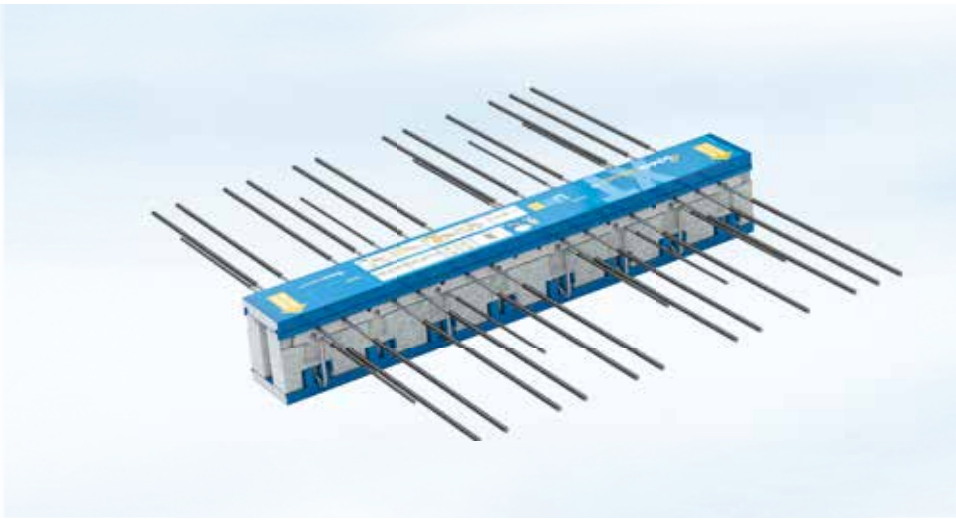
Schöck Isokorb®



Technical Information
Schöck Isokorb® XT with 120 mm insulation

March 2016

Telephone hotline for design support services
Tel.: 01865 290 890
Fax: 01865 290 899
E-mail: design@schoeck.co.uk

Planning tools - downloads and requests
Tel.: 0845 241 3390
Fax: 0845 241 3391
E-mail: design@schoeck.co.uk
Web: www.schoeck.co.uk

CPD Seminars and on-site consultation
Tel.: 0845 241 3390
Fax: 0845 241 3391
Web: www.schoeck.co.uk

Planning and consulting service

The engineers of Schöck's application engineering department would be very happy to advise you on static, structural and building-physics questions and will produce for you proposals for your solution with calculations and detailed drawings.
For this please send your planning documentation (general arrangements, sections, static specifications) with the address of the building project to:

Schöck Ltd
Staniford House
4 Wedgwood Road
Bicester
Oxfordshire
OX26 4UL

Telephone hotline for design support services
Tel.: 01865 290 890
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Notes | Symbols

Technical Information

- This Technical Information on the respective product application is valid only in its entirety and therefore may only be reproduced as a whole. With texts and graphics published solely as extracts there is a danger of communicating insufficient or even mis-leading information. Therefore dissemination lies in the sole responsibility of the user or rather the processor!
- This Technical Information is valid solely for United Kingdom and takes into account the federal state-specific approvals and standards.
- If the installation takes place in another country then the valid Technical Information of the respective country is to be applied.
- The current Technical Information is to be applied. A current version is available at www.schoeck.co.uk/en_gb/downloads.
- The characteristic physical values for all products are listed in the appropriate table in the “Building physics” section.

Special constructions - bending of reinforcing steel

Some connection situations cannot be realised with those standard product variants presented in this Technical Information. In this case special designs can be requested from the application engineering department (for contact details see page 3). This applies, for example, with additional requirements as a result of prefabricated construction (limitations due to technical manufacturing constraints or through transportation width), which can possibly be met using coupler bars. The bending of bars required for special constructions are carried out in the factory in each case on the individual steel bar. With this, it is monitored and ensured that the conditions of the general building supervisory approvals and of BS EN1992 1-1(EC2) and BS EN1992-1-1/NA are observed with regard to bending of reinforcing steel.

Attention: If reinforcing steel of the Schöck Isokorb® is bent or rebent on-site the observance and monitoring of the relevant conditions lies outside the influence of Schöck Bauteile GmbH. Therefore, in such cases, our warranty ceases.

Tags

Hazard note

The yellow triangle with the exclamation mark indicates a hazard note. This means there is a danger to life and limb with non-observance!

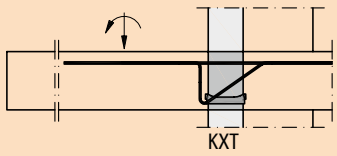
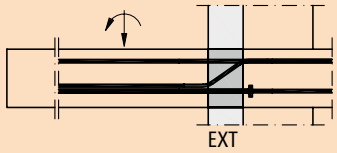
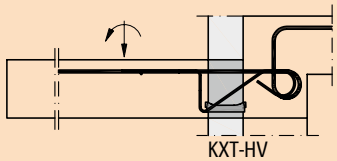
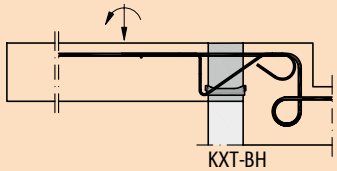
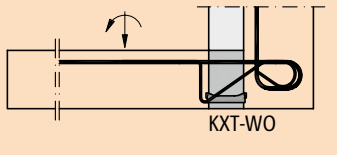
Info

The square with “i” indicates important information which, for example, is to be taken into account with the design.

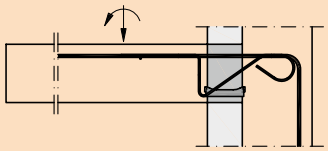
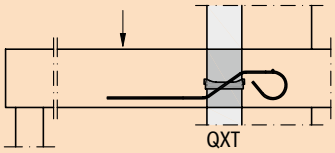
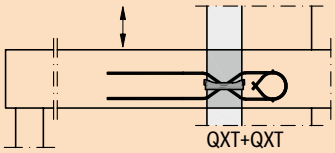
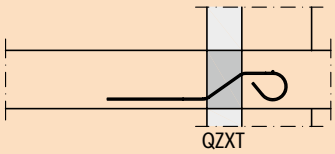
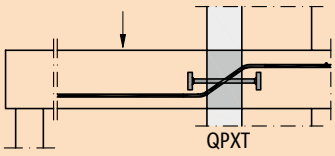
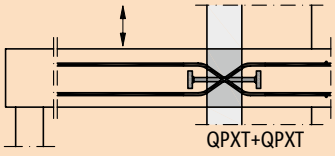
Check list

The square with tick indicates the check list. Here the essential points of the design are summarised in brief.

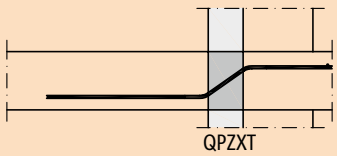
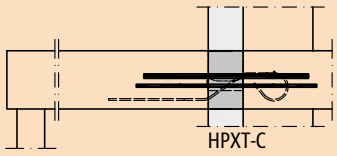
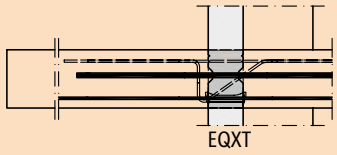
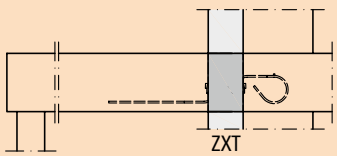
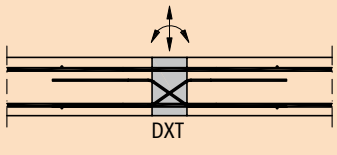
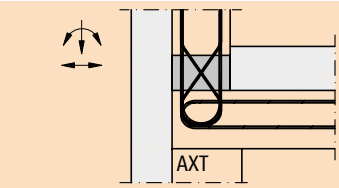
Summary of types

Application	Production type	Schöck Isokorb® type
Free cantilevered balconies  KXT	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**KXT** HTE COMPACT Page 53
Free cantilevered balconies  EXT	**Building site** In-situ concrete balconies **Precast concrete work** Prefabricated component balconies	**EXT** HTE Page 71
Free cantilevered balconies with height offset downwards  KXT-HV	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies	**KXT-HV** HTE COMPACT Page 95
Free cantilevered balconies with height offset upwards  KXT-BH	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies	**KXT-BH** HTE COMPACT Page 95
Free cantilevered balconies with wall connection upwards  KXT-WO	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies	**KXT-WO** HTE COMPACT Page 95

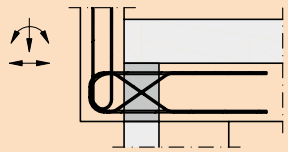
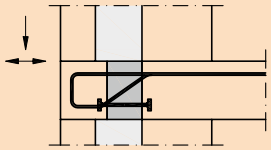
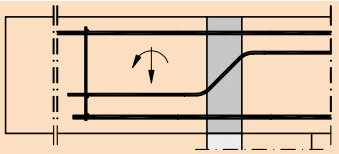
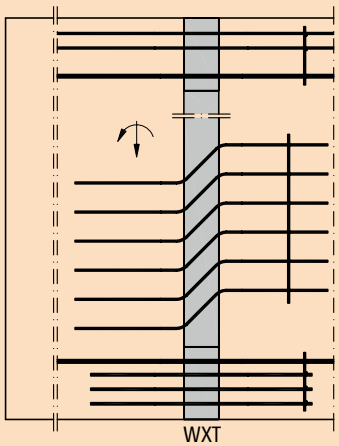
Summary of types

Application	Production type	Schöck Isokorb® type	
Free cantilevered balconies with wall connection downwards			
	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies	**KXT-WU**	Page 95
Supported balconies			
	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**QXT**	Page 115
Supported balconies with positive and negative shear force			
	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**QXT+QXT**	Page 115
Zero-stress shear force connection			
	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**QZXT**	Page 115
Supported balconies with point load peaks			
	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**QPXT**	Page 133
Supported balconies with positive and negative shear force with point load peaks			
	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**QPXT+QPXT**	Page 133

Summary of types

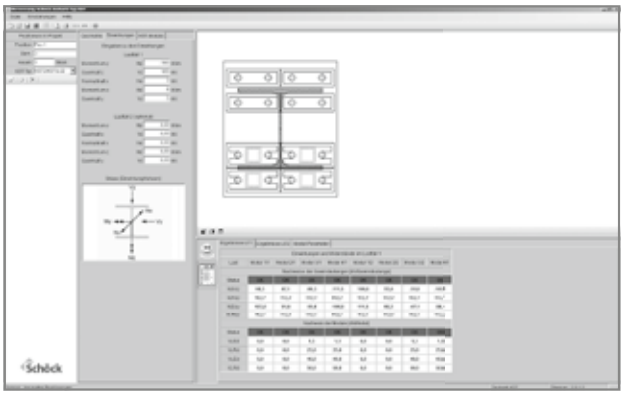
Application	Production type	Schöck Isokorb® type
Zero-stress shear force connection  	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**QPZXT** Page 133
Addition for horizontal loads  	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**HPXT** Page 149
Addition for horizontal loads and positive moments  	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**EQXT** Page 159
Addition as insulating adapter  	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**ZXT** Page 169
Continuous floors with bending momemts and shear forces  	**Building site** In-situ concrete balconies **Precast concrete work** Completely prefabricated balconies Prefabricated component balconies	**DXT** Page 175
Balustrades and parapets  	**Building site** In-situ concrete **Precast concrete work** Completely prefabricated part	**AXT** Page 187

Summary of types

Application	Production type	Schöck Isokorb® type
Advanced balustrades  FXT	**Building site** In-situ concrete **Precast concrete work** Completely prefabricated part	**FXT** Page 209
Cantilevers  OXT	**Building site** In-situ concrete	**OXT** Page 225
Free cantilevered downstand beams and reinforced concrete beams  SXT	**Building site** In-situ concrete **Precast concrete work** Completely prefabricated part	**SXT** Page 239
Free cantilevered shear wall  WXT	**Building site** In-situ concrete **Precast concrete work** Completely prefabricated part	**WXT** Page 251

Design software

The Schöck Isokorb® design software and the Schöck Isokorb® type KST design software provide the design of thermally separated structures.
The Schöck Isokorb® design software is available as a free download and can also be applied for on CD-ROM. It runs under MS Windows using MS Framework 3.5.

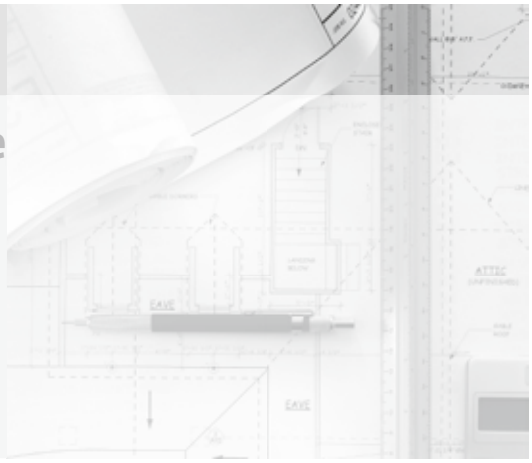


Software

- Administrator rights are required for installation of the software.
- Upwards from Windows 7, with an update, the software is to be started using administrator rights (right mouse click on Schöck Icon; selection: carry out using administrator rights).

Building physics

Reinforced concrete/Reinforced concrete



Thermal protection

The Part L 2010 and its new requirements relating to thermal bridges

Prior to the Building Regulations Part L 2010 , it was possible to to assess the impact of non-repeating thermal bridges very simply by simply stating that Accredited Construction Details had been adopted - and assigning a 'y' value of 0.08 W/m^{2}K per °C to the entire dwelling, rather than calculating for each individual junction or thermal bridge. However, that has now changed and it is necessary to assess the heat loss through every individual thermal bridge.
This makes it even more critical that an effective thermal barrier is installed wherever a cantilever balcony and/or other similar construction connectivity point breaks the insulation layer creating the risk of a thermal bridge.

Linear thermal transmission coefficient Ψ

The heat flow via a linear contact thermal bridge (e.g. balcony connection) is described by a thermal transmission coefficient Ψ. The better the heat insulation element employed in the area of the connection of the balcony (or of another thermal bridge) is, the greater the thermal resistance R of the element, the smaller is the heat flow via the thermal bridge and the smaller is the heat coefficient Ψ.
The heat transmission coefficient Ψ, along with the insulation performance of the Schöck Isokorb® XT, depends on the structural configuration in the area of the balcony connection and therefore changes with each design. The calculation (acc. to EN ISO 10211) takes place via the input of the design (wall or floor structure), on the installation of the Schöck Isokorb® XT and on the assignment of the appropriate material properties (e.g. thermal conductivity) in a thermal bridge program (FEM-Software), which calculates the 2- and/or 3-dimensional heat flow.
If the heat flows through the undisturbed construction is subtracted from this total heat flow, then the linear thermal transmission coefficient Ψ is obtained.

The equivalent thermal conductivity λ_{eq} and the equivalent thermal resistance R_{eq}

The equivalent thermal conductivity λ_{eq} is the overall thermal conductivity of the Schöck Isokorb® averaged over the various different surface areas. Given the same insulating element thickness, it is an indicator of the thermal insulation effciency of the connection. The smaller the λ_{eq} value, the higher the thermal insulation of the balcony connection. As the equivalent thermal conductivity takes into account the various surface areas of the materials used, λ_{eq} depends on the load capacity of the Schöck Isokorb®.
To determine the thermal conductivity of thermal insulating elements of different thicknesses, the equivalent thermal resistance value R_{eq} is used in place of λ_{eq}. It takes into account both the thickness of the insulating element, and the equivalent thermal conductivity λ_{eq}.
The larger the R_{eq} value, the better the insulation performance. R_{eq} is calculated using the equivalent thermal conductivity λ_{eq} and thickness of insulating element d as follows:

$$R_{eq} = \frac{d}{\lambda_{eq}}$$

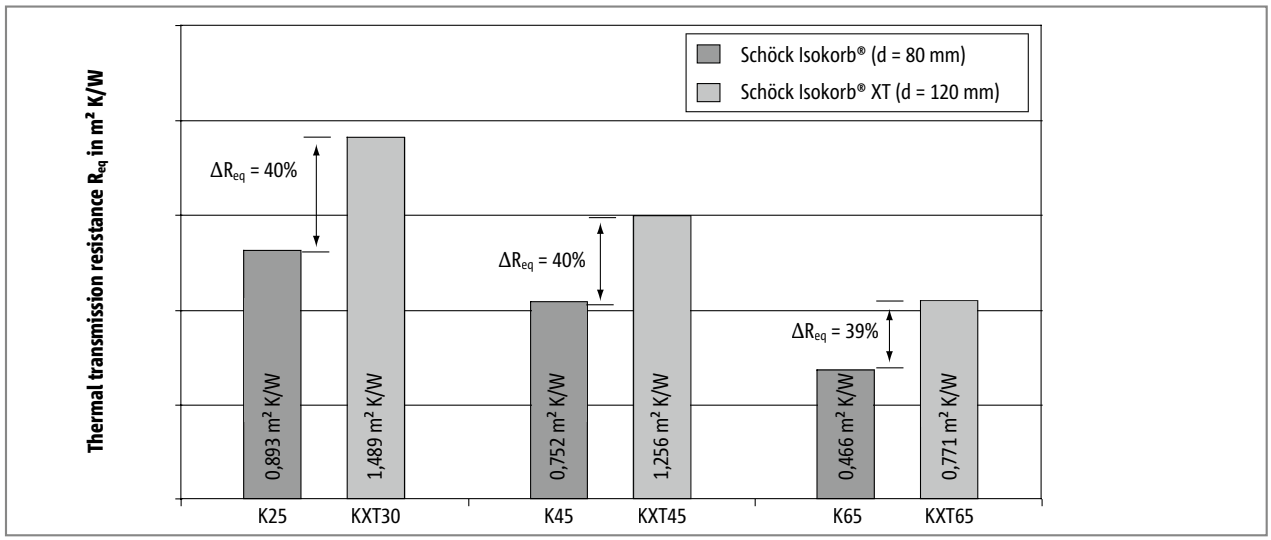
Product characteristic value λ_{eq} and structure-dependent thermal transmission coefficient Ψ

While the thermal transmission coefficient Ψ describes the heat loss across the complete connection structure, the equivalent thermal conductivity λ_{eq} is a measure for the heat insulation of the Schöck Isokorb® alone and thus a structure-independent product characteristic value. Therefore, the related λ_{eq}-values given in this Technical Information are for all Isokorb®types. Along with the thermal transmission coefficients Ψ precalculated below for simple wall constructions (configured in layers), λ_{eq} can thus also be employed for detailed thermal bridge calculations in an FEM-Tool as material characteristic value of the Schöck Isokorb®.

Thermal protection

The Schöck Isokorb® XT easily meets the requirements of Part L 2010

Achieving compliance with Part L 2010 requires increasing attention to thermal bridging issues. As far as the thermal resistance value R_{eq} is concerned, the thermal insulation performance of the Schöck Isokorb® XT with its insulation thickness of d = 120 mm provides an average improvement of around 40% on that of the Schöck Isokorb® type K where d = 80 mm.



Comparison heat transmission resistance $_{eq}$ of Schöck Isokorb® XT (d = 120 mm) and Schöck Isokorb® (d = 80 mm) with an element height of 180 mm

Thermal protection

Thermal characteristic values shown using the example of typical external wall constructions

The thermal outflow via a linear thermal bridge (e.g. a balcony connection) is described using the thermal transmission coefficient ψ (the psi value). The better the thermal insulation element in the balcony connection area, or in other words the greater the thermal resistance R_{eq} of the element, the lower the thermal loss through the thermal bridge and the smaller the thermal transmission coefficient ψ.
The thermal transmission coefficient ψ depends on the underlying construction type of the balcony connection as well as on the insulating capacity of the Schöck Isokorb® XT. The following values are valid for typical constructions with thermal insulation bonded systems as shown in the table below:

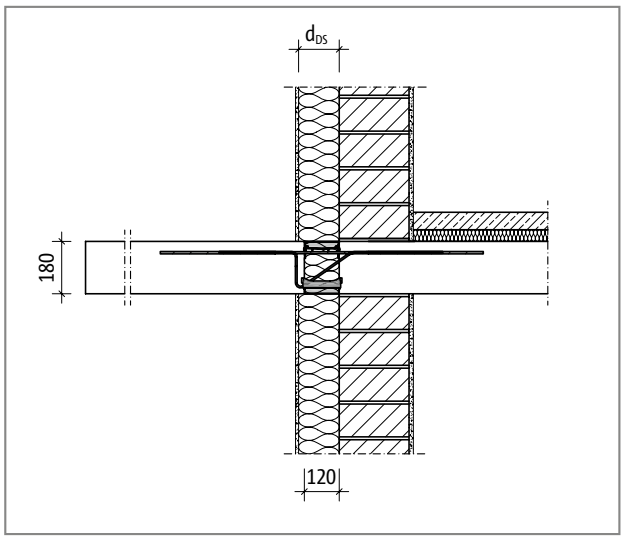
Schöck Isokorb® type		KXT30-H180-F0	KXT45-H180-F0	KXT65-V8 H180-F0	QXT10-H180-F0	QXT30-H180-F0	QXT60-H180-F0
Equivalent thermal conductivity in W/(m · K)							
	λ_{eq}	0.080	0.095	0.154	0.057	0.064	0.074
Equivalent thermal resistance in m² · K/W							
	R_{eq}	1.489	1.256	0.771	2.108	1.878	1.616
Thermal transmission coefficient Ψ in W/(m·K)							
Insulation thickness of the EIFS d_{DS} in mm	**140**	0.10	0.14	0.20	0.05	0.06	0.07
	220	0.12	0.15	0.21	0.06	0.08	0.09
	300	0.17	0.18	0.20	0.10	0.11	0.13

Thermal transmission coefficients Ψ with a concrete slab thickness of 180 mm

Thermal transmission coefficients ψ for further construction details for balcony connections using Schöck Isokorb® XT can be found under www.schoeck.co.uk

Notes on the table

- With the most unfavourable design listed in the table (Schöck Isokorb® type KXT65 and 140 mm insulation thickness of the exterior insulation finishing system) the temperature factor f_{RSi} = 0.88. Therefore, with normal conditions (outside air temperature : Θ_e = -5 °C and inside air temperature Θ_i = 20 °C), there results a minimum surface temperature of Θ_{min} = 17.1°C.
- The equivalent thermal conductivity (and thus also R_{eq}) can be calculated both one-dimensionally “by hand” and also three-dimensionally with the aid of an FE program. The three-dimensional calculation is more complex but also more accurate. The one-dimensionally calculated thermal conductivity leads to higher values, i. e. $_{eq,1dim} \geq \lambda_{eq,3dim}$. In other words $\lambda_{eq,1dim}$ is conservative.
- Thermal insulation of the exterior insulation finishing system: thermal conductivity λ = 0.040 W/(m · K)
  Thermal resistance outside: R_{se} = 0,04 (m² · K)/W
  Thermal resistance inside: Ψ value calculation: R_{si} = 0.13 m²K/W, calculation f_{Rsi} : R_{si} = 0.25 (m² · K)/W



Wall design for the determination of the building physical properties

Passive house

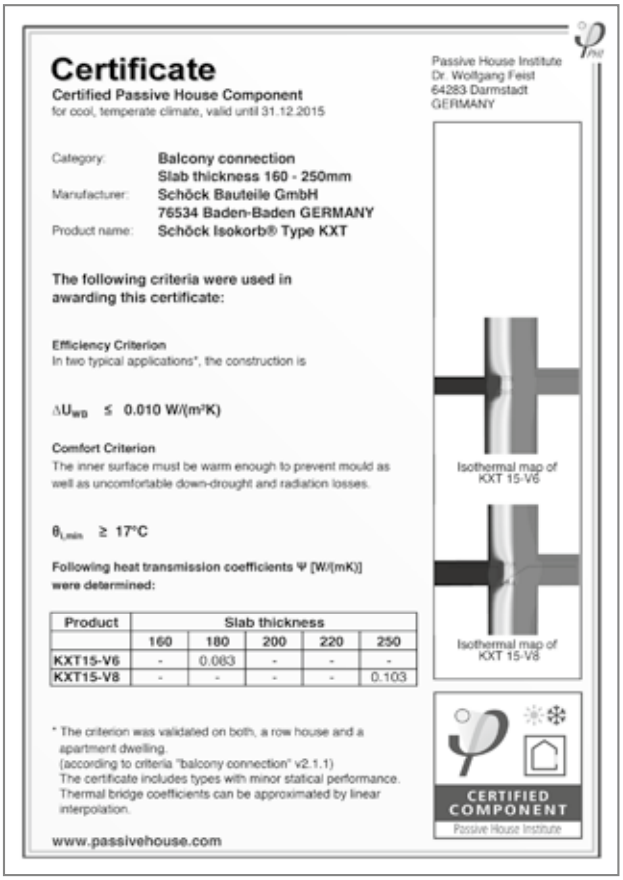
Passive house standard with Schöck Isokorb® XT

Due to the very high thermal insulation performance of the Schöck Isokorb® XT the balcony from the Passive House Institute in Darmstadt (PHI) connected with the Schöck Isokorb® KXT is certified as “Low thermal bridge design”. For supported balconies (Schöck Isokorb® types QXT) numerous bearing levels and for freely cantilevered balconies (Schöck Isokorb® types KXT) one bearing level (KXT15) are certified as “Non-thermal bridge connection”.
With the Schöck Isokorb® type AXT Schöck offers a non-thermal bridge connection acc. to PHI certification is also available for parapets and balustrades. Depending on the design, with the Schöck Isokorb® type AXT, negative heat transmission coefficients are also possible.
For certification of the heat transmission coefficient Ψ, the minimum inner surface temperature and the temperature for a Schöck Isokorb® XT are determined in a Passive House design. The values must conform with the requirements on quality and with the boundary values of the Passive House Institute defined for these.

i It is possible to avoid a thermal bridge with Schöck Isokorb® KXT15

As first insulation element for freely cantilevered balconies the Schöck Isokorb® KXT15 receives the certification “Passive House Component” from the Passive House Institute .

Certified Passive House components Schöck Isokorb® type QXT and Schöck Isokorb® type KXT15



Certificate

Certified Passive House Component
for cool, temperate climate, valid until 31.12.2015

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

Category: Balcony connection
Slab thickness 160 - 250mm
Manufacturer: Schöck Bauteile GmbH
76534 Baden-Baden GERMANY
Product name: Schöck Isokorb® Type KXT

The following criteria were used in awarding this certificate:

Efficiency Criterion
In two typical applications*, the construction is

$\Delta U_{WB} \leq 0.010$ W/(m²K)

Comfort Criterion
The inner surface must be warm enough to prevent mould as well as uncomfortable down-drought and radiation losses.

$\theta_{i,min} \geq 17$°C

Following heat transmission coefficients Ψ [W/(mK)] were determined:

Product	Slab thickness				
	160	180	200	220	250
KXT15-V6	-	0.083	-	-	-
KXT15-V8	-	-	-	-	0.103

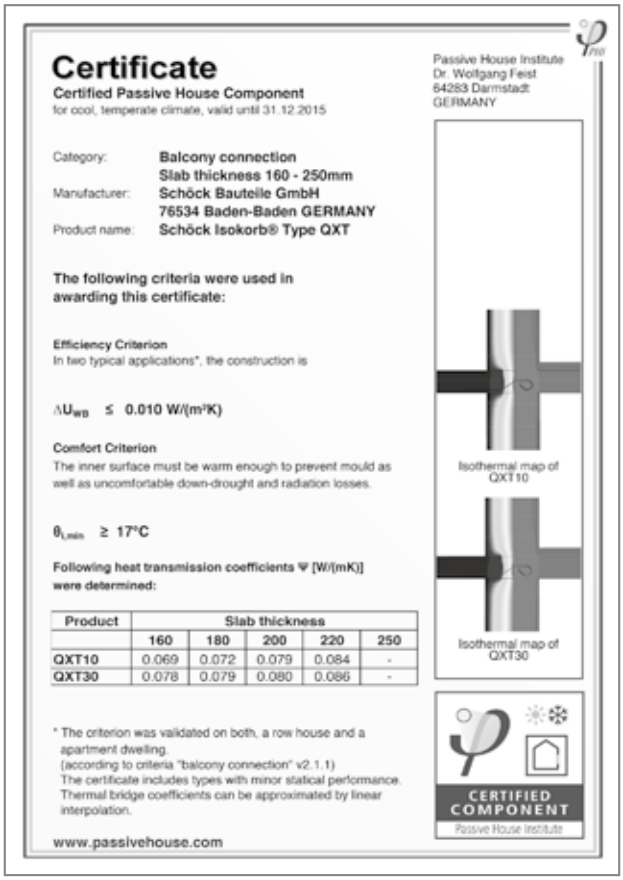
Isothermal map of KXT 15-V6

Isothermal map of KXT 15-V8

* The criterion was validated on both, a row house and a apartment dwelling.
(according to criteria "balcony connection" v2.1.1)
The certificate includes types with minor statical performance. Thermal bridge coefficients can be approximated by linear interpolation.

CERTIFIED COMPONENT
Passive House Institute

www.passivehouse.com



Certificate

Certified Passive House Component
for cool, temperate climate, valid until 31.12.2015

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
GERMANY

Category: Balcony connection
Slab thickness 160 - 250mm
Manufacturer: Schöck Bauteile GmbH
76534 Baden-Baden GERMANY
Product name: Schöck Isokorb® Type QXT

The following criteria were used in awarding this certificate:

Efficiency Criterion
In two typical applications*, the construction is

$\Delta U_{WB} \leq 0.010$ W/(m²K)

Comfort Criterion
The inner surface must be warm enough to prevent mould as well as uncomfortable down-drought and radiation losses.

$\theta_{i,min} \geq 17$°C

Following heat transmission coefficients Ψ [W/(mK)] were determined:

Product	Slab thickness				
	160	180	200	220	250
QXT10	0.069	0.072	0.079	0.084	-
QXT30	0.078	0.079	0.080	0.086	-

Isothermal map of QXT10

Isothermal map of QXT30

* The criterion was validated on both, a row house and a apartment dwelling.
(according to criteria "balcony connection" v2.1.1)
The certificate includes types with minor statical performance. Thermal bridge coefficients can be approximated by linear interpolation.

CERTIFIED COMPONENT
Passive House Institute

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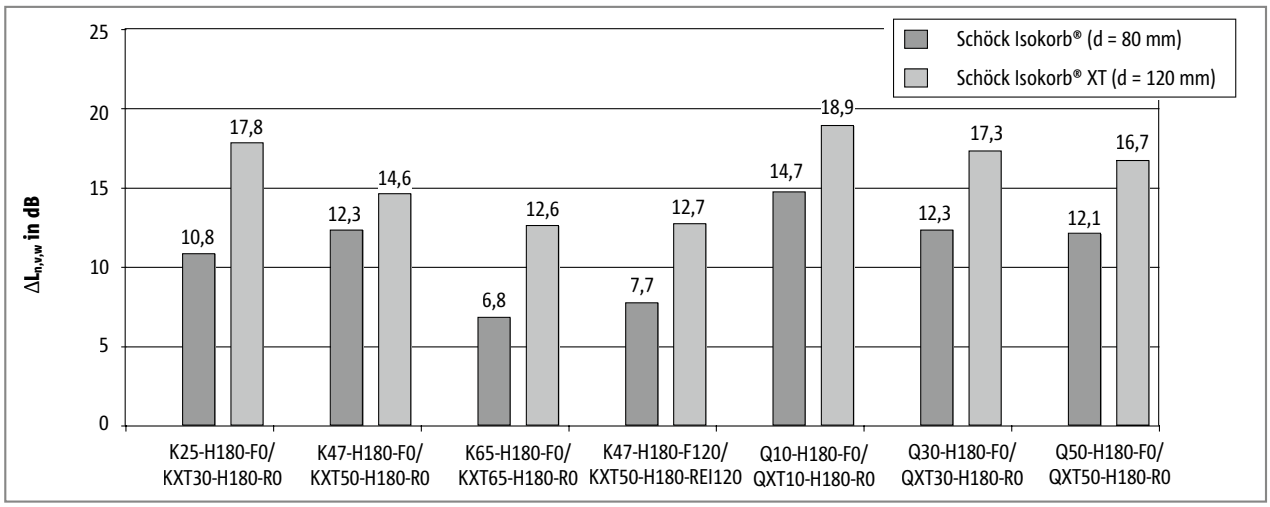
Impact sound protection

The rated difference in impact sound level $\Delta L_{n,v,w}$

This describes the reduction in the transmission of impact sound from the balcony to the building when using the Schöck Isokorb® XT structural thermal break connection, compared with an uninterrupted balcony to concrete connection. The larger the value, the more the impact sound is reduced. The rated difference in impact sound level $\Delta L_{n,v,w}$ for the Schöck Isokorb® XT was measured and specified by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart.

Schöck Isokorb® type	Evaluated impact sound level difference $\Delta L_{n,v,w}$ in dB	
	Fire resistance class R0	Fire resistance class REI120
KXT15-H180	18.1	-
KXT30-H180	17.8	17.6
KXT30-V8-H180	14.9	-
KXT50-H180	14.6	12.7
KXT50-V8-H180	14.0	-
KXT65-V8-H180	12.6	9.3
KXT90-V8-H180	11.8	-
QXT10-H180	18.9	15.8
QXT30-H180	17.3	13.3
QXT60-H180	16.7	13.8
QXT70-H180	15.0	14.0

Table 4: Evaluated impact sound level differences $\Delta L_{n,v,w}$ Schöck Isokorb® XT



Schöck Isokorb® XT and the new requirements on the impact sound protection

The Schöck Isokorb® XT significantly reduces the impact sound transmission of access balconies and balconies in buildings and thus improves the impact sound insulation. With evaluated impact sound level differences of 9.3 dB to 18.9 dB in many cases it enables the maintaining of the required standard impact sound level of $L'_{n,w} \leq 53$ dB, without additional measures (e. g. floating laid screeding).

Fire protection configuration

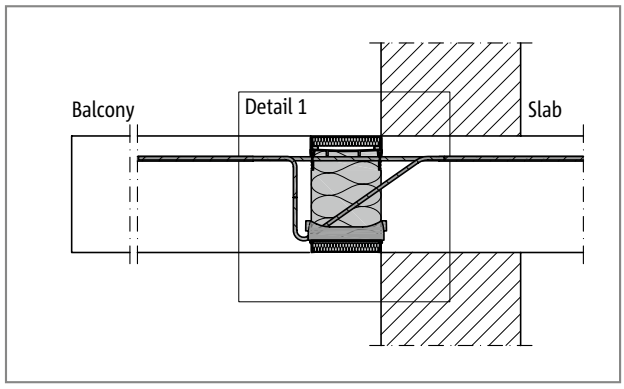
Schöck Isokorb® XT fire protection configuration

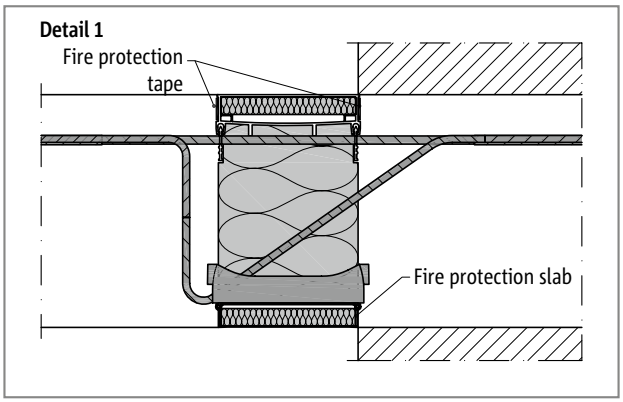
Each Schöck Isokorb®XT is also available in a fire protection configuration (designation e.g. Schöck Isokorb® type KXT50-CV35-H180-REI120).

To this end, fire protection slabs are attached on the upper and lower sides of the Schöck Isokorb® (see figure). Prerequisite for the fire protection classification of the balcony connection is that the balcony slab and the floor slab also meet the requirements of the necessary fire resistance class according to BS EN 1992-1-1 and -2 (EC 2). If, in addition to the load bearing capacity (R) in the case of fire, the integrity (E) and the insulation (I) are also required, block outs between the Schöck Isokorb® XT are to be closed in the fire protection configuration, for example using the Schöck Isokorb® type ZXT.

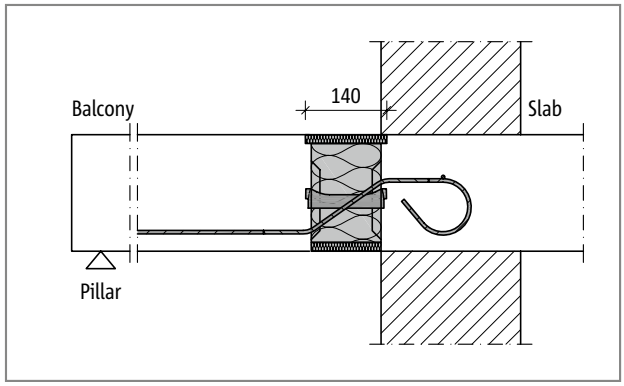
The Schöck Isokorb®XT has been checked as enclosing on the basis of floors acc. to BS EN 1365-2. According to BS EN13501-2 only the requirement R (load bearing capacity in cases of fire) is placed on balconies. Basis for this testing is BS EN 1365-5. In addition, for fire protection of the Schöck Isokorb®, testing continues to be carried on the basis of floors acc. to BS EN 1365-2. From this results the classification REI.
(R - load bearing capacity, E - integrity, I - insulation)

With the Schöck Isokorb®, the requirements from the fire tests are implemented using flush integrated lateral fire protection tapes or 10 mm overlaying fire protection slabs. The integrated fire protection tapes, made from material which forms an insulation layer, and the respectively 10 mm overlaying fire protection slabs on the upper side of the Schöck Isokorb® XT ensure that the joints, which open under the effect of fire, are closed. Thus the integrity and the insulation are ensured in case of fire (see following figures).
The fire protection configuration of the respective Schöck Isokorb® type is presented in the product chapter title “Fire protection configuration”.

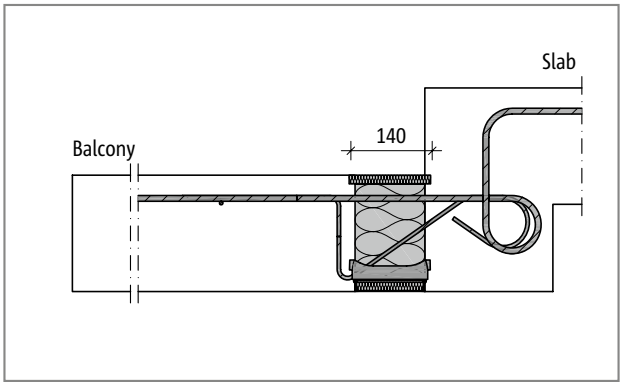




Schöck Isokorb® type KXT with REI120: Fire protection slabs top and bottom; laterally integrated fire protection bands



Schöck Isokorb® type QXT with REI120: Fire protection slab top projecting laterally



Schöck Isokorb® type KXT-HV with REI120: Fire protection slab top projecting laterally

Fire protection

- For the insulation between the Schöck Isokorb®, Schöck Isokorb® supplementary type ZXT (see p. 169) is available in R0 or as fire protection configuration to REI120. The rating of the Schöck Isokorb® used is relevant for the fire protection of the connection.

Fire protection classes REI120, R90

The reaction to fire of structural components is classified on the basis of the European Standard BS EN 13501-2.

Schöck Isokorb® type	KXT, KXT-HV, KXT-BH, KXT-WO, KXT-WU, QXT, QXT+QXT,QXTZ, QPXT, QPXT+QPXT, QPZXT, HPXT, EQXT, DXT, EXT	FXT,AXT,OXT SXT,WXT
Fire protection class	REI120	R90

Schöck Isokorb® type KXT

Fire resistance class R0

Type	KXT15-V6			KXT15-V8			KXT25-V6			KXT25-V8			KXT30-V6		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.916	0.062		1.711	0.069		1.568	0.076		1.428	0.083		1.377	0.086	
170	1.980	0.060	18.1	1.774	0.067		1.629	0.073		1.487	0.080		1.434	0.083	18.1
180	2.040	0.058		1.833	0.065		1.686	0.070		1.542	0.077		1.489	0.080	
190	2.098	0.057		1.890	0.063		1.742	0.068		1.596	0.074		1.542	0.077	
200	2.152	0.055		1.944	0.061		1.795	0.066		1.647	0.072		1.593	0.075	
210	2.204	0.054		1.995	0.060	-	1.846	0.064	-	1.697	0.070	-	1.642	0.072	
220	2.254	0.053	-	2.045	0.058		1.895	0.063		1.745	0.068		1.689	0.070	-
230	2.301	0.052		2.092	0.057		1.941	0.061		1.791	0.066		1.734	0.068	
240	2.346	0.051		2.137	0.056		1.986	0.060		1.835	0.065		1.778	0.067	
250	2.389	0.050		2.181	0.054		2.030	0.059		1.878	0.063		1.821	0.065	

Fire resistance class R0

Type	KXT30-V8			KXT30-VV			KXT40-V6			KXT40-V8			KXT40-VV		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.213	0.098		0.938	0.127		1.228	0.097		1.121	0.106		0.903	0.132	
170	1.267	0.094		0.983	0.121		1.282	0.093		1.172	0.101		0.947	0.125	
180	1.318	0.090		1.027	0.116		1.334	0.089		1.221	0.097		0.990	0.120	
190	1.368	0.087		1.069	0.111		1.384	0.086		1.269	0.094		1.032	0.115	18.1
200	1.416	0.084		1.111	0.107		1.432	0.083		1.315	0.090		1.072	0.111	
210	1.462	0.081	-	1.152	0.103	-	1.479	0.080	-	1.359	0.087	18.1	1.112	0.107	
220	1.507	0.079		1.191	0.100		1.524	0.078		1.403	0.085		1.150	0.103	
230	1.551	0.077		1.230	0.097		1.568	0.076		1.445	0.082		1.188	0.100	
240	1.593	0.075		1.267	0.094		1.610	0.074		1.486	0.080		1.225	0.097	-
250	1.634	0.073		1.304	0.091		1.651	0.072		1.526	0.078		1.261	0.094	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Impact sound level difference $\Delta L_{n,v,w}$

- Measurements by the Research and Development Institute for Building Physics Assoc. at the Stuttgart Technical University, Test Report No. FEB/FS52-01/08 and FEB/FS52-02/08.
- The impact sound level difference is dependent on the reinforcement cross-section area and on the element height. The smaller the reinforcement cross-section area and the smaller the floor height, the greater is the impact sound level difference. For Schöck Isokorb® types, which have not been tested, the measured values of the Schöck Isokorb® type are specified respectively with more reinforcement cross-section area or higher floor thickness (to be on the safe side).

Schöck Isokorb® type KXT

Fire resistance class R0

Type	KXT45-V6			KXT45-V8			KXT45-VV			KXT50-V6			KXT50-V8		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.154	0.103		1.059	0.112		0.787	0.151		1.061	0.112		0.980	0.121	
170	1.206	0.098		1.108	0.107		0.827	0.144		1.110	0.107		1.026	0.116	
180	1.256	0.095		1.156	0.103		0.866	0.137		1.157	0.103		1.071	0.111	
190	1.305	0.091		1.202	0.099		0.904	0.131		1.203	0.099		1.115	0.107	
200	1.351	0.088	-	1.246	0.095	-	0.941	0.126	18.1	1.248	0.095	-	1.158	0.103	-
210	1.397	0.085		1.290	0.092		0.977	0.122		1.292	0.092		1.200	0.099	
220	1.441	0.082		1.332	0.089		1.012	0.117		1.334	0.089		1.240	0.096	
230	1.483	0.080		1.373	0.087		1.047	0.113		1.375	0.086		1.280	0.093	
240	1.525	0.078		1.413	0.084		1.081	0.110		1.415	0.084		1.318	0.090	
250	1.565	0.076		1.452	0.082		1.114	0.107		1.454	0.082		1.355	0.088	

Fire resistance class R0

Type	KXT50-VV			KXT55-V8			KXT55-V10			KXT55-VV			KXT65-V8		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.692	0.172		0.767	0.155		0.728	0.163		0.608	0.195		0.699	0.170	
170	0.728	0.163		0.806	0.147		0.765	0.155		0.641	0.185		0.735	0.162	
180	0.763	0.156		0.844	0.141		0.801	0.148		0.672	0.177		0.771	0.154	
190	0.797	0.149		0.881	0.135		0.837	0.142		0.703	0.169		0.806	0.147	-
200	0.831	0.143	-	0.918	0.129	-	0.872	0.136	18.1	0.734	0.162	-	0.840	0.142	
210	0.864	0.137		0.953	0.125		0.907	0.131		0.764	0.155		0.873	0.136	
220	0.897	0.133		0.988	0.120		0.940	0.126		0.794	0.150		0.906	0.131	
230	0.928	0.128		1.022	0.116		0.973	0.122		0.823	0.144		0.938	0.127	
240	0.960	0.124		1.056	0.113		1.005	0.118		0.852	0.140		0.969	0.123	18.1
250	0.990	0.120		1.089	0.109		1.037	0.115		0.880	0.135		1.000	0.119	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Impact sound level difference $\Delta L_{n,v,w}$

- Measurements by the Research and Development Institute for Building Physics Assoc. at the Stuttgart Technical University, Test Report No. FEB/FS52-01/08 and FEB/FS52-02/08.
- The impact sound level difference is dependent on the reinforcement cross-section area and on the element height. The smaller the reinforcement cross-section area and the smaller the floor height, the greater is the impact sound level difference. For Schöck Isokorb® types, which have not been tested, the measured values of the Schöck Isokorb® type are specified respectively with more reinforcement cross-section area or higher floor thickness (to be on the safe side).

Schöck Isokorb® type KXT

Fire resistance class R0

Type	KXT65-V10			KXT90-V8			KXT90-V10			KXT100-V8			KXT100-V10		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.666	0.178		0.531	0.224		0.521	0.228		0.516	0.230		0.507	0.234	
170	0.701	0.170		0.560	0.212		0.550	0.216		0.544	0.218		0.534	0.222	
180	0.735	0.162		0.588	0.202		0.578	0.206		0.572	0.208		0.562	0.212	
190	0.768	0.155		0.616	0.193		0.605	0.196		0.599	0.198		0.588	0.202	
200	0.801	0.148	-	0.644	0.184	-	0.632	0.188	-	0.626	0.190	-	0.615	0.193	-
210	0.833	0.143		0.671	0.177		0.659	0.180		0.652	0.182		0.641	0.185	
220	0.865	0.137		0.698	0.170		0.685	0.173		0.679	0.175		0.667	0.178	
230	0.896	0.133		0.724	0.164		0.711	0.167		0.704	0.169		0.692	0.172	
240	0.927	0.128		0.750	0.158		0.737	0.161		0.730	0.163		0.717	0.166	
250	0.957	0.124		0.776	0.153		0.762	0.156		0.755	0.157		0.742	0.160	

Fire resistance class REI120

Type	KXT15-V6			KXT15-V8			KXT25-V6			KXT25-V8			KXT30-V6		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.468	0.081		1.345	0.088		1.255	0.095		1.164	0.102		1.130	0.105	
170	1.527	0.078		1.401	0.085		1.309	0.091		1.216	0.098		1.181	0.101	
180	1.583	0.075		1.456	0.082		1.362	0.087		1.266	0.094		1.230	0.097	
190	1.638	0.073		1.508	0.079		1.412	0.084		1.315	0.090		1.278	0.093	
200	1.690	0.070	-	1.558	0.076	-	1.461	0.081	-	1.362	0.087	-	1.324	0.090	-
210	1.740	0.068		1.607	0.074		1.508	0.079		1.407	0.084		1.369	0.087	
220	1.788	0.066		1.654	0.072		1.554	0.076		1.452	0.082		1.413	0.084	
230	1.834	0.065		1.699	0.070		1.598	0.074		1.494	0.079		1.455	0.082	
240	1.878	0.063		1.742	0.068		1.641	0.072		1.536	0.077		1.496	0.079	
250	1.921	0.062		1.785	0.067		1.682	0.071		1.576	0.075		1.536	0.077	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Impact sound level difference $\Delta L_{n,v,w}$

- Measurements by the Research and Development Institute for Building Physics Assoc. at the Stuttgart Technical University, Test Report No. FEB/FS52-01/08 and FEB/FS52-02/08.
- The impact sound level difference is dependent on the reinforcement cross-section area and on the element height. The smaller the reinforcement cross-section area and the smaller the floor height, the greater is the impact sound level difference. For Schöck Isokorb® types, which have not been tested, the measured values of the Schöck Isokorb® type are specified respectively with more reinforcement cross-section area or higher floor thickness (to be on the safe side).

Schöck Isokorb® type KXT

Fire resistance class REI120

Type	KXT30-V8			KXT30-VV			KXT40-V6			KXT40-V8			KXT40-VV		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.017	0.117		0.816	0.146		1.027	0.116		0.951	0.125		0.790	0.150	
170	1.065	0.112		0.857	0.139		1.075	0.110		0.997	0.119		0.829	0.143	
180	1.111	0.107		0.897	0.133		1.122	0.106		1.041	0.114		0.868	0.137	
190	1.156	0.103		0.935	0.127		1.167	0.102		1.084	0.110		0.906	0.131	
200	1.200	0.099		0.973	0.122		1.211	0.098	-	1.126	0.105		0.943	0.126	
210	1.242	0.096	-	1.011	0.118	-	1.254	0.095		1.167	0.102	18.1	0.980	0.121	-
220	1.284	0.093		1.047	0.113		1.296	0.092		1.207	0.098		1.015	0.117	
230	1.324	0.090		1.082	0.110		1.336	0.089		1.246	0.095		1.050	0.113	
240	1.363	0.087		1.117	0.106		1.375	0.086	18.1	1.284	0.093		1.084	0.110	
250	1.401	0.085		1.151	0.103		1.414	0.084		1.320	0.090		1.117	0.106	

Fire resistance class REI120

Type	KXT45-V6			KXT45-V8			KXT45-VV			KXT50-V6			KXT50-V8		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.975	0.122		0.906	0.131	-	0.700	0.170		0.908	0.131		0.848	0.140	
170	1.022	0.116		0.950	0.125		0.736	0.161		0.952	0.125		0.890	0.134	
180	1.067	0.111		0.993	0.120		0.771	0.154		0.995	0.119		0.930	0.128	
190	1.110	0.107		1.035	0.115		0.806	0.147		1.036	0.115		0.970	0.122	
200	1.153	0.103	-	1.076	0.110		0.840	0.141	18.1	1.077	0.110	-	1.009	0.118	-
210	1.195	0.099		1.115	0.107	18.1	0.873	0.136		1.117	0.106		1.047	0.113	
220	1.235	0.096		1.154	0.103		0.906	0.131		1.156	0.103		1.085	0.110	
230	1.274	0.093		1.192	0.100		0.938	0.127		1.193	0.100		1.121	0.106	
240	1.313	0.091		1.229	0.097		0.970	0.123		1.230	0.097		1.156	0.103	
250	1.350	0.088		1.265	0.094		1.001	0.119		1.266	0.094		1.191	0.100	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Impact sound level difference $\Delta L_{n,v,w}$

- Measurements by the Research and Development Institute for Building Physics Assoc. at the Stuttgart Technical University, Test Report No. FEB/FS52-01/08 and FEB/FS52-02/08.
- The impact sound level difference is dependent on the reinforcement cross-section area and on the element height. The smaller the reinforcement cross-section area and the smaller the floor height, the greater is the impact sound level difference. For Schöck Isokorb® types, which have not been tested, the measured values of the Schöck Isokorb® type are specified respectively with more reinforcement cross-section area or higher floor thickness (to be on the safe side).

Schöck Isokorb® type KXT

Fire resistance class REI120

Type	KXT50-VV			KXT55-V8			KXT55-V10			KXT55-VV			KXT65-V8		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.623	0.191		0.684	0.174		0.652	0.182		0.555	0.214		0.629	0.189	
170	0.656	0.181		0.719	0.165		0.686	0.173		0.584	0.203		0.662	0.179	
180	0.688	0.173		0.754	0.158		0.720	0.165		0.614	0.194		0.695	0.171	
190	0.720	0.165		0.788	0.151		0.753	0.158	18.1	0.643	0.185		0.727	0.163	
200	0.751	0.158	-	0.822	0.145	-	0.785	0.151		0.671	0.177	-	0.759	0.157	18.1
210	0.782	0.152		0.855	0.139		0.817	0.145		0.699	0.170		0.789	0.150	
220	0.812	0.146		0.887	0.134		0.848	0.140		0.727	0.163		0.820	0.145	
230	0.842	0.141		0.919	0.129		0.879	0.135		0.754	0.158		0.850	0.140	
240	0.871	0.136		0.950	0.125		0.909	0.131	-	0.781	0.152		0.879	0.135	
250	0.900	0.132		0.980	0.121		0.938	0.127		0.807	0.147		0.908	0.131	

Fire resistance class REI120

Type	KXT65-V10			KXT90-V8			KXT90-V10			KXT100-V8			KXT100-V10		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.602	0.197		0.490	0.243		0.481	0.247		0.477	0.249		0.469	0.253	
170	0.634	0.187		0.517	0.230		0.508	0.234		0.503	0.236		0.495	0.240	
180	0.666	0.178		0.543	0.219		0.534	0.222		0.529	0.225		0.520	0.228	
190	0.697	0.171		0.569	0.209		0.560	0.212		0.555	0.214		0.545	0.218	
200	0.727	0.163	-	0.595	0.200	-	0.585	0.203	-	0.580	0.205	-	0.570	0.208	-
210	0.757	0.157		0.621	0.191		0.610	0.195		0.605	0.196		0.595	0.200	
220	0.786	0.151		0.646	0.184		0.635	0.187		0.629	0.189		0.619	0.192	
230	0.815	0.146		0.670	0.177		0.659	0.180		0.653	0.182		0.643	0.185	
240	0.844	0.141		0.695	0.171		0.683	0.174		0.677	0.175		0.667	0.178	
250	0.872	0.136		0.719	0.165		0.707	0.168		0.701	0.170	18.1	0.690	0.172	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Impact sound level difference $\Delta L_{n,v,w}$

- Measurements by the Research and Development Institute for Building Physics Assoc. at the Stuttgart Technical University, Test Report No. FEB/FS52-01/08 and FEB/FS52-02/08.
- The impact sound level difference is dependent on the reinforcement cross-section area and on the element height. The smaller the reinforcement cross-section area and the smaller the floor height, the greater is the impact sound level difference. For Schöck Isokorb® types, which have not been tested, the measured values of the Schöck Isokorb® type are specified respectively with more reinforcement cross-section area or higher floor thickness (to be on the safe side).

Schöck Isokorb® type EXT

Fire resistance class R0

Type	EXT30-L/R-V10			EXT30-L/R-V12			EXT50-L/R-V10			EXT50-L/R-V12		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
180	0.422	0.284					0.350	0.342				
190	0.443	0.271					0.368	0.326				
200	0.463	0.259		0.421	0.285		0.386	0.311		0.356	0.337	
210	0.483	0.248		0.440	0.273		0.403	0.298		0.372	0.323	
220	0.503	0.238	-	0.458	0.262	-	0.420	0.286	-	0.388	0.309	-
230	0.523	0.229		0.477	0.252		0.437	0.275		0.404	0.297	
240	0.543	0.221		0.495	0.243		0.454	0.265		0.419	0.286	
250	0.562	0.213		0.512	0.234		0.470	0.255		0.435	0.276	

Fire resistance class REI90

Type	EXT30-L/R-V10			EXT30-L/R-V12			EXT50-L/R-V10			EXT50-L/R-V12		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
180	0.396	0.303					0.332	0.361				
190	0.416	0.289					0.349	0.344				
200	0.435	0.276		0.398	0.302		0.366	0.328		0.339	0.354	
210	0.454	0.264		0.415	0.289		0.382	0.314		0.354	0.339	
220	0.473	0.254	-	0.433	0.277	-	0.399	0.301	-	0.370	0.325	-
230	0.492	0.244		0.450	0.266		0.415	0.289		0.385	0.312	
240	0.510	0.235		0.468	0.257		0.431	0.279		0.400	0.300	
250	0.529	0.227		0.485	0.248		0.447	0.269		0.415	0.289	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type KXT-HV, KXT-BH, KXT-WO, KXT-WU

Fire resistance class R0

Type	KXT25-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT30-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT50-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT65-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT65-HV-V8, -BH-V8, -WO-V8, -WU-V8		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.340	0.089		1.050	0.113		0.824	0.144		0.618	0.192		0.605	0.196	
170	1.397	0.085		1.099	0.108		0.865	0.137		0.651	0.182		0.637	0.186	
180	1.451	0.082		1.146	0.104		0.905	0.131		0.683	0.174		0.669	0.178	
190	1.503	0.079		1.192	0.100		0.944	0.126		0.715	0.166		0.700	0.170	
200	1.553	0.076		1.237	0.096		0.982	0.121		0.746	0.159		0.730	0.163	
210	1.602	0.074	-	1.280	0.093	-	1.020	0.117	-	0.776	0.153	-	0.760	0.156	-
220	1.648	0.072		1.322	0.090		1.056	0.112		0.806	0.147		0.790	0.150	
230	1.693	0.070		1.363	0.087		1.092	0.109		0.836	0.142		0.819	0.145	
240	1.737	0.068		1.403	0.085		1.127	0.105		0.865	0.137		0.847	0.140	
250	1.779	0.067		1.441	0.082		1.161	0.102		0.893	0.133		0.875	0.136	

Fire resistance class REI120

Type	KXT25-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT30-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT50-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT65-HV-V6, -BH-V6, -WO-V6, -WU-V6			KXT65-HV-V8, -BH-V8, -WO-V8, -WU-V8		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.105	0.108		0.900	0.132		0.728	0.163		0.563	0.211		0.552	0.215	
170	1.155	0.103		0.944	0.126		0.766	0.155		0.593	0.200		0.582	0.204	
180	1.204	0.099		0.986	0.120		0.802	0.148		0.623	0.191		0.611	0.194	
190	1.251	0.095		1.028	0.116		0.838	0.142		0.652	0.182		0.640	0.186	
200	1.297	0.092		1.068	0.111		0.873	0.136		0.681	0.174		0.668	0.178	
210	1.341	0.089	-	1.108	0.107	-	0.908	0.131	-	0.710	0.167	-	0.696	0.171	-
220	1.384	0.086		1.147	0.104		0.941	0.126		0.738	0.161		0.724	0.164	
230	1.426	0.083		1.184	0.100		0.974	0.122		0.765	0.155		0.751	0.158	
240	1.467	0.081		1.221	0.097		1.007	0.118		0.792	0.150		0.777	0.153	
250	1.506	0.079		1.257	0.095		1.038	0.114		0.819	0.145		0.804	0.148	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QXT

Fire resistance class R0

Type	QXT10			QXT20			QXT30			QXT40		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.994	0.060		1.910	0.063		1.763	0.068		1.637	0.073	
170	2.053	0.058		1.970	0.061		1.822	0.066		1.695	0.071	
180	2.108	0.057		2.026	0.059		1.878	0.064		1.750	0.069	
190	2.161	0.056		2.078	0.058		1.931	0.062		1.803	0.067	
200	2.210	0.054	-	2.128	0.056	-	1.981	0.061	-	1.853	0.065	-
210	2.257	0.053		2.175	0.055		2.029	0.059		1.900	0.063	
220	2.301	0.052		2.220	0.054		2.074	0.058		1.946	0.062	
230	2.343	0.051		2.263	0.053		2.117	0.057		1.989	0.060	
240	2.383	0.050		2.303	0.052		2.158	0.056		2.031	0.059	
250	2.421	0.050		2.341	0.051		2.198	0.055		2.071	0.058	

Fire resistance class R0

Type	QXT60			QXT70			QXT80			QXT90		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.506	0.080										
170	1.562	0.077		1.493	0.080		1.325	0.091		1.191	0.101	
180	1.616	0.074		1.546	0.078		1.375	0.087		1.239	0.097	
190	1.668	0.072		1.597	0.075		1.424	0.084		1.285	0.093	
200	1.717	0.070	-	1.646	0.073		1.471	0.082		1.329	0.090	
210	1.764	0.068		1.692	0.071	-	1.516	0.079	-	1.373	0.087	-
220	1.809	0.066		1.737	0.069		1.559	0.077		1.414	0.085	
230	1.852	0.065		1.780	0.067		1.601	0.075		1.455	0.082	
240	1.894	0.063		1.821	0.066		1.641	0.073		1.494	0.080	
250	1.934	0.062		1.861	0.064		1.680	0.071		1.532	0.078	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QXT

Fire resistance class REI120

Type	QXT10			QXT20			QXT30			QXT40		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.482	0.081		1.435	0.084		1.351	0.089		1.275	0.094	
170	1.538	0.078		1.491	0.080		1.405	0.085		1.328	0.090	
180	1.592	0.075		1.544	0.078		1.457	0.082		1.379	0.087	
190	1.643	0.073		1.595	0.075		1.506	0.080		1.427	0.084	
200	1.692	0.071	-	1.643	0.073	-	1.554	0.077	-	1.474	0.081	-
210	1.739	0.069		1.690	0.071		1.600	0.075		1.519	0.079	
220	1.784	0.067		1.735	0.069		1.644	0.073		1.563	0.077	
230	1.827	0.066		1.778	0.067		1.687	0.071		1.605	0.075	
240	1.869	0.064		1.819	0.066		1.728	0.069		1.645	0.073	
250	1.908	0.063		1.859	0.065		1.767	0.068		1.684	0.071	

Fire resistance class REI120

Type	QXT60			QXT70			QXT80			QXT90		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160												
170	1.245	0.096										
180	1.294	0.093		1.249	0.096		1.135	0.106		1.040	0.115	
190	1.341	0.089		1.295	0.093		1.179	0.102		1.082	0.111	
200	1.387	0.087		1.340	0.090		1.222	0.098		1.123	0.107	
210	1.431	0.084	-	1.383	0.087	-	1.263	0.095	-	1.162	0.103	-
220	1.473	0.081		1.425	0.084		1.303	0.092		1.200	0.100	
230	1.514	0.079		1.466	0.082		1.342	0.089		1.238	0.097	
240	1.554	0.077		1.505	0.080		1.380	0.087		1.274	0.094	
250	1.592	0.075		1.543	0.078		1.416	0.085		1.309	0.092	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QXT+QXT

Fire resistance class R0

Type	QXT10+QXT10			QXT20+QXT20			QXT30+QXT30			QXT40+QXT40		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.637	0.073		1.528	0.079		1.348	0.089		1.206	0.099	
170	1.695	0.071		1.585	0.076		1.402	0.086		1.257	0.095	
180	1.750	0.069		1.639	0.073		1.454	0.083		1.307	0.092	
190	1.803	0.067		1.691	0.071		1.504	0.080		1.354	0.089	
200	1.853	0.065	-	1.740	0.069	-	1.552	0.077	-	1.400	0.086	-
210	1.900	0.063		1.787	0.067		1.597	0.075		1.444	0.083	
220	1.946	0.062		1.833	0.065		1.642	0.073		1.487	0.081	
230	1.989	0.060		1.876	0.064		1.684	0.071		1.528	0.079	
240	2.031	0.059		1.917	0.063		1.725	0.070		1.568	0.077	
250	2.071	0.058		1.957	0.061		1.764	0.068		1.606	0.075	

Fire resistance class REI120

Type	QXT10+QXT10			QXT20+QXT20			QXT30+QXT30			QXT40+QXT40		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.275	0.094		1.208	0.099		1.093	0.110		0.998	0.120	
170	1.328	0.090		1.259	0.095		1.141	0.105		1.043	0.115	
180	1.379	0.087		1.309	0.092		1.188	0.101		1.088	0.110	
190	1.427	0.084		1.356	0.088		1.233	0.097		1.131	0.106	
200	1.474	0.081	-	1.402	0.086	-	1.277	0.094	-	1.172	0.102	-
210	1.519	0.079		1.446	0.083		1.319	0.091		1.213	0.099	
220	1.563	0.077		1.489	0.081		1.360	0.088		1.252	0.096	
230	1.605	0.075		1.530	0.078		1.400	0.086		1.290	0.093	
240	1.645	0.073		1.570	0.076		1.438	0.083		1.327	0.090	
250	1.684	0.071		1.608	0.075		1.476	0.081		1.363	0.088	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QZXT

Fire resistance class R0

Type	QZXT10			QZXT20			QZXT30			QZXT40		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	2.713	0.044		2.560	0.047		2.301	0.052		2.089	0.057	
170	2.762	0.043		2.612	0.046		2.357	0.051		2.147	0.056	
180	2.807	0.043		2.660	0.045		2.409	0.050		2.201	0.055	
190	2.848	0.042		2.705	0.044		2.458	0.049		2.252	0.053	
200	2.886	0.042		2.746	0.044		2.504	0.048		2.301	0.052	
210	2.921	0.041	-	2.785	0.043	-	2.547	0.047	-	2.346	0.051	-
220	2.954	0.041		2.821	0.043		2.587	0.046		2.389	0.050	
230	2.985	0.040		2.854	0.042		2.625	0.046		2.429	0.049	
240	3.014	0.040		2.886	0.042		2.660	0.045		2.467	0.049	
250	3.041	0.039		2.916	0.041		2.694	0.045		2.504	0.048	

Fire resistance class R0

Type	QZXT60			QZXT70			QZXT80			QZXT90		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.877	0.064										
170	1.936	0.062		1.830	0.066		1.655	0.072		1.511	0.079	
180	1.991	0.060		1.885	0.064		1.710	0.070		1.564	0.077	
190	2.044	0.059		1.937	0.062		1.761	0.068		1.615	0.074	
200	2.093	0.057		1.987	0.060		1.811	0.066		1.663	0.072	
210	2.140	0.056	-	2.034	0.059	-	1.858	0.065	-	1.710	0.070	-
220	2.184	0.055		2.079	0.058		1.903	0.063		1.754	0.068	
230	2.226	0.054		2.122	0.057		1.946	0.062		1.797	0.067	
240	2.266	0.053		2.162	0.055		1.987	0.060		1.838	0.065	
250	2.305	0.052		2.201	0.055		2.026	0.059		1.877	0.064	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QZXT

Fire resistance class REI120

Type	QZXT10			QZXT20			QZXT30			QZXT40		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.840	0.065		1.768	0.068		1.640	0.073				
170	1.898	0.063		1.826	0.066		1.698	0.071		1.586	0.076	
180	1.954	0.061		1.882	0.064		1.752	0.068		1.640	0.073	
190	2.006	0.060		1.934	0.062		1.804	0.067		1.691	0.071	
200	2.055	0.058	-	1.984	0.060	-	1.854	0.065	-	1.740	0.069	
210	2.102	0.057		2.031	0.059		1.901	0.063		1.787	0.067	-
220	2.147	0.056		2.076	0.058		1.946	0.062		1.832	0.066	
230	2.189	0.055		2.118	0.057		1.989	0.060		1.875	0.064	
240	2.230	0.054		2.159	0.056		2.030	0.059		1.916	0.063	
250	2.268	0.053		2.198	0.055		2.070	0.058		1.955	0.061	

Fire resistance class REI120

Type	QZXT60			QZXT70			QZXT80			QZXT90		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
170	1.468	0.082										
180	1.520	0.079		1.458	0.082		1.351	0.089		1.258	0.095	
190	1.571	0.076		1.507	0.080		1.398	0.086		1.304	0.092	
200	1.619	0.074		1.555	0.077		1.445	0.083		1.349	0.089	
210	1.665	0.072	-	1.600	0.075	-	1.489	0.081	-	1.392	0.086	-
220	1.709	0.070		1.644	0.073		1.532	0.078		1.434	0.084	
230	1.752	0.069		1.686	0.071		1.573	0.076		1.474	0.081	
240	1.792	0.067		1.727	0.069		1.613	0.074		1.513	0.079	
250	1.832	0.066		1.766	0.068		1.652	0.073		1.551	0.077	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QPXT

Fire resistance class R0

Type	QPXT10			QPXT20			QPXT30			QPXT40			QPXT50		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
180	1.024	0.117		0.945	0.127		0.892	0.134							
190	1.065	0.113		0.984	0.122		0.930	0.129		0.801	0.150		0.757	0.158	
200	1.105	0.109		1.022	0.117		0.967	0.124		0.834	0.144		0.789	0.152	
210	1.144	0.105	-	1.059	0.113	-	1.003	0.120	-	0.866	0.138		0.820	0.146	
220	1.182	0.102		1.095	0.110		1.038	0.116		0.898	0.134	-	0.851	0.141	-
230	1.219	0.098		1.131	0.106		1.072	0.112		0.929	0.129		0.880	0.136	
240	1.254	0.096		1.165	0.103		1.105	0.109		0.960	0.125		0.910	0.132	
250	1.289	0.093		1.198	0.100		1.138	0.105		0.989	0.121		0.938	0.128	

Fire resistance class R0

Type	QPXT60			QPXT70			QPXT75			QPXT100		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
200	0.650	0.185		0.663	0.181		0.594	0.202		0.557	0.215	
210	0.677	0.177		0.691	0.174		0.619	0.194		0.581	0.207	
220	0.703	0.171	-	0.717	0.167	-	0.643	0.187	-	0.604	0.199	-
230	0.729	0.165		0.744	0.161		0.668	0.180		0.627	0.191	
240	0.755	0.159		0.770	0.156		0.691	0.174		0.650	0.185	
250	0.780	0.154		0.795	0.151		0.715	0.168		0.672	0.178	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QPXT

Fire resistance class REI90

Type	QPXT10			QPXT20			QPXT30			QPXT40			QPXT50		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
190	0.858	0.140		0.818	0.147		0.788	0.152							
200	0.889	0.135		0.849	0.141		0.818	0.147		0.705	0.170		0.682	0.176	
210	0.920	0.130		0.879	0.136		0.848	0.141		0.731	0.164		0.708	0.170	
220	0.949	0.126	-	0.909	0.132	-	0.878	0.137	-	0.757	0.159	-	0.733	0.164	-
230	0.977	0.123		0.937	0.128		0.906	0.132		0.782	0.153		0.758	0.158	
240	1.005	0.119		0.965	0.124		0.934	0.128		0.806	0.149		0.783	0.153	
250	1.031	0.116		0.992	0.121		0.961	0.125		0.830	0.145		0.807	0.149	

Fire resistance class REI90

Type	QPXT60			QPXT70			QPXT75			QPXT100		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
210	0.591	0.203		0.609	0.197		0.553	0.217		0.526	0.228	
220	0.613	0.196		0.632	0.190		0.574	0.209		0.546	0.220	
230	0.635	0.189	-	0.655	0.183	-	0.595	0.202	-	0.567	0.212	-
240	0.656	0.183		0.677	0.177		0.616	0.195		0.587	0.204	
250	0.677	0.177		0.699	0.172		0.636	0.189		0.607	0.198	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QPXT+QPXT

Fire resistance class R0

Type	QPXT10+QPXT10			QPXT40+QPXT40			QPXT60+QPXT60			QPXT70+QPXT70		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
190	0.780	0.154										
200	0.812	0.148		0.599	0.200							
210	0.844	0.142		0.624	0.192		0.479	0.250		0.469	0.256	
220	0.875	0.137	-	0.649	0.185	-	0.499	0.240		0.488	0.246	
230	0.905	0.133		0.673	0.178		0.519	0.231	-	0.507	0.236	-
240	0.935	0.128		0.697	0.172		0.538	0.223		0.526	0.228	
250	0.964	0.124		0.721	0.166		0.557	0.215		0.545	0.220	

Fire resistance class REI90

Type	QPXT10+QPXT10			QPXT40+QPXT40			QPXT60+QPXT60			QPXT70+QPXT70		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
190	0.663	0.181										
200	0.689	0.174		0.530	0.227							
210	0.715	0.168		0.551	0.218		0.435	0.276		0.430	0.279	
220	0.740	0.162	-	0.572	0.210	-	0.452	0.265		0.447	0.268	
230	0.765	0.157		0.592	0.203		0.469	0.256	-	0.464	0.258	-
240	0.789	0.152		0.613	0.196		0.486	0.247		0.481	0.249	
250	0.812	0.148		0.632	0.190		0.503	0.239		0.498	0.241	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type QPZXT

Fire resistance class R0

Type	QPZXT10			QPZXT40			QPZXT60			QPZXT75		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
180	1.626	0.074										
190	1.677	0.072		1.341	0.089							
200	1.727	0.069		1.386	0.087		1.124	0.107		1.032	0.116	
210	1.774	0.068		1.430	0.084		1.164	0.103		1.070	0.112	
220	1.819	0.066	-	1.473	0.081	-	1.202	0.100	-	1.106	0.108	-
230	1.862	0.064		1.514	0.079		1.239	0.097		1.142	0.105	
240	1.904	0.063		1.553	0.077		1.276	0.094		1.177	0.102	
250	1.944	0.062		1.592	0.075		1.311	0.092		1.210	0.099	

Fire resistance class REI90

Type	QPZXT10			QPZXT40			QPZXT60			QPZXT75		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
190	1.348	0.089										
200	1.393	0.086		1.163	0.103							
210	1.437	0.083		1.203	0.100		1.009	0.119		0.937	0.128	
220	1.480	0.081	-	1.242	0.097	-	1.044	0.115	-	0.971	0.124	-
230	1.521	0.079		1.280	0.094		1.078	0.111		1.004	0.120	
240	1.561	0.077		1.317	0.091		1.112	0.108		1.036	0.116	
250	1.599	0.075		1.353	0.089		1.145	0.105		1.067	0.112	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® supplementary type HPXT

Fire resistance class R0

Type	HPXT-A			HPXT-B			HPXT-C		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.281	0.094	-	1.500	0.080	-	0.841	0.143	-
170	1.333	0.090		1.556	0.077		0.882	0.136	
180	1.384	0.087		1.610	0.075		0.921	0.130	
190	1.432	0.084		1.661	0.072		0.960	0.125	
200	1.479	0.081		1.710	0.070		0.997	0.120	
210	1.523	0.079		1.756	0.068		1.034	0.116	
220	1.567	0.077		1.801	0.067		1.069	0.112	
230	1.608	0.075		1.844	0.065		1.104	0.109	
240	1.648	0.073		1.885	0.064		1.138	0.105	
250	1.687	0.071		1.925	0.062		1.171	0.102	

Fire resistance class REI90

Type	HPXT-A			HPXT-B			HPXT-C		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	1.046	0.115	-	1.188	0.101	-	0.733	0.164	-
170	1.093	0.110		1.239	0.097		0.770	0.156	
180	1.139	0.105		1.287	0.093		0.806	0.149	
190	1.182	0.101		1.334	0.090		0.841	0.143	
200	1.225	0.098		1.379	0.087		0.875	0.137	
210	1.266	0.095		1.423	0.084		0.908	0.132	
220	1.306	0.092		1.465	0.082		0.941	0.128	
230	1.345	0.089		1.506	0.080		0.973	0.123	
240	1.382	0.087		1.545	0.078		1.005	0.119	
250	1.419	0.085		1.583	0.076		1.035	0.116	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® supplementary type EQXT

Fire resistance class R0

Type	EQXT1			EQXT2		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.767	0.156	-	0.383	0.313	-
170	0.805	0.149		0.405	0.297	
180	0.842	0.142		0.426	0.282	
190	0.878	0.137		0.447	0.269	
200	0.914	0.131		0.467	0.257	
210	0.948	0.127		0.488	0.246	
220	0.982	0.122		0.508	0.236	
230	1.015	0.118		0.528	0.227	
240	1.047	0.115		0.548	0.219	
250	1.079	0.111		0.567	0.212	

Fire resistance class REI90

Type	EQXT1			EQXT2		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
160	0.676	0.177	-	0.359	0.334	-
170	0.711	0.169		0.379	0.316	
180	0.745	0.161		0.399	0.300	
190	0.778	0.154		0.419	0.286	
200	0.810	0.148		0.439	0.274	
210	0.842	0.143		0.458	0.262	
220	0.873	0.137		0.477	0.251	
230	0.903	0.133		0.496	0.242	
240	0.933	0.129		0.515	0.233	
250	0.962	0.125		0.533	0.225	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type DXT

Fire resistance class R0

Type	DXT30-VV6		DXT30-VV8		DXT30-VV10		DXT50-VV6		DXT50-VV8		DXT50-VV10	
H [mm]	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}
160	0.712	0.169					0.569	0.211				
170	0.748	0.160	0.653	0.184			0.599	0.200	0.537	0.224		
180	0.783	0.153	0.685	0.175	0.590	0.203	0.629	0.191	0.564	0.213	0.498	0.241
190	0.817	0.147	0.716	0.168	0.617	0.194	0.658	0.182	0.590	0.203	0.522	0.230
200	0.851	0.141	0.746	0.161	0.645	0.186	0.686	0.175	0.616	0.195	0.545	0.220
210	0.884	0.136	0.776	0.155	0.671	0.179	0.714	0.168	0.642	0.187	0.569	0.211
220	0.916	0.131	0.805	0.149	0.697	0.172	0.742	0.162	0.668	0.180	0.592	0.203
230	0.947	0.127	0.834	0.144	0.723	0.166	0.769	0.156	0.692	0.173	0.614	0.195
240	0.978	0.123	0.862	0.139	0.748	0.160	0.795	0.151	0.717	0.167	0.636	0.189
250	1.008	0.119	0.890	0.135	0.773	0.155	0.821	0.146	0.741	0.162	0.658	0.182

Fire resistance class R0

Type	DXT70-...-VV6		DXT70-VV8		DXT70-VV10		DXT90-VV6		DXT90-VV8		DXT90-VV10	
H [mm]	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}
160	0.437	0.274					0.379	0.317				
170	0.461	0.260	0.424	0.283			0.400	0.300	0.371	0.323		
180	0.485	0.247	0.446	0.269	0.403	0.297	0.421	0.285	0.391	0.307	0.358	0.335
190	0.509	0.236	0.467	0.257	0.423	0.283	0.442	0.272	0.410	0.292	0.376	0.319
200	0.532	0.226	0.489	0.245	0.443	0.271	0.462	0.260	0.430	0.279	0.394	0.305
210	0.554	0.216	0.510	0.235	0.463	0.259	0.483	0.249	0.449	0.267	0.411	0.292
220	0.577	0.208	0.531	0.226	0.482	0.249	0.503	0.239	0.467	0.257	0.429	0.280
230	0.599	0.200	0.552	0.217	0.501	0.240	0.522	0.230	0.486	0.247	0.446	0.269
240	0.621	0.193	0.572	0.210	0.520	0.231	0.542	0.221	0.504	0.238	0.463	0.259
250	0.643	0.187	0.592	0.203	0.538	0.223	0.561	0.214	0.523	0.230	0.480	0.250

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type DXT

Fire resistance class REI120

Type	DXT30-VV6		DXT30-VV8		DXT30-VV10		DXT50-VV6		DXT50-VV8		DXT50-VV10	
H [mm]	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}
160	0.633	0.190					0.518	0.232				
170	0.666	0.180	0.590	0.203			0.545	0.220	0.493	0.243		
180	0.698	0.172	0.619	0.194	0.540	0.222	0.573	0.210	0.518	0.232	0.462	0.260
190	0.729	0.165	0.648	0.185	0.566	0.212	0.600	0.200	0.543	0.221	0.484	0.248
200	0.760	0.158	0.676	0.178	0.591	0.203	0.626	0.192	0.568	0.211	0.507	0.237
210	0.791	0.152	0.703	0.171	0.616	0.195	0.652	0.184	0.592	0.203	0.529	0.227
220	0.820	0.146	0.731	0.164	0.641	0.187	0.678	0.177	0.615	0.195	0.550	0.218
230	0.849	0.141	0.757	0.158	0.665	0.181	0.703	0.171	0.639	0.188	0.571	0.210
240	0.878	0.137	0.783	0.153	0.688	0.174	0.728	0.165	0.662	0.181	0.592	0.203
250	0.906	0.132	0.809	0.148	0.712	0.169	0.752	0.160	0.684	0.175	0.613	0.196

Fire resistance class REI120

Type	DXT70-...-VV6		DXT70-VV8		DXT70-VV10		DXT90-VV6		DXT90-VV8		DXT90-VV10	
H [mm]	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}
160	0.406	0.295					0.355	0.338				
170	0.429	0.280	0.396	0.303			0.375	0.320	0.350	0.343		
180	0.451	0.266	0.417	0.288	0.380	0.316	0.395	0.304	0.369	0.326	0.339	0.354
190	0.473	0.254	0.437	0.274	0.398	0.301	0.415	0.289	0.387	0.310	0.356	0.337
200	0.495	0.242	0.458	0.262	0.417	0.288	0.434	0.276	0.405	0.296	0.373	0.321
210	0.516	0.232	0.478	0.251	0.436	0.275	0.453	0.265	0.423	0.283	0.390	0.308
220	0.537	0.223	0.497	0.241	0.454	0.264	0.472	0.254	0.441	0.272	0.407	0.295
230	0.558	0.215	0.517	0.232	0.472	0.254	0.491	0.244	0.459	0.262	0.423	0.284
240	0.579	0.207	0.536	0.224	0.490	0.245	0.510	0.235	0.476	0.252	0.439	0.273
250	0.599	0.200	0.556	0.216	0.508	0.236	0.528	0.227	0.494	0.243	0.456	0.263

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type AXT, FXT, OXT

Fire resistance class R0

Type	AXT1		AXT2	
H [mm]	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}
150	0.897	0.134	0.690	0.174
160	0.942	0.127	0.727	0.165
170	0.986	0.122	0.764	0.157
180	1.028	0.117	0.799	0.150
190	1.070	0.112	0.834	0.144
200	1.110	0.108	0.868	0.138
210	1.149	0.104	0.901	0.133
220	1.187	0.101	0.934	0.128
230	1.224	0.098	0.966	0.124
240	1.260	0.095	0.997	0.120
250	1.295	0.093	1.028	0.117

Type	FXT	
H [mm]	R_{eq}	λ_{eq}
150		
160	0.808	0.149
170	0.847	0.142
180	0.886	0.136
190	0.923	0.130
200	0.960	0.125
210	0.995	0.121
220	1.030	0.117
230	1.064	0.113
240	1.097	0.109
250	1.129	0.106

Type	OXT	
H [mm]	R_{eq}	λ_{eq}
150		
160		
170		
180	0.799	0.150
190	0.834	0.144
200	0.868	0.138
210	0.901	0.133
220	0.934	0.128
230	0.966	0.124
240	0.997	0.120
250	1.028	0.117

Fire resistance class R90

Type	AXT1		AXT2	
H [mm]	R_{eq}	λ_{eq}	R_{eq}	λ_{eq}
160	0.753	0.159	0.609	0.197
170	0.787	0.153	0.638	0.188
180	0.819	0.147	0.667	0.180
190	0.850	0.141	0.694	0.173
200	0.880	0.136	0.721	0.166
210	0.909	0.132	0.747	0.161
220	0.938	0.128	0.772	0.155
230	0.965	0.124	0.797	0.151
240	0.991	0.121	0.821	0.146
250	1.017	0.118	0.845	0.142

Type	FXT	
H [mm]	R_{eq}	λ_{eq}
160	0.665	0.180
170	0.696	0.172
180	0.726	0.165
190	0.755	0.159
200	0.783	0.153
210	0.810	0.148
220	0.837	0.143
230	0.863	0.139
240	0.888	0.135
250	0.912	0.132

Type	OXT	
H [mm]	R_{eq}	λ_{eq}
160		
170		
180	0.667	0.180
190	0.694	0.173
200	0.721	0.166
210	0.747	0.161
220	0.772	0.155
230	0.797	0.151
240	0.821	0.146
250	0.845	0.142

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.

Schöck Isokorb® type SXT

Fire resistance class R0

Type	SXT1			SXT2			SXT3			SXT4		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
320 - 550	0.823	0.146	-	0.619	0.194	-	0.479	0.251	-	0.347	0.346	-

Fire resistance class R90

Type	SXT1			SXT2			SXT3			SXT4		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
320 - 550	0.712	0.168	-	0.554	0.217	-	0.439	0.273	-	0.325	0.369	-

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- \- No measured results available.
- The quivalent thermal conductivityt λ_{eq} is dependent on the geometry of the element. An element height of 400 mm has been used for the calculation.

Schöck Isokorb® type WXT

Fire resistance class R0

Type	WXT1			WXT2			WXT3			WXT4		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
1500 - 1990	1.824	0.066	-	1.408	0.085	-	1.094	0.110	-	0.862	0.139	-
2000 - 2490	2.102	0.057		1.674	0.072		1.333	0.090		1.070	0.112	
2500 - 3500	2.479	0.048		2.065	0.058		1.706	0.070		1.410	0.085	

Fire resistance class R90

Type	WXT1			WXT2			WXT3			WXT4		
H [mm]	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$	R_{eq}	λ_{eq}	$\Delta L_{n,v,w}$
1500 - 1990	1.420	0.085	-	1.154	0.104	-	0.935	0.128	-	0.760	0.158	-
2000 - 2490	1.593	0.075		1.335	0.090		1.109	0.108		0.921	0.130	
2500 - 3500	1.814	0.066		1.582	0.076		1.362	0.088		1.167	0.103	

- R_{eq} Equivalent thermal transmission resistance in $(m^2 \cdot K)/W$
- λ_{eq} Equivalent thermal conductivity in $W/(m \cdot K)$
- $\Delta L_{n,v,w}$ Evaluated impact sound level difference in dB
- - No measured results available.
- The quivalent thermal conductivityt λ_{eq} is dependent on the geometry of the element. In the height range 1500 - 1990 mm: 1500 mm was used, in the height range 2000 - 2490: 2000 mm was used and in the height range 2500 - 3500: 2500 m was used for the calculation. Therefore the values lie on the safe side.

Building physics

Reinforced concrete/Reinforced concrete

Notes

Notes

- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,\,max}$, whereby $V_{Rd,\,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\Theta = 45\,^{\circ}$ and $\alpha = 90\,^{\circ}$ (slab load-bearing capacity).
- The short QPXT, QPXT+QPXT, QPZXT, HPXT, EQXT are fundamentally to be combined with Schöck Isokorb® types of length 1 m.
- With different concrete strength classes (e.g. balcony C32/40, inner slab C25/30) basically the weaker concrete is relevant for the design of the Schöck Isokorb®.
- The tight fit between the pressure bearings and the concrete must be ensured, therefore construction joints are to be arranged underneath the pressure bearings. With construction joints between precast concrete members and the Schöck Isokorb® an in-situ concreting or grouting strips ≥ 100 mm is carried out.

Special constructions - bending of reinforcing steel

Some connection situations cannot be realised with those standard product variants presented in this Technical Information. In this case special designs can be requested from the application engineering department (for contact details see page 3). This applies, for example, with additional requirements as a result of prefabricated construction (limitations due to technical manufacturing constraints or through transportation width), which can possibly be met using coupler bars. The bending of bars required for special constructions are carried out in the factory in each case on the individual steel bar. With this, it is monitored and ensured that the conditions of the general building supervisory approvals and of BS EN1992 1-1(EC2) and BS EN1992-1-1/NA are observed with regard to bending of reinforcing steel.

Attention: If reinforcing steel of the Schöck Isokorb® is bent or rebent on-site the observance and monitoring of the relevant conditions lies outside the influence of Schöck Bauteile GmbH. Therefore, in such cases, our warranty ceases.

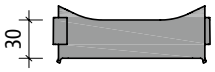
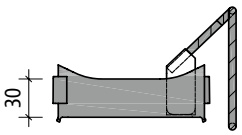
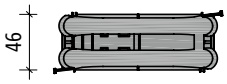
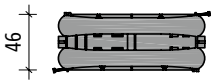
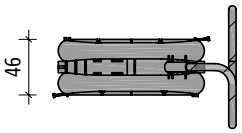
Adjustment of load capacities

A listing of the new product programme in comparison with the previous programme is reproduced in the following table.

New product programme		Previous product programme
KXT15	replaced	KXT10
KXT25	replaced	KXT20
KXT30	remains	KXT30
KXT40	remains	KXT40
KXT45	amended	–
KXT50	remains	KXT50
KXT55	amended	–
KXT65	replaced	KXT60
–	not applicable	KXT70
–	not applicable	KXT80
KXT90	remains	KXT90
KXT100	remains	KXT100

New product programme		Previous product programme
KXT25-HV/BH/WO/WU	replaced	KXT20-HV/BH/WO/WU
KXT30-HV/BH/WO/WU	remains	KXT30-HV/BH/WO/WU
KXT50-HV/BH/WO/WU	remains	KXT50-HV/BH/WO/WU
KXT65-HV/BH/WO/WU	replaced	KXT60-HV/BH/WO/WU

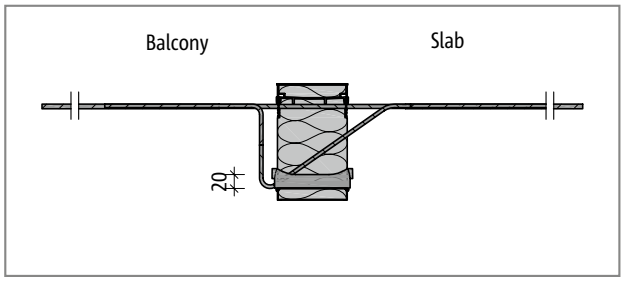
Summary of the application of the HTE Compact pressure bearing in the Schöck Isokorb® types.

HTE Compact 20	HTE Compact 30	HTE Compact 30 with special stirrup
		
		

HTE Compact

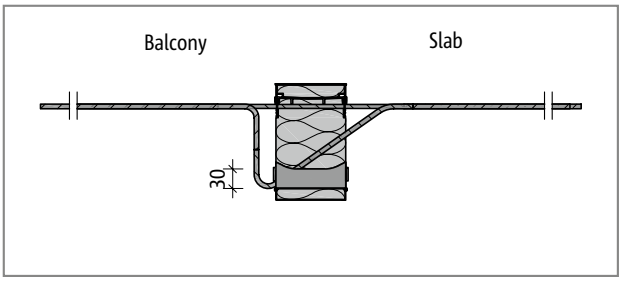
Schöck Isokorb® type KXT

HTE Compact 20



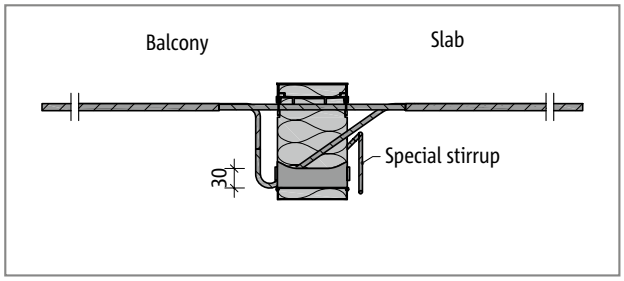
Schöck Isokorb® type KXT15 to KXT40: Product section

HTE Compact 30



Schöck Isokorb® type KXT45, KXT50: Product section

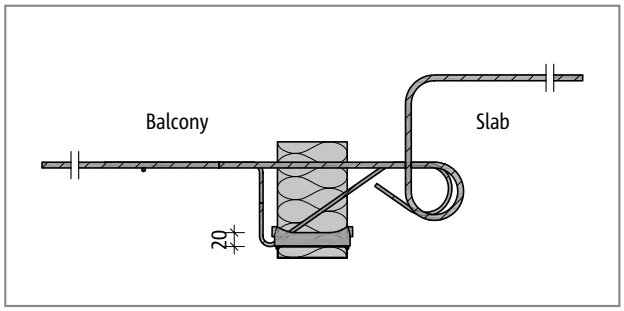
HTE Compact 30 with special stirrup



Schöck Isokorb® type KXT55 to KXT100: Product section

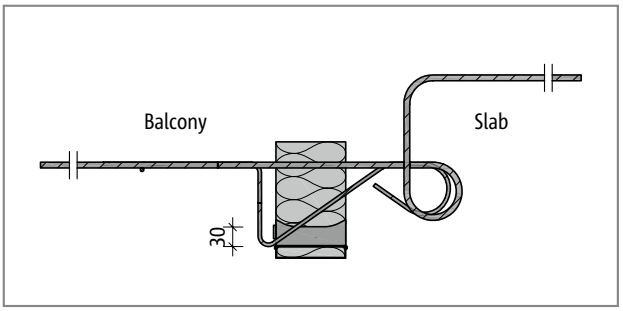
Schöck Isokorb® type KXT-HV (analogue type KXT-BH, KXT-WO, KXT-WU)

HTE Compact 20



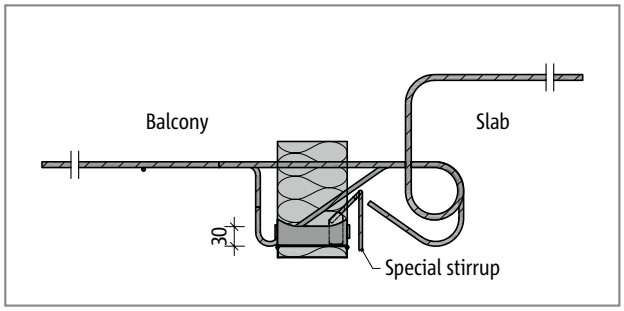
Schöck Isokorb® type KXT25-HV, KXT30-HV: Product section

HTE Compact 30



Schöck Isokorb® type KXT50-HV: Product section

HTE Compact 30 with special stirrup

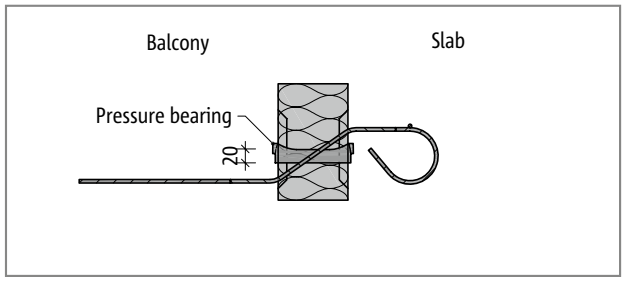


Schöck Isokorb® type KXT65-HV: Product section

HTE Compact

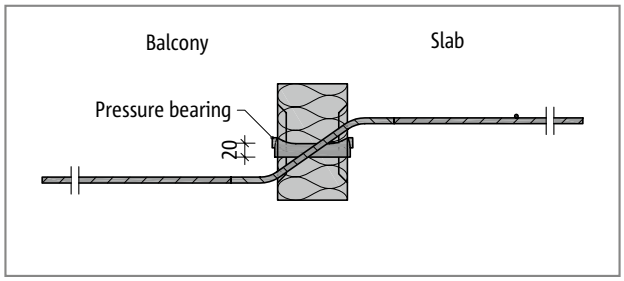
Schöck Isokorb® type QXT

HTE Compact 20



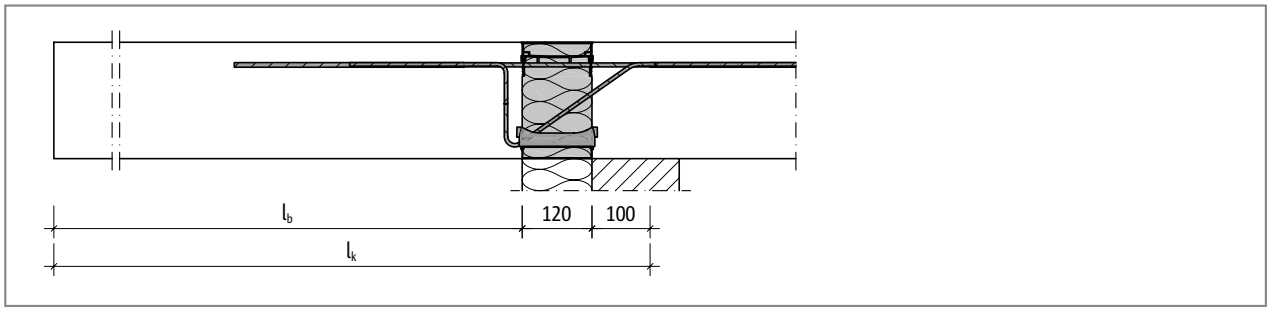
Schöck Isokorb® type QXT10 to QXT40: Product section

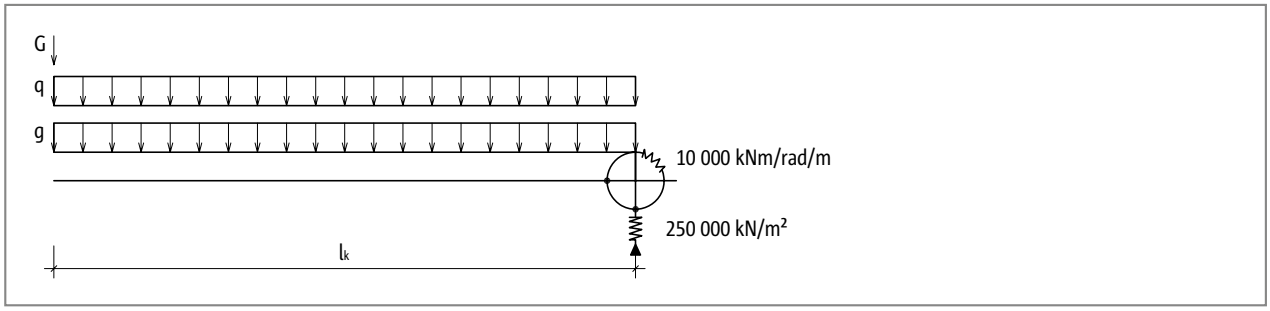
HTE Compact 20



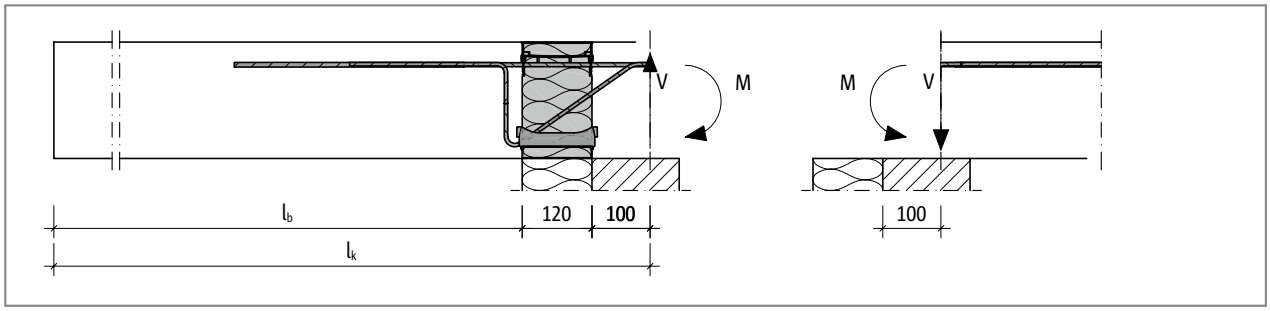
Schöck Isokorb® type QXT60 to QXT90: Product section

FEM guidelines





Schöck Isokorb® type K: approximate assumption of the spring stiffness



FEM guidelines

Recommnded method for the design of Schöck Isokorb® types by means of FEM systems:

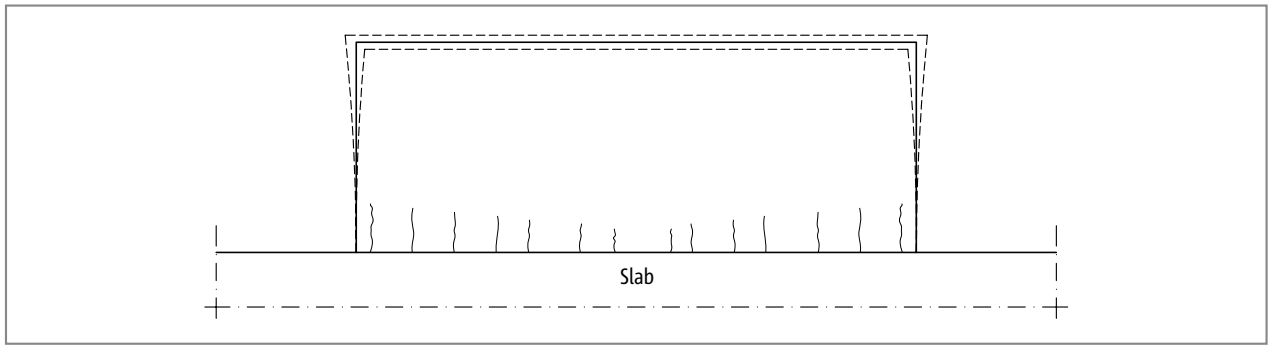
- Separate balcony slab from the supporting structure of the building
- Determine internal forces on the balcony slab support taking into account the spring stiffness values (satisfactorily accurate approximation of the Schöck Isokorb® load-bearing behaviour)
  10,000 kNm/rad/m (rotation)
  250,000 kN/m² (vertical)
- Select Schöck Isokorb® type and add the calculated values v_{ed} and m_{ed} as external edge loads to the load-bearing structure of the building .

The stiffnesses in the area of the support of the load-bearing structure (inner slab/wall) are, in the normal case, assumed to be infinitely stiff . Only with very different stiffness relationships of connecting and supporting structural components are the linearly changing moments and shear forces along the edges of the slab to be taken into account.
The achievable internal forces are used for both the design of the Schöck Isokorb®, as well as for the design of the inner slab and wall construction of the building.

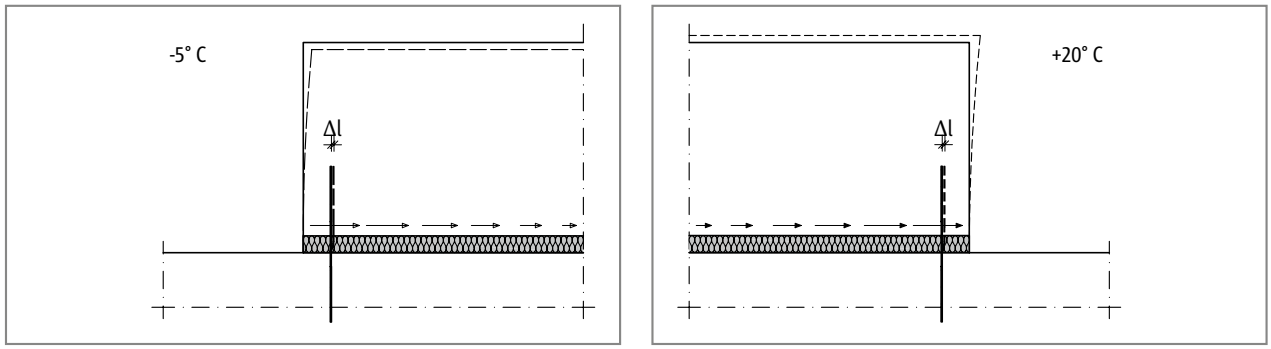
FEM guidelines

- The Schöck Isokorb® can transmit no twisting moments.

Fatigue/Temperature effect



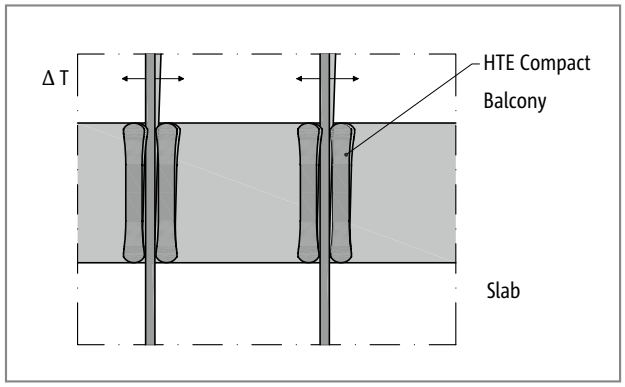
Balcony slab without Schöck Isokorb®: Crack formation through fatigue possible



Schöck Isokorb®: Displacement of the outer bars of a balcony slab by Δl as a result of temperature deformation

Balcony slabs, external walkways and canopy constructions expand with warming and contract with cooling. With a traversing reinforced concrete slab cracks in the reinforced concrete slab can result at this point through which moisture can penetrate.
The Schöck Isokorb® defines a joint which with correct execution prevents cracks in the concrete.

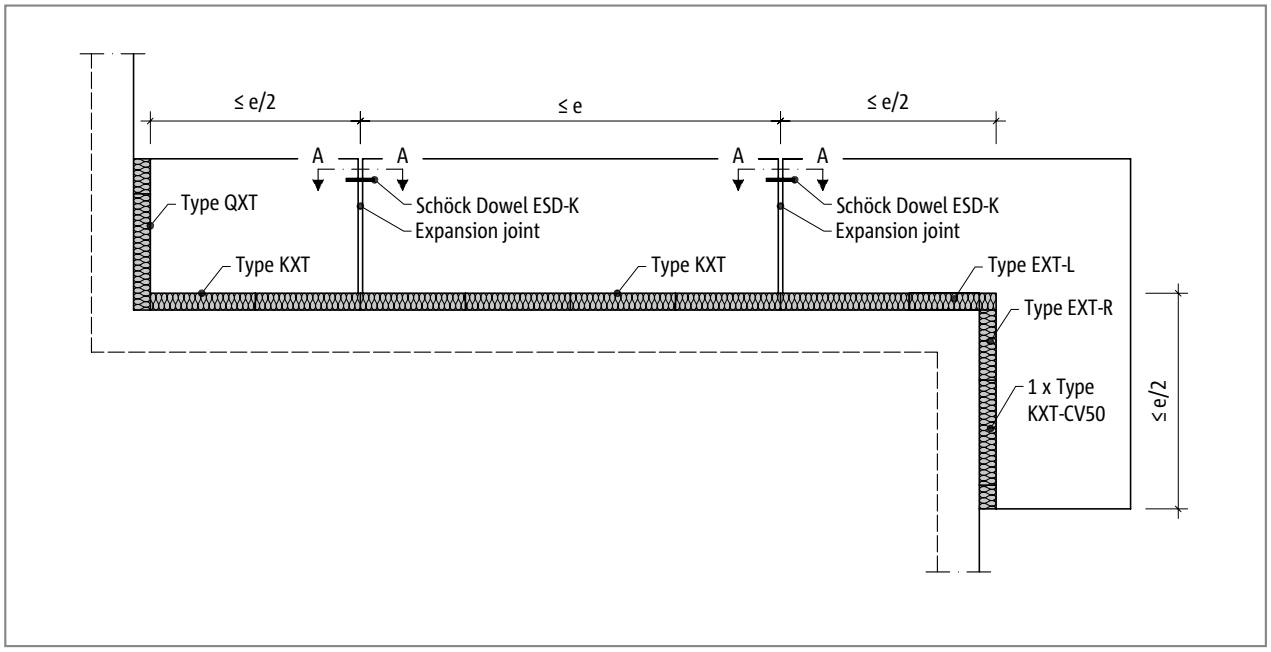
The tension bars, the shear force bars and the HTE Compact pressure bearings in the Schöck Isokorb® are consistently deflected transverse to their axis through thermal stressing. Therefore a verification of the fatigue safety is to be carried out for the Schöck Isokorb®. This verification of the fatigue safety is provided through the observation of the respective expansion joint spacings e for the Schöck Isokorb® type (as per approval document). Thus material fatigue and the failure of the structural component over the planned useful life is excluded.



Schöck Isokorb® detail: deflection of the pressure bearing as a result of temperature difference

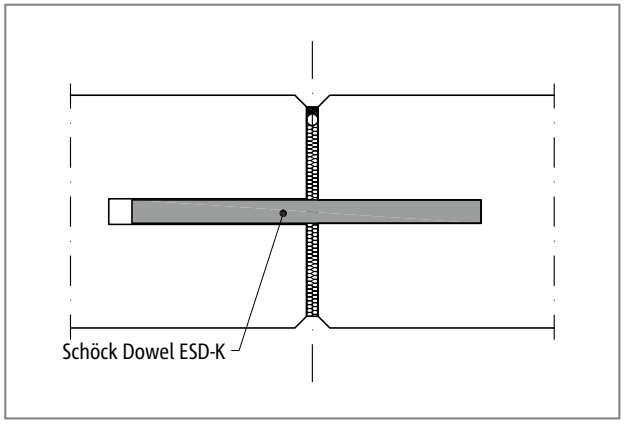
The HTE Compact pressure bearing compensates the movement of the structural component through individual inclination of each individual compression element. The bars are deflected only in the fatigue safe area.

Fatigue | Expansion joint spacing

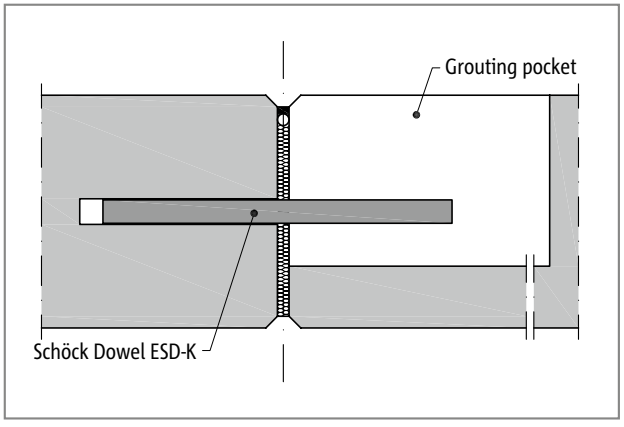


Schöck Isokorb® type KXT: Expansion joint formation using longitudinally displaceable shear force dowel, e.g. Schöck Dowel

The maximum expansion joint spacings e of the Schöck Isokorb® types are different as bar diameter and type of construction of the Schöck Isokorb® types are different. For the respective Schöck Isokorb® type the maximum expansion joint spacings are given in the Product chapter.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Dowel: Expansion joint formation in in-situ concrete



Schöck Dowel: Expansion joint formation precast concrete balcony

Expansion joints

- Details for the formation of expansion joints see also: Technical Information Schöck Dowel Systems® application examples.

Indicative minimum concrete strength classes

The concrete cover CV for balcony slab connections with Schöck Isokorb® and the indicative minimum concrete strength class are selected depending on exposure classes and the approval document. The higher minimum concrete strength class is relevant.
In addition, the indicative minimum concrete strength classes of exposure classes XF1, and XF3 are to be noted.

Indicative minimum concrete strength classes (extract from BS EN 1992-1-1 Table 4.1 and BS8500-1:2006)

Exposure class	Indicative minimum concrete strength classes			Concrete cover CV [mm]
BS EN 1992-1-1 Table 4.1	BS 8500-1:2006	Approval internal component	Approval external component	Schöck Isokorb®
XC1	C20/25	C25/30	C32/40	30
XC3/4	C40/50			35 (Δc = 5 mm)
XC3/4	C30/37			50
XD1	C35/40			50
XS1	C45/55			50 (Δc = 5 mm)
XF1, XF3	acc. to BS EN 206-1			-

Concrete cover

- Due to suitable quality measures with the Schöck Isokorb® manufacture, Δc_{dev} (BS EN 1992-1-1/NA, NDP to 4.4.1.3(3)) may be reduced by 5 mm with the determination of the concrete cover CV.
- Types KXT, KFXT, EXT, KXT-HV, KXT-BH, KXT-WO, KXT-WU: CV35 and CV50 is the concrete cover of the tension bar
- Type DXT: CV35 is the concrete cover of the tension bars lying at the top. The lower tension bars, in both cases, have a concrete cover of 30 mm.
  CV50 is the concrete cover of the upper and lower tension bars.
- Types QXT, QXT+QXT, QZXT: Concrete cover on the balcony side, bottom, at least 30 mm (as a rule less exposed than the balcony upper surface).
- Types QPXT, QPXT+QPXT, QPZXT: Concrete cover, balcony side, bottom, at least 40 mm (as a rule less exposed than the balcony upper surface).
- With special requirements on the concrete cover further product variants can be requested from Schöck Technical Design Department.

Construction materials

Schöck Isokorb® construction materials

Reinforcing steel	B500B acc. to EC2 National Annex
Structural steel	S 235 JRG1, S 235 JO, S 235 J2, S 355 JR, S 355 J2, or S 355 JO acc. to BS EN 10025-2 for the compression slabs
Stainless steel	Ribbed round steel B500B NR, Material No. 1.4362, 1.4571 or 1.4482 acc. to Approval document Z-15.7-240 Tension bars Material No. 1.4362 f_{yk} = 600 N/mm^2) Plain steel bars, Material No. 1.4571 or 1.4404 of hardening level S 460
Concrete pressure bearings	HTE Compact pressure bearings (pressure bearings made from micro-steel fibre-reinforced high performance fine concrete) HDPE plastic sheathing
Insulating material	Neopor® - this polystyrene hard foam is a registered trademark of BASF, λ = 0.031 W/m·K, building material classification B1 (flame retardant)
Fire protection material	Light building panels of building material class A1, cement-bonded fire protection panels, mineral wool: ρ ≥ 150 kg/m^3, melting point T ≥ 1000 °C and integrated fire

Connected components

Reinforcing steel	B500A, B500B or B500C acc. to BS 4449 or BS 4483
Beton	Standard concrete acc. to BS EN 206-1 with a dry apparent density of 2000 kg/m^3 to 2600 kg/m^3 (lightweight concrete is not permitted) **Indicative minimum concrete strength class of the external structural component:** Minimim C32/40 and depending on the environmental classes acc. to EC2 and NA **Indicative concrete strength class of internal structural components:** Minimum C25/30 and depending on the environmental classes acc. to EC2 and NA

Information on the bending of reinforcing steel

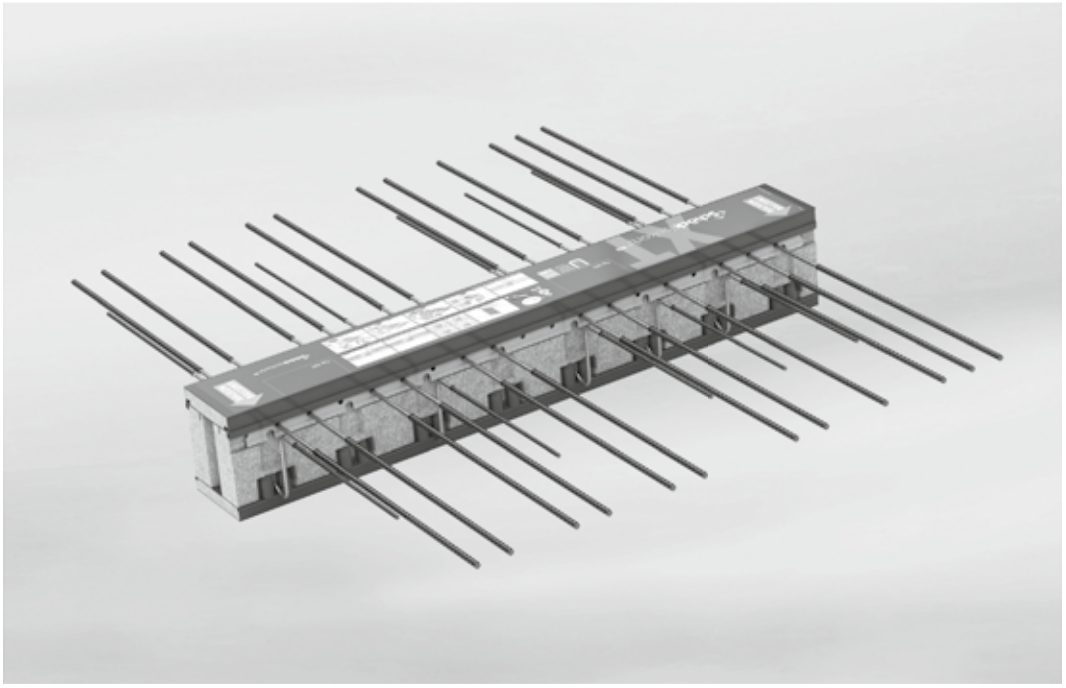
With the production of the Schöck Isokorb® in the factory it is ensured through monitoring that the conditions of the general building supervisory approval document and of BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA with regard to bending of reinforcing steel are oberved.

Attention: If reinforcing steel of the Schöck Isokorb® is bent or bent and bent back on-site, the observation and the monitoring of the respective conditions (building supervisory appoval document, BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA) lie outside the influence of Schöck Bauteile GmbH. Therefore, in such cases, the warranty ceases.

Characteristic physical values

The characteristic physical values for all products are listed in the appropriate table in the “Building physics” section.

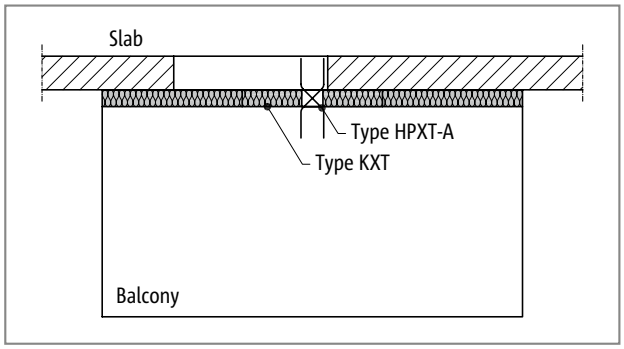
Schöck Isokorb® type KXT



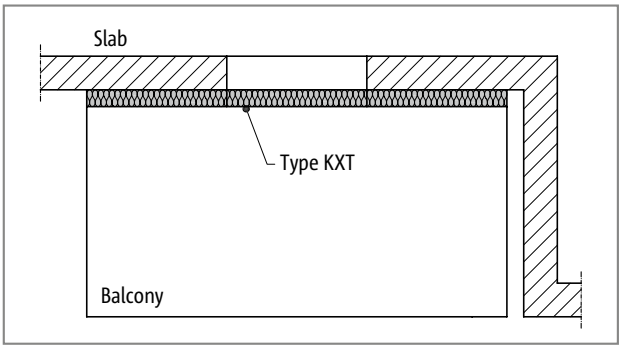
Schöck Isokorb® type KXT

Schöck Isokorb® type KXT
Suitable for cantilever balconies. It transfers negative moments and positive shear forces. The Schöck Isokorb® type KXT of shear force variant VV transmits negative moments, positive and negative shear forces.

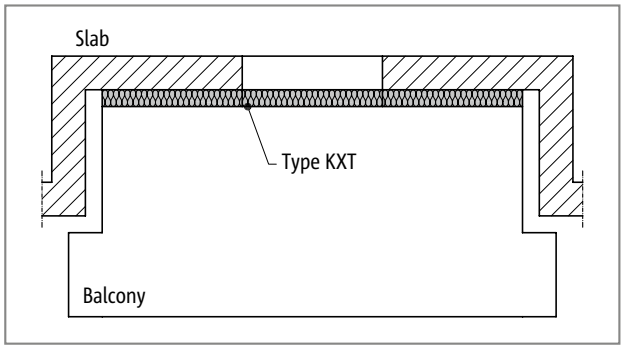
Element arrangement | Installation cross sections



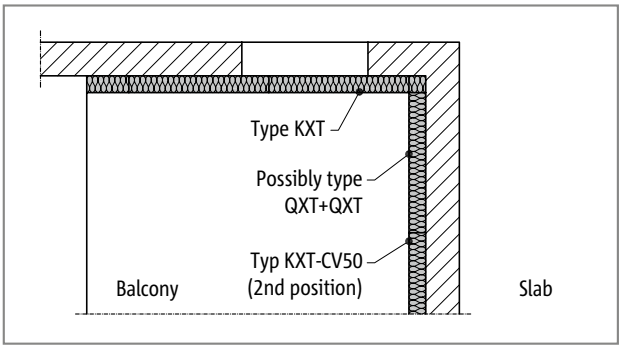
Schöck Isokorb® type KXT: Cantilever balcony ; optional with type HPXT with scheduled horizontal loads (e.g. closed balustrades)



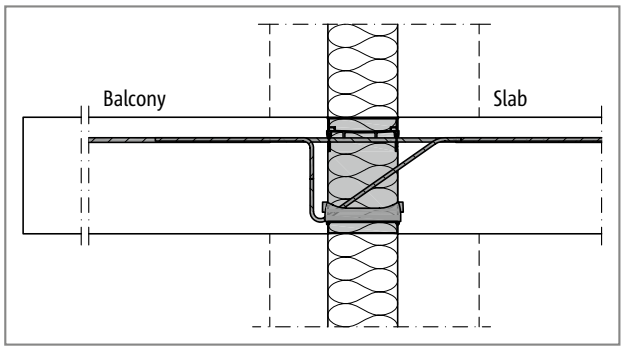
Schöck Isokorb® type KXT: Balcony with facade (offset) projection



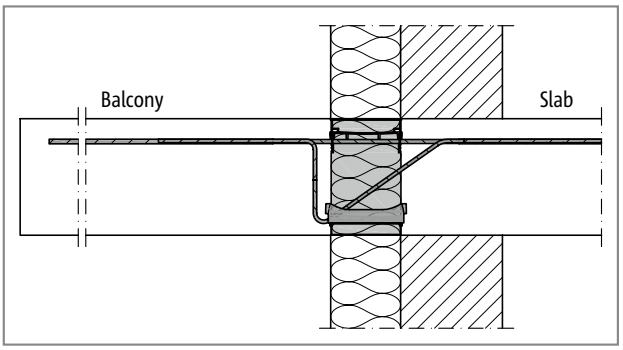
Schöck Isokorb® type KXT: Balcony with facade (offset) recess



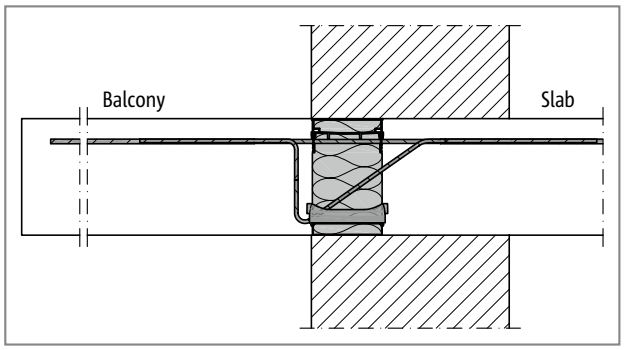
Schöck Isokorb® type KXT, QXT+QXT: Balcony with inside corner, supported in two sides



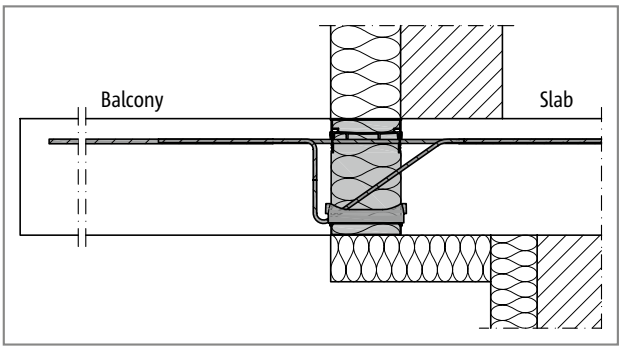
Schöck Isokorb® type KXT: Connection with non-load-bearing cavity masonry



Schöck Isokorb® type KXT: Connection with external insulation (EIFS)



Schöck Isokorb® type KXT: Connection with single-leaf masonry



Schöck Isokorb® type KXT: Connection with indirectly supported inner slab

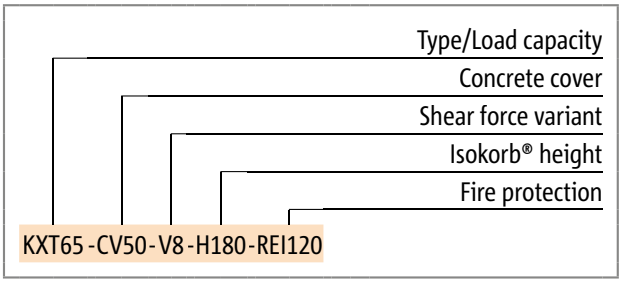
Product selection | Type designations | Special designs

Variants of Schöck Isokorb® type KXT

The design of the Schöck Isokorb® type KXT can be varied as follows:

- Load capacity:
  KXT15 to KXT100
- Concrete cover of the tension bars:
  CV35 = 35 mm, CV50 = 50 mm (e.g.: KXT50-CV35-V6-H200)
- Shear force variant:
  Number and diameter of the shear force bars V6, V8, V10, VV (e.g.: KXT50-CV35-V8-H200)
- Height:
  H = 160 - 250 mm for Schöck Isokorb® type KXT and concrete cover CV35
  H = 180 - 250 mm for Schöck Isokorb® type KXT and concrete cover CV50
- Fire resistance class:
  R0 (Standard), REI120

Type designations in planning documents



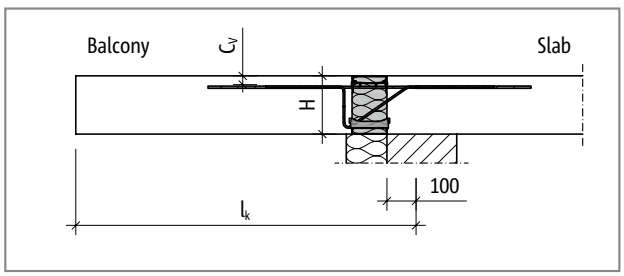
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).
This also applies with additional requirements as a result of precast concrete construction. For additional requirements determined by manufacturing or transportation there are solutions available with coupler bars.

C25/30 design

Schöck Isokorb® type			KXT15	KXT25	KXT30	KXT40	KXT45	KXT50
Design values with	Concrete cover CV [mm]		Concrete strength class ≥ C25/30					
	CV35	CV50	$m_{Rd,y}$ [kNm/m]					
Isokorb® height H [mm]	160		-8.9	-15.0	-20.8	-23.8	-25.5	-29.3
		180	-9.5	-16.0	-22.0	-25.2	-27.2	-31.3
	170		-10.0	-16.9	-23.2	-26.5	-28.8	-33.0
		190	-10.7	-17.9	-24.4	-27.9	-30.6	-35.0
	180		-11.2	-18.8	-25.6	-29.2	-32.1	-36.8
		200	-11.8	-19.8	-26.7	-30.6	-33.9	-38.8
	190		-12.3	-20.7	-27.9	-31.9	-35.5	-40.6
		210	-13.0	-21.8	-29.1	-33.3	-37.1	-42.4
	200		-13.6	-22.7	-30.3	-34.6	-38.7	-44.2
		220	-14.3	-23.8	-31.5	-36.0	-40.3	-46.0
	210		-14.8	-24.7	-32.7	-37.3	-41.9	-47.8
		230	-15.5	-25.8	-33.8	-38.7	-43.4	-49.6
	220		-16.0	-26.7	-35.0	-40.0	-45.0	-51.4
		240	-16.8	-27.9	-36.2	-41.4	-46.6	-53.2
	230		-17.3	-28.7	-37.4	-42.7	-48.2	-55.0
		250	-18.1	-29.9	-38.6	-44.1	-49.7	-56.8
	240		-18.6	-30.8	-39.8	-45.4	-51.3	-58.6
	250		-20.0	-33.0	-42.1	-48.1	-54.4	-62.2
Shear force variant			$v_{Rd,z}$ [kN/m]					
	V6		28.2	28.2	28.2	35.3	35.3	35.3
	V8		50.1	50.1	62.7	62.7	62.7	62.7
	VV		-	-	±50.1	±50.1	±50.1	±50.1

Schöck Isokorb® type	KXT15	KXT25	KXT30	KXT40	KXT45	KXT50
Isokorb® length [mm]	1000	1000	1000	1000	1000	1000
Tension bars V6/V8	4 ⌀ 8	7 ⌀ 8	10 ⌀ 8	12 ⌀ 8	13 ⌀ 8	15 ⌀ 8
Tension bars VV	-	-	12 ⌀ 8	14 ⌀ 8	15 ⌀ 8	8 ⌀ 12
Shear force bars V6	4 ⌀ 6	4 ⌀ 6	4 ⌀ 6	5 ⌀ 6	5 ⌀ 6	5 ⌀ 6
Shear force bars V8	4 ⌀ 8	4 ⌀ 8	5 ⌀ 8	5 ⌀ 8	5 ⌀ 8	5 ⌀ 8
Shear force bars VV	-	-	4 ⌀ 8 + 4 ⌀ 8	4 ⌀ 8 + 4 ⌀ 8	4 ⌀ 8 + 4 ⌀ 8	4 ⌀ 8 + 4 ⌀ 8
Pressure bearing V6/V8 (pce)	4	6	7	8	7	8
Pressure bearing VV (pce)	-	-	8	8	12	13
Special stirrup VV (pce)	-	-	-	-	-	4



Schöck Isokorb® type KXT: Static system

C25/30 design

Schöck Isokorb® type			KXT55	KXT65	KXT90	KXT100	KXT100
Design values with	Concrete cover CV [mm]		Concrete strength class ≥ C25/30				≥ C30/37
	CV35	CV50	$m_{Rd,y}$ [kNm/m]				
Isokorb® height H [mm]	160		-33.1	-37.1	-46.4	-46.4	-50.2
		180	-35.4	-39.7	-49.2	-49.2	-53.3
	170		-37.5	-42.0	-52.1	-52.1	-56.3
		190	-39.8	-44.6	-54.9	-54.9	-59.4
	180		-41.8	-46.8	-57.8	-57.8	-62.5
		200	-44.2	-49.2	-60.7	-60.7	-65.6
	190		-46.2	-51.5	-63.5	-63.5	-68.7
		210	-48.6	-53.8	-66.4	-66.4	-71.8
	200		-50.7	-56.2	-69.3	-69.3	-74.9
		220	-53.1	-58.5	-72.1	-72.1	-78.0
	210		-55.2	-60.8	-75.0	-75.0	-81.1
		230	-57.7	-63.1	-77.8	-77.8	-84.2
	220		-59.8	-65.4	-80.7	-80.7	-87.3
		240	-62.1	-67.8	-83.6	-83.6	-90.4
	230		-64.2	-70.1	-86.4	-86.4	-93.5
		250	-66.4	-72.4	-89.3	-89.3	-96.6
	240		-68.5	-74.7	-92.2	-92.2	-99.7
	250		-72.8	-79.4	-97.9	-97.9	-105.9
Shear force variant			$v_{Rd,z}$ [kN/m]				
	V8		75.2	87.8	112.8	112.8	112.8
	V10		100.3	112.8	125.4	125.4	125.4
	VV		75.2/–50.1	-	-	-	

Schöck Isokorb® type	KXT55	KXT65	KXT90	KXT100	KXT100
Isokorb® length [mm]	1000	1000	1000	1000	1000
Tension bars V8/V10	8 ⌀ 12	9 ⌀ 12	12 ⌀ 12	13 ⌀ 12	13 ⌀ 12
Tension bars VV	9 ⌀ 12	-	-	-	-
Shear force bars V8	6 ⌀ 8	7 ⌀ 8	9 ⌀ 8	9 ⌀ 8	9 ⌀ 8
Shear force bars V10	8 ⌀ 8	9 ⌀ 8	10 ⌀ 8	10 ⌀ 8	10 ⌀ 8
Shear force bars VV	6 ⌀ 8 + 4 ⌀ 8	-	-	-	-
Pressure bearing V6/V8 (pce)	11	12	18	18	18
Pressure bearing VV (pce)	15	-	-	-	-
Special stirrup (pce)	4	4	4	4	4

Notes on design

- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,max}$, whereby $V_{Rd,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- With CV50, H = 180 mm is the lowest Isokorb® height, this requires a minimum slab thickness of h = 180 mm.
- For cantilever slab constructions without live load, stressed from moment loading without direct shear force effectiveness or lightweight constructions, please use the Schöck design software or contact our Technical Design Department.
- The indicative minimum concrete strength class of the external structural component is C32/40.
- Note FEM guidelines if a FEM program is to be used for design.

Deflection/Camber

Deflection

The deflection factors given in the table (tan α [%]) result alone from the deflection of the Schöck Isokorb® under 100% steel utilisation. They serve for the estimation of the required camber. The total arithmetic camber of the balcony slab formwork results from the calculation acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA plus the deflection from Schöck Isokorb®. The camber of the balcony slab formwork to be given by the structural engineer/designer in the implementation plans (Basis: Calculated total deflection from cantilever slab + floor rotation angle + Schöck Isokorb®) should be so rounded that the scheduled drainage direction is maintained (round up: with drainage to the building facade, round down: with drainage towards the cantilever slab end).

Deflection (p) as a result of Schöck Isokorb®

$p = \tan\alpha \cdot l_k \cdot (m_{pd} / m_{Rd}) \cdot 10$ [mm]

Factors to be applied

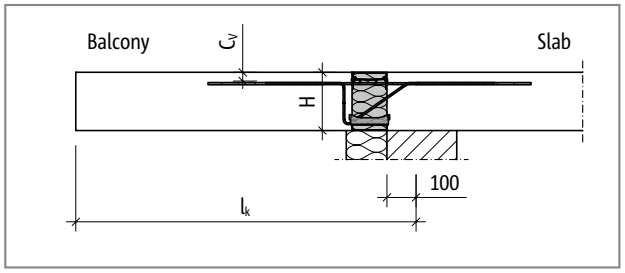
$\tan\alpha$ = apply table

l_k = cantilever length [m]

m_{pd} = relevant bending moment [kNm/m] in the ultimate limit state for the determination of the p [mm] from Schöck Isokorb®.
The load combination to be applied for the deflection is determined by the structural engineer.
(Recommendation: Load combination for the determination of the camber p : determine g+q/2, m_{pd} in the ultimate limit state)

m_{Rd} = maximum design moment [kNm/m] of the Schöck Isokorb®

Design example, see page 67



Schöck Isokorb® type KXT: Static system

Schöck Isokorb® type		KXT15 - KXT50		KXT55 - KXT100	
Deflection factors when		tan α [%]		tan α [%]	
		CV35	CV50	CV35	CV50
Isokorb®-height H [mm]	160	1.1	-	1.4	-
	170	1.0	-	1.2	-
	180	0.9	1.1	1.1	1.3
	190	0.9	1.0	1.0	1.2
	200	0.8	0.9	0.9	1.0
	210	0.7	0.8	0.9	1.0
	220	0.7	0.8	0.8	0.9
	230	0.6	0.7	0.7	0.8
	240	0.6	0.7	0.7	0.8
	250	0.6	0.6	0.7	0.7

Slenderness | Expansion joint spacing

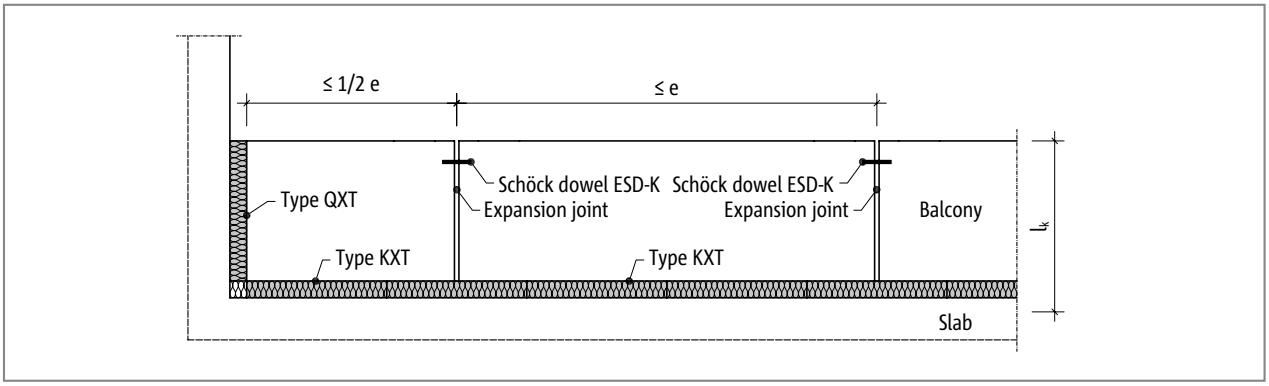
Slenderness

In order to safeguard the serviceability we recommend the limitation of the slenderness to the following maximum cantilever lengths max l_k [m]:

Schöck Isokorb® type		KXT15 - KXT100	
maximum cantilever length with		$l_{k,max}$ [m]	
		CV35	CV50
Isokorb® height H [mm]	160	1.65	-
	170	1.78	-
	180	1.90	1.70
	190	2.03	1.80
	200	2.15	1.90
	210	2.28	2.00
	220	2.40	2.10
	230	2.53	2.20
	240	2.65	2.30
	250	2.78	2.40

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type KXT: Arrangement of expansion joints

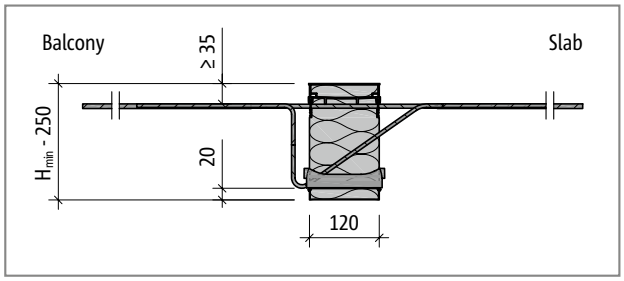
Schöck Isokorb® type		KXT15 - KXT50-V6,V8	KXT50-VV - KXT100
Maximum expansion joint spacing		e [m]	
Insulating element thickness [mm]	120	23.0	21.7

Edge distances

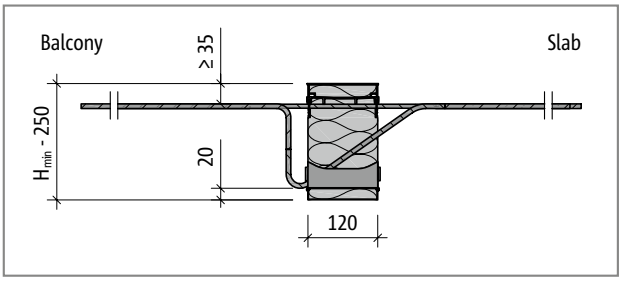
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the tension bars from the free edge or from the expansion joint: $e_R \geq 50$ mm and $e_R \leq 150$ mm applies.
- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

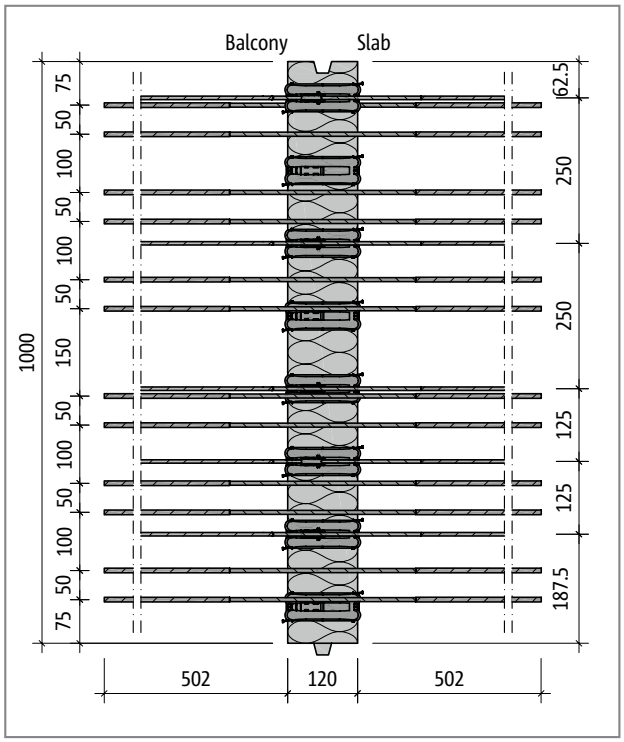
Product description



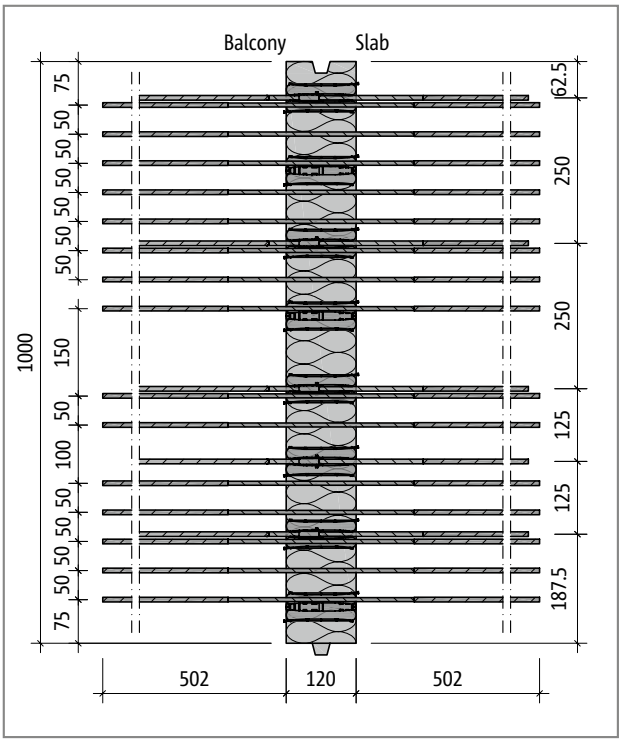
Schöck Isokorb® type KXT15 to KXT40: Product section



Schöck Isokorb® type KXT45, KXT50: Product section



Schöck Isokorb® type KXT40: Product plan view

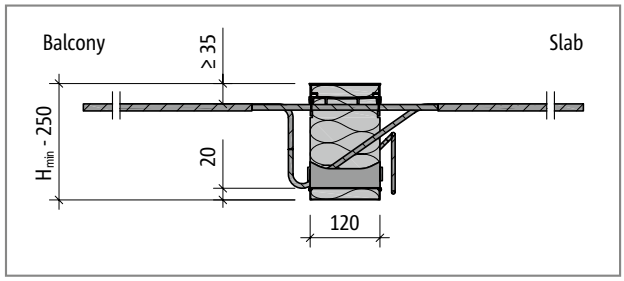


Schöck Isokorb® type KXT50: Product plan view

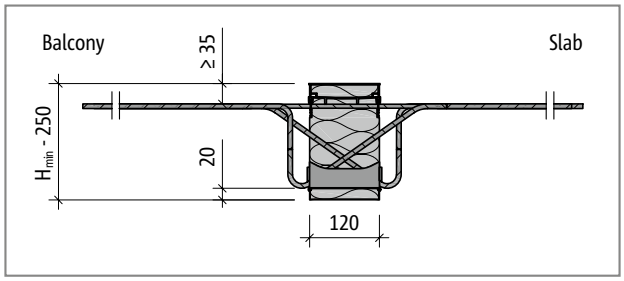
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- On-site dividing of the Schöck Isokorb® type KXT on the unreinforced positions possible; take into account the load-bearing capacity reduced due to the dividing; take into account required edge distances
- Concrete cover of the tension bars: CV35 = 35 mm, CV50 = 50 mm

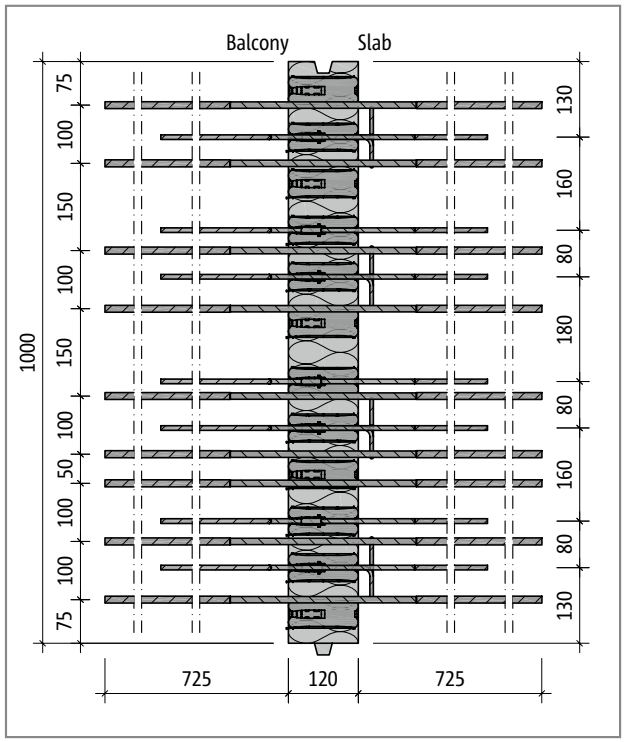
Product description



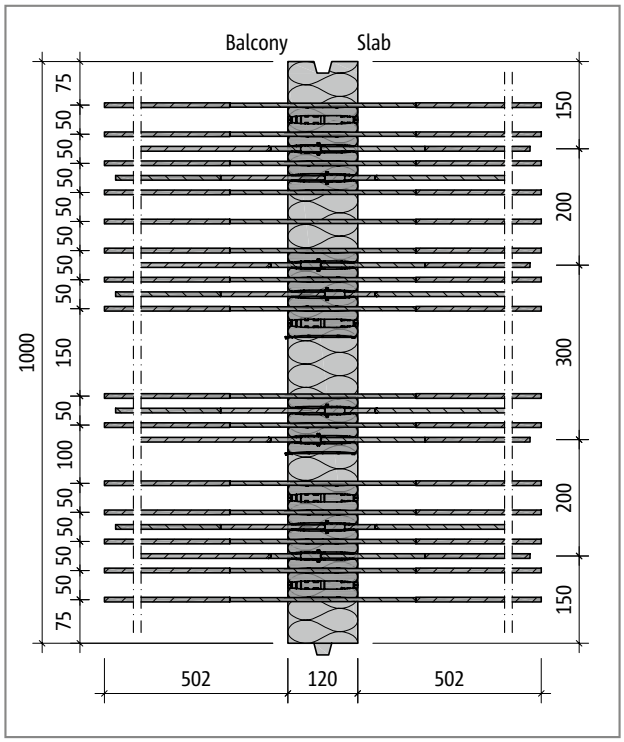
Schöck Isokorb® type KXT55 to KXT100: Product section



Schöck Isokorb® type KXT45-VV: Product section



Schöck Isokorb® type KXT65: Product plan view

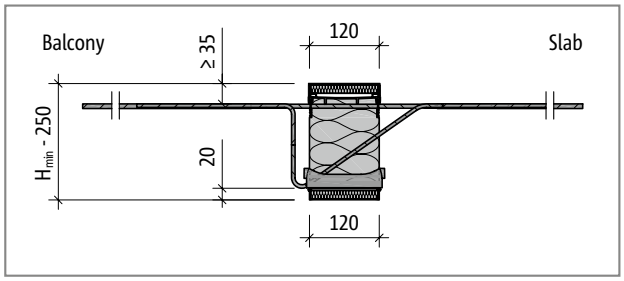


Schöck Isokorb® type KXT45-VV: Product plan view

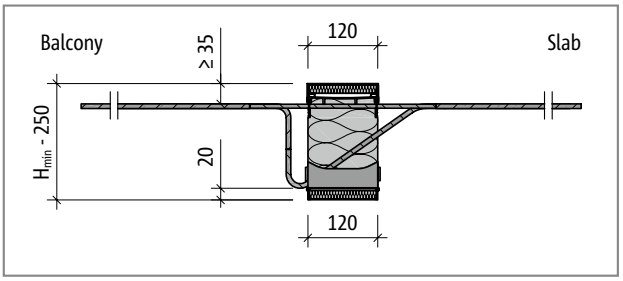
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- On-site dividing of the Schöck Isokorb® type KXT on the unreinforced positions possible; take into account the load-bearing capacity reduced due to the dividing; take into account required edge distances
- Concrete cover of the tension bars: CV35 = 35 mm, CV50 = 50 mm

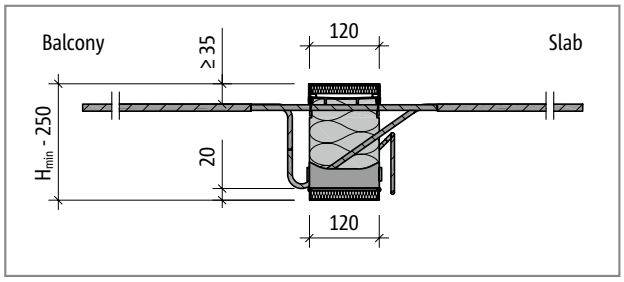
Fire protection configuration



Schöck Isokorb® type KXT15 to KXT40 with REI120: Product section



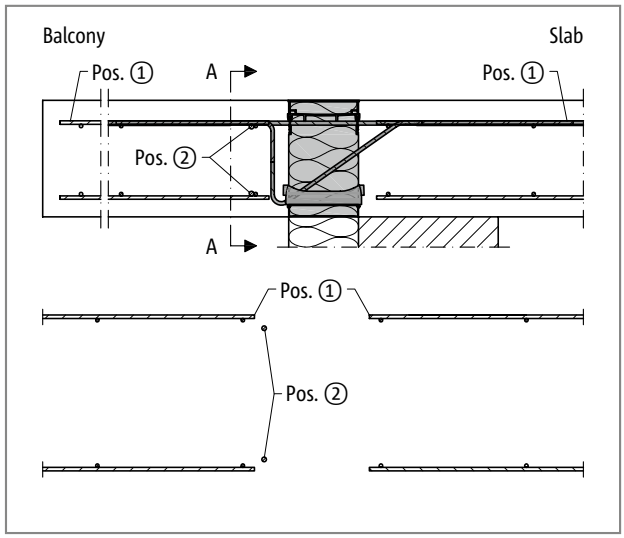
Schöck Isokorb® type KXT45, KXT50 with REI120: Product section



Schöck Isokorb® type KXT55 to KXT100 with REI120: Product section

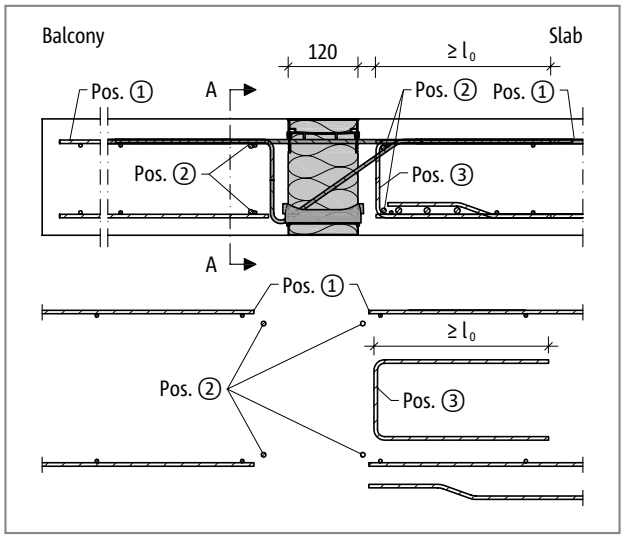
On-site reinforcement

Direct support



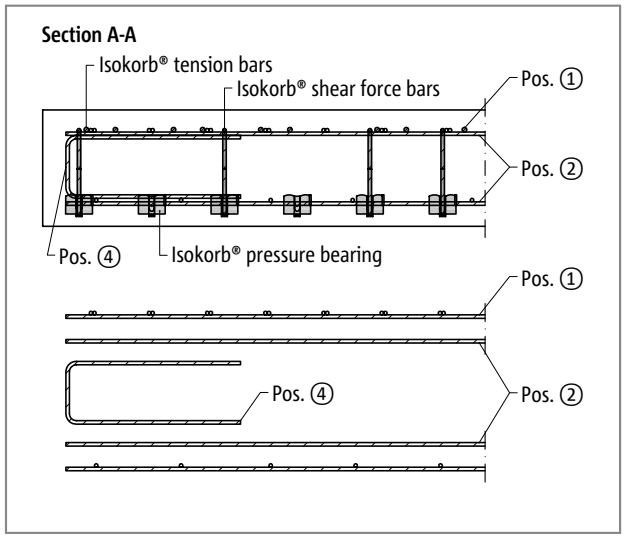
Schöck Isokorb® type KXT: On-site reinforcement with direct support

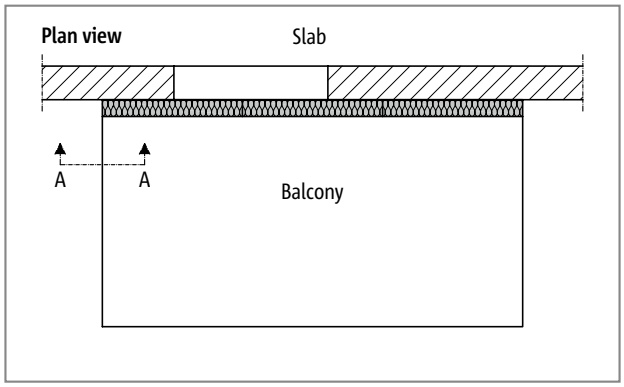
Indirect support



Schöck Isokorb® type KXT: On-site reinforcement with indirect support

Direct and indirect support





Schöck Isokorb® type KXT: On-site reinforcement, balcony side in the section A-A; Pos. 4 = reinforcement at the free edges

The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing inner slab reinforcement can be taken into account as long as the maximum separation to the tension bars of the Schöck Isokorb® of 4⌀ is maintained. Additional reinforcement may be required.

On-site reinforcement

Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type			KXT15	KXT25	KXT30-V6/V8	KXT40-V6/V8	KXT45-V6/V8
On-site reinforcement	Type of bearing	Height [mm]	Concrete strength class ≥ C25/30				
Pos. 1 Lapping reinforcement							
Pos. 1 [mm²/m]	direct/indirect	160 - 250	201	352	503	604	654
	direct/indirect	160 - 250					
Pos. 1 Variant A	direct/indirect	160 - 250	H8@150 mm	H8@125 mm	H10@125 mm	H10@100 mm	H10@100 mm
	direct/indirect	160 - 250					
Pos. 2 Steel bars along the insulation joint							
Pos. 2	direct	160 - 250	2 • H8	2 • H8	2 • H8	2 • H8	2 • H8
Pos. 2	indirect	160 - 250	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Edge- and splitting tension reinforcement							
Pos. 3 [mm²/m]	indirect	160 - 250	113	113	113	125	131
Pos. 4 Structural edging at the free edge							
Pos. 4	direct/indirect	160 - 250	acc. to BS EN 1992-1-1 (EC2), 9.3.1.4				

Schöck Isokorb® type			KXT50-V6/V8	KXT55-V8/V10	KXT65	KXT90	KXT100
On-site reinforcement	Type of bearing	Height [mm]	Concrete strength class ≥ C25/30				
Pos. 1 Lapping reinforcement							
Pos. 1 [mm²/m]	direct/indirect	160 - 250	755	905	1018	1357	1470
	direct/indirect	160 - 250					
Pos. 1 Variant A	direct/indirect	160 - 250	H10@100 mm	H12@100 mm	H12@90 mm	H12@80 mm	H12@75 mm
	direct/indirect	160 - 250					
Pos. 2 Steel bars along the insulation joint							
Pos. 2	direct	160 - 250	2 • H8	2 • H8	2 • H8	2 • H8	2 • H8
Pos. 2	indirect	160 - 250	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Edge- and splitting tension reinforcement							
Pos. 3 [mm²/m]	indirect	160	150	326	263	325	354
		170	150	326	278	344	372
		180	150	326	291	360	389
		190	150	326	303	375	405
		200	150	326	314	388	419
		210	150	326	323	400	432
		220	150	326	332	410	444
		230	150	326	340	420	455
		240	150	326	347	429	464
		250	150	326	355	438	474
Pos. 4 Structural edging at the free edge							
Pos. 4	direct/indirect	160 - 250	acc. to BS EN 1992-1-1 (EC2), 9.3.1.4				

On-site reinforcement

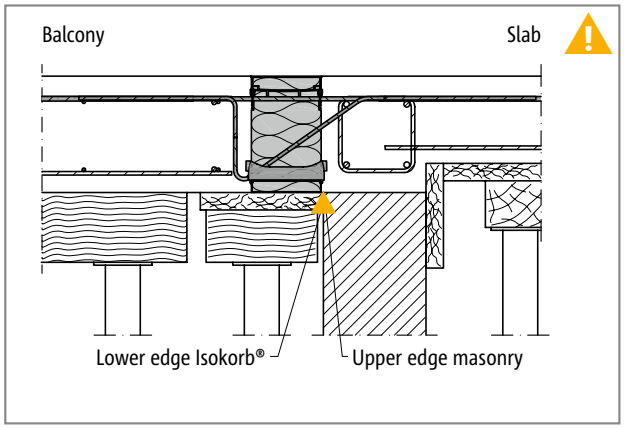
Schöck Isokorb® type			KXT30-VV	KXT40-VV	KXT45-VV	KXT50-VV	KXT55-VV
On-site reinforcement	Type of bearing	Height [mm]	Concrete strength class ≥ C25/30				
Pos. 1 Lapping reinforcement							
Pos. 1 [mm²/m]	direct/indirect	160 - 250	604	704	754	905	1018
	direct/indirect	160 - 250					
Pos. 1 Variant A	direct/indirect	160 - 250	H10@100 mm	H10@100 mm	H10@100 mm	H12@100 mm	H12@90 mm
	direct/indirect	160 - 250					
Pos. 2 Steel bars along the insulation joint							
Pos. 2	direct	160 - 250	2 • H8	2 • H8	2 • H8	2 • H8	2 • H8
Pos. 2	indirect	160 - 250	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Edge- and splitting tension reinforcement							
Pos. 3 [mm²/m]	direct/indirect	160 - 250	-	-	-	92	128
Pos. 4 Structural edging at the free edge							
Pos. 4	direct/indirect	160 - 250	acc. to BS EN 1992-1-1 (EC2), 9.3.1.4				

Information about on-site reinforcement

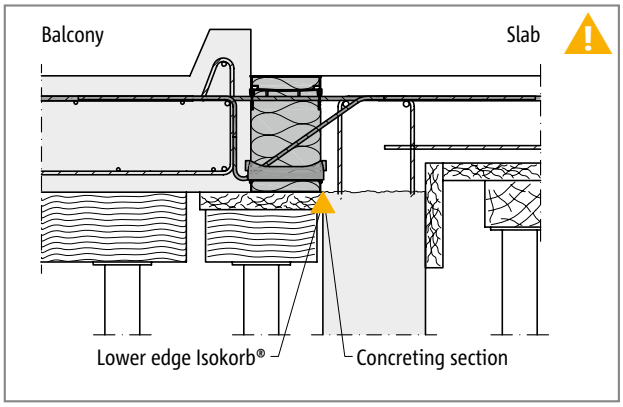
- Alternative reinforcement is possible. Determine lap length acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted. For the lapping (l_0) with the Schöck Isokorb® types KXT15 - KXT50 a length of the tension bars of 465 mm and with types KXT55 - KXT100 a length of the tension bars of 695 mm can be included in the calculation.
- The reinforcement at the free edges Pos. 4 of the structural component perpendicular to the Schöck Isokorb® should be selected as low as possible so that it can be arranged between the upper and lower reinforcement layer.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Tight fit/Concreting section | Precast/Compression joints

Tight fit/Concreting section



Schöck Isokorb® type KXT: In-situ concrete balcony with height offset inner slab on masonry wall



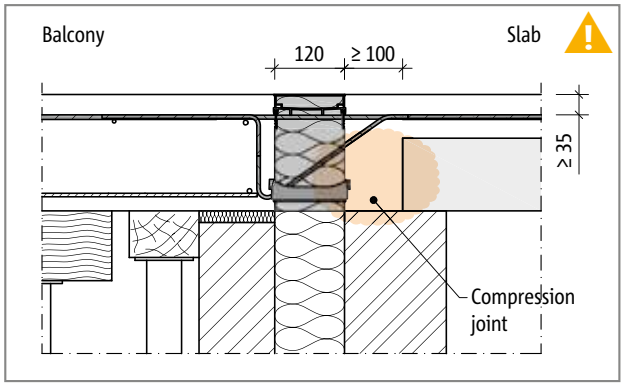
Schöck Isokorb® type KXT: Precast balcony with height offset inner slab on precast reinforced concrete wall

⚠ Hazard note: Tight fit with different height levels

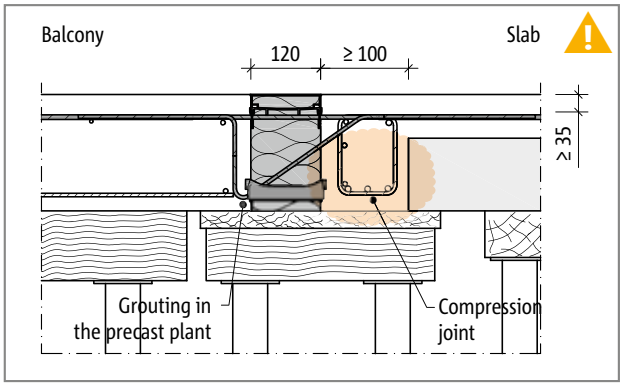
The tight fit of the pressure bearings to the freshly poured concrete is to be ensured, therefore the upper edge of the masonry respectively of the concreting section is to be arranged below the lower edge of the Schöck Isokorb®. This is to be taken into account above all with a different height level between inner slab and balcony.

- The concreting joint resp. the upper edge of the masonry is to be arranged below the lower edge of the Schöck Isokorb®.
- The position of the concreting section is to be indicated in the formwork and reinforcement drawing.
- The joint planning is to be coordinated between precast concrete plant and construction site.

Precast/Compression joints



Schöck Isokorb® type KXT: Direct support, installation in conjunction with hollow core slabs, compression joint on the inner slab side



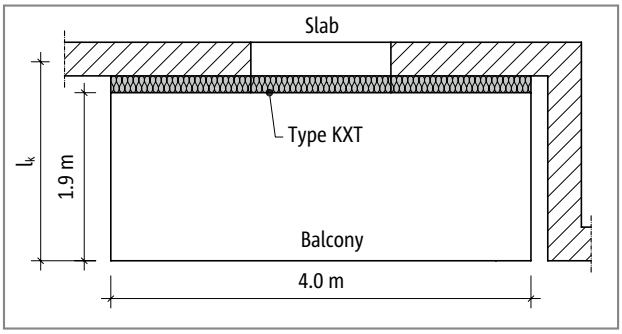
Schöck Isokorb® type KXT: Indirect support, installation in conjunction with element slabs (here: h ≤ 200 mm), compression joint inner slab side

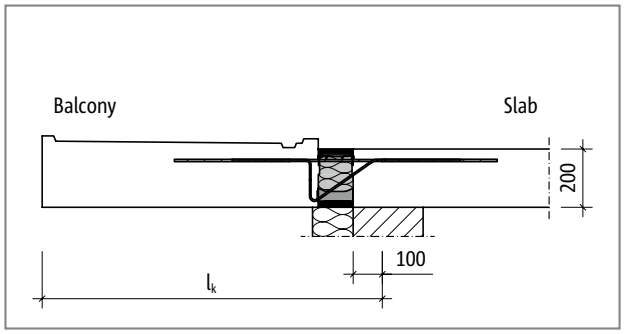
⚠ Hazard note: Compression joints

Compression joints are joints which, with unfavourable loading combination, remain always in compression. The underside of a cantilever balcony is always a compression zone. If the cantilever balcony is a precast part or an element slab, and/or the floor is an element slab, then the definition of the standard is effective.

- Compression joints are to be indicated in the formwork and reinforcement drawing!
- Compression joints between precast parts are always to be grouted using in-situ concrete. This also applies for compression joints with the Schöck Isokorb®!
- With compression joints between precast parts (on the inner slab or balcony side) and the Schöck Isokorb® a in-situ concrete resp. poured strip of ≥ 100 mm width is to be carried out. This is to be entered in the working drawings.
- We recommend the installation of the Schöck Isokorb® resp. the pouring of the balcony-side compression joint already in the precast concrete plant.

Design example





Static system and load assumptions

Geometry:	Projection length	l_k = 2.12 m
	Balcony slab thickness	h = 200 mm
Design loads:	Balcony slab and screed	g = 6.5 kN/m²
	Live load	q = 2.5 kN/m²
	Edge load (balustrade)	g_R = 1.5 kN/m
Exposure classes:	External XC 4	
	Internal XC 1	
Selected:	Concrete strength class C25/30 for inner slab and C32/ 40 for balcony	
	Concrete cover c_v = 35 mm for Isokorb® tension bars	
	(Reduction Δc_{def} by 5mm, due to quality measures Schöck Isokorb® production)	
Connection geometry:	No height offset, no floor edge downstand beam, no balcony upstand	
Support inner slab:	Directly supported	
Support balcony:	Restaint of cantilever slab using Type KXT	

Recommendation on slenderness

Geometry:	Cantilever length	l_k = 2.12 m
	Balcony slab thickness	h = 200 mm
	Concrete cover	CV35
	Maximum cantilever length	$l_{k,max}$ = 2.15 m (from table, see page 59) > l_k

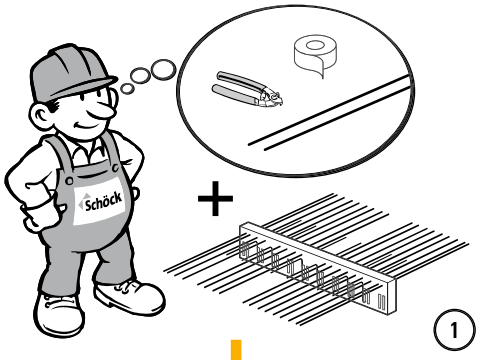
Ultimate limit state (moment and shear force)

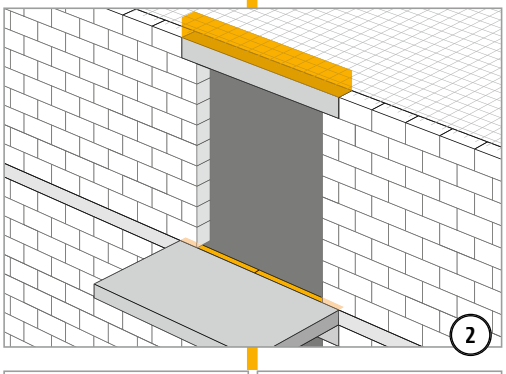
Internal forces:	m_{Ed}	$= -[(\gamma_G \cdot g + \gamma_Q \cdot q) \cdot l_k^2/2 + \gamma_G \cdot g_R \cdot l_k]$
	m_{Ed}	$= -[(1.35 \cdot 6.5 + 1.5 \cdot 2.5) \cdot 2.12^2/2 + 1.35 \cdot 1.5 \cdot 2.12] = -32.4$ kNm/m
	v_{Ed}	$= +(\gamma_G \cdot g + \gamma_Q \cdot q) \cdot l_k + \gamma_G \cdot g_R$
	v_{Ed}	$= +(1.35 \cdot 6.5 + 1.5 \cdot 2.5) \cdot 2.12 + 1.35 \cdot 1.5 = +28.6$ kN/m
Selected:	**Schöck Isokorb® Type KXT40-CV35-H200**	
	m_{Rd}	= -34.6 kNm/m (see page 56) > m_{Ed}
	v_{Rd}	= +35.3 kN/m (see page 56) > v_{Ed}

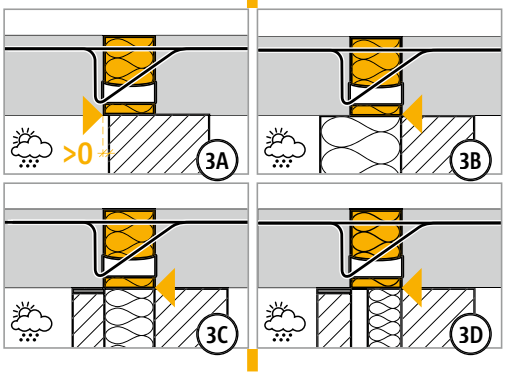
Serviceability limit state (deflection/precamber)

Deflection factor:	tan α	= 0.8 (from table, see page 58)
Selected load combination:	g + q/2	
	(Recommendation for the determination of the precamber from Schöck Isokorb®)	
	m_{pd} determine in the ultimate limit state	
	m_{pd}	$= -[(\gamma_G \cdot g + \gamma_Q \cdot q/2) \cdot l_k^2/2 + \gamma_G \cdot g_R \cdot l_k]$
	m_{pd}	$= -[(1.35 \cdot 6.5 + 1.5 \cdot 2.5/2) \cdot 2.12^2/2 + 1.35 \cdot 1.5 \cdot 2.12] = -28.2$ kNm/m
	p	$= [\tan \alpha \cdot l_k \cdot (m_{pd}/m_{Rd})] \cdot 10$ [mm]
	p	$= [0.8 \cdot 2.12 \cdot (28.2/34.6)] \cdot 10 = 13.8$ mm
Arrangement of expansion joints	Length of balcony :	4.00 m < 11.30 m
	=> no expansion joints required	

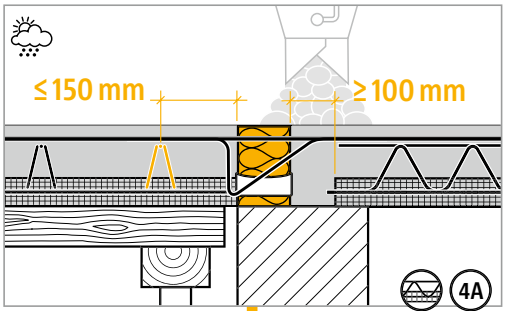
Installation instructions

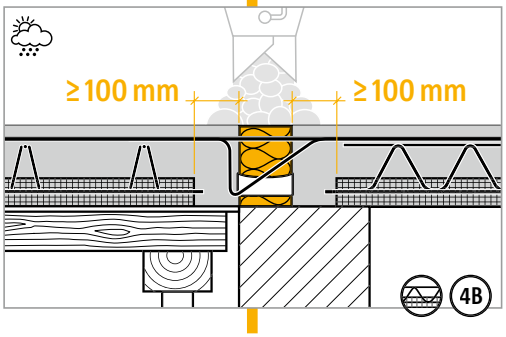


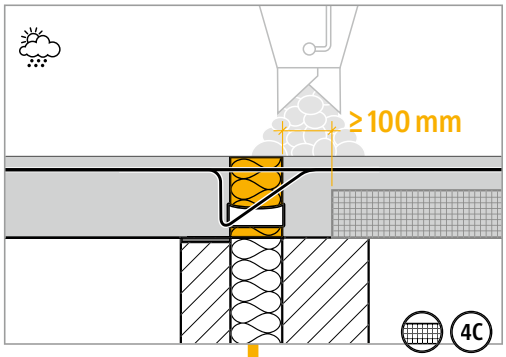


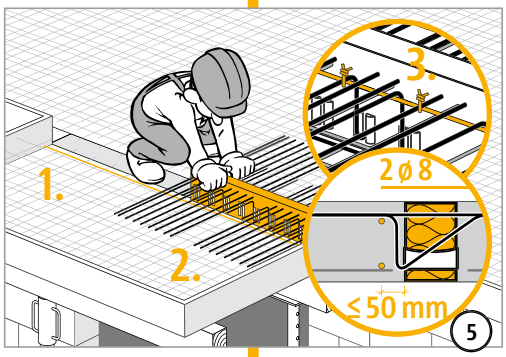


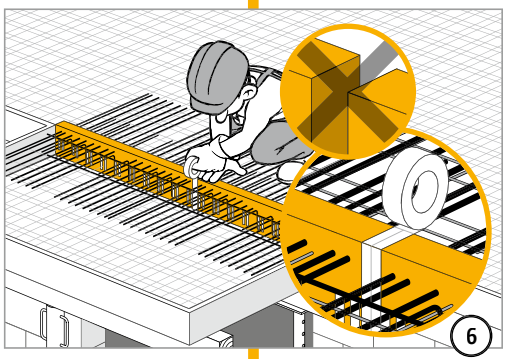
(4A)–(4C) Without fail fill compression joint with in-situ concrete! Joint width ≥ 100 mm.

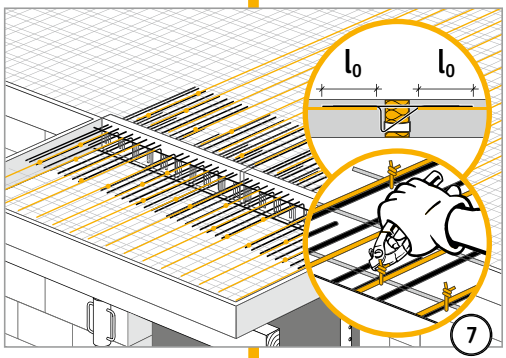


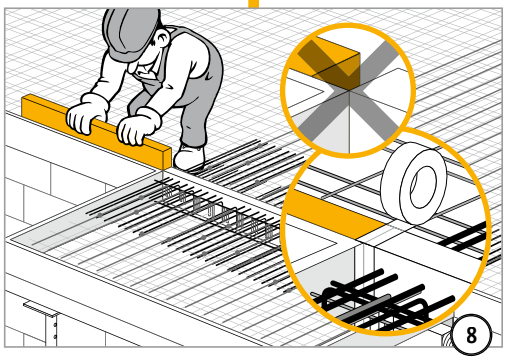








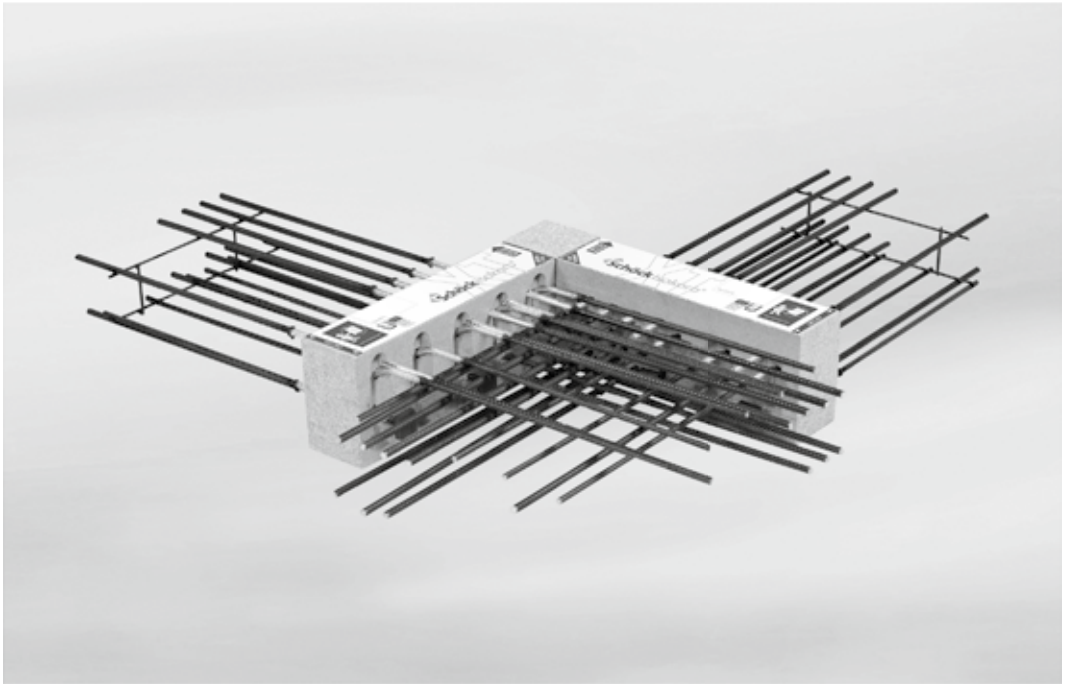




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Has the additional proportionate deflection resulting from the Schöck Isokorb® been taken into account?
- ☐ Is the drainage direction taken into account with the resulting camber information? Is the degree of camber entered in the working drawings?
- ☐ Is the increased minimum slab thickness taken into account with CV50?
- ☐ Are the recommendations for the limitation of the slenderness observed?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Are the Schöck FEM guidelines taken into acount with the calculation using FEM?
- ☐ With the selection of the design table is the relevant concrete cover taken into account?
- ☐ Are existing horizontal loads e.g. from wind pressure taken into account? Are additional Schöck Isokorb® supplementary type HPXT required for this?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Have the required in-situ concrete strips for the respective Schöck Isokorb® type, in conjunction with inner slab elements been charted in the implementation plans?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ With precast balconies are possibly necessary gaps for the front side transportation anchors and downpipes with internal drainage taken into account? Is the maximum centre distance of 300 mm for the Isokorb® bars observed?
- ☐ Is, due to connection with height offset or to a wall, instead of Isokorb® type KXT the type KXT-HV, KXT-BH, KXT-WO, KXT-WU (from page 95) or even a special design necessary?)

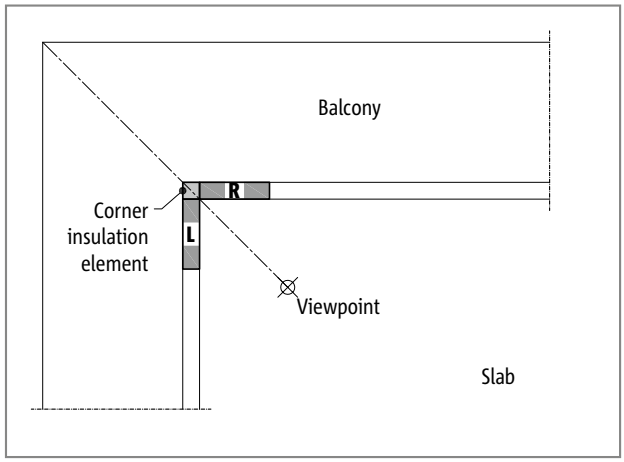
Schöck Isokorb® type EXT



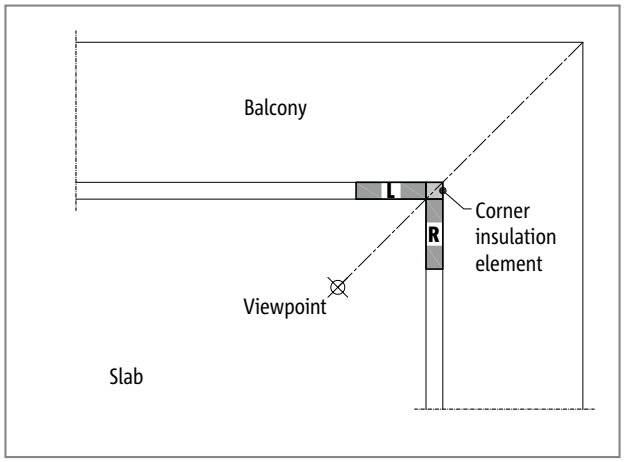
Schöck Isokorb® type EXT

Schöck Isokorb® type EXT
Suitable for cantelevered corner balconies. It transfers negative moments and positive shear forces.

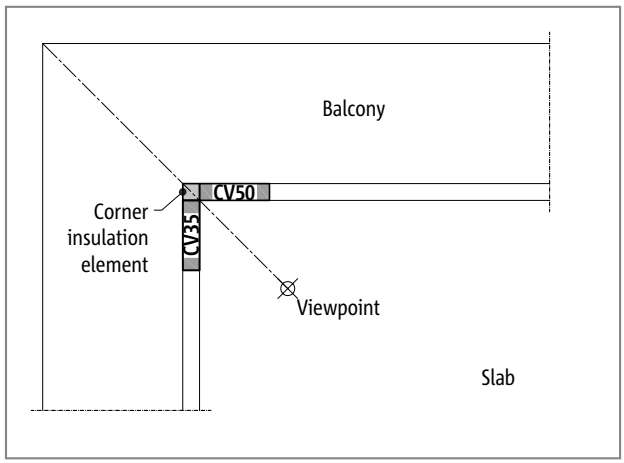
Element arrangement



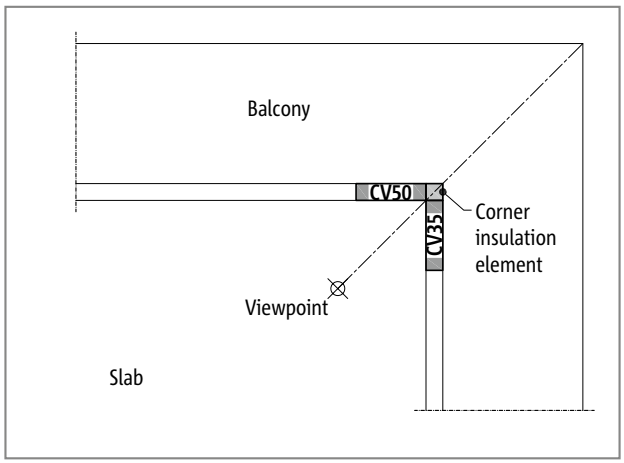
Schöck Isokorb® type EXT: Arrangement EXT-L left from viewpoint, arrangement EXT-R right from viewpoint



Schöck Isokorb® type EXT: Arrangement EXT-L left from viewpoint, arrangement EXT-R right from viewpoint

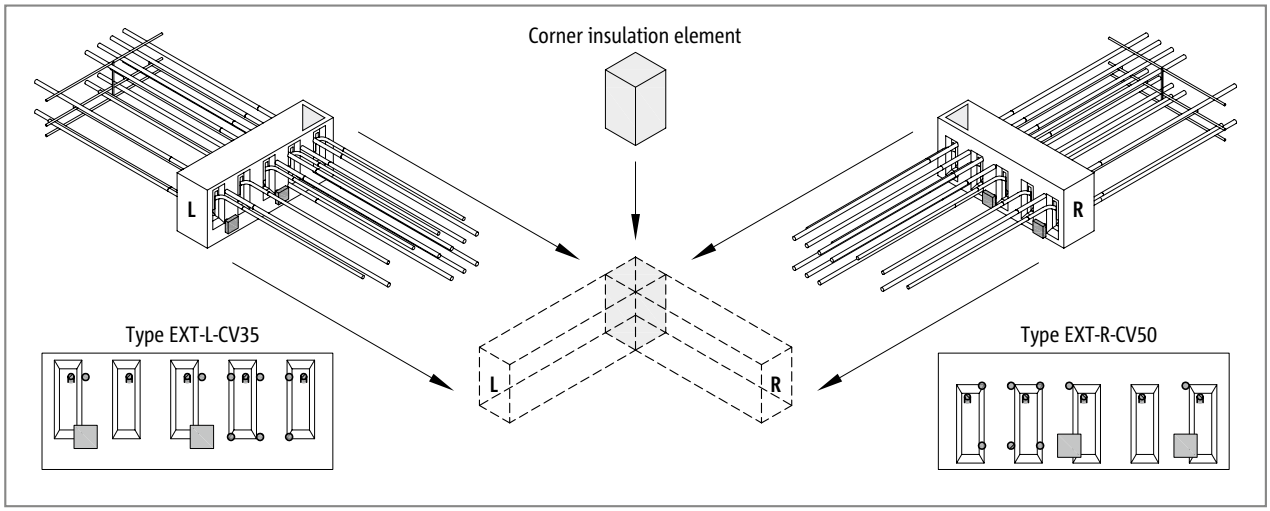


Schöck Isokorb® type EXT: Concrete covering selectable: Here CV35 left from viewpoint, concrete covering CV50 right from viewpoint



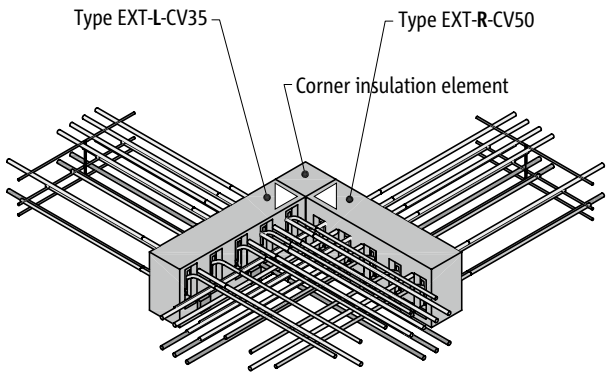
Schöck Isokorb® type EXT: Concrete covering selectable: here CV50 left fom viewpoint, concrete covering CV35 right from viewpoint

Element arrangement



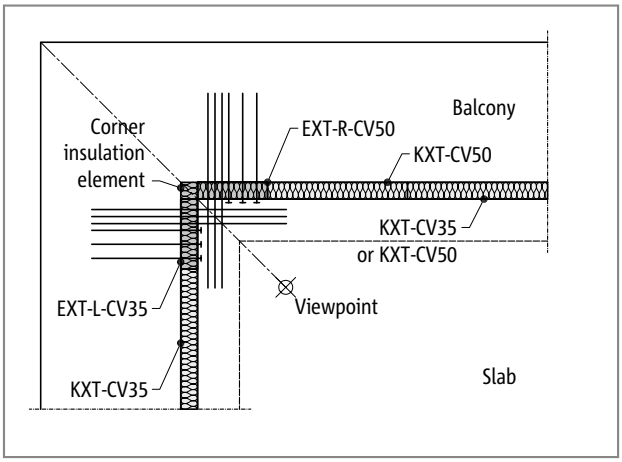
Schöck Isokorb® type EXT-L-CV35, EXT-R-CV50: Arrangement at the corner with corner insulation block

Product isometry

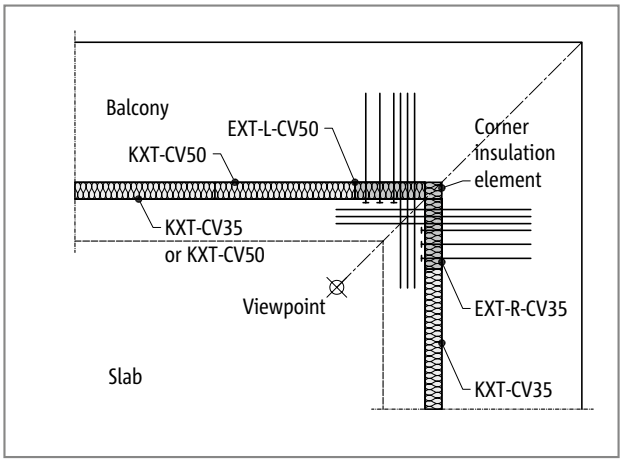


Schöck Isokorb® type EXT-L-CV35, EXT-R-CV50: Isometric illustration

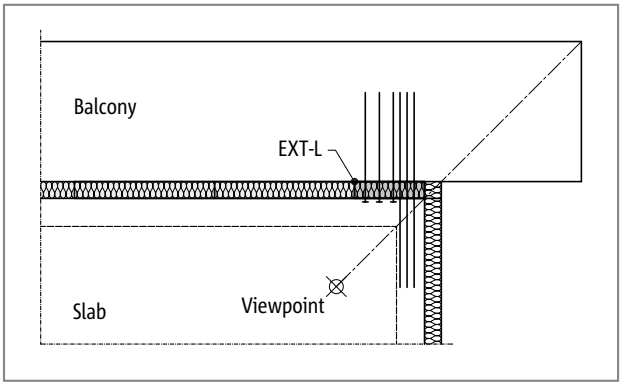
Element arrangement



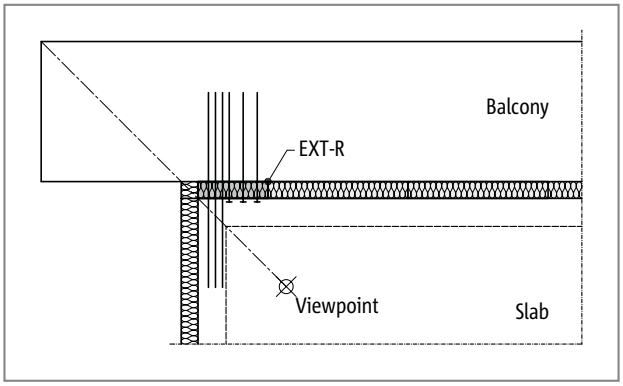
Schöck Isokorb® type EXT: Balcony with outer corner freely cantilevered (Application EXT-L-CV35, EXT-R-CV50)



Schöck Isokorb® type EXT: Balcony with outer corner freely cantilevered (Application EXT-L-CV50, EXT-R-CV35)



Schöck Isokorb® type EXT: Balcony cantilevered over building corner (Application type EXT-L)

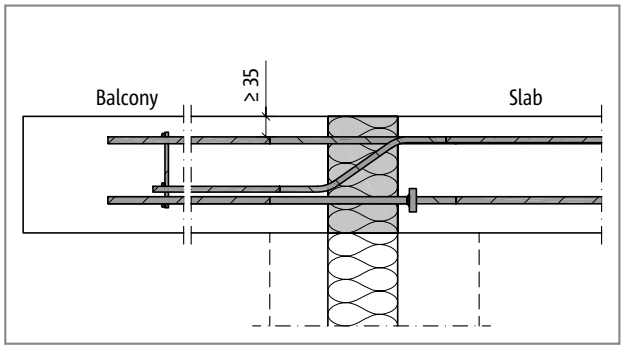


Schöck Isokorb® type EXT: Balcony cantilevered over building corner (Application type EXT-R)

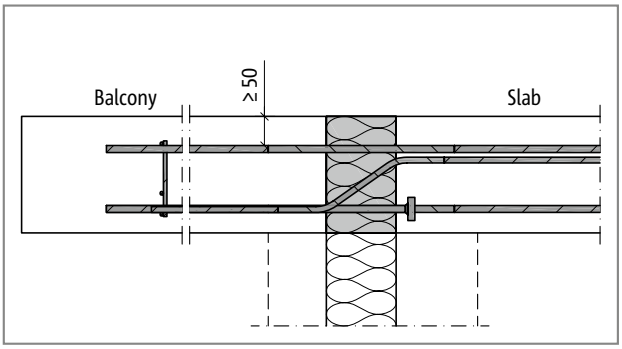
Element arrangement

- The Schöck Isokorb® type EXT, with small cantilever lengths can also be replaced by Schöck Isokorb® type KXT.
- The corner insulation block (corner DK) is supplied with each Schöck Isokorb® type EXT. For employment with small cantilever lengths in combination with the Schöck Isokorb® type KXT the corner insulation block can be ordered separately.
- In the connection to the Schöck Isokorb® type EXT-CV50 a Schöck Isokorb® type KXT-CV50 is required. Accordingly, both a Schöck Isokorb® type KXT-CV35 or type KXT-CV50 can be arranged. The configuration of the reinforcement of the outer corner balcony can be simplified through the selection of a Schöck Isokorb® type KXT-CV50.

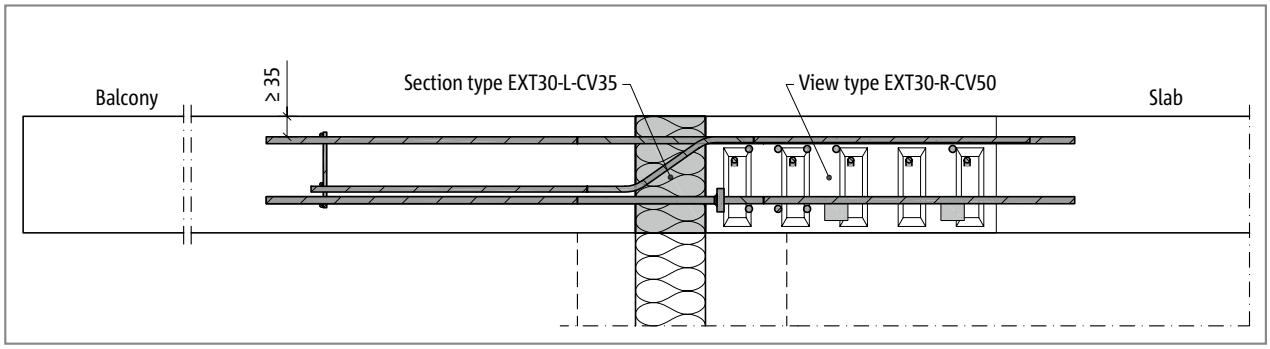
Installation cross sections



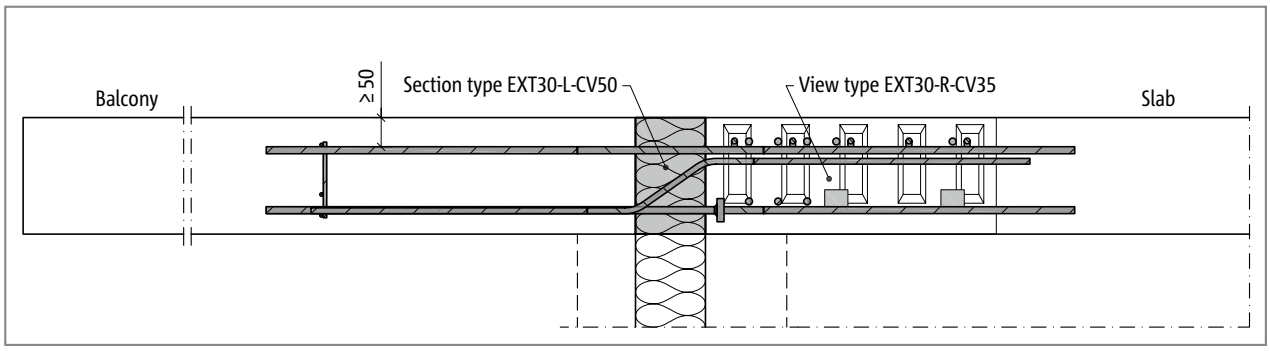
Schöck Isokorb® type EXT-CV35: Connection with non-load-bearing cavity walls



Schöck Isokorb® type EXT-CV50: Connection with non-load-bearing cavity walls



Schöck Isokorb® type EXT: Outer corner with non-load-bearing cavity walls (Section EXT-L-CV35; aspect EXT-R-CV50)



Schöck Isokorb® type EXT: Outer corner with non-load-bearing cavity walls (aspect EXT-L-CV35; Section EXT-R-CV50)

Product selection | Type designations | Special designs

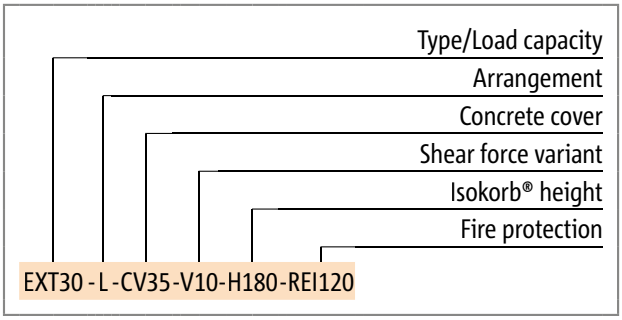
Schöck Isokorb® type EXT variants

An outer corner balcony is made using a Schöck Isokorb® type EXT-L, a type EXT-R and corner insulation block. The corner insulation block (corner DK) is supplied with each Schöck Isokorb® type EXT.

The configuration of the Schöck Isokorb® type EXT can be varied as follows:

- Load capacity:
  EXT30 and EXT50
- Arrangement:
  L: left from viewpoint on the floor
  R: right from viewpoint on the floor
- possible combination of arrangements of the Schöck Isokorb®type EXT and concrete covering of the tension bars CV:
  EXT-L-CV35 with EXT-R-CV50 and corner insulation block (corner DK)
  EXT-L-CV50 with EXT-R-CV35 and corner insulation block (corner DK)
- Shear force variant:
  Diameter of the shear force bars V10, V12
- Height:
  H = 180 - 250 mm for shear force load-bearing level V10
  H = 200 - 250 mm for shear force load-bearing level V12
- Fire resistance class:
  REI0 (Standard), REI120

Type designations in planning documents



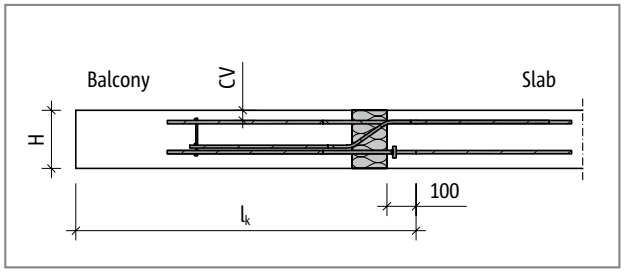
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

C25/30 design

Schöck Isokorb® type		EXT30-L, EXT30-R	EXT50-L, EXT50-R
Design values with	Concrete cover CV [mm]	Concrete strength class ≥ C25/30	
	CV35/CV50	$M_{Rd,y}$ [kNm/element]	
Isokorb® height H [mm]	180	-18.2	-23.4
	190	-20.4	-26.2
	200	-22.6	-29.0
	210	-24.7	-31.8
	220	-26.9	-34.7
	230	-29.1	-37.5
	240	-31.3	-40.3
	250	-33.5	-43.1
Shear force variant		$V_{Rd,z}$ [kN/element]	
	V10	97.9	97.9
	V12	141.0	141.0

Schöck Isokorb® type	EXT30-L, EXT30-R	EXT50-L, EXT50-R
Isokorb® length [mm]	500	500
Tension bars	5 ⌀ 12	6 ⌀ 12
Compression bars	3 ⌀ 12	3 ⌀ 12
Pressure bearing bars	2 ⌀ 12	3 ⌀ 14
Shear force bars V10	5 ⌀ 10	5 ⌀ 10
Shear force bars V12	5 ⌀ 12	5 ⌀ 12
H_{min} with V12 [mm]	200	200



Schöck Isokorb® type EXT: Static system

Notes on design

- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,max}$, whereby $V_{Rd,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\Theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- Mininimum height Schöck Isokorb® type EXT with V12: H_{min} = 200 mm
- The Schöck Isokorb® type EXT, with small cantilever lengths can also be replaced by Schöck Isokorb® type KXT.
- The indicative minimum concrete strength class of the external structural component is C32/40.
- Note FEM guidelines if a FEM program is to be used for design.

Deflection/Camber

Deflection

The deflection factors given in the table (tan α [%]) result alone from the deflection of the Schöck Isokorb® under 100% steel utilisation. They serve for the estimation of the required camber. The total arithmetic camber of the balcony slab formwork results from the calculation acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA plus the deflection from Schöck Isokorb®. The camber of the balcony slab formwork to be given by the structural engineer/designer in the implementation plans (Basis: Calculated total deflection from cantilever slab + floor rotation angle + Schöck Isokorb®) should be so rounded that the scheduled drainage direction is maintained (round up: with drainage to the building facade, round down: with drainage towards the cantilever slab end).

Deflection (p) as a result of Schöck Isokorb®

$p = \tan \alpha \cdot l_k \cdot (m_{pd} / m_{Rd}) \cdot 10$ [mm]

Factors to be applied

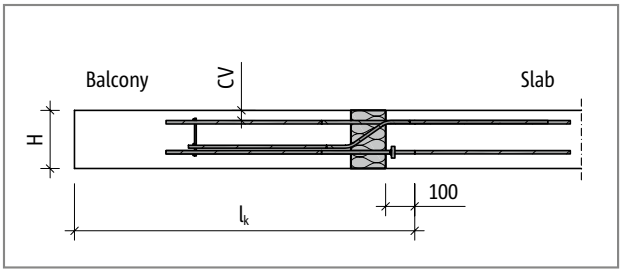
$\tan \alpha$ = apply table

l_k = cantilever length [m]

m_{pd} = relevant bending moment [kNm/m] in the ultimate limit state for the determination of the p [mm] from Schöck Isokorb®.
The load combination to be applied for the deflection is determined by the structural engineer.
(Recommendation: Load combination for the determination of the camber p : determine g+q/2, m_{pd} in the ultimate limit state)

m_{Rd} = maximum design moment [kNm/m] of the Schöck Isokorb®

Design example, see page 67



Schöck Isokorb® type EXT: Static system

Schöck Isokorb® type		EXT30-L, EXT30-R, EXT50-L, EXT50-R
Deflection factors when		tan α [%]
		CV35/CV50
Isokorb®-height H [mm]	180	1.2
	190	1.1
	200	1.0
	210	0.9
	220	0.8
	230	0.8
	240	0.7
	250	0.7

Slenderness

Slenderness

In order to safeguard the serviceability we recommend the limitation of the slenderness to the following maximum cantilever lengths max l_k [m]:

Schöck Isokorb® type		EXT30-L, EXT30-R, EXT50-L, EXT50-R
maximum cantilever length with		$l_{k,max}$ [m]
		CV35/CV50
Isokorb®-height H [mm]	180	1.89
	190	2.00
	200	2.12
	210	2.23
	220	2.34
	230	2.50
	240	2.65
	250	2.78

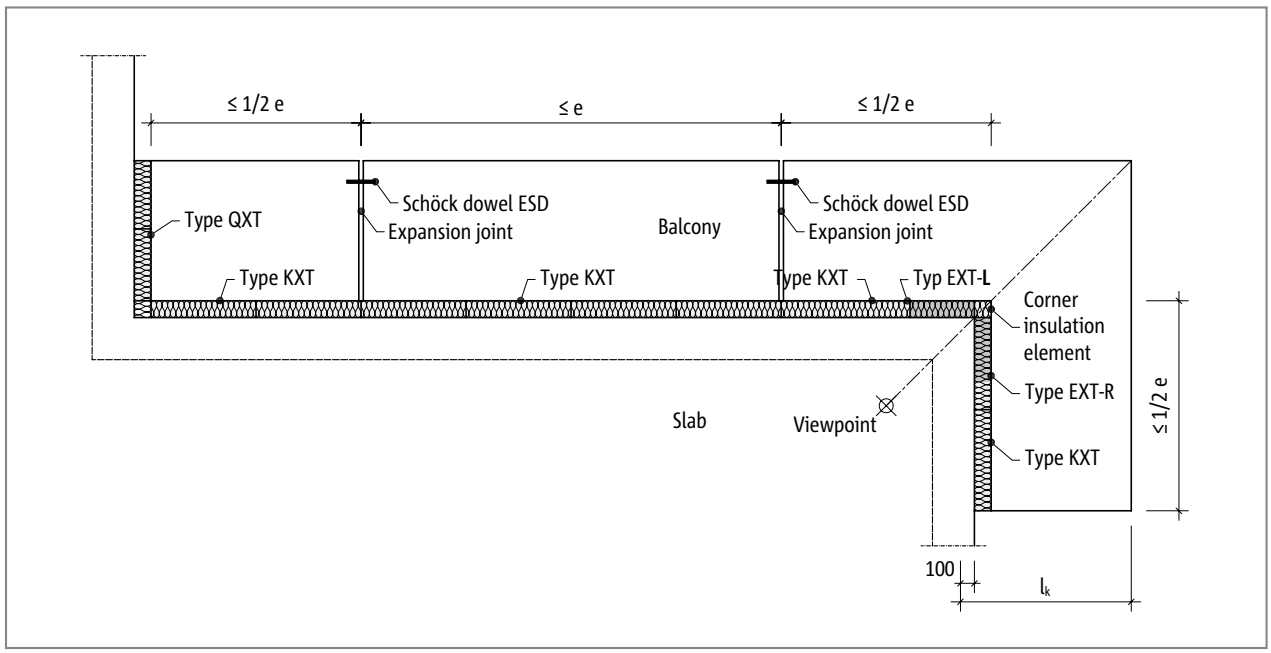
maximum cantilever length

- The maximum cantilever length, depending on the side length of the outer angle with the employment of the Schöck Isokorb® type EXT, can be limited by the load-bearing capacity.

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type EXT: Expansion joint arrangement

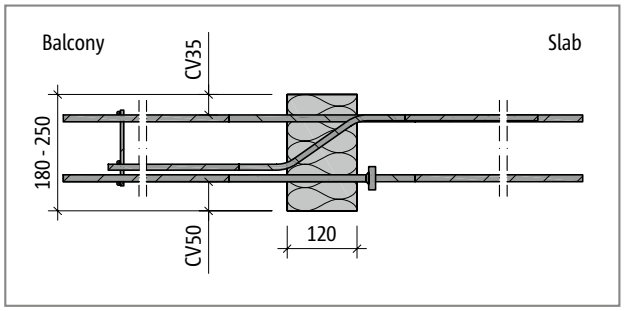
Schöck Isokorb® type		EXT30-L, EXT30-R, EXT50-L, EXT50-R
Maximum expansion joint spacing e		e [m]
Insulating element thickness [mm]	120	19.8

Edge distances

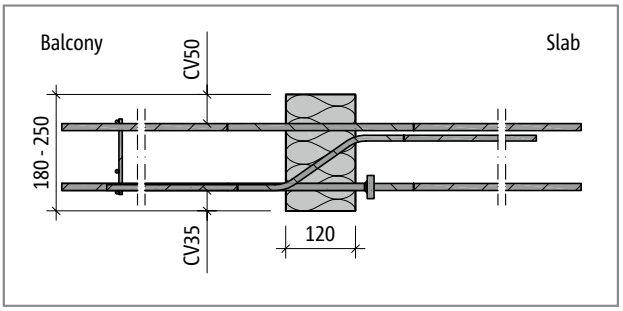
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the tension bars from the free edge or from the expansion joint: $e_R \geq 50$ mm and $e_R \leq 150$ mm applies.
- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

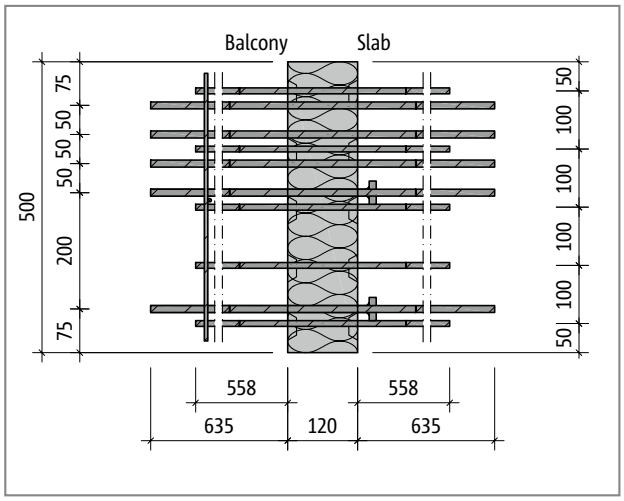
Product description



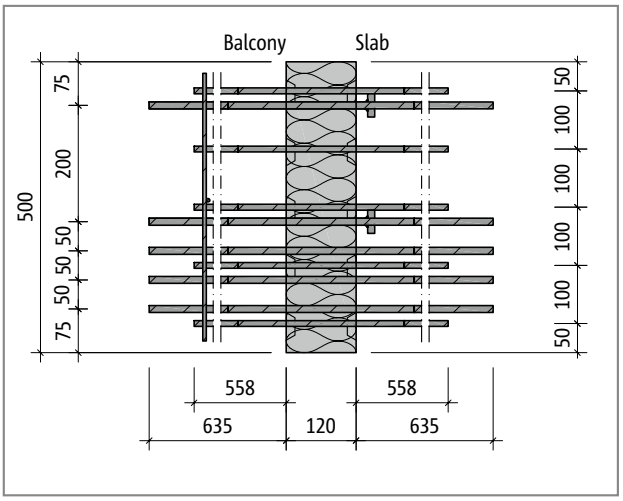
Schöck Isokorb® type EXT-L-CV35: Product section



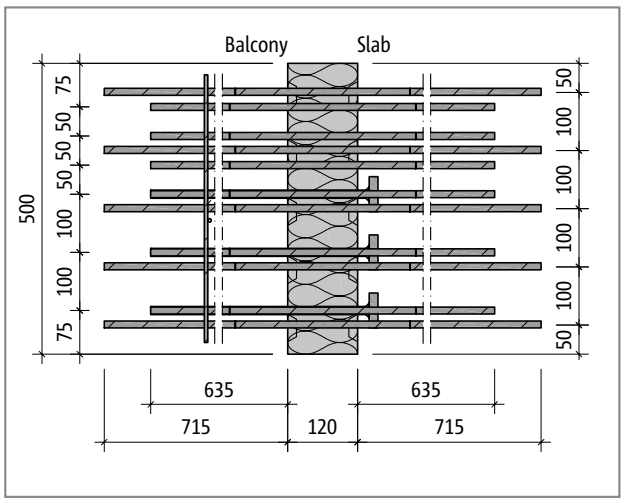
Schöck Isokorb® type EXT-L-CV50: Product section



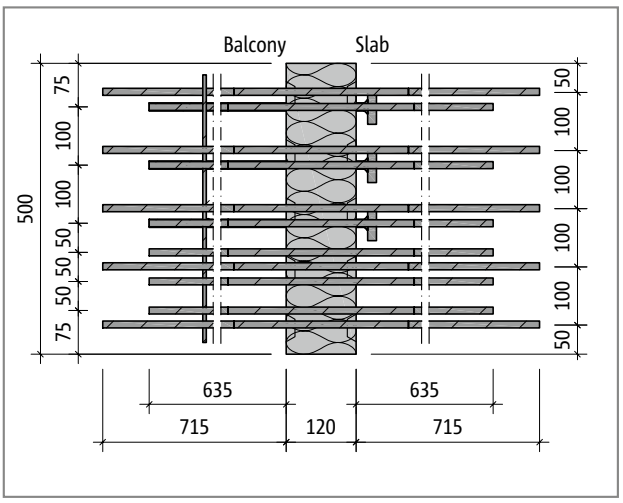
Schöck Isokorb® type EXT30-L-V10: Product plan view



Schöck Isokorb® type EXT30-R-V10: Product plan view



Schöck Isokorb® type EXT50-L-V12: Product plan view

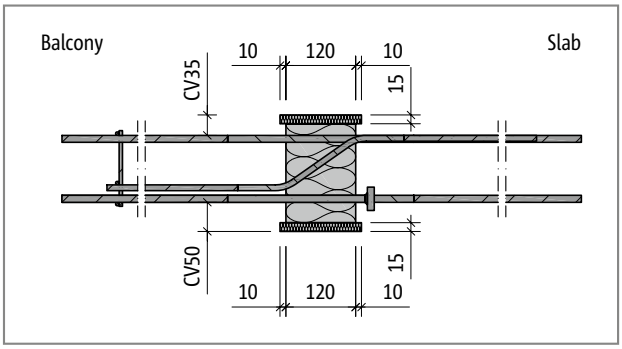


Schöck Isokorb® type EXT50-R-V12: Product plan view

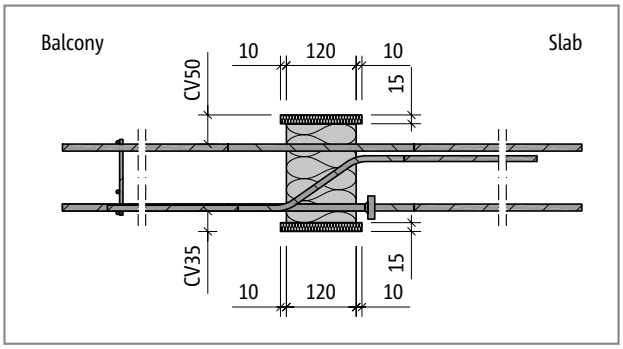
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- Mininimum height Schöck Isokorb® type EXT with V12: H_{min} = 200 mm
- Concrete cover of the tension bars: CV35 = 35 mm, CV50 = 50 mm
- The Schöck Isokorb® type EXT is also available as type EFXT variant for employment with element slabs.

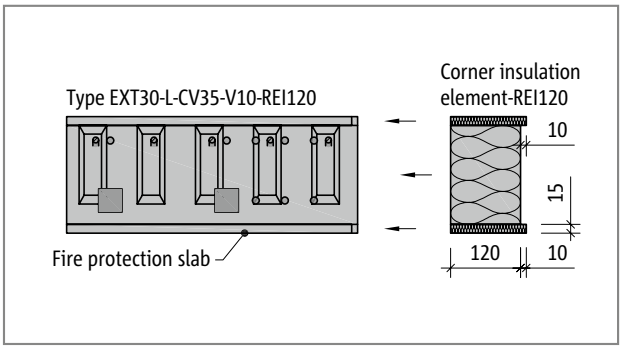
Fire protection configuration



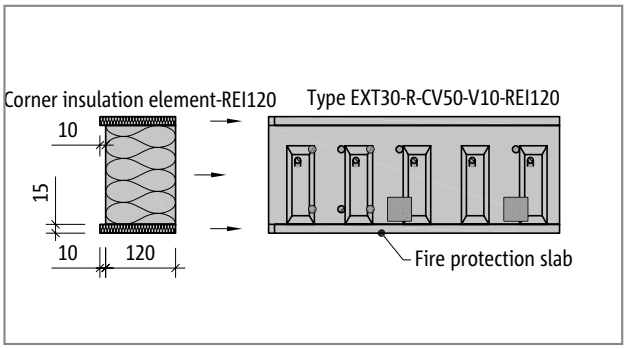
Schöck Isokorb® type EXT30-CV35 with REI120: Product section



Schöck Isokorb® type EXT30-CV50 with REI120: Product section



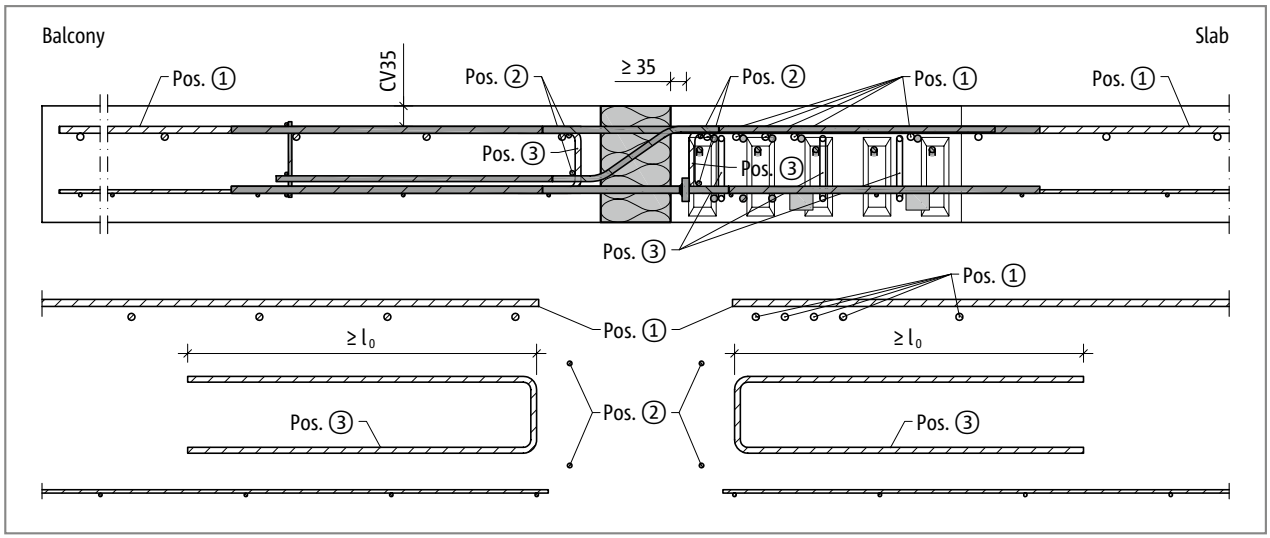
Schöck Isokorb® type EXT30-L-CV35 with REI120: Product view



Schöck Isokorb® type EXT30-R-CV50 with REI120: Product view

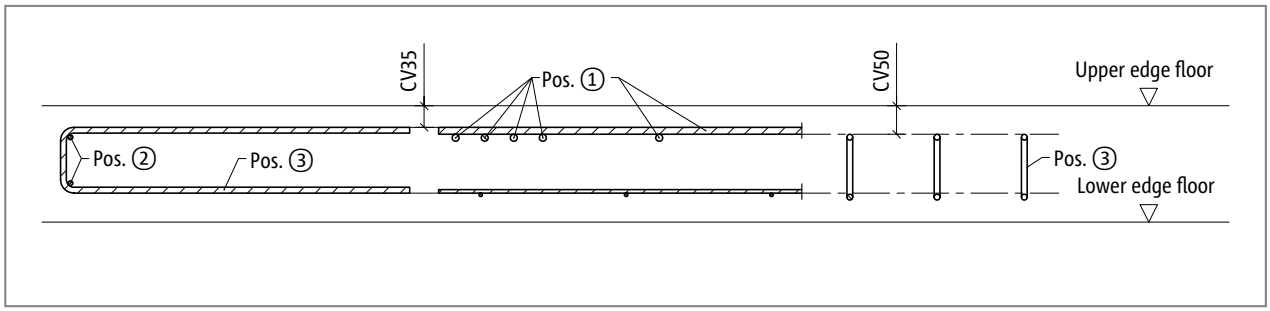
On-site reinforcement

Indirect support, outer corner balcony EXT-L-CV35



Schöck Isokorb® type EXT: On-site reinforcement outer corner section EXT-L-CV35, aspect EXT-R-CV50))

Indirect support, height of the on-site reinforcement in the corner with Schöck Isokorb® type EXT-L-CV35



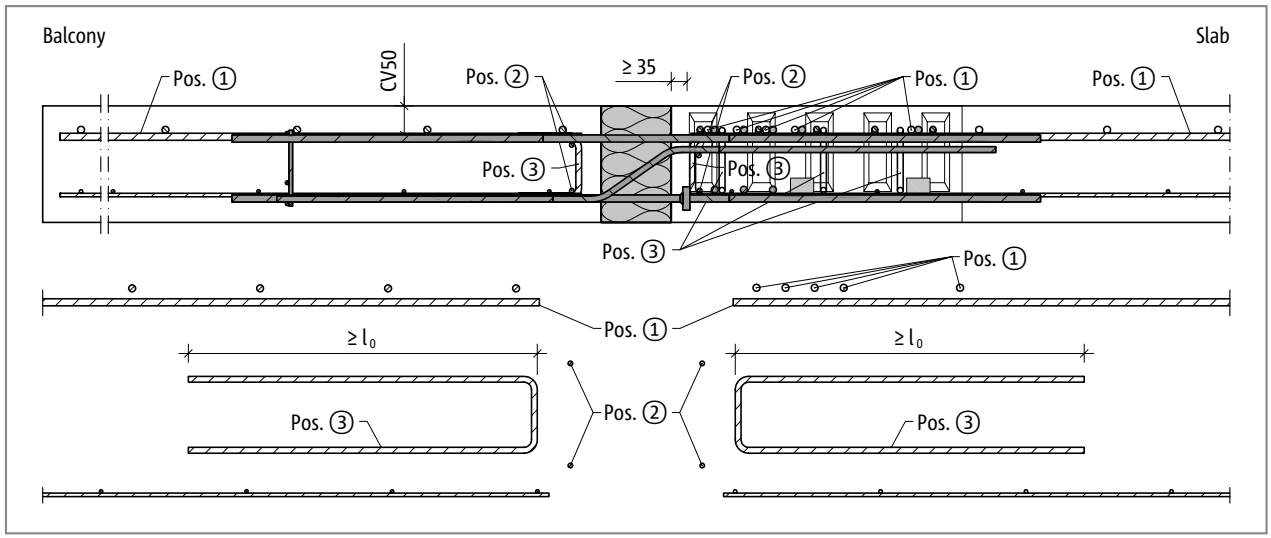
Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type	EXT30-V10	EXT30-V12	EXT50-V10	EXT50-V12
On-site reinforcement	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement				
Pos. 1 [mm²/Element]	565	565	678	678
Pos. 1 Variant	5 • H12	5 • H12	6 • H12	6 • H12
Pos. 2 Steel bars along the insulation joint				
Pos. 2	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Stirrup				
Pos. 3 [mm²/Element]	225	325	225	325
Pos. 3 Variant	3 • H10	5 • H10	3 • H10	5 • H10
Lap length l_0 [mm]	680	680	680	680

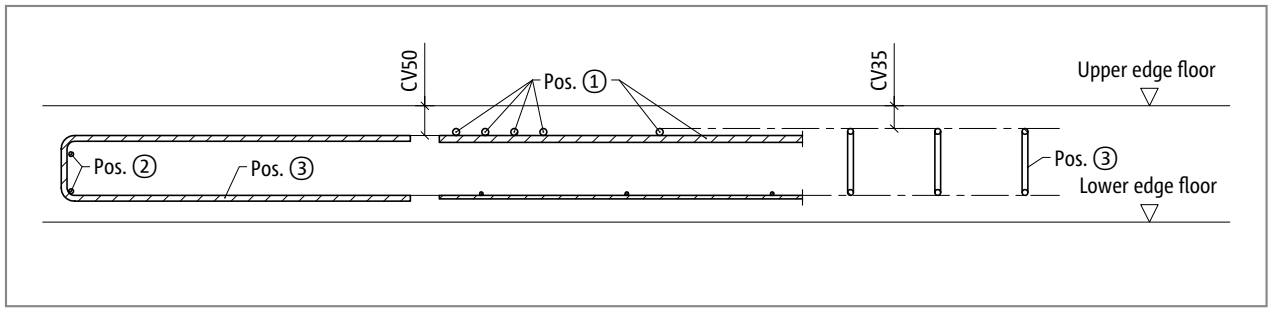
On-site reinforcement

Indirect support, outer corner balcony EXT-L-CV50



Schöck Isokorb® type EXT: On-site reinforcement outer corner (section EXT-L-CV50, aspect EXT-R-CV35)

Indirect support, height of the on-site reinforcement in the corner with Schöck Isokorb® type EXT-L-CV50



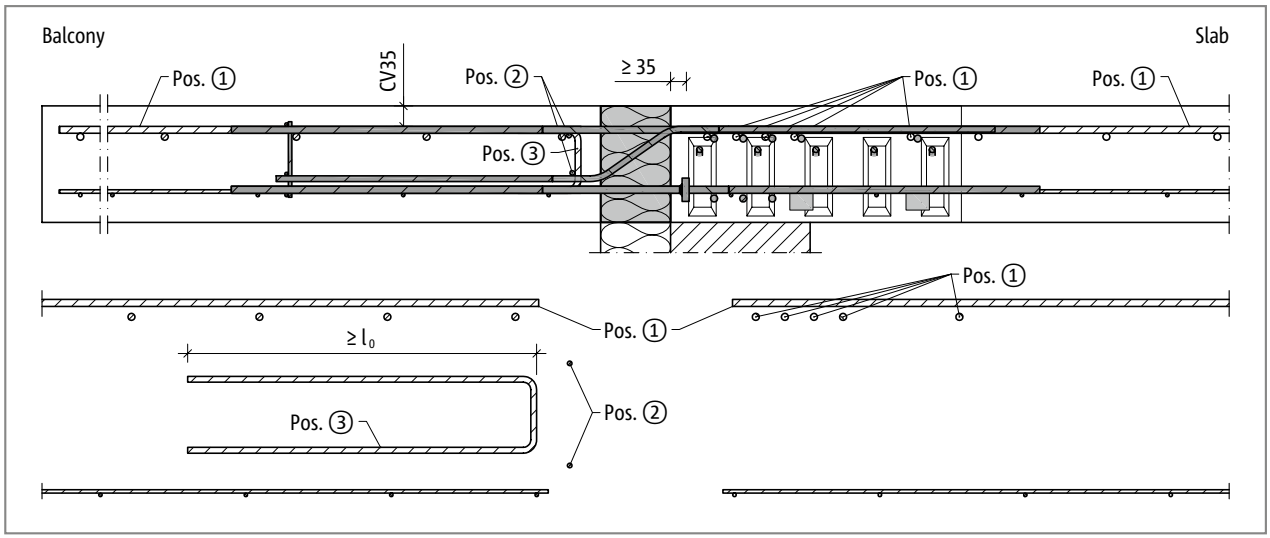
The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing inner slab reinforcement can be taken into account as long as the maximum separation to the tension bars of the Schöck Isokorb® of 4⌀ is maintained. Additional reinforcement may be required.

Information about on-site reinforcement

- Alternative connection reinforcement is possible. For the determination of the lap length the rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted.
- The indicative minimum concrete strength class of the external structural component is C32/40.

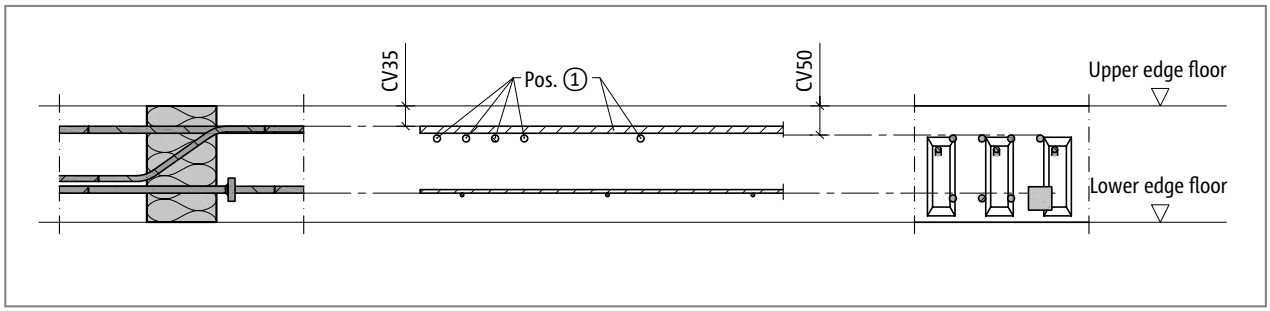
On-site reinforcement

Direct support, outer corner balcony EXT-L-CV35



Schöck Isokorb® type EXT: On-site reinforcement outer corner section EXT-L-CV35, aspect EXT-R-CV50))

Direct support, height of the on-site reinforcement in the corner with Schöck Isokorb® type EXT-L-CV35



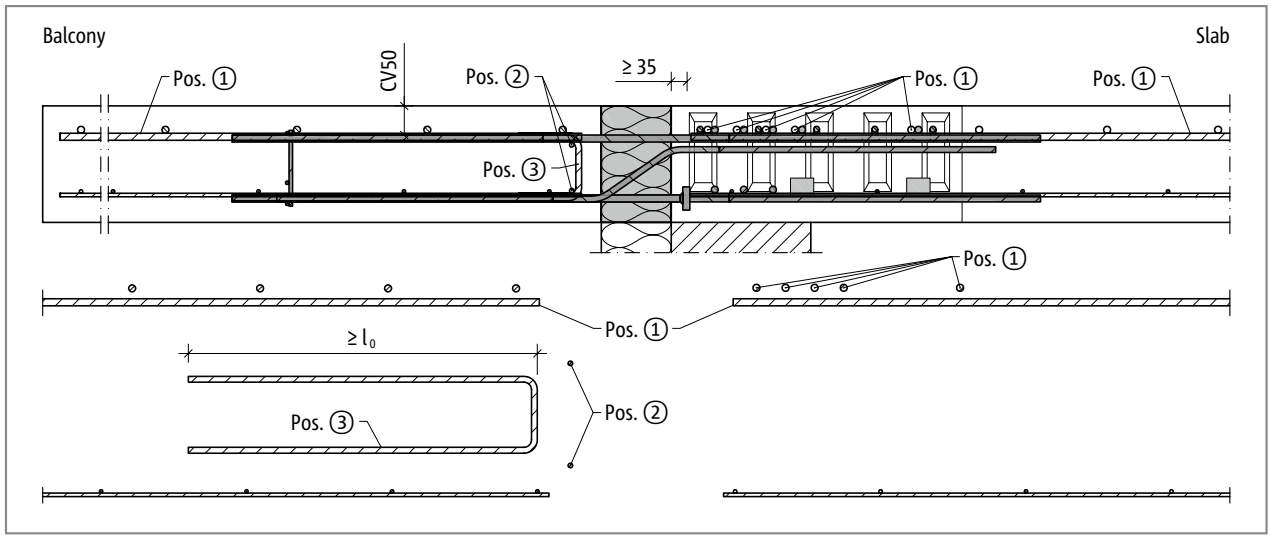
Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type	EXT30-V10	EXT30-V12	EXT50-V10	EXT50-V12
On-site reinforcement	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement				
Pos. 1 [mm²/Element]	565	565	678	678
Pos. 1 Variant	5 • H12	5 • H12	6 • H12	6 • H12
Pos. 2 Steel bars along the insulation joint				
Pos. 2	2 • H8	2 • H8	2 • H8	2 • H8
Pos. 3 Stirrup				
Pos. 3 [mm²/Element]	225	325	225	325
Pos. 3 Variant	3 • H10	5 • H10	3 • H10	5 • H10
Lap length l_0 [mm]	680	680	680	680

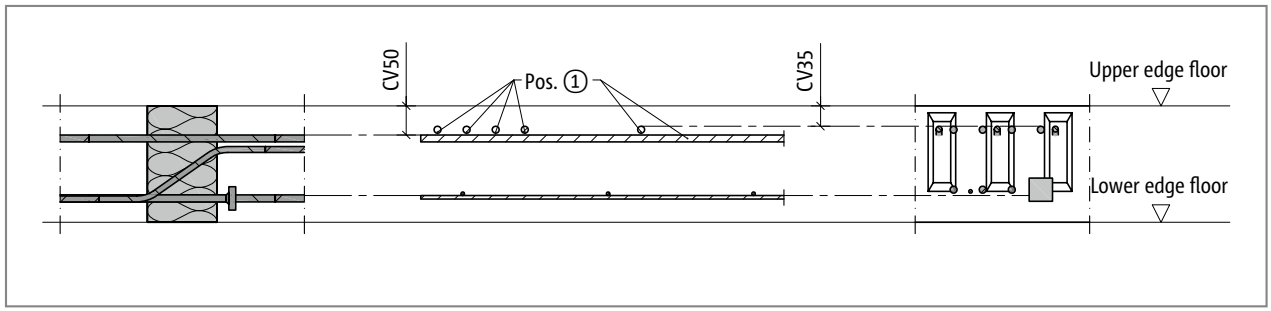
On-site reinforcement

Direct support, outer corner balcony EXT-L-CV50



Schöck Isokorb® type EXT: On-site reinforcement outer corner (section EXT-L-CV50, aspect EXT-R-CV35)

Direct support, height of the on-site reinforcement in the corner with Schöck Isokorb® type EXT-L-CV50

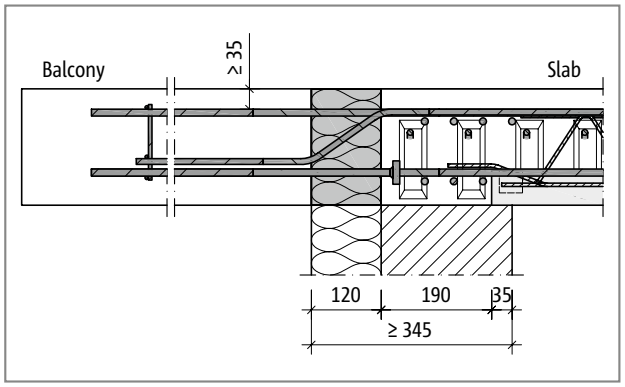


The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing inner slab reinforcement can be taken into account as long as the maximum separation to the tension bars of the Schöck Isokorb® of 4⌀ is maintained. Additional reinforcement may be required.

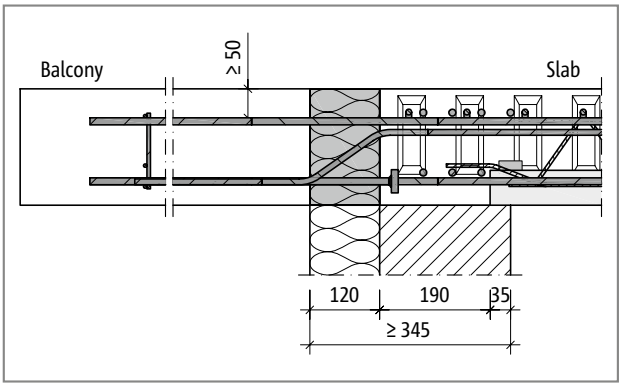
Information about on-site reinforcement

- Alternative connection reinforcement is possible. For the determination of the lap length the rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted.
- The indicative minimum concrete strength class of the external structural component is C32/40.

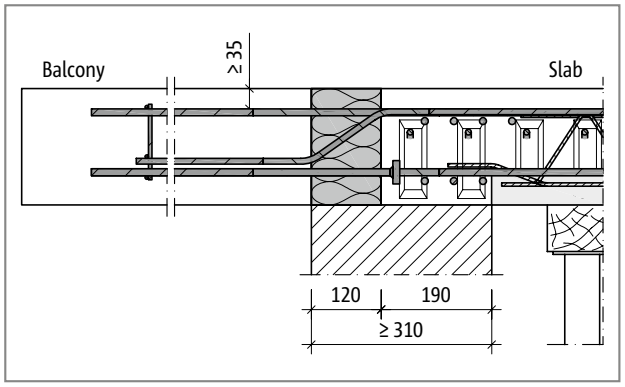
Precast construction



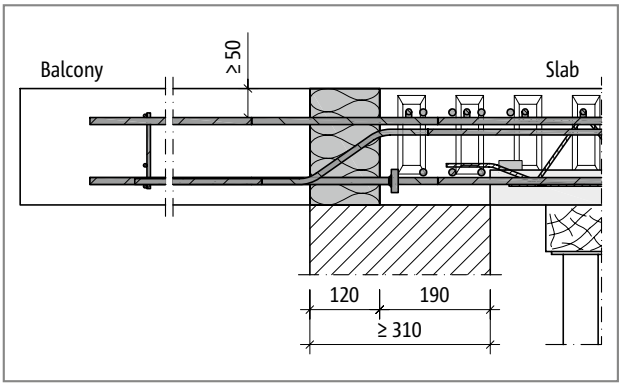
Schöck Isokorb® type EXT: Element slab without edge support witht EIFS (section EXT-L-CV35, view EXT-R-CV50)



Schöck Isokorb® type EXT: Element slab without edge support with EIFS (section EXT-R-CV50, view EXT-L-CV35))



Schöck Isokorb® type EXT: Element slab with edge support with heat-insulating masonry (section EXT-L-CV35, view EXT-R-CV50)

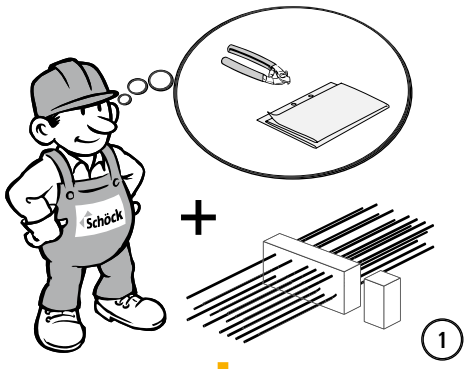


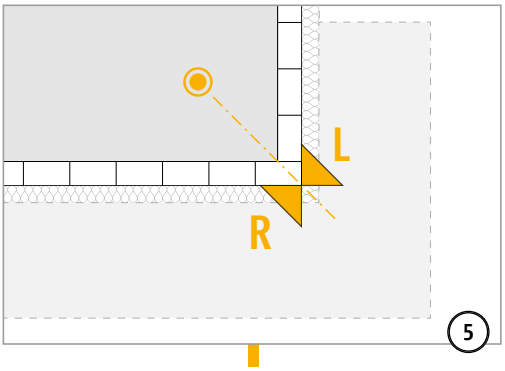
Schöck Isokorb® type EXT: Element slab with edge support with heat-insulating masonry (section EXT-R-CV50, view EXT-L-CV35)

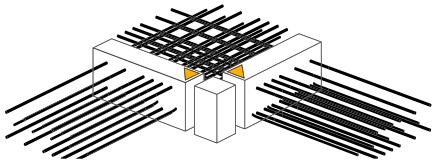
Precast construction

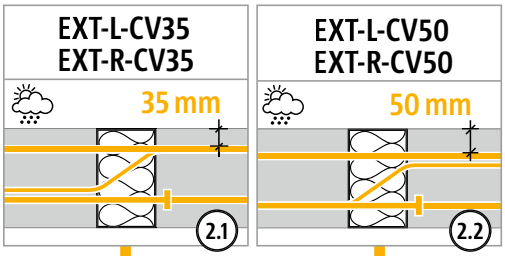
- The Schöck Isokorb® type EXT, in combination with element slabs, requires a block-out of at least 190 mm from the edge of the insulating block in the area of the compression bars.

Installation instructions - outer corner balcony









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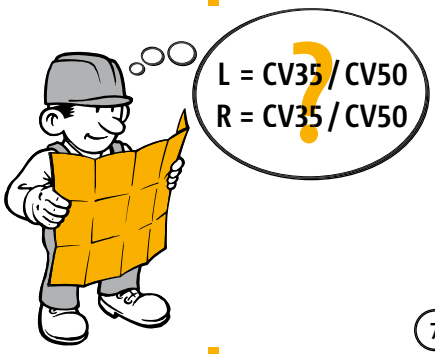

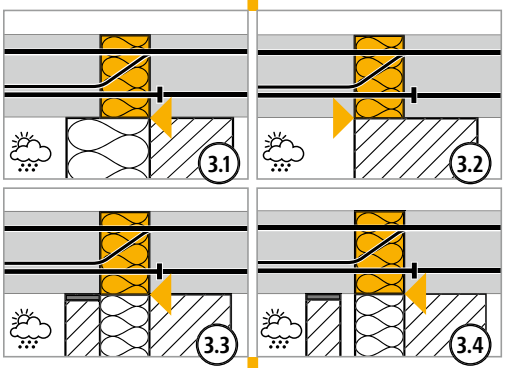

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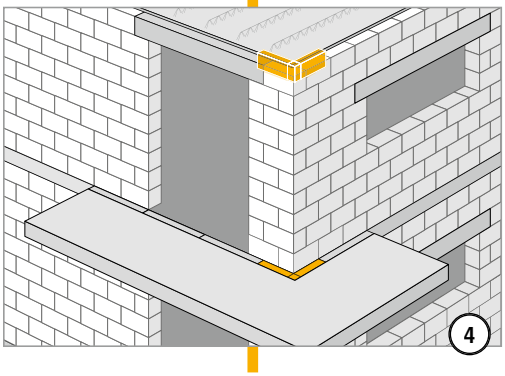
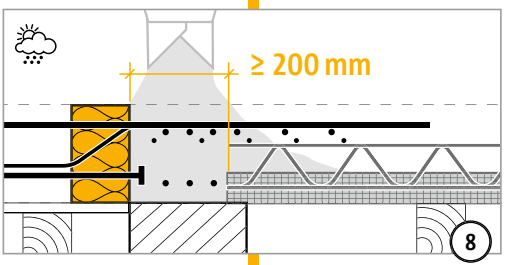
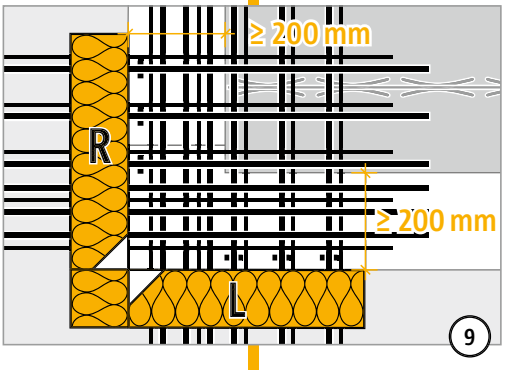
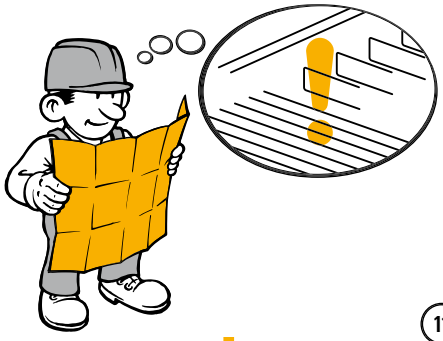
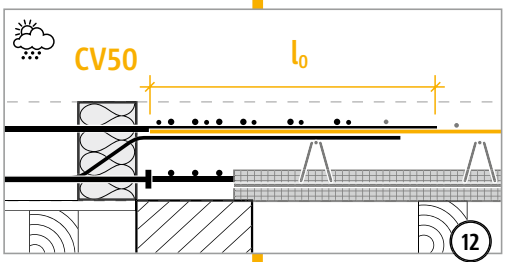


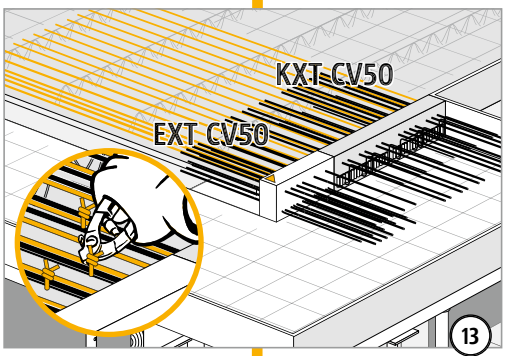


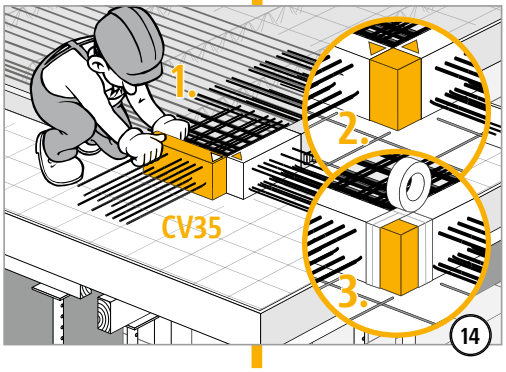


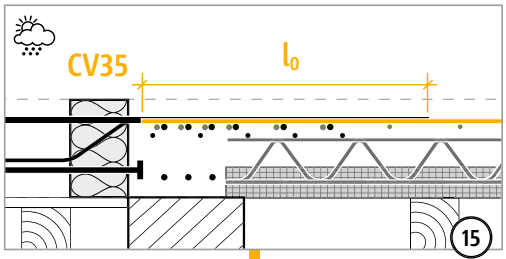
Installation instructions - outer corner balcony

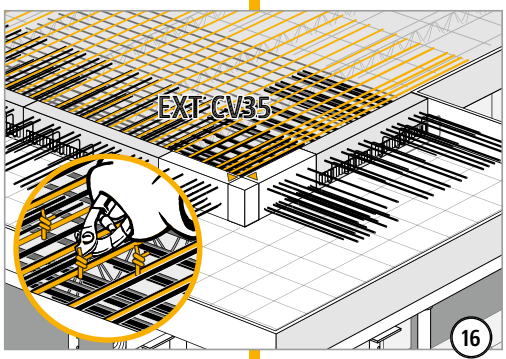


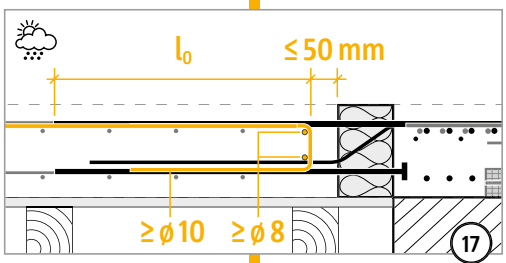


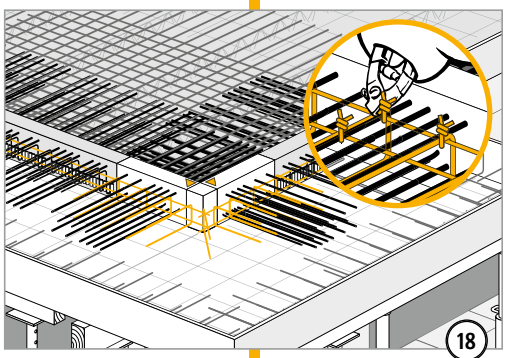


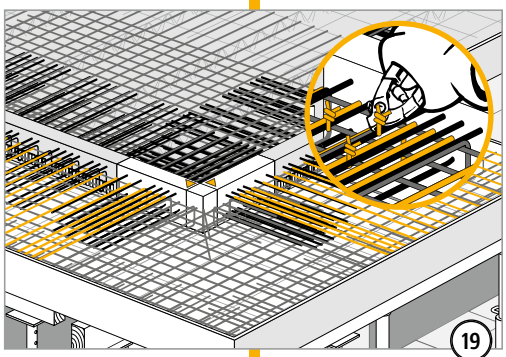




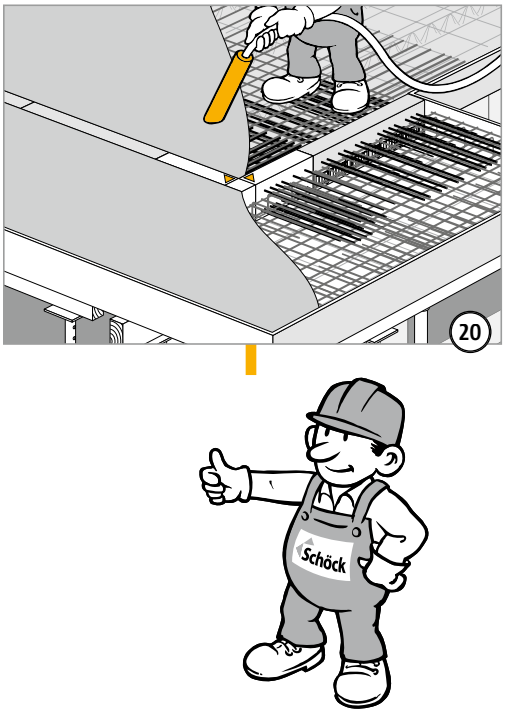




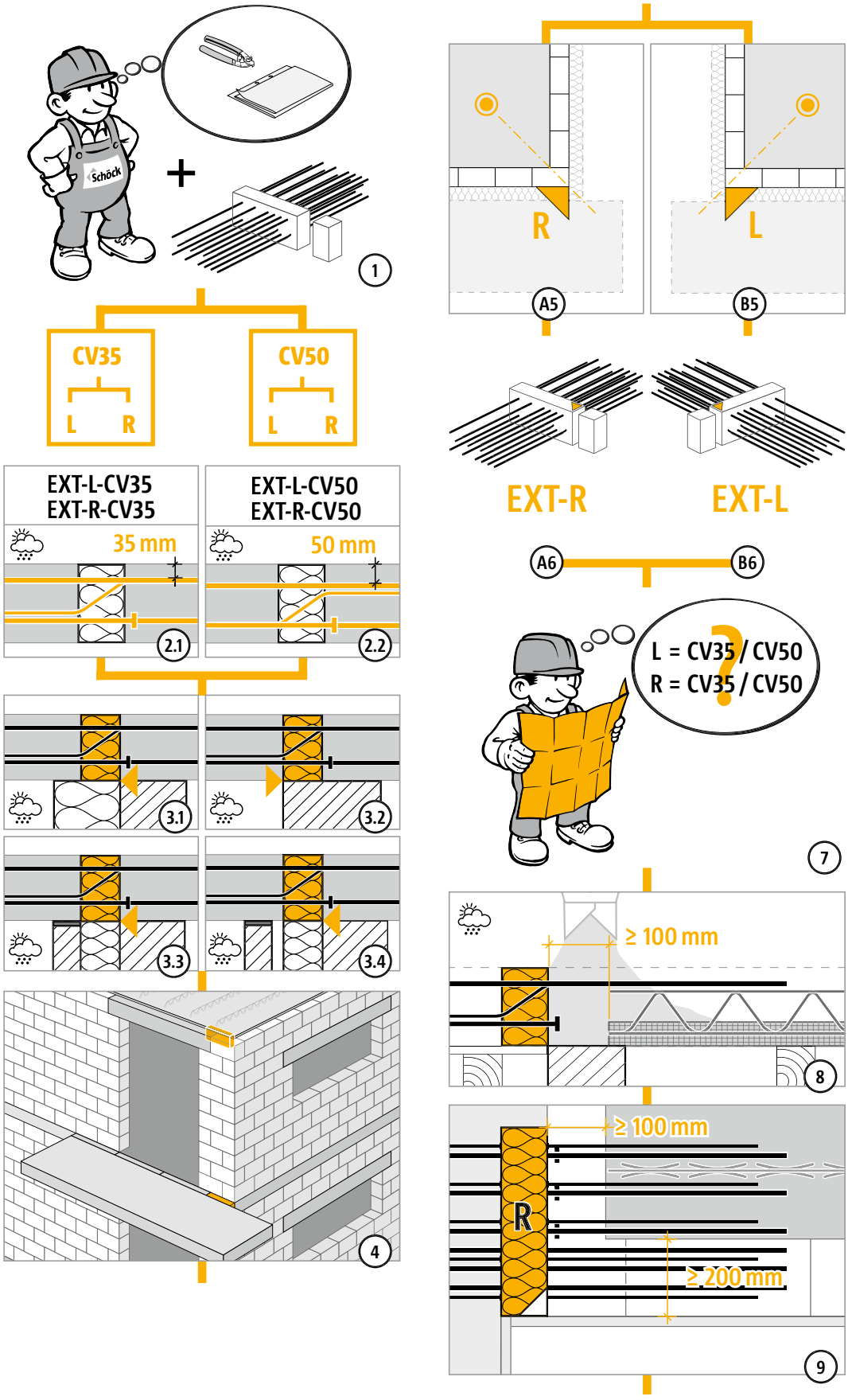




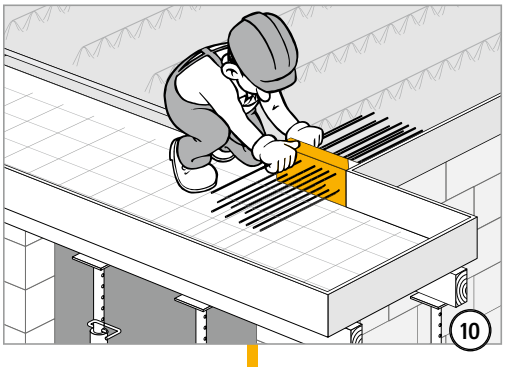
Installation instructions - outer corner balcony

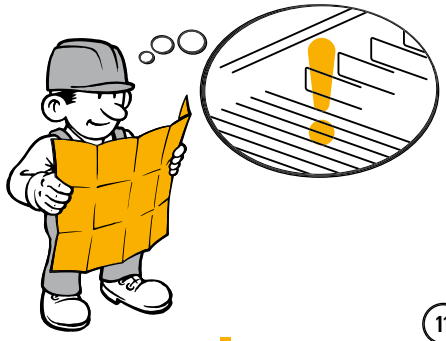


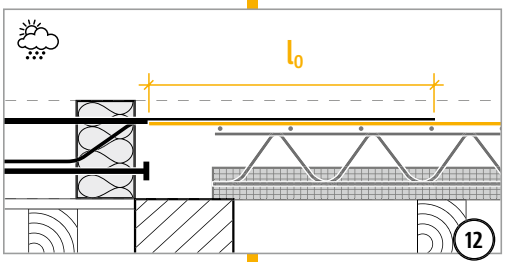
Installation instructions – balcony at the corner of the building, cantilevered laterally

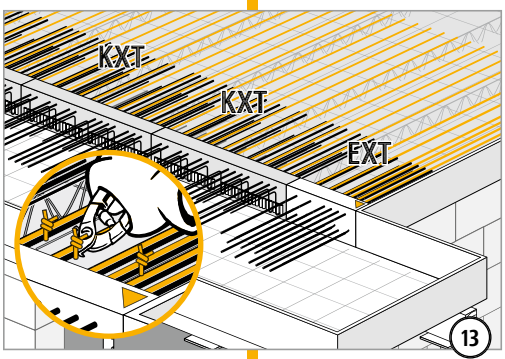


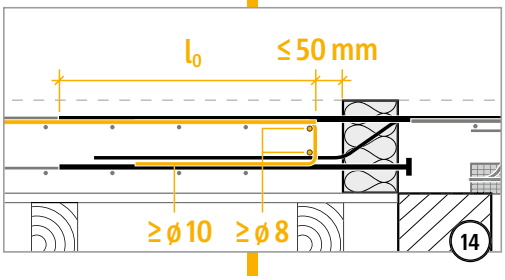
Installation instructions – balcony at the corner of the building, cantilevered laterally

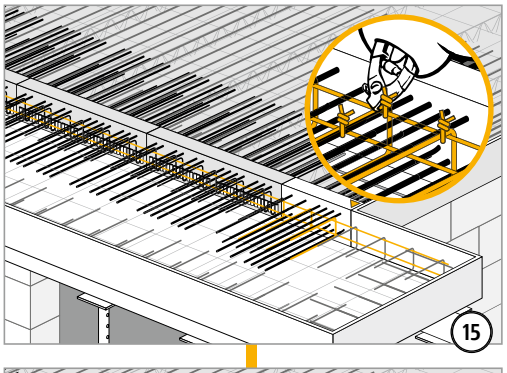


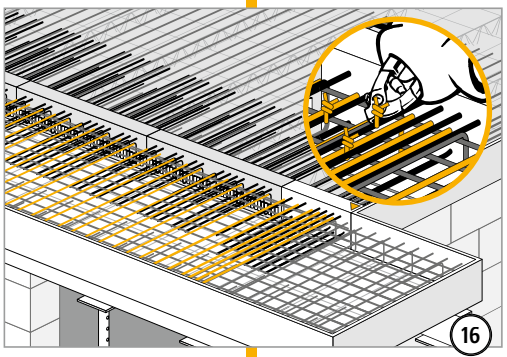


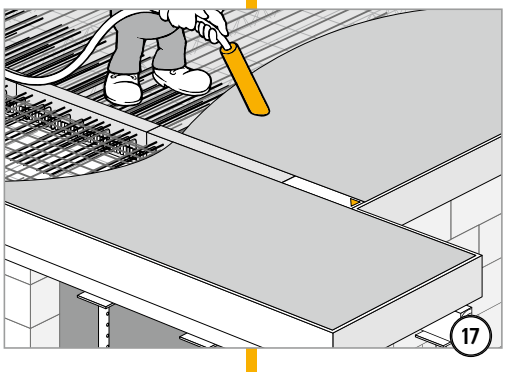








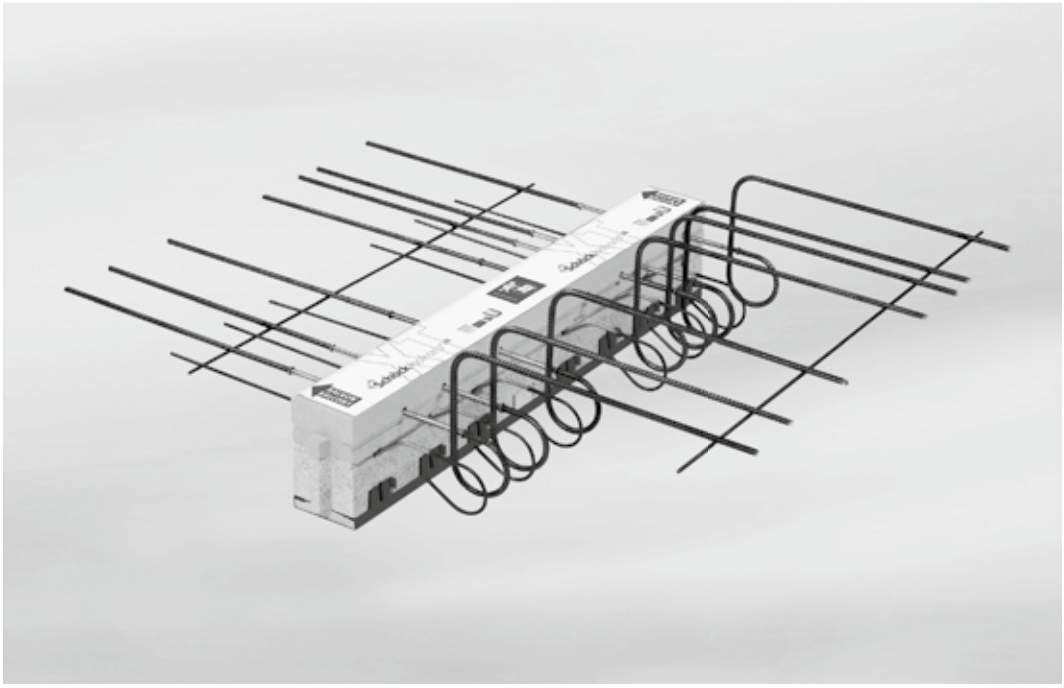




Check list

- ☐ Is the combination possiblity (EXT-R-CV35 and EXT-L-CV50 or vice versa) taken into account with the corner balcony? Is a Schöck Isokorb® type KXT-CV50 planned in the connection to the Schöck Isokorb®type EXT-L-CV50 or type EXT-R-CV50?
- ☐ Is the minimum slab thickness (H_{min} = 180 mm or with V12 H_{min} = 200 mm) of the Schöck Isokorb®type EXT taken into account ?
- ☐ Are the recommendations for the limitation of the slenderness observed?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Is the the in-situ concrete strip (width ≥ 190 mm from insulating block of the Schöck Isokorb® type EXT), required in combination with element floors, marked in the implementation plans?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Are the Schöck FEM guidelines taken into acount with the calculation using FEM?
- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ With the selection of the design table is the relevant concrete cover taken into account?
- ☐ Has the additional proportionate deflection resulting from the Schöck Isokorb® been taken into account?
- ☐ Is the drainage direction taken into account with the resulting camber information? Is the degree of camber entered in the working drawings?
- ☐ Are existing horizontal loads e.g. from wind pressure taken into account? Are additional Schöck Isokorb® supplementary type HPXT required for this?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ With precast balconies are possibly necessary gaps for the front side transportation anchors and downpipes with internal drainage taken into account? Is the maximum centre distance of 300 mm for the Isokorb® bars observed?
- ☐ Is, due to connection with height offset or to a wall, instead of Isokorb® type KXT the type KXT-HV, KXT-BH, KXT-WO, KXT-WU (from page 95) or even a special design necessary?)

Schöck Isokorb® type KXT-HV, KXT-BH, KXT-WO, KXT-WU



Schöck Isokorb® type KXT-HV

Schöck Isokorb® type KXT-HV
Suitable for cantilevered, lower lying balconies. The balcony lies lower than the floor slab. It transfers negative moments and positive shear forces.

Schöck Isokorb® type KXT-BH
Suitable for cantilevered, higher lying balconies. The balcony lies higher than the floor slab. It transfers negative moments and positive shear forces.

Schöck Isokorb® type KXT-WO
Suitable for cantilevered balconies, which are connected above to a reinforced concrete wall. It transfers negative moments and positive shear forces.

Schöck Isokorb® type KXT-WU
Suitable for cantilevered balconies, which are connected below to a reinforced concrete wall. It transfers negative moments and positive shear forces.

Lower lying balconies using Schöck Isokorb® type KXT

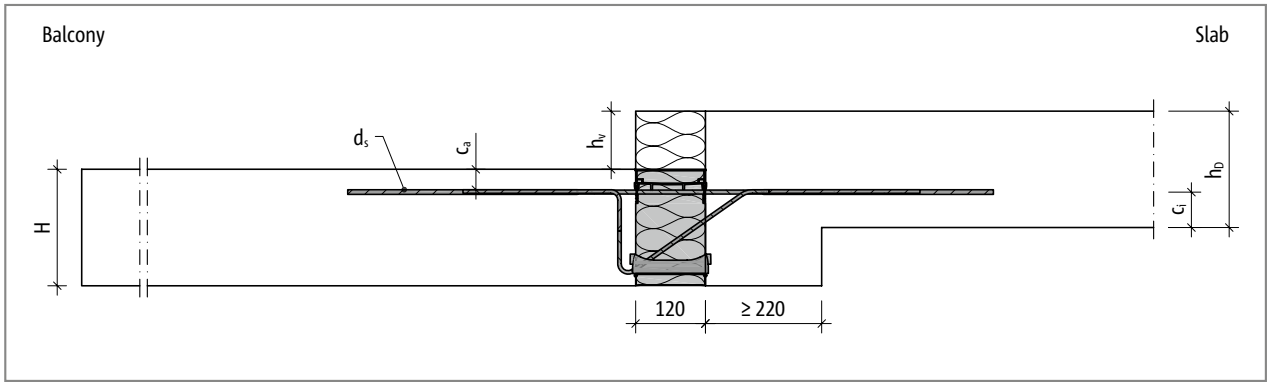
Height offset $h_V \leq h_D - c_a - d_s - c_i$

- If $h_V \leq h_D - c_a - d_s - c_i$ then the Schöck Isokorb® type KXT with straight tension bars can be selected.

h_V = height offset
h_D = slab thickness
c_a = concrete cover outer
d_s = diameter tension bar Isokorb
c_i = concrete cover inner
H = Isokorb-height

Example: Schöck Isokorb® type KXT50-CV35
h_D = 180 mm, c_a = 35 mm, d_s = 8 mm, c_i = 30 mm
max. h_V = 180 - 35 - 8 - 30 = 107 mm

- Recommendation: Downstand beam width at least 220 mm
- With floor-side arrangement of element slabs for c_i the element slab thickness + $\varnothing_S$ is to be applied.



Schöck Isokorb® type KXT: Smaller height offset downwards (balcony lies lower)

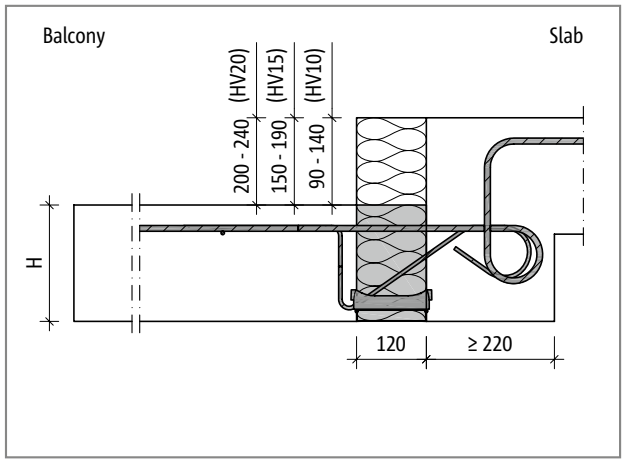
Height offset $h_V > h_D - c_a - d_s - c_i$

If the condition $h_V \leq h_D - c_a - d_s - c_i$ is not met the connection can be carried out using these variants:

- KXT-HV10-CV35 for height offset of 90 mm to 140 mm
- KXT-HV15-CV35 for height offset of 150 mm to 190 mm
- KXT-HV20-CV35 for height offset of 200 mm to 240 mm

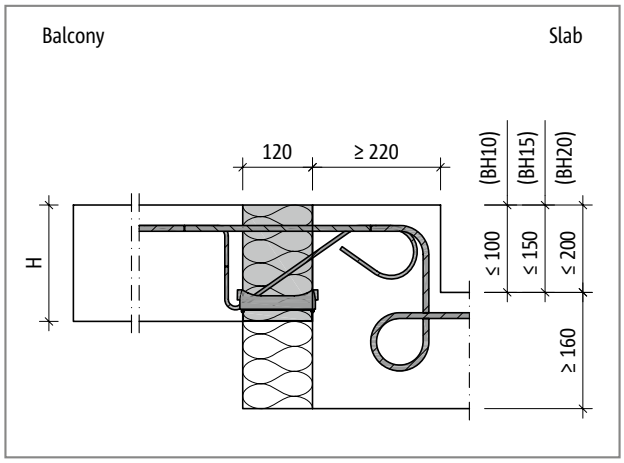
Installation cross sections

Lower lying balcony



Schöck Isokorb® type KXT-HV: Lower lying balcony and outer insulation

Higher lying balcony

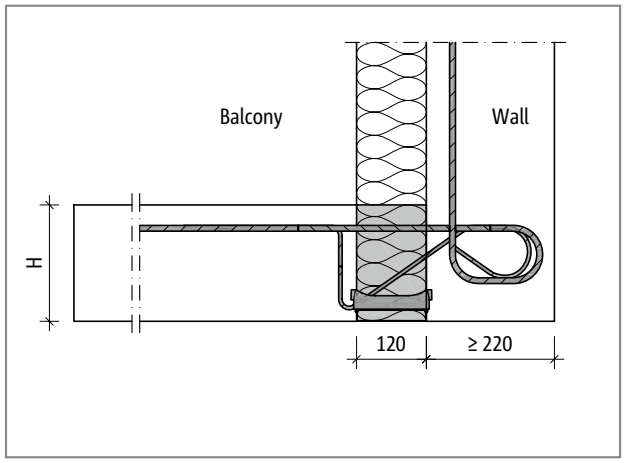


Schöck Isokorb® type KXT-BH: Higher lying balcony and outer insulation

Downstand/upstand beam width

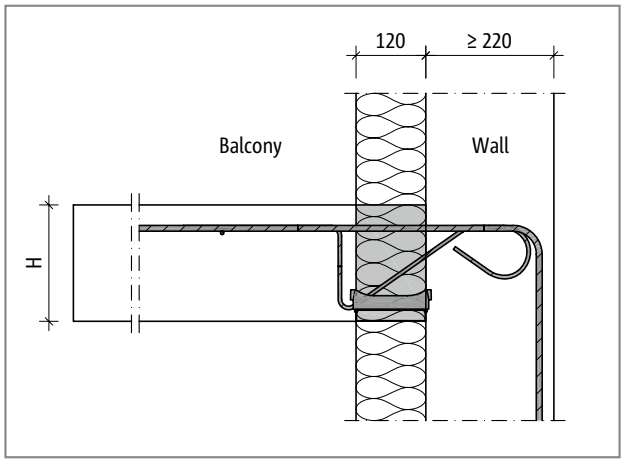
- at least 220 mm
- Special designs are also available for lower downstand/upstand beam widths.

Wall connection upwards



Schöck Isokorb® type KXT-WO: Wall connection upwards with outer insulation

Wall connection downwards



Schöck Isokorb® type KXT-WU: Wall connection downwards with outer insulation

Wall thickness

- at least 220 mm
- Special designs are also available for lower wall thicknesses.

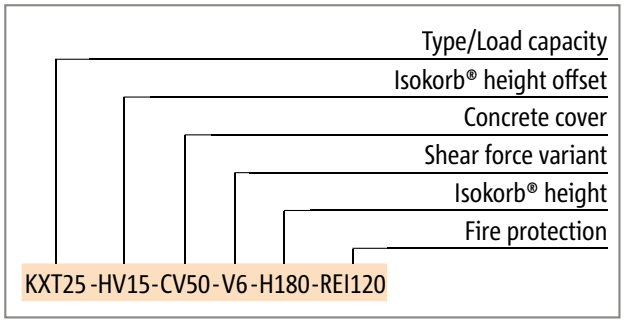
Product selection | Type designations | Special designs

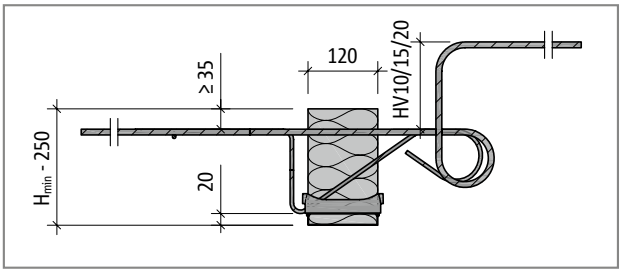
Schöck Isokorb® type KXT-HV variants

The configuration of the Schöck Isokorb® type KXT-HV can be varied as follows:

- Load capacity:
  KXT25-HV, KXT30-HV, KXT50-HV, KXT65-HV
- Connection geometry:
  HV10 = Isokorb® height offset: 90 - 140 mm
  HV15 = Isokorb® height offset: 150 - 190 mm
  HV20 = Isokorb® height offset: 200 - 240 mm
- Concrete cover of the tension bars::
  CV35 = 35 mm, CV50 = 50 mm (e.g.: KXT50-HV15-CV35-V6-H200)
- Shear force variant:
  Number and diameter of the shear force bars V6, V8 bei KXT65-... available
- Fire resistance class: R0 (Standard), REI120

Type designations in planning documents





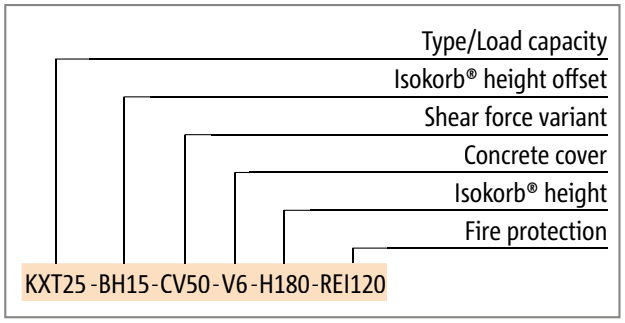
Schöck Isokorb® type KXT-HV15: Product section

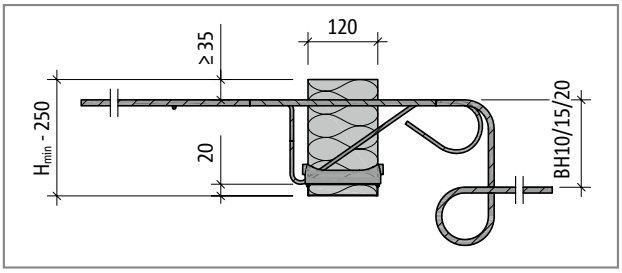
Schöck Isokorb® type KXT-BH variants

The configuraton of the Schöck Isokorb® type KXT-BH can be varied as follows:

- Load capacity:
  KXT25-BH, KXT30-BH, KXT50-BH, KXT65-BH
- Connection geometry:
  BH10 = Isokorb® height offset: ≤ 100 mm
  BH15 = Isokorb® height offset: ≤ 150 mm
  BH20 = Isokorb® height offset: ≤ 200 mm
- Concrete cover of the tension bars::
  CV35 = 35 mm, CV50 = 50 mm (e.g.: KXT50-BH15-CV35-V6-H200)
- Shear force variant:
  Number and diameter of the shear force bars V6, V8 bei KXT65-... available
- Fire resistance class: R0 (Standard), REI120

Type designations in planning documents





Schöck Isokorb® type KXT-BH15: Product section

Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

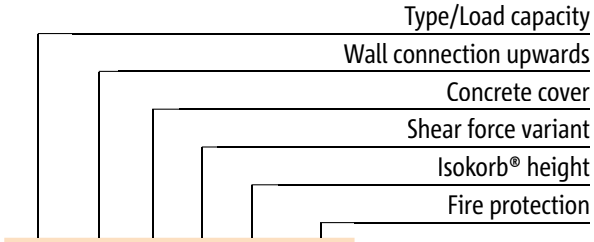
Product selection | Type designations | Special designs

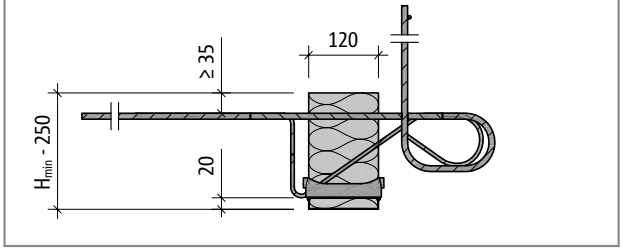
Schöck Isokorb® type KXT-WO variants

The configuration of the Schöck Isokorb® type KXT-WO can be varied as follows:

- Load capacity:
  KXT25-WO, KXT30-WO, KXT50-WO, KXT65-WO
- Connection geometry:
  WO = connection to a wall upwards
- Concrete cover of the tension bars::
  CV35 = 35 mm, CV50 = 50 mm (e.g.: KXT50-WO-CV35-V6-H200)
- Shear force variant:
  Number and diameter of the shear force bars V6, V8 bei KXT65-... available
- Fire resistance class:
  R0 (Standard), REI120

Type designations in planning documents





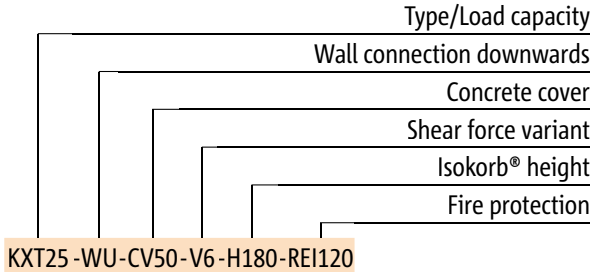
Schöck Isokorb® type KXT-WO: Product section

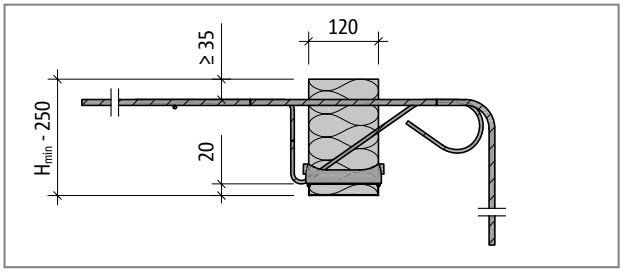
Schöck Isokorb® type KXT-WU variants

The configuration of the Schöck Isokorb® type KXT-WU can be varied as follows:

- Load capacity:
  KXT25-WU, KXT30-WU, KXT50-WU, KXT65-WU
- Connection geometry:
  WU = connection to a wall downwards
- Concrete cover of the tension bars::
  CV35 = 35 mm, CV50 = 50 mm (e.g.: KXT50-WU-CV35-V6-H200)
- Shear force variant:
  Number and diameter of the shear force bars V6, V8 bei KXT65-... available
- Fire resistance class:
  R0 (Standard), REI120

Type designations in planning documents





Schöck Isokorb® type KXT-WU: Product section

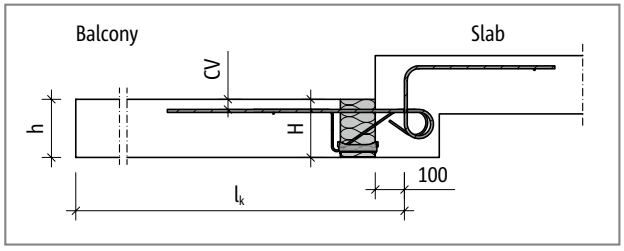
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

C25/30 design

Schöck Isokorb® type			KXT25-HV10/15/20 KXT25-BH10/15/20 KXT25-WO KXT25-WU	KXT30-HV10/15/20 KXT30-BH10/15/20 KXT30-WO KXT30-WU	KXT50-HV10/15/20 KXT50-BH10/15/20 KXT50-WO KXT50-WU	KXT65-HV10/15/20 KXT65-BH10/15/20 KXT65-WO KXT65-WU
Design values with	Concrete cover CV [mm]		Concrete strength class ≥ C25/30			
	CV35	CV50	$m_{Rd,y}$ [kNm/m]			
Isokorb® height H [mm]	160		-14.7	-20.6	-28.0	-36.4
		180	-15.6	-21.8	-29.7	-38.6
	170		-16.4	-23.0	-31.4	-40.8
		190	-17.2	-24.1	-33.1	-43.1
	180		-18.1	-25.3	-34.8	-45.3
		200	-18.9	-26.5	-36.5	-47.5
	190		-19.8	-27.7	-38.3	-49.7
		210	-20.6	-28.9	-40.0	-51.9
	200		-21.5	-30.1	-41.7	-54.2
		220	-22.3	-31.2	-43.4	-56.4
	210		-23.2	-32.4	-45.1	-58.6
		230	-24.0	-33.6	-46.8	-60.8
	220		-24.8	-34.8	-48.5	-63.0
		240	-25.7	-36.0	-50.2	-65.3
	230		-26.5	-37.2	-51.9	-67.5
		250	-27.4	-38.3	-53.6	-69.7
	240		-28.2	-39.5	-55.3	-71.9
	250		-29.9	-41.9	-58.7	-76.4
Shear force variant			$v_{Rd,z}$ [kN/m]			
	V6		28.2	42.3	42.3	56.7
	V8		-	-	-	66.2

Schöck Isokorb® type	KXT25-HV10/15/20 KXT25-BH10/15/20 KXT25-WO KXT25-WU	KXT30-HV10/15/20 KXT30-BH10/15/20 KXT30-WO KXT30-WU	KXT50-HV10/15/20 KXT50-BH10/15/20 KXT50-WO KXT50-WU	KXT65-HV10/15/20 KXT65-BH10/15/20 KXT65-WO KXT65-WU
Isokorb® length [mm]	1000	1000	1000	1000
Tension bars	5 ⌀ 10	7 ⌀ 10	10 ⌀ 10	13 ⌀ 10
Shear force bars V6	4 ⌀ 6	6 ⌀ 6	6 ⌀ 6	6 ⌀ 8
Shear force bars V8	-	-	-	7 ⌀ 8
Pressure bearing (pce)	5	7	8	12
Special stirrup (pce)	-	-	-	4



Schöck Isokorb® type KXT-HV: Static system

C25/30 design

Notes on design

- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,\,max}$, whereby $V_{Rd,\,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\Theta = 45\,°$ and $\alpha = 90\,°$ (slab load-bearing capacity).
- With CV50, H = 180 mm is the lowest Isokorb® height, this requires a minimum slab thickness of h = 180 mm.
- The indicative minimum concrete strength class of the external structural component is C32/40.
- Note FEM guidelines if a FEM program is to be used for design.

Deflection/Camber

Deflection

The deflection factors given in the table (tan α [%]) result alone from the deflection of the Schöck Isokorb® under 100% steel utilisation. They serve for the estimation of the required camber. The total arithmetic camber of the balcony slab formwork results from the calculation acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA plus the deflection from Schöck Isokorb®. The camber of the balcony slab formwork to be given by the structural engineer/designer in the implementation plans (Basis: Calculated total deflection from cantilever slab + floor rotation angle + Schöck Isokorb®) should be so rounded that the scheduled drainage direction is maintained (round up: with drainage to the building facade, round down: with drainage towards the cantilever slab end).

Deflection (p) as a result of Schöck Isokorb®

$p = \tan \alpha \cdot l_k \cdot (m_{pd} / m_{Rd}) \cdot 10$ [mm]

Factors to be applied

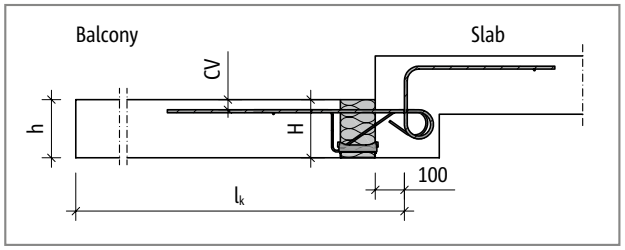
$\tan \alpha$ = apply table

l_k = cantilever length [m]

m_{pd} = relevant bending moment [kNm/m] in the ultimate limit state for the determination of the p [mm] from Schöck Isokorb®.
The load combination to be applied for the deflection is determined by the structural engineer.
(Recommendation: Load combination for the determination of the camber p : determine g+q/2, m_{pd} in the ultimate limit state)

m_{Rd} = maximum design moment [kNm/m] of the Schöck Isokorb®

Design example, see page 67



Schöck Isokorb® type KXT-HV: Static system

Schöck Isokorb® type		KXT-HV, -BH, -WO, -WU	
Deflection factors when		tan α [%]	
		CV35	CV50
Isokorb® height H [mm]	160	1.1	-
	170	1.0	-
	180	0.9	1.1
	190	0.8	1.0
	200	0.8	0.9
	210	0.7	0.8
	220	0.7	0.7
	230	0.6	0.7
	240	0.6	0.6
	250	0.6	0.6

Slenderness | Expansion joint spacing

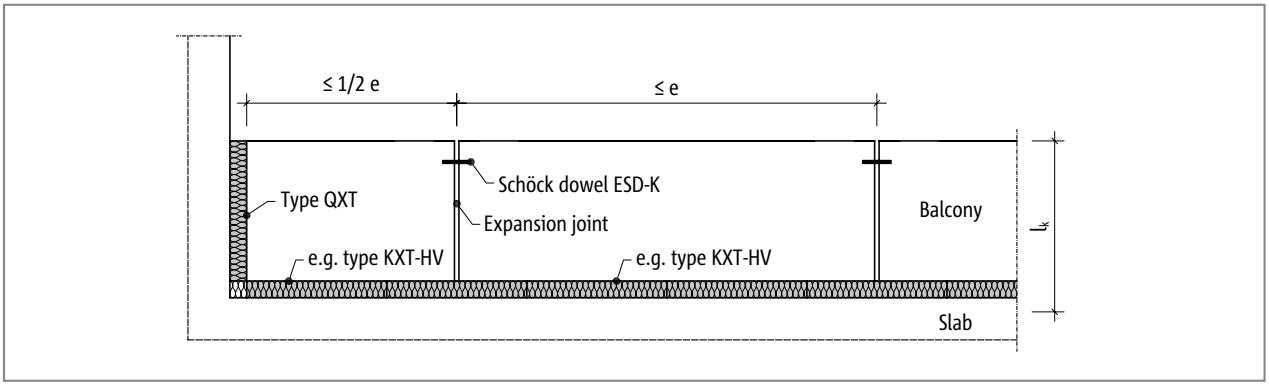
Slenderness

In order to safeguard the serviceability we recommend the limitation of the slenderness to the following maximum cantilever lengths max l_k [m]:

Schöck Isokorb® type		KXT-HV, -BH, -WO, -WU	
maximum cantilever length with		$l_{k,max}$ [m]	
		CV35	CV50
Isokorb® height H [mm]	160	1.65	-
	170	1.78	-
	180	1.90	1.70
	190	2.03	1.80
	200	2.15	1.90
	210	2.28	2.00
	220	2.40	2.10
	230	2.53	2.20
	240	2.65	2.30
	250	2.78	2.40

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type KXT-HV: Arrangement of expansion joints

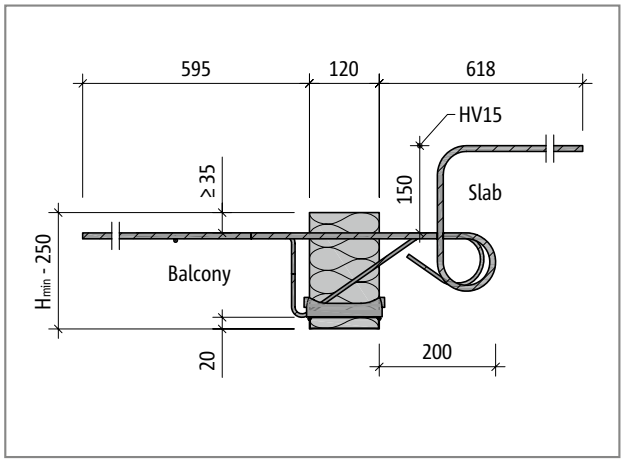
Schöck Isokorb® type		KXT-HV, -BH, -WO, -WU
Maximum expansion joint spacing e		e [m]
Insulating element thickness [mm]	120	21.7

Edge distances

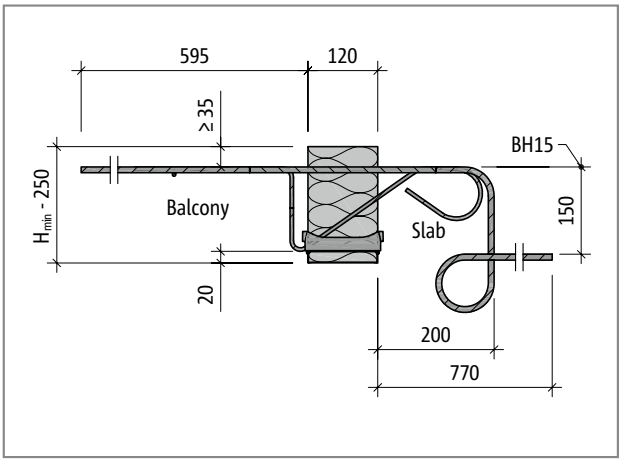
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the tension bars from the free edge or from the expansion joint: $e_R \geq 50$ mm and $e_R \leq 150$ mm applies.
- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

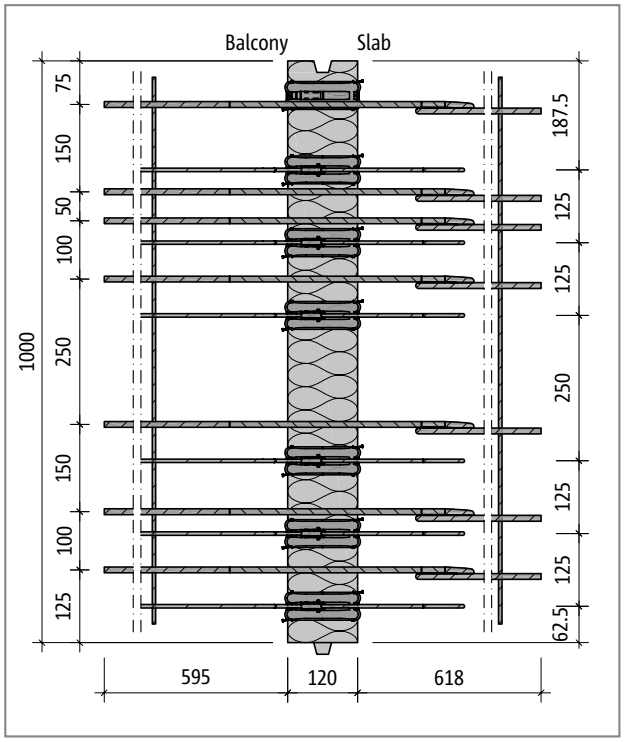
Product description



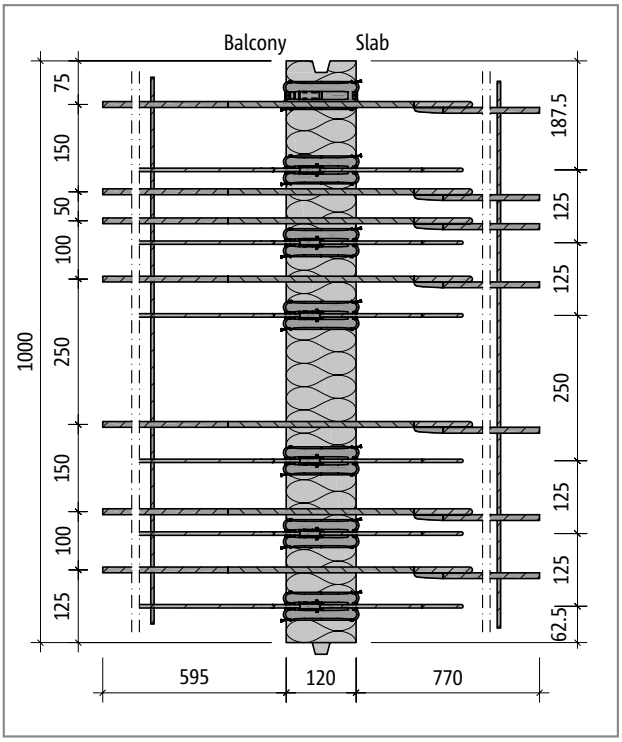
Schöck Isokorb® type KXT30-HV15: Product section



Schöck Isokorb® type KXT30-BH15: Product section



Schöck Isokorb® type KXT30-HV: Product plan view

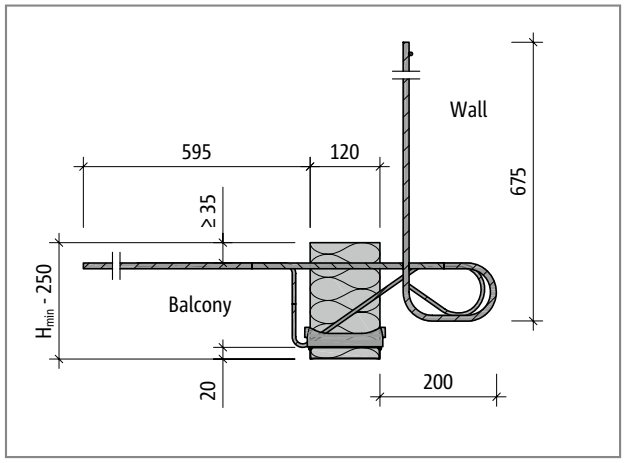


Schöck Isokorb® type KXT30-BH: Product plan view

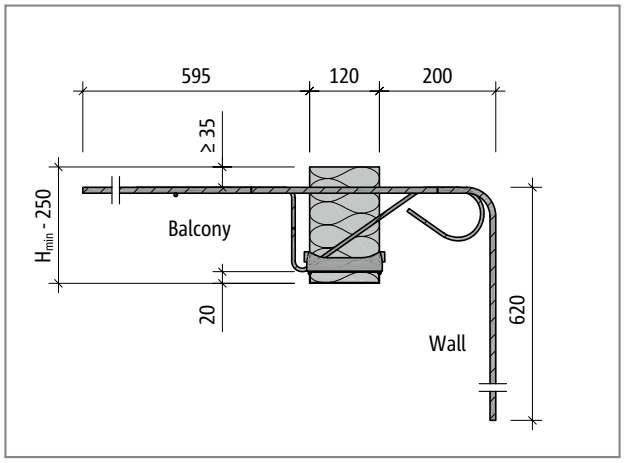
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- Minimum height Schöck Isokorb® type KXT-HV, -BH: H_{min} = 160 mm
- On-site dividing of the Schöck Isokorb® Type KXT-HV, -BH on the unreinforced positions possible; take into account the load-bearing capacity reduced due to the dividing; take into account required edge distances
- Concrete cover of the tension bars: CV35 = 35 mm, CV50 = 50 mm

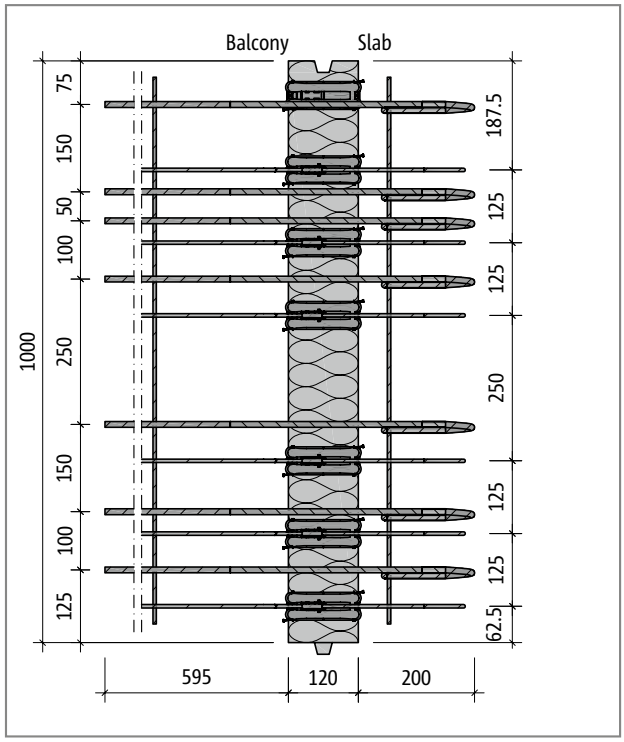
Product description



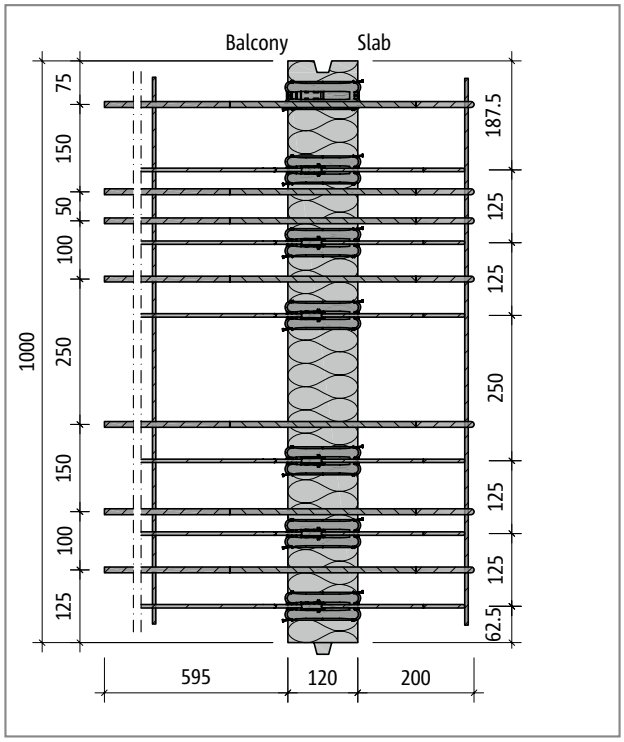
Schöck Isokorb® type KXT30-WO: Product section



Schöck Isokorb® type KXT30-WU : Product section



Schöck Isokorb® type KXT30-WO: Product plan view

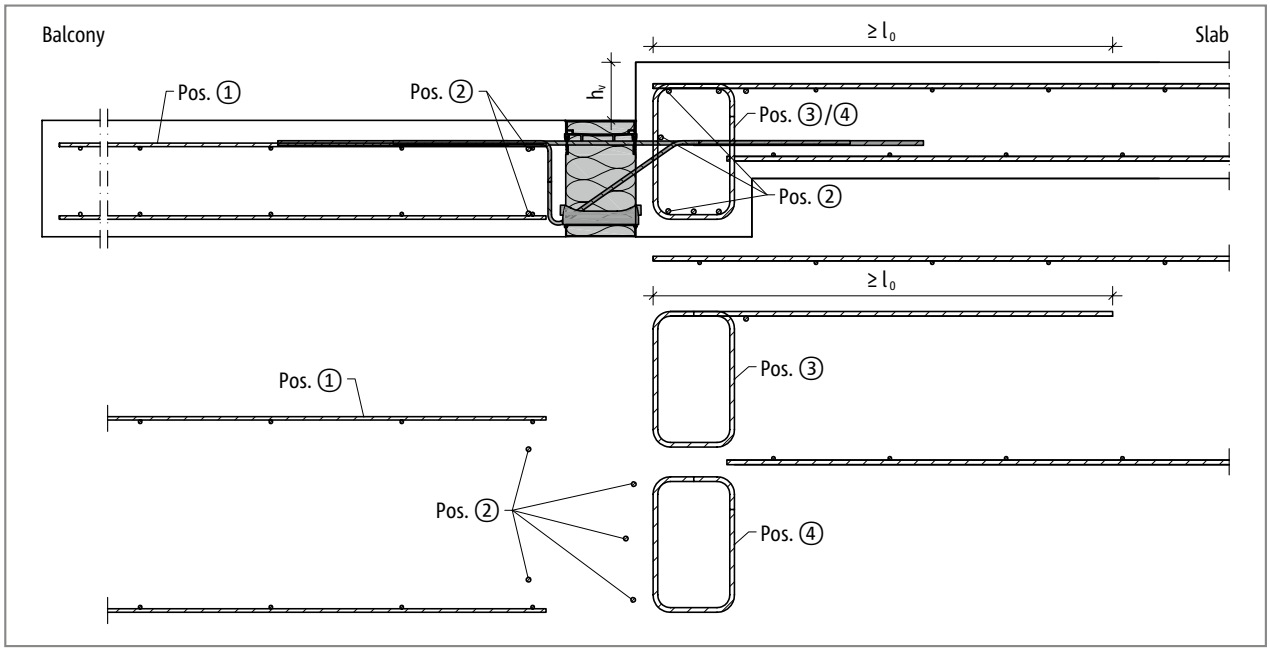


Schöck Isokorb® type KXT30-WU: Product plan view

Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- Minimum height Schöck Isokorb® type KXT-WO, -WU: H_{min} = 160 mm
- On-site dividing of the Schöck Isokorb® type KXT on the unreinforced positions possible; take into account the load-bearing capacity reduced due to the dividing; take into account required edge distances
- Concrete cover of the tension bars: CV35 = 35 mm, CV50 = 50 mm

On-site reinforcement - Schöck Isokorb® type KXT-HV



Schöck Isokorb® type KXT: On-site reinforcement for small height offset

Information about on-site reinforcement

- Due to the reinforcement density in the downstand beam application is recommended up to KXT65 only.
- For the redirection of the tension force on the floor-side, a stirrup reinforcement Pos. 3 is required in the floor edge beam (upper side length $l_{0,bü}$). This stirrup reinforcement Pos.3 safeguards the load transmission from the Schöck Isokorb®.
- The shear force reinforcement Pos. 4 conforms to the loading of balcony, floor and the supporting width of the downstand/upstand beam. Therefore the shear force reinforcement in individual cases ts to be verified by the structural engineer.
- The required lateral reinforcement in the upstand beam area is to be verified acc. to BS EN 1992-1-1 (EC2), 8.7 to 8.8 and BS EN 1992-1-1/NA, NDPs for 8.8.
- The Schöck Isokorb® type KXT, if required, is to be laid before the installation of the downstand/upstand reinforcement.
- Pos. 3: Value for Isokorb® heights between 160 mm and 250 mm may be interpolated.
- Pos. 3: For larger downstand beam widths a reduction of the required reinforcement acc. to the structural engineer's details is possible.
- The indicative minimum concrete strength class of the external structural component is C32/40.

On-site reinforcement - Schöck Isokorb® type KXT-HV

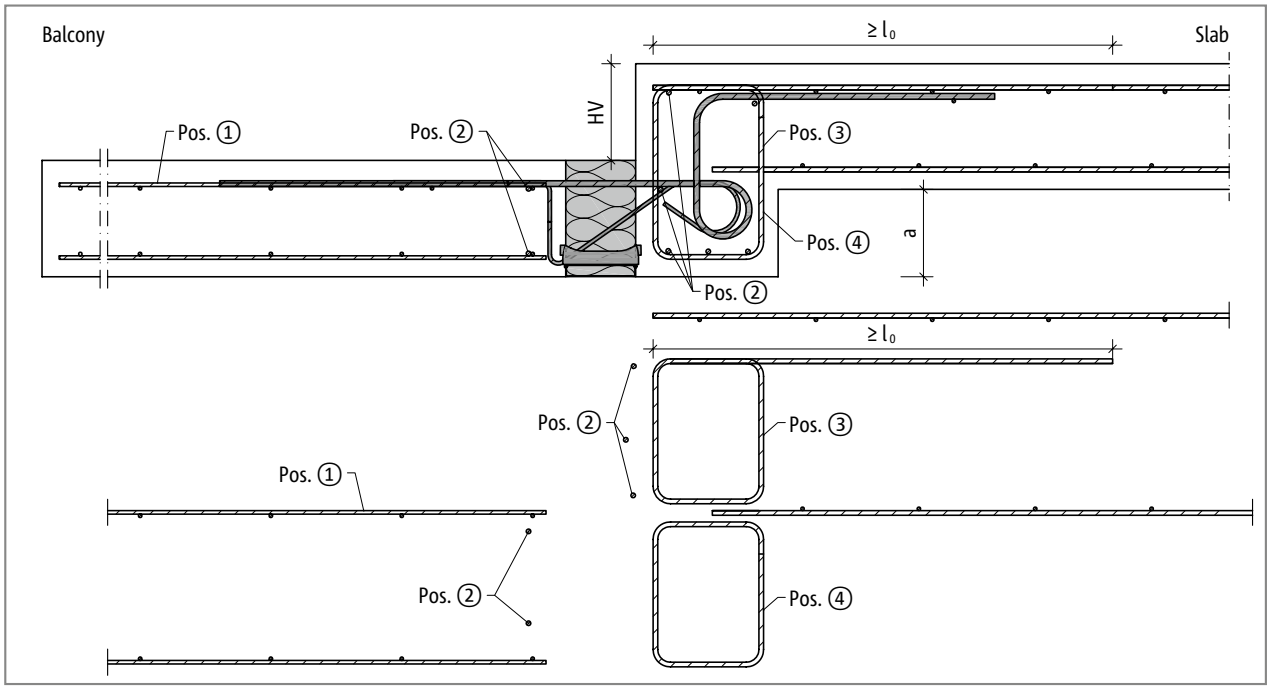
Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type			KXT15	KXT25	KXT30	KXT40	KXT45	KXT50
On-site reinforcement	Location	Height [mm]	Concrete strength class ≥ C25/30					
Pos. 1 Lapping reinforcement								
Pos. 1 [mm²/m]	Balcony side	160 - 250	201	352	503	600	654	755
Pos. 2 Steel bars along the insulation joint								
Pos. 2	Balcony side	160 - 250	2 • H8	2 • H8	2 • H8	2 • H8	2 • H8	2 • H8
	Floor side	160 - 250	3 • H8	3 • H8	3 • H8	3 • H8	3 • H8	3 • H8
Pos. 3 Stirrup reinforcement for the redirection of the tension force								
Pos. 3 [mm²/m]	Floor side	160	159	254	361	454	558	558
		250	298	536	767	928	1168	1168
Pos. 4 Stirrup reinforcement acc. to shear force design								
Pos. 4	Floor side	160 - 250	Stirrup reinforcement acc. to BS EN 1992-1-1 (EC2), 6.2.3, 9.2.2					

Schöck Isokorb® type			KXT55
On-site reinforcement	Location	Height [mm]	Concrete strength class ≥ C25/30
Pos. 1 Lapping reinforcement			
Pos. 1 [mm²/m]	Balcony side	160 - 250	905
Pos. 2 Steel bars along the insulation joint			
Pos. 2	Balcony side	160 - 250	2 • H8
	Floor side	160 - 250	3 • H8
Pos. 3 Stirrup reinforcement for the redirection of the tension force			
Pos. 3 [mm²/m]	Floor side	160	716
		250	1517
Pos. 4 Stirrup reinforcement acc. to shear force design			
Pos. 4	Floor side	160 - 250	Stirrup reinforcement acc. to BS EN 1992-1-1 (EC2), 6.2.3, 9.2.2

On-site reinforcement - Schöck Isokorb® type KXT-HV



Schöck Isokorb® type KXT-HV: On-site reinforcement

Recommendation for the on-site connection reinforcement

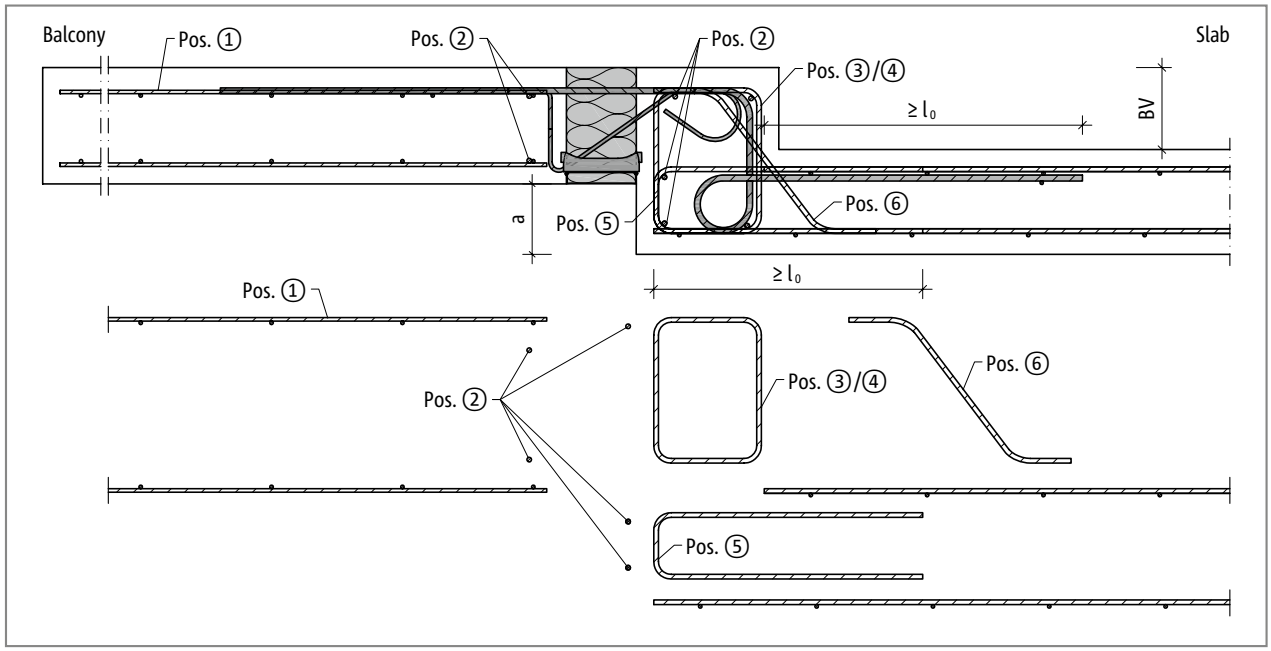
Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type		KXT25-HV	KXT30-HV	KXT50-HV	KXT65-HV
On-site reinforcement	Location	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement					
Pos. 1 [mm²/m]	Balcony side	403	629	873	1130
Pos. 2 Steel bars along the insulation joint					
Pos. 2	Balcony side/downstand beam	5 • H8	5 • H8	5 • H8	5 • H8
Pos. 3 Stirrup					
Pos. 3 [mm²/m]	Downstand beam a = 260 mm	732	1052	1538	2075
	Downstand beam a = 135 mm	454	650	925	1227
Pos. 4 Stirrup					
Pos. 4	Downstand beam	Taking into account of shear forces and moments by the structural engineer			

Information about on-site reinforcement

- For the redirection of the tension force on the floor-side, a stirrup reinforcement Pos. 3 is required in the floor edge beam (upper side length $l_{0,bü}$). This stirrup reinforcement Pos.3 safeguards the load transmission from the Schöck Isokorb®.
- l_0 for l_0 (⌀10) ≥ 570 mm, l_0 (⌀12) ≥ 680 mm and l_0 (⌀14) ≥ 790 mm.
- Pos. 3 applies for downstand widths b = 220 mm. For b > 220 mm a reduction is possible.
- Pos. 3 is given for two offset dimensions a. In between it can be interpolated.
- The shear force reinforcement Pos. 4 conforms to the loading of balcony, floor and the supporting width of the downstand/upstand beam. Therefore the shear force reinforcement in individual cases ts to be verified by the structural engineer.
- The required lateral reinforcement in the upstand beam area is to be verified acc. to BS EN 1992-1-1 (EC2), 8.7 to 8.8 and BS EN 1992-1-1/NA, NDPs for 8.8.
- The Schöck Isokorb® type KXT-HV, if required, is to be laid before the installation of the downstand/upstand reinforcement.
- The indicative minimum concrete strength class of the external structural component is C32/40.

On-site reinforcement - Schöck Isokorb® type KXT-BH



Schöck Isokorb® type KXT-BH: On-site reinforcement

Recommendation for the on-site connection reinforcement

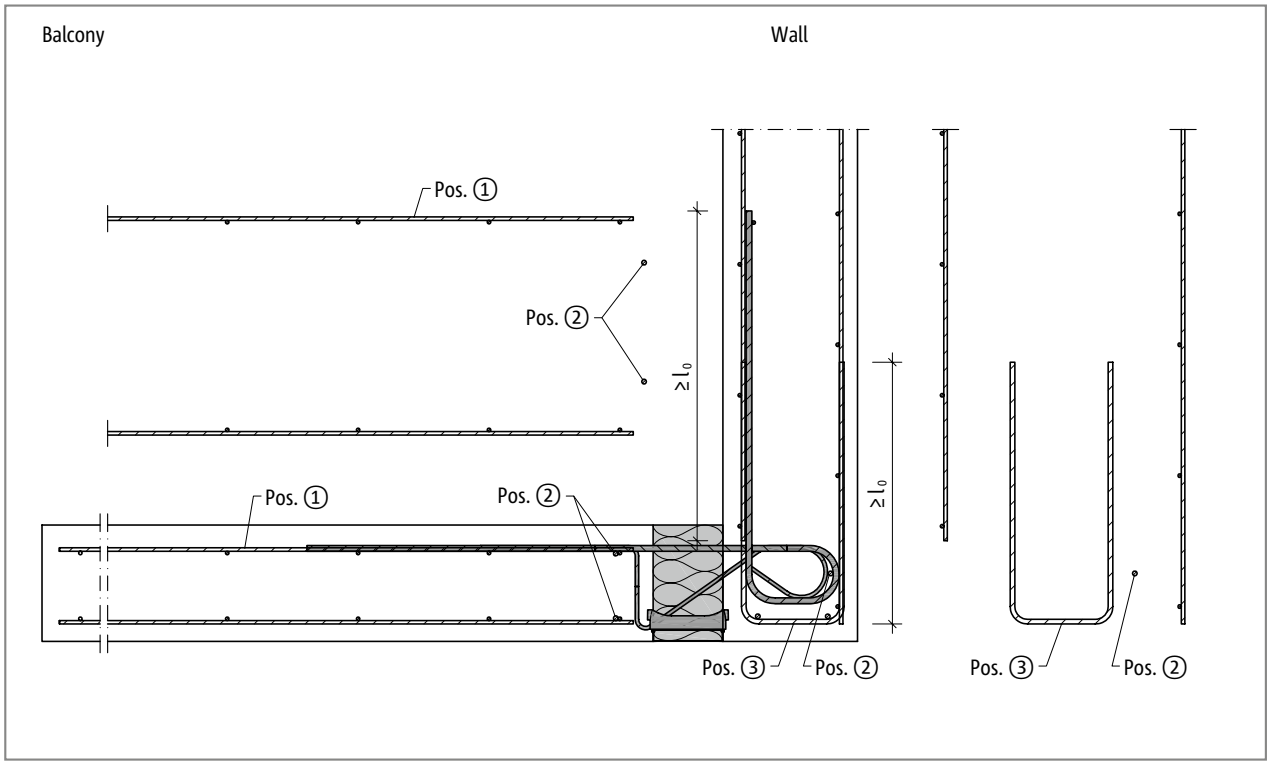
Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type		KXT25-BH	KXT30-BH	KXT50-BH	KXT65-BH
On-site reinforcement	Location	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement					
Pos. 1 [mm²/m]	Balcony side	403	629	873	1130
Pos. 2 Steel bars along the insulation joint					
Pos. 2	Balcony/upstand beam	5 • H8	5 • H8	5 • H8	5 • H8
Pos. 3 and Pos. 5 Stirrup					
Pos. 3 and Pos. 5 [mm²/m]	Upstand beam a = 260 mm	732	1052	1372	2075
	Upstand beam a = 135 mm	454	650	925	1227
Pos. 4 Stirrup					
Pos. 4	Upstand beam	Taking into account of shear forces and moments by the structural engineer			
Pos. 6 Inclined reinforcement					
Pos. 6	Upstand beam	H8@200	H8@200	H8@200	H10@140

Information about on-site reinforcement

- For the redirection of the tension force on the floor side, a stirrup reinforcement Pos. 3 is required in the floor edge beam (upper side length $l_{0,bü}$). This stirrup reinforcement Pos.3 + Pos.5 safeguards the load passing from the Schöck Isokorb®.
- l_0 for l_0 (⌀10) ≥ 570 mm, l_0 (⌀12) ≥ 680 mm and l_0 (⌀14) ≥ 790 mm.
- Pos. 3 and Pos. 5 apply for upstand beam widths b = 220 mm. For b > 220 mm a reduction is possible.
- Pos. 3 and Pos. 5 are given for two offset dimensions a. In b tween it can be interpolated.
- The shear force reinforcement Pos. 4 conforms to the loading of balcony, floor and the supporting width of the downstand/upstand beam. Therefore the shear force reinforcement in individual cases ts to be verified by the structural engineer.
- The required lateral reinforcement in the upstand beam area is to be verified acc. to BS EN 1992-1-1 (EC2), 8.7 to 8.8 and BS EN 1992-1-1/NA, NDPs for 8.8.
- The Schöck Isokorb® type KXT-BH, if required, is to be laid before the installation of the downstand/upstand reinforcement.
- The indicative minimum concrete strength class of the external structural component is C32/40.

On-site reinforcement - Schöck Isokorb® type KXT-WO



Schöck Isokorb® type KXT-WO: On-site reinforcement

Recommendation for the on-site connection reinforcement

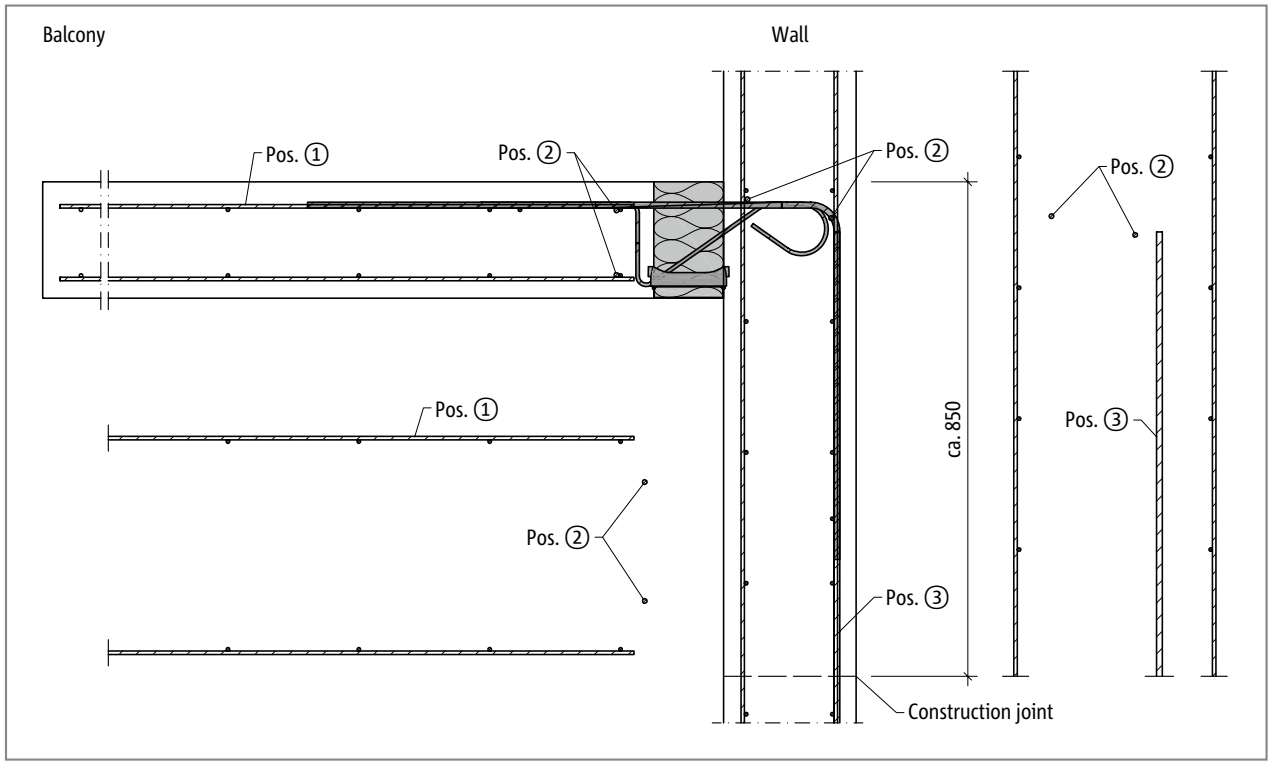
Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

Schöck Isokorb® type		KXT25-WO	KXT30-WO	KXT50-WO	KXT65-WO
On-site reinforcement	Location	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement					
Pos. 1 [mm²/m]	Balcony side	403	629	873	1130
Pos. 2 Steel bars along the insulation joint					
Pos. 2	Balcony side/wall side	3 • H8	3 • H8	3 • H8	3 • H8
Pos. 3 Stirrup					
Pos. 3	Wall side	H8@100	H10@100	H12@100	H16@100
l_0 [mm]	Wall side	≥ 570	≥ 680	≥ 790	≥ 790

Information about on-site reinforcement

- The required lateral reinforcement in the upstand beam area is to be verified acc. to BS EN 1992-1-1 (EC2), 8.7 to 8.8 and BS EN 1992-1-1/NA, NDPs for 8.8.
- The Schöck Isokorb® type KXT-WO, if required, is to be laid before the installation of the downstand/upstand reinforcement.
- The indicative minimum concrete strength class of the external structural component is C32/40.

On-site reinforcement - Schöck Isokorb® type KXT-WU



Schöck Isokorb® type KXT-WU: On-site reinforcement

Recommendation for the on-site connection reinforcement

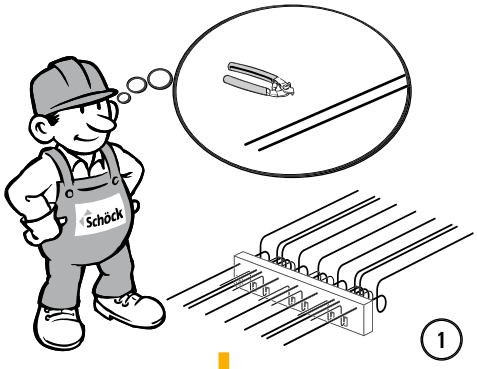
Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars.

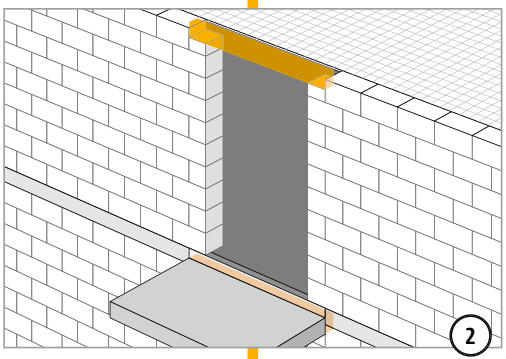
Schöck Isokorb® type		KXT25-WU	KXT30-WU	KXT50-WU	KXT65-WU
On-site reinforcement	Location	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement					
Pos. 1 [mm²/m]	Balcony side	403	629	873	1130
Pos. 2 Steel bars along the insulation joint					
Pos. 2	Balcony side/wall side	3 • H8	3 • H8	3 • H8	3 • H8
Pos. 3 Bar steel					
Pos. 3	Wall side	H8@100	H10@100	H12@100	H16@100
l_0 [mm]	Wall side	≥ 570	≥ 680	≥ 790	≥ 790

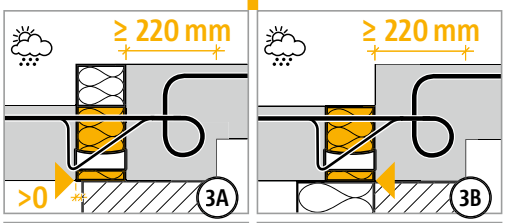
Information about on-site reinforcement

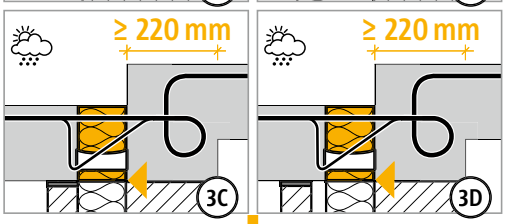
- The required lateral reinforcement in the upstand beam area is to be verified acc. to BS EN 1992-1-1 (EC2), 8.7 to 8.8 and BS EN 1992-1-1/NA, NDPs for 8.8.
- The Schöck Isokorb® type KXT-WU, if required, is to be laid before the installation of the outer reinforcement in the wall.
- The indicative minimum concrete strength class of the external structural component is C32/40.

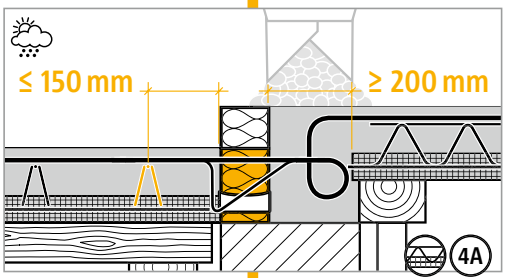
Installation instructions

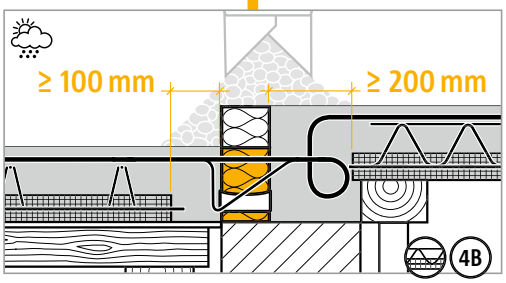




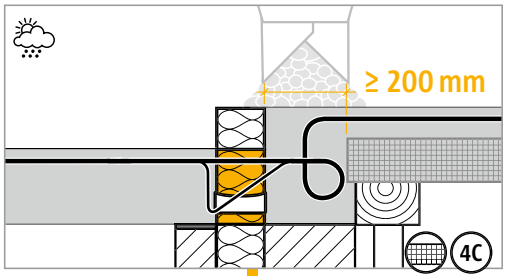


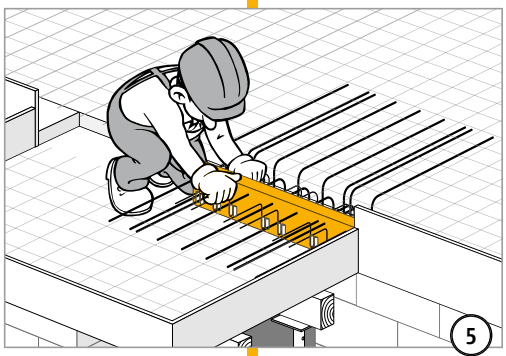


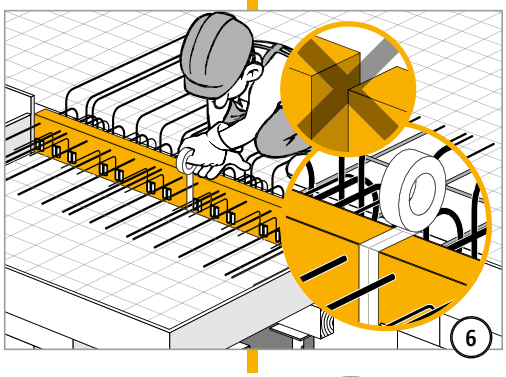


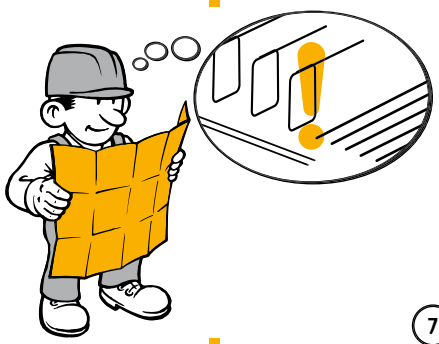


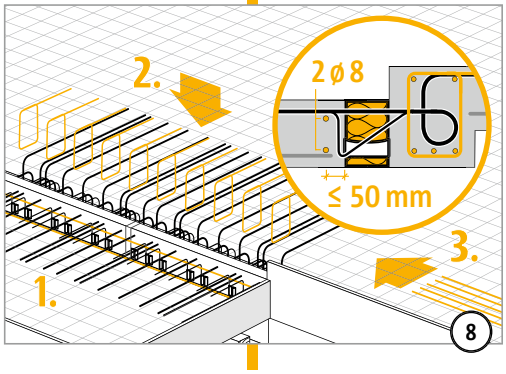
Without fail fill compression joint with in-situ concrete! Joint width ≥ 100 mm.



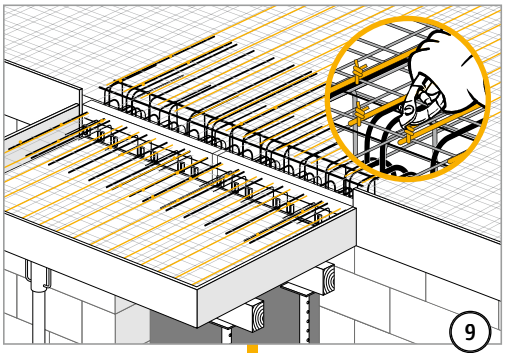


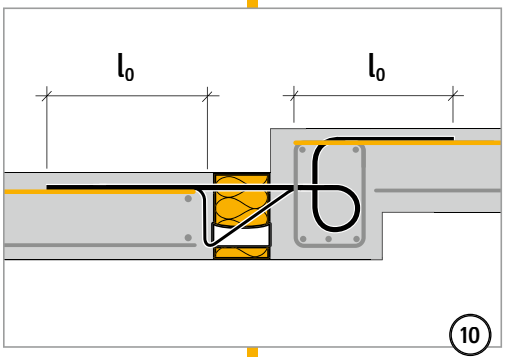


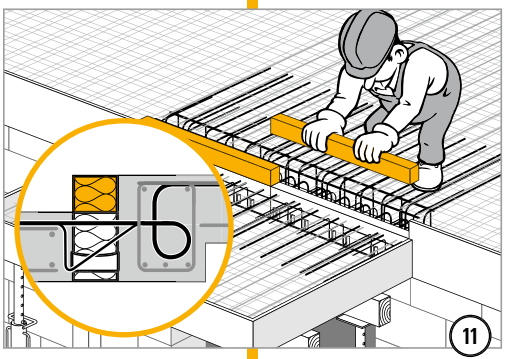


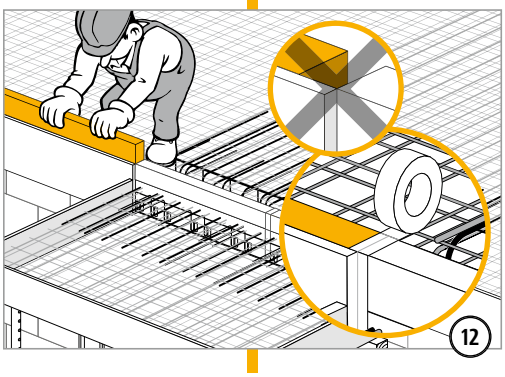


Installation instructions





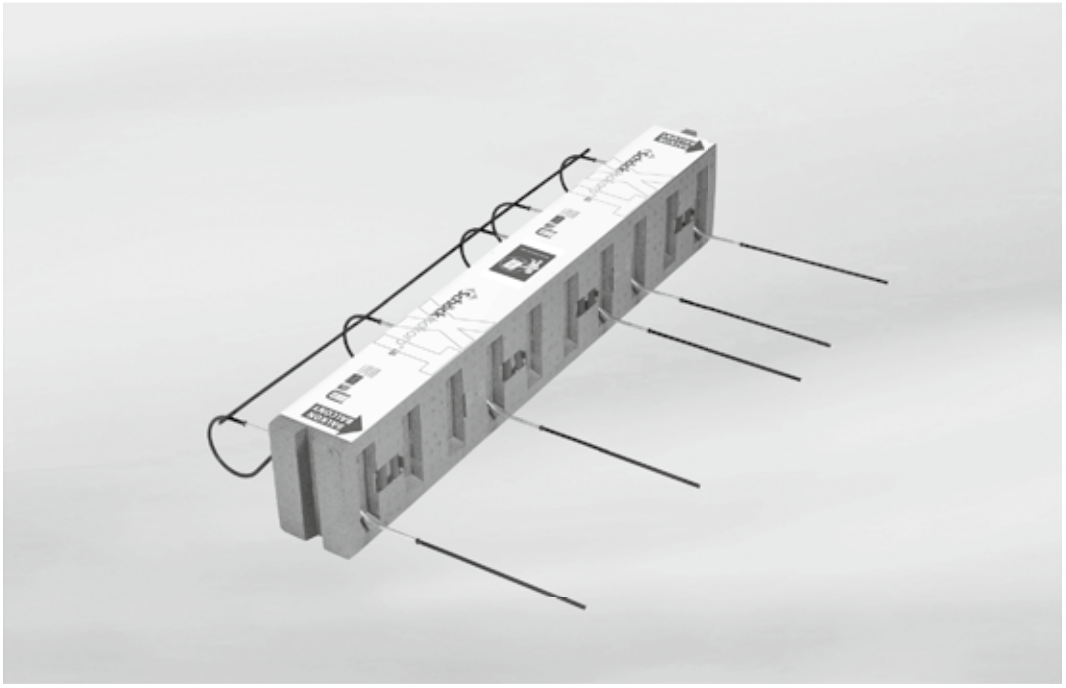




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Has the additional proportionate deflection resulting from the Schöck Isokorb® been taken into account?
- ☐ Is the drainage direction taken into account with the resulting camber information? Is the degree of camber entered in the working drawings?
- ☐ Is the increased minimum slab thickness taken into account with CV50?
- ☐ Are the recommendations for the limitation of the slenderness observed?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Are the Schöck FEM guidelines taken into acount with the calculation using FEM?
- ☐ Are existing horizontal loads e.g. from wind pressure taken into account? Are additional Schöck Isokorb® supplementary type HPXT required for this?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Is the the in-situ concrete strip (width ≥ 100 mm from insulating block of the Schöck Isokorb®type EXT), required in combination with precast floors, marked in the implementation plans?
- ☐ Is the required component geometry present with the connection to a floor or a wall? Is a special design required?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ With precast balconies are possibly necessary gaps for the front side transportation anchors and downpipes with internal drainage taken into account? Is the maximum centre distance of 300 mm for the Isokorb® bars observed?

Schöck Isokorb® type QXT, QXT+QXT, QZXT



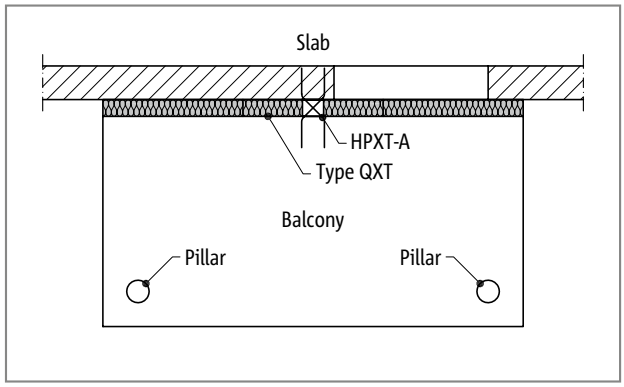
Schöck Isokorb® type QXT

Schöck Isokorb® type QXT
Suitable for supported balconies. It transmits positive shear forces.

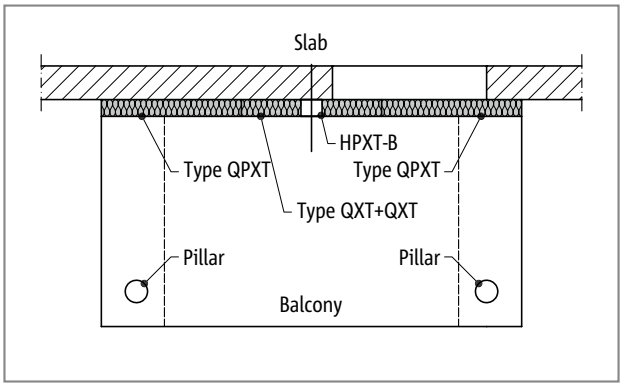
Schöck Isokorb® type QXT+QXT
Suitable for supported balconies. It transmits positive and negative shear forces.

Schöck Isokorb® type QZXT
Suitable for supported balconies with zero-stress connections. It transmits positive shear forces.

Element arrangement

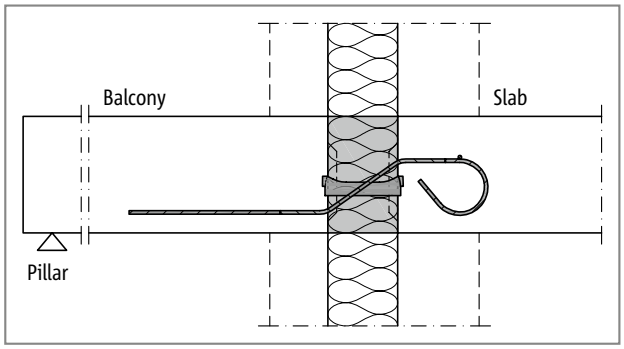


Schöck Isokorb® type QXT: Balcony with column support

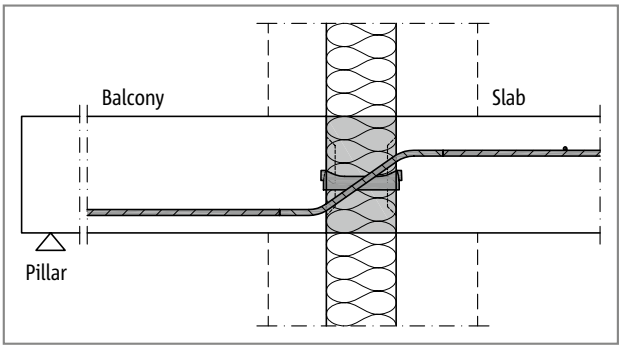


Schöck Isokorb® type QPXT, QXT+QXT: Balcony with column support with different support stiffness; optionally with type HPXT-B for the transmission of standard horozontal force

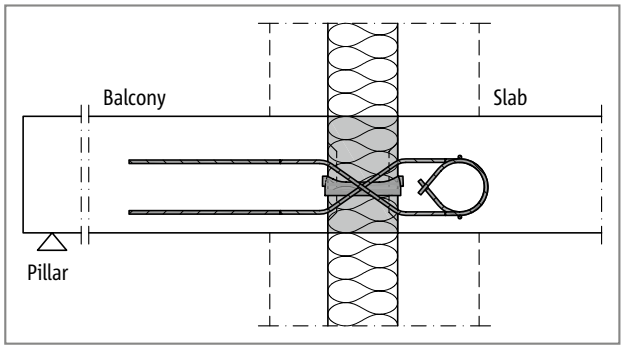
Installation cross sections



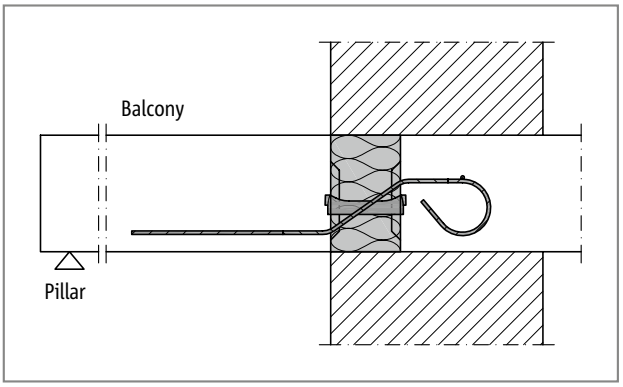
Schöck Isokorb® type QXT: connection with non-load-bearing cavity wall (type QXT10 to QXT40)



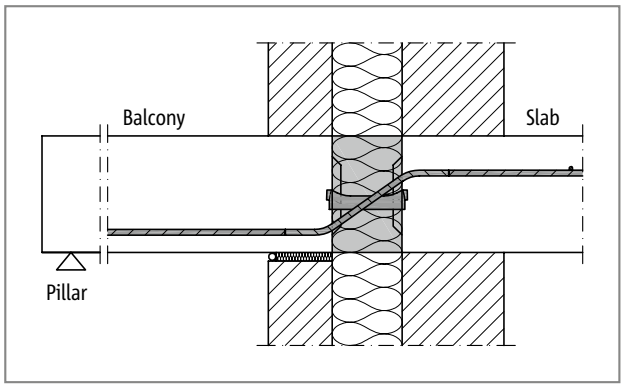
Schöck Isokorb® type QXT: Connection with non-load-bearing cavity wall (type QXT60 to QXT90)



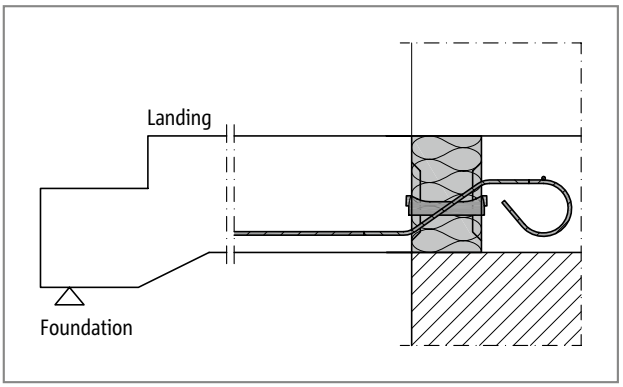
Schöck Isokorb® type QXT+QXT: Connection with non-load-bearing cavity wall



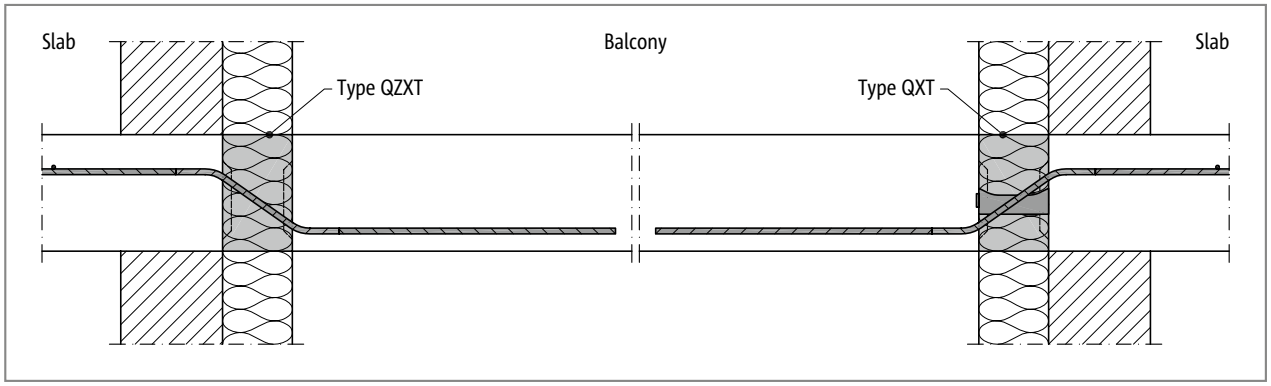
Schöck Isokorb® type QXT: Connection with single-shell, heat insulating masonry (type QXT10 to QXT40)



Schöck Isokorb® type QXT: Connection with cavity masonry with core insulation (type QXT60 to QXT90)



Schöck Isokorb® type QXT: Connecting stair landing with single-shell, heat insulating masonry (type QXT10 to QXT40)



Schöck Isokorb® type QXT, QZXT: Application case reinforced concrete slab spanning in one direction

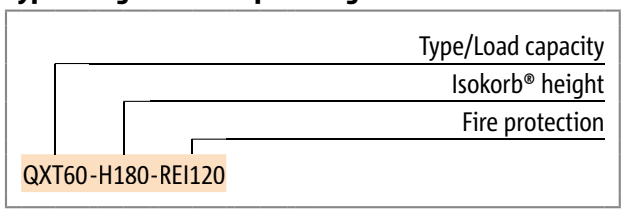
Product selection | Type designations | Special designs

Schöck Isokorb® type QXT, QXT+QXT variants

The configuration of the Schöck Isokorb® types QXT and QXT+QXT can be varied as followsn:
For the load-bearing levels 10 to 40 the following applies, shear force bar bent off on the floor side, straight on the balcony side.
For the load-bearing levels 60 to 90 the following applies, shear force bar straight on the floor side, straight on balcony side.

- Load capacity:
  QXT10 bis QXT40, QXT60 bis QXT90
  QXT10+QXT10 bis QXT40+QXT40
- Concrete cover of the shear force bars:
  bottom: CV = 30 mm
  top: CV ≥ 35 mm (depending on height of the shear force bars)
- Height:
  H = H_{min} bis 250 mm (note minimum slab height depending on load-bearing level and fire protection)
- Fire resistance class:
  R0: Standard
  REI120: Projecting upper fire protection slab, both sides 10 mm

Type designations in planning documents



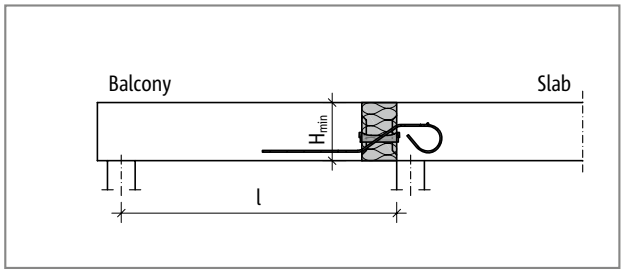
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).
This also applies with additional requirements as a result of precast concrete construction. For additional requirements determined by manufacturing or transportation there are solutions available with coupler bars.

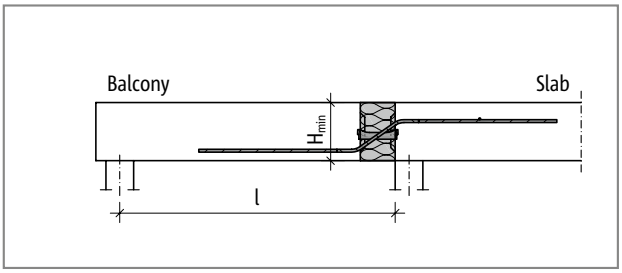
Design

Design table type QXT

Schöck Isokorb® type	QXT10	QXT20	QXT30	QXT40	QXT60	QXT70	QXT80	QXT90
Design values with	$v_{Rd,z}$ [kN/m]							
Concrete C25/30	35.3	42.3	56.4	70.5	87.7	97.9	117.5	137.1
Isokorb® length [mm]	1000	1000	1000	1000	1000	1000	1000	1000
Shear force bars	5 ⌀ 6	6 ⌀ 6	8 ⌀ 6	10 ⌀ 6	7 ⌀ 8	5 ⌀ 10	6 ⌀ 10	7 ⌀ 10
Pressure bearing (pce)	4	4	4	4	4	4	5	6
H_{min} width R0 [mm]	160	160	160	160	160	170	170	170
H_{min} width REI120 [mm]	160	160	160	160	170	180	180	180



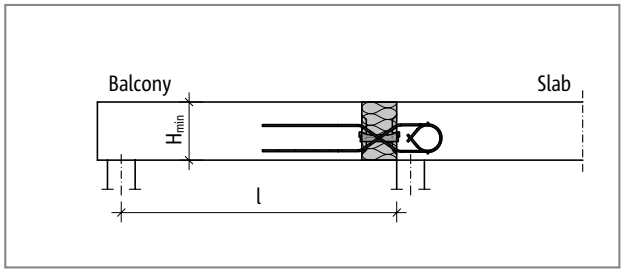
Schöck Isokorb® type QXT: Static system (type QXT10 to QXT40)



Schöck Isokorb® type QXT: Static system (type QXT60 to QXT90)

Design table type QXT+QXT

Schöck Isokorb® type	QXT10+QXT10	QXT20+QXT20	QXT30+QXT30	QXT40+QXT40
Design values with	$v_{Rd,z}$ [kN/m]			
Concrete C25/30	±35.3	±42.3	±56.4	±70.5
Isokorb® length [mm]	1000	1000	1000	1000
Shear force bars	5 ⌀ 6 + 5 ⌀ 6	6 ⌀ 6 + 6 ⌀ 6	8 ⌀ 6 + 8 ⌀ 6	10 ⌀ 6 + 10 ⌀ 6
Pressure bearing (pce)	4	4	4	4
H_{min} width R0 [mm]	160	160	160	160
H_{min} width REI120 [mm]	160	160	160	160



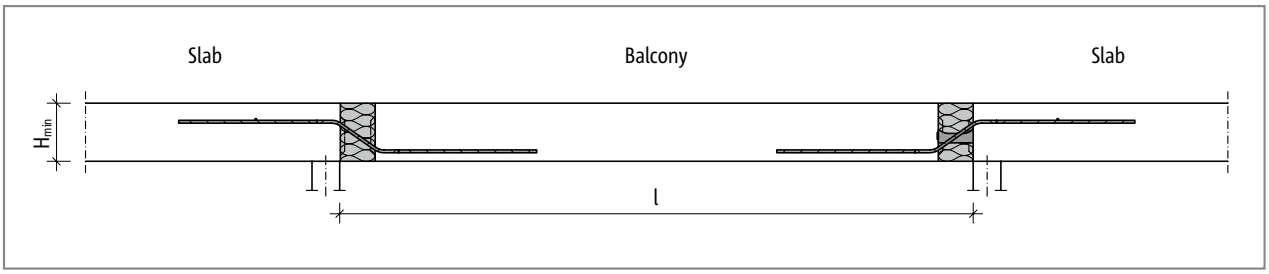
Schöck Isokorb® type QXT+QXT: Static system

Design

Design table type QZXT

Schöck Isokorb® type	QZXT10	QZXT20	QZXT30	QZXT40	QZXT60	QZXT70	QZXT80	QZXT90
Design values with	$v_{Rd,z}$ [kN/m]							
Concrete C20/25	30.0	36.0	48.1	60.1	74.7	83.4	100.1	116.8
Concrete C25/30	35.3	42.3	56.4	70.5	87.7	97.9	117.5	137.1
Slab load-bearing capacity	ok	ok	ok	ok	ok	ok	ok	check

Isokorb® length [mm]	1000	1000	1000	1000	1000	1000	1000	1000
Shear force bars	5 ⌀ 6	6 ⌀ 6	8 ⌀ 6	10 ⌀ 6	7 ⌀ 8	5 ⌀ 10	6 ⌀ 10	7 ⌀ 10
Pressure bearing (pce)	-	-	-	-	-	-	-	-
H_{min} width R0 [mm]	160	160	160	160	160	170	170	170
H_{min} width REI120 [mm]	160	160	160	160	170	180	180	180



Schöck Isokorb® type QZXT, QXT: Static system (type QZXT60 to QZXT90, QXT60 to QXT90

Notes on design

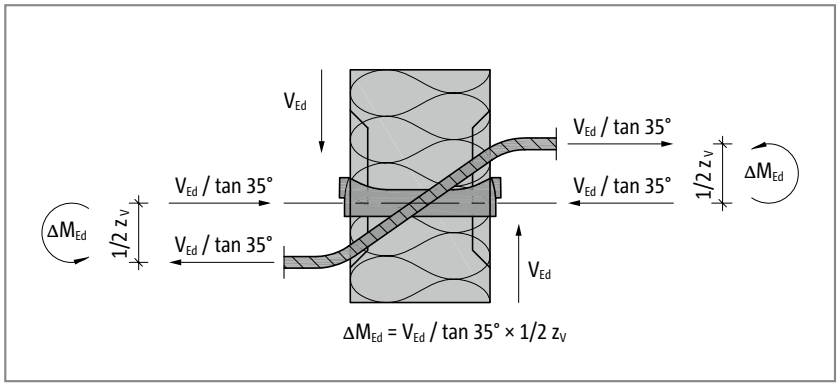
- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,\,max}$, whereby $V_{Rd,\,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\theta = 45\,^{\circ}$ and $\alpha = 90\,^{\circ}$ (slab load-bearing capacity).
- A static verification is to be provided for the adjacent reinforced concrete structural components on both sides of the Schöck Isokorb. With a connection using Schöck Isokorb® type QXT a freely rotatable support (pin connection joint) is to be accepted as a static system .
- For the transmission of standard horizontal forces additional Schöck Isokorb® type HPXT (see page 149) are required.
- Through the excentric force application of the Schöck Isokorb® type QXT and type QXT+QXT an offset moment results at the edges of the adjacent slabs. This is to be taken into account with the design of the slabs.
- With different concrete strength classes (e.g. balcony C32/40, inner slab C25/30) basically the weaker concrete is relevant for the design of the Schöck Isokorb®.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Moments from excentric connection

Moments from excentric connection

For the design of the connection reinforcement on both sides of the shear force transmitting Schöck Isokorb® types QXT and QX-T+QXT moments from excentric connection are to be taken into account. These moments are in each case to be superimosed with the moments from the standard stressing if they have the same sign.

The following table values ΔM_{Ed} have been calculated with 100% utilisation of v_{Rd} with a lever arm $z_{v,max}$ = 140 mm .



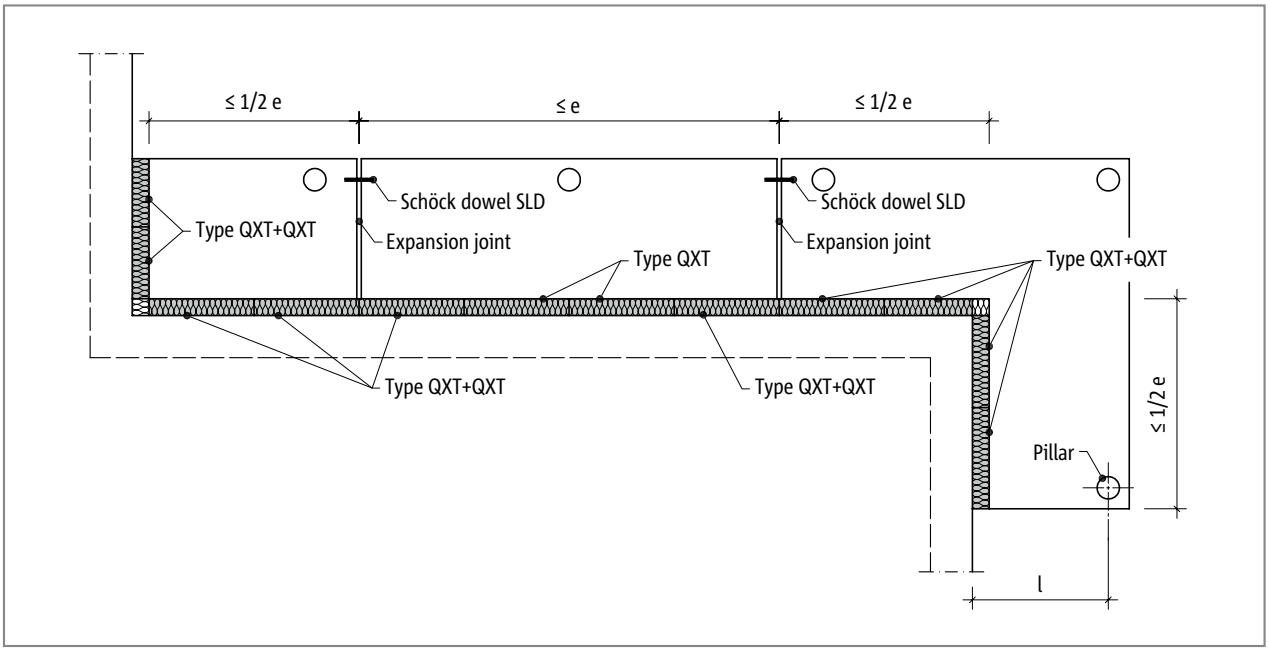
Schöck Isokorb® type	QXT10, QXT10+QXT10	QXT20, QXT20+QXT20	QXT30, QXT30+QXT30	QXT40, QXT40+QXT40
Design values with	Δ M_{Ed} [kNm/m]			
Concrete C25/30	2.2	2.7	3.6	4.5

Schöck Isokorb® type	QXT60	QXT70	QXT80	QXT90
Design values with	Δ M_{Ed} [kNm/m]			
Concrete C25/30	5.9	7.1	8.6	10.0

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® Type QXT, QXT+QXT: Expansion joint arrangement

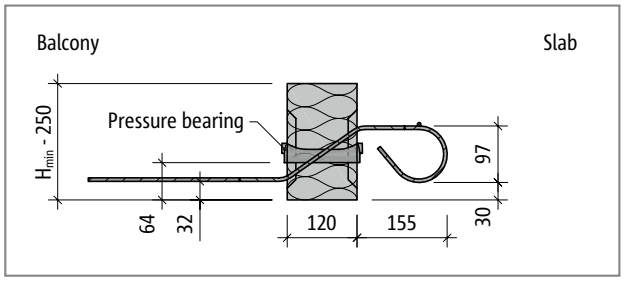
Schöck Isokorb® type		QXT10 - QXT60 QXT10+QXT10 - QXT40+QXT40 QZXT10 - QZXT60	QXT70 - QXT90 QZXT70 - QZXT90
Maximum expansion joint spacing		e [m]	
Insulating element thickness [mm]	120	23.0	21.7

Edge distances

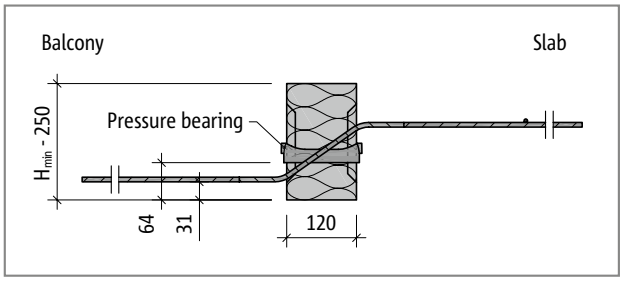
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

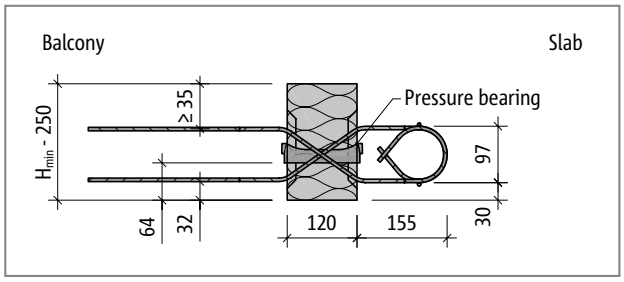
Product description



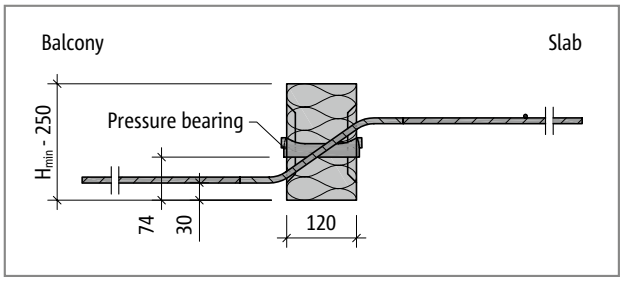
Schöck Isokorb® type QXT10 to QXT40: Product section



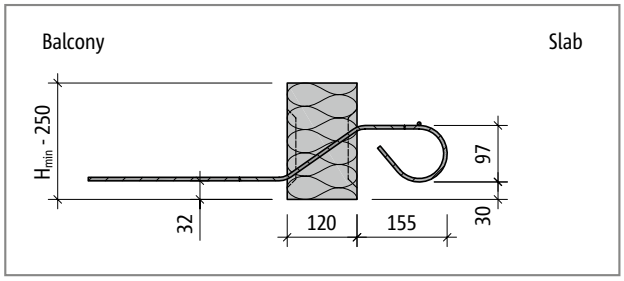
Schöck Isokorb® type QXT60: Product section



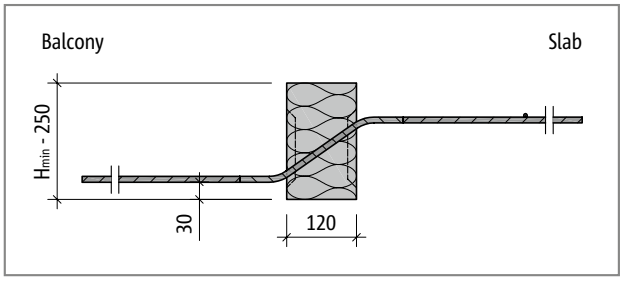
Schöck Isokorb® type QXT10+QXT10 to QXT40+QXT40: Product section



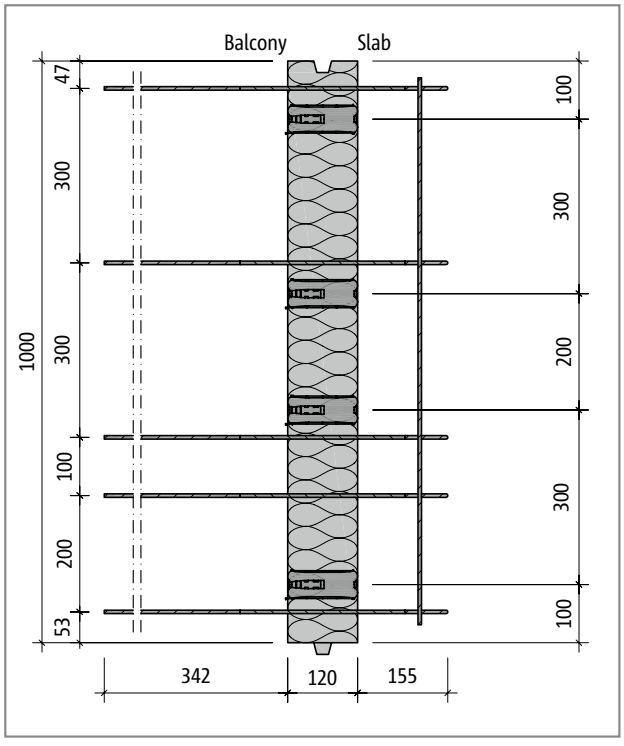
Schöck Isokorb® type QXT70 bis QXT90:Product section



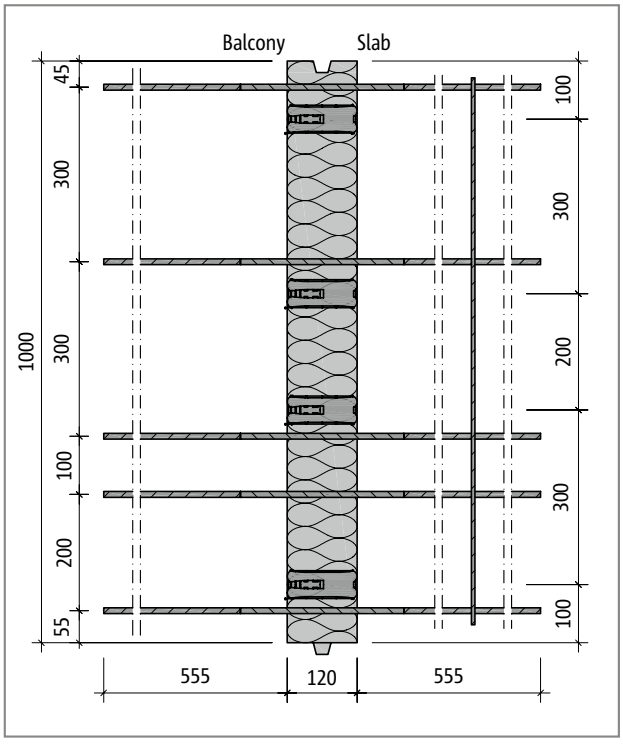
Schöck Isokorb® type QZXT10 to QZXT40: Product section



Schöck Isokorb® type QZXT60 to QZXT90: Product section



Schöck Isokorb® type QXT10: Product plan view

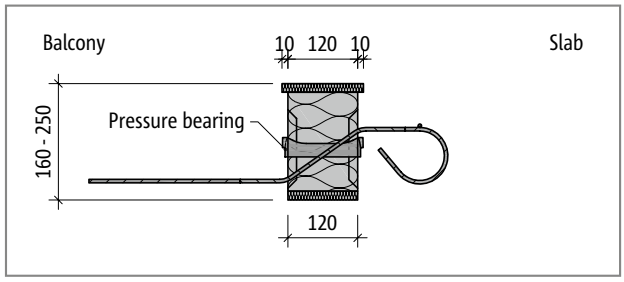


Schöck Isokorb® type QXT70: Product plan views

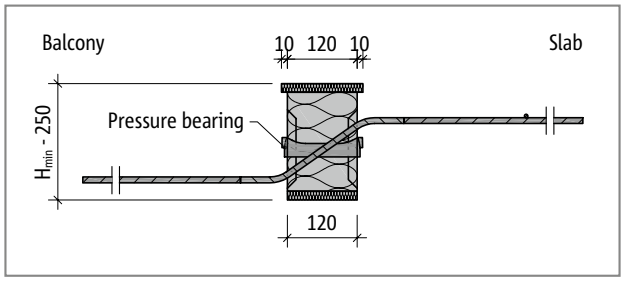
Fire protection configuration

Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- Note minimum height H_{min} Schöck Isokorb® type QXT, QXT+QXT



Schöck Isokorb® type QXT10 to QXT40 with REI120: Product section



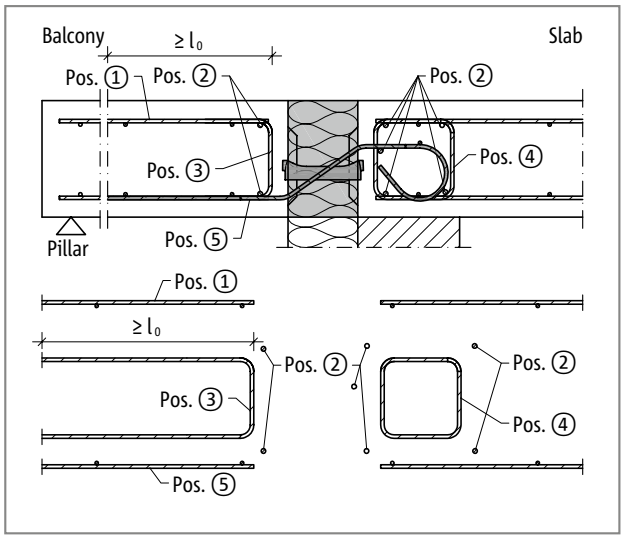
Schöck Isokorb® type QXT60 to QXT90 with REI120: Product section

Fire protection

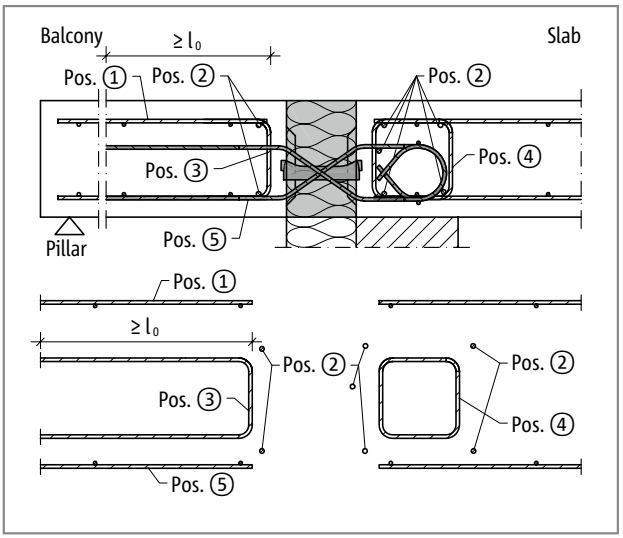
- Note minimum height H_{min} Schöck Isokorb® type QXT, QXT+QXT

On-site reinforcement

Schöck Isokorb® type QXT10 to QXT40 and type QXT10+QXT10 to QXT40+QXT40



Schöck Isokorb® type QXT10 to QXT40: On-site reinforcement



Schöck Isokorb® type QXT10+QXT10 to QXT40+QXT40: On-site reinforcement

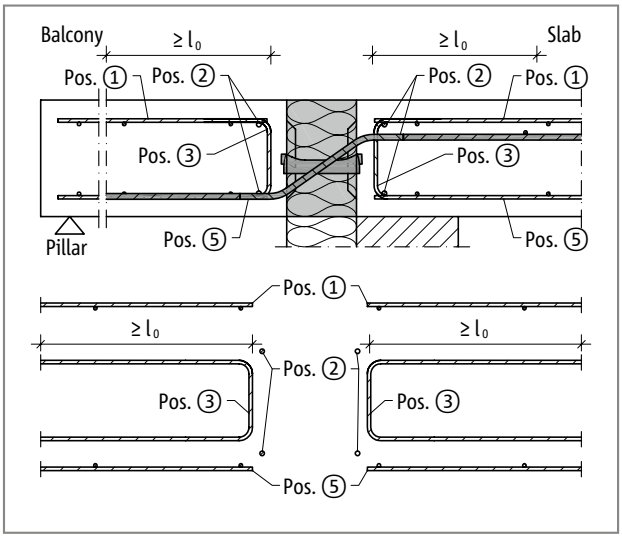
The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the shear force bars of the Schöck Isokorb® are 100% lapped, insofar as they lie in the tension zone.

Schöck Isokorb® type		QXT10, QXT10+QXT10	QXT20, QXT20+QXT20	QXT30, QXT30+QXT30	QXT40, QXT40+QXT40
On-site reinforcement	**Location**	**Concrete strength class ≥ C25/30**			
Pos. 1 Lapping reinforcement					
Pos. 1	Balcony side	acc. to the specifications of the structural engineer			
Pos. 2 Steel bars along the insulation joint					
Pos. 2	Balcony side	2 • H8	2 • H8	2 • H8	2 • H8
Pos. 2	Floor side	5 • H8	5 • H8	5 • H8	5 • H8
Pos. 3 Stirrup					
Pos. 3 [mm²/m]	Balcony side	81	97	130	162
Pos. 4 Closed stirrup (edge beam acc. to Z-15.7-240, Annex 6, para. 16a)					
Pos. 4 [mm²/m]	Floor side	141	141	141	141
Pos. 4	Floor side	H8@200	H8@200	H8@200	H8@200
Pos. 5 Lapping reinforcement					
Pos. 5	Balcony side	necessary in the tension zone, as specified by the structural engineer			
Pos. 6 Structural edging at the free edge					
Pos. 6		Edging acc. to BS EN 1992-1-1 (EC2), 9.3.1.4 (not shown)			

Information about on-site reinforcement

- Lapping of the reinforcement in the connecting reinforced concrete components must be applied as close as possible to the insulating element of the Schöck Isokorb®, the required concrete cover must be observed.
- The shear force bars are to be anchored with their straight ends in the pressure zone. In the tension zone the shear force bars are to be lapped.
- The structural edging Pos. 6 should be selected so low that it can be arranged between the upper and lower reinforcement position.
- The indicative minimum concrete strength class of the external structural component is C32/40.

On-site reinforcement



Schöck Isokorb® type QXT60 to QXT90: On-site reinforcement

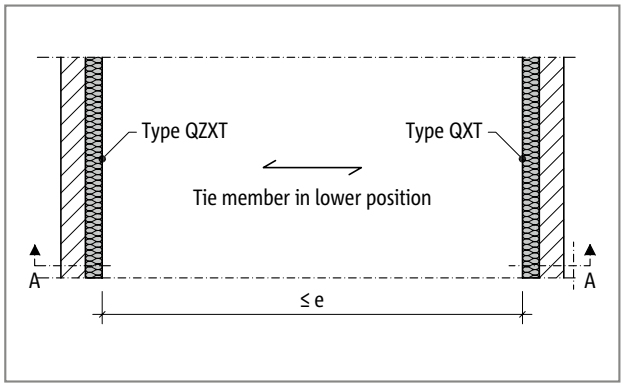
The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the shear force bars of the Schöck Isokorb® are 100% lapped, insofar as they lie in the tension zone.

Schöck Isokorb® type		QXT60	QXT70	QXT80	QXT90
On-site reinforcement	**Location**	**Concrete strength class ≥ C25/30**			
Pos. 1 Lapping reinforcement					
Pos. 1	balcony/floor side	acc. to the specifications of the structural engineer			
Pos. 2 Steel bars along the insulation joint					
Pos. 2	balcony/floor side	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Stirrup					
Pos. 3 [mm²/m]	balcony/floor side	202	225	270	315
Pos. 5 Lapping reinforcement					
Pos. 5	balcony/floor side	necessary in the tension zone, as specified by the structural engineer			
Pos. 6 Structural edging at the free edge					
Pos. 6		Edging acc. to BS EN 1992-1-1 (EC2), 9.3.1.4 (not shown)			

Information about on-site reinforcement

- Lapping of the reinforcement in the connecting reinforced concrete components must be applied as close as possible to the insulating element of the Schöck Isokorb®, the required concrete cover must be observed.
- The shear force bars are to be anchored with their straight ends in the pressure zone. In the tension zone the shear force bars are to be lapped.
- The structural edging Pos. 6 should be selected so low that it can be arranged between the upper and lower reinforcement position.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Application example reinforced concrete slab spanning in one direction

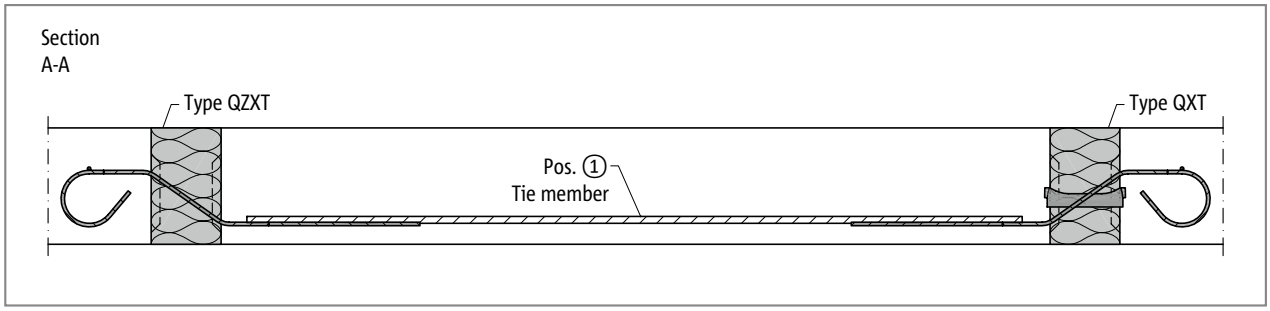


Schöck Isokorb® type QZXT, QXT: Reinforced concrete slab spanning in one direction

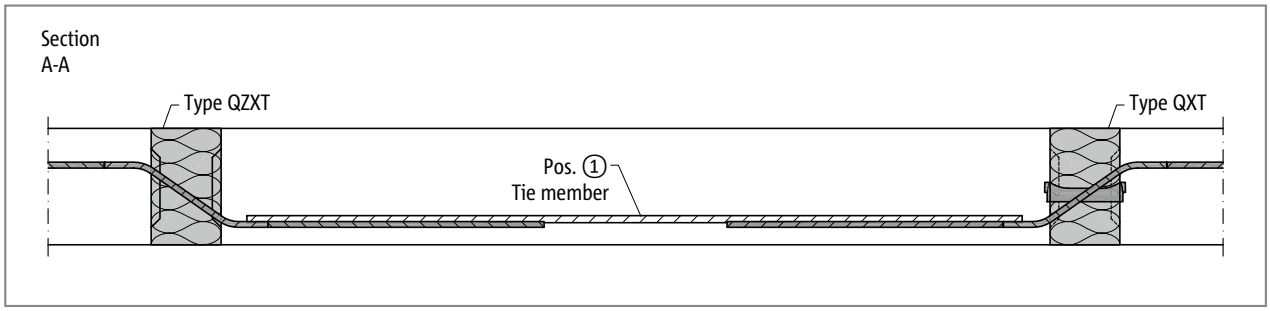
For zero-stress mounting a type QZXT without pressure bearing is to be arranged on one side. On the opposite side a type QXT with pressure bearing is then required. In order to maintain the equilibrium of forces a tie is to act as reinforcment between type QZXT and type QXT, which overlaps with the shear force transmitting Isokorb® bars.

Expansion joints

- Expansion joint spacing e see p. 123



Schöck Isokorb® type QZXT10 to QZXT40, QXT10 to QXT40: Section A-A; Reinforced concrete slab spanning in one direction



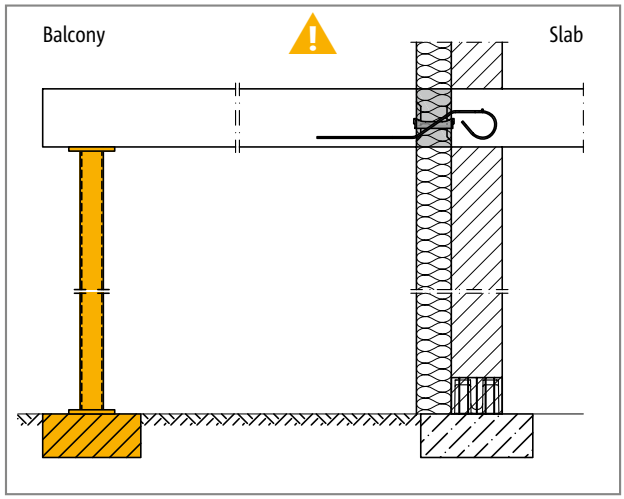
Schöck Isokorb® type QZXT60 to QZXT90, QXT60 to QXT90: Section A-A; Reinforced concrete slab spanning in one direction

Schöck Isokorb® type	QXT10, QZXT10	QXT20, QZXT20	QXT30, QZXT30	QXT40, QZXT40	QXT60, QZXT60	QXT70, QZXT70	QXT80, QZXT80	QXT90, QZXT90
On-site reinforcement	Concrete strength class ≥ C25/30							
Pos. 1 Tie								
Pos. 1	5 • H8	6 • H8	8 • H8	10 • H8	7 • H8	5 • H10	6 • H10	7 • H10

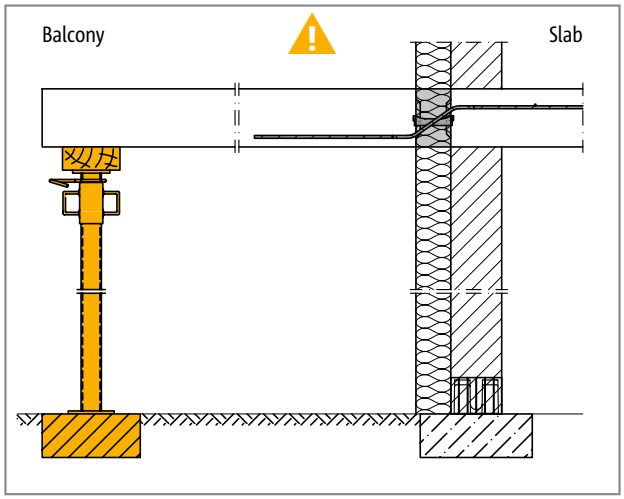
Information about on-site reinforcement

- The required suspension reinforcement and the on-site slab reinforcement are not shown here.
- On-site reinforcement analogous to Schöck Isokorb® type QXT see p. 126

Type of bearing: supported



Schöck Isokorb® type QXT: Continuous support required



Schöck Isokorb® type QXT: Continuous support required

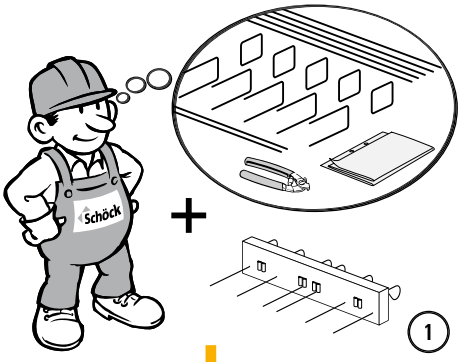
Supported balcony

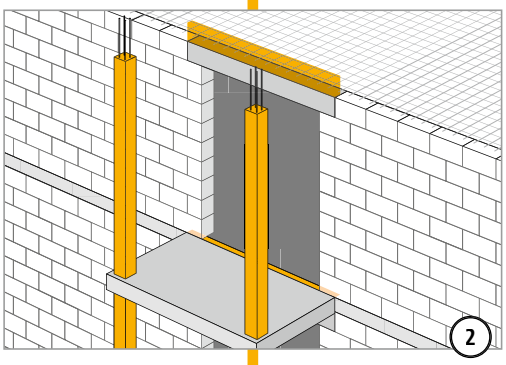
The Schöck Isokorb® types QXT, QXT+QXT and QZXT are developed for supported balconies. They transmit exclusively shear forces, no bending moments.

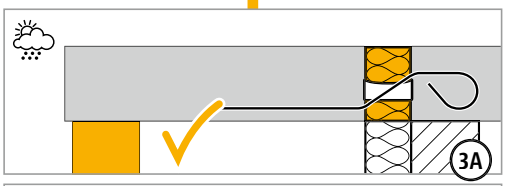
Warning - omitting the columns

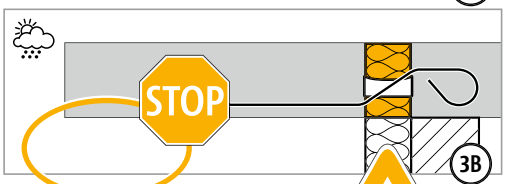
- The balcony will collapse if not supported.
- At all stages of construction, the balcony must be supported with statically suitable columns or supports.
- Even when completed, the balcony must be supported with statically suitable columns or supports.
- A removal of temporary support is permitted only after installation of the final support.

Installation instructions



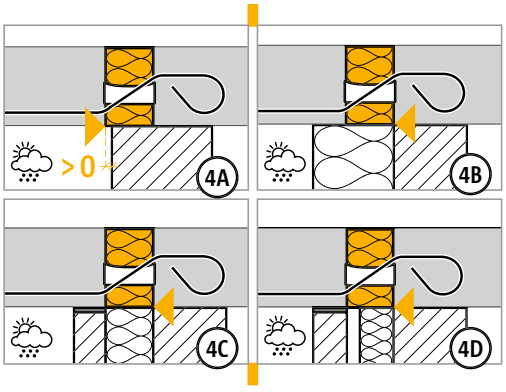


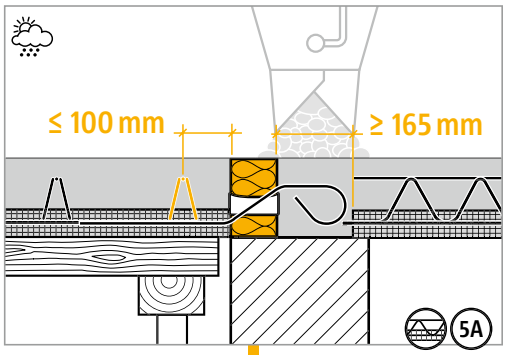


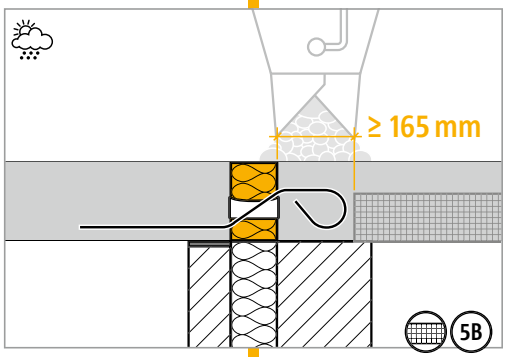


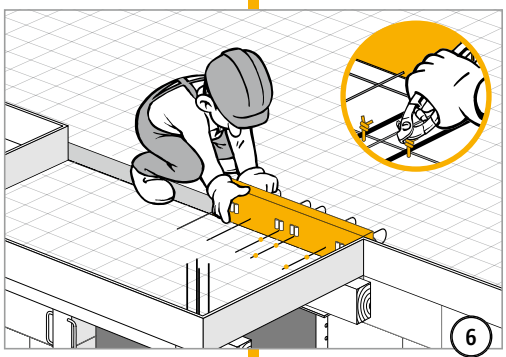
⚠ WARNING

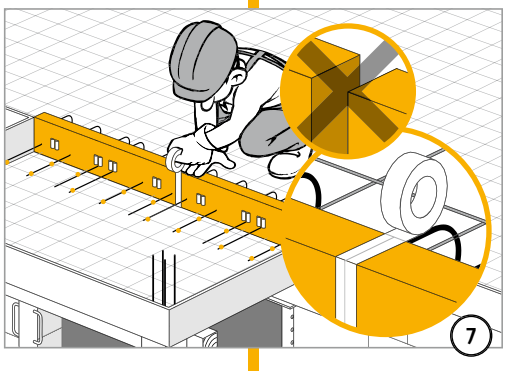
Without support the balcony will collapse!
The balcony must always be supported statically designed. Remove temporary support only after installation of final support.

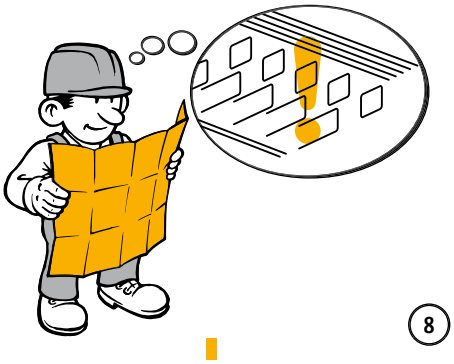




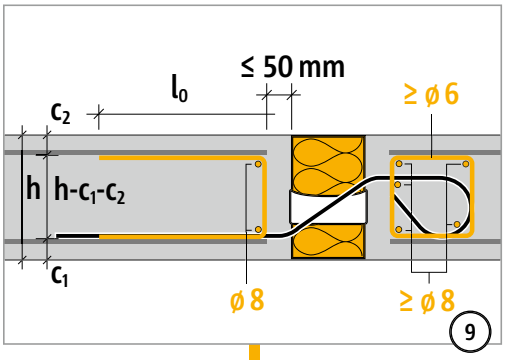


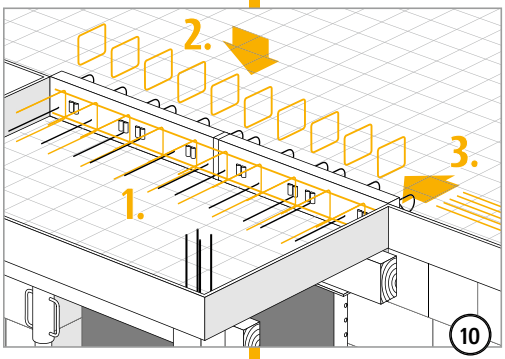


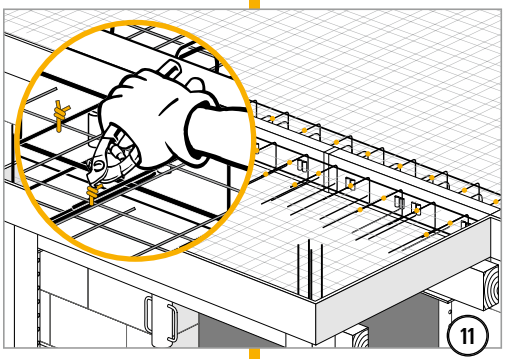


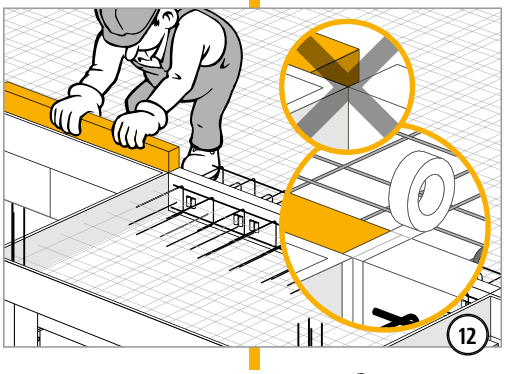


Installation instructions





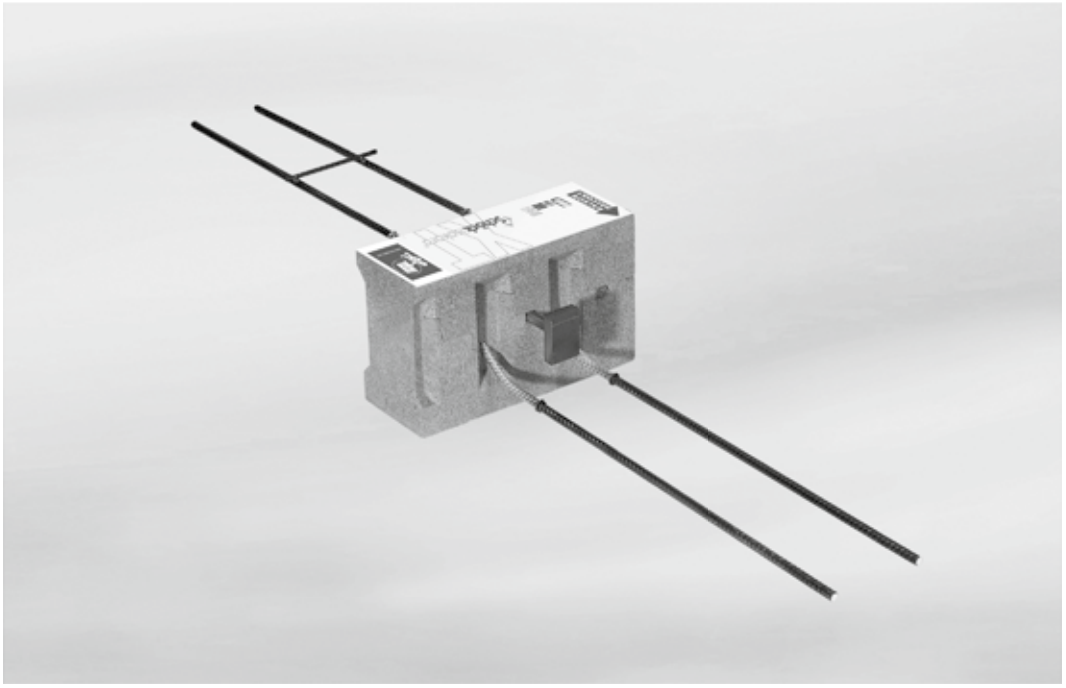




Check list

- ☐ Is the Schöck Isokorb® type matching the static system selected? Type QXT counts as pure shear force connection (pinned connection).
- ☐ Is the balcony so planned that a continuous support is ensured in all stages of construction and in the final status?
- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Are the Schöck FEM guidelines taken into acount with the calculation using FEM?
- ☐ Is the minimum slab thickness taken into consideration with Schöck Isokorb® types in fire protection configuration?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Is the required component geometry present with the connection to a floor or a wall? Is a special design required?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Are existing horizontal loads e.g. from wind pressure taken into account? Are additional Schöck Isokorb® supplementary type HPXT required for this?
- ☐ With precast balconies are possibly necessary gaps for the front side transportation anchors and downpipes with internal drainage taken into account? Is the maximum centre distance of 300 mm for the Isokorb® bars observed?

Schöck Isokorb® type QPXT, QPXT+QPXT, QPZXT



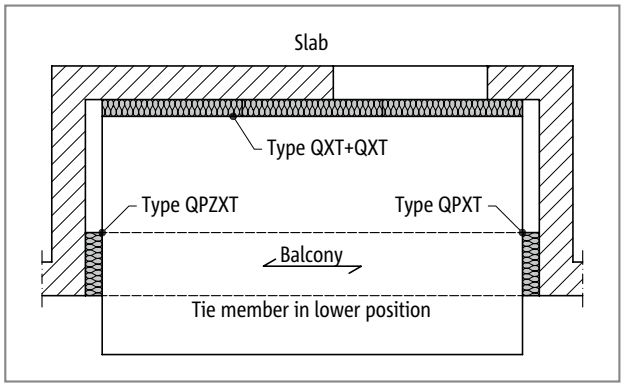
Schöck Isokorb® type QPXT

Schöck Isokorb® type QPXT (shear force)
Suitable for load peaks with supported balconies. It transmits positive shear forces.

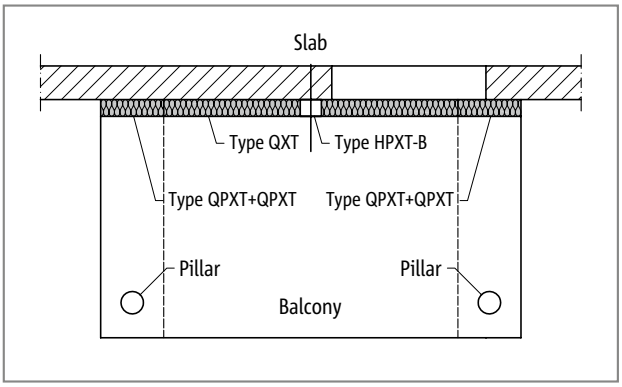
Schöck Isokorb® type QPXT+QPXT (shear force)
Suitable for load peaks with supported balconies. It transmits positive and negative shear forces.

Schöck Isokorb® type QPZXT (shear force zero-stress)
Suitable for load peaks with supported balconies with zero-stress connection. It transmits positive shear forces.

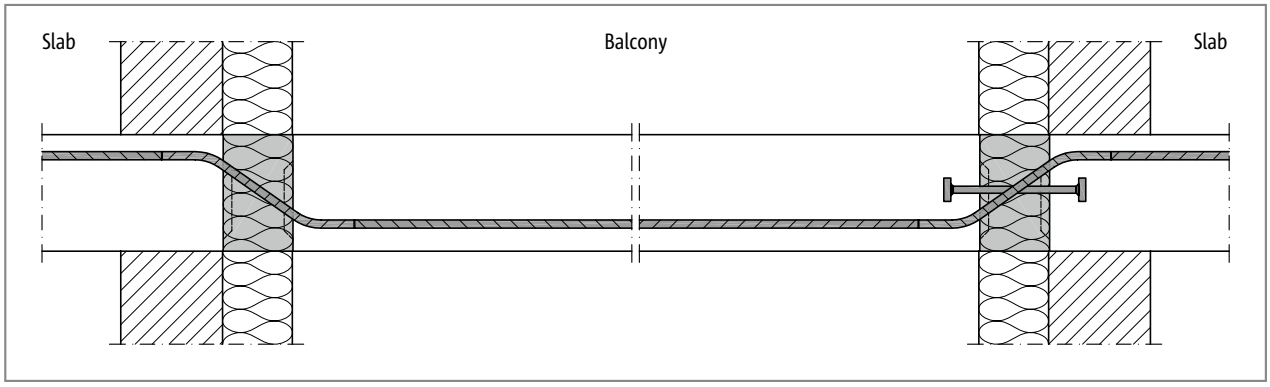
Element arrangement | Installation cross section



Schöck Isokorb® type QXT+QXT, QPXT, QPZXT: Three-sided supported recessed balcony with tie



Schöck Isokorb® type QPXT+QPXT, QXT: Balcony with supporting suspension with different support stiffness; optionally with type HPXT-B for the transmission of standard horizontal force



Schöck Isokorb® type QPXT, QPZXT: Application case recessed balcony *see p. 144*

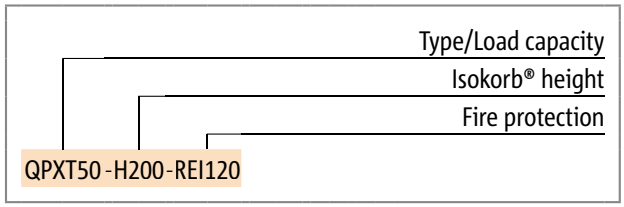
Product selection | Type designations | Special designs

Schöck Isokorb® type QPXT, QPXT+QPXT, QPZXT variants

The configuration of the Schöck Isokorb® types QPXT, QPXT+QPXT and QPZXT can be varied as follows:
For all load-bearing levels the folowing applies: shear force bar straight on the floor side, straight on the balcony side.
Type QPXT: Shear force bar for positive shear force
Type QPXT+QPXT: Shear force bar for positive and negative shear force
Type QPZXT: Stress-free without pressure bearing, shear force bar for positive shear force

- Load capacity:
  QPXT10 to QPXT70, QPXT75, QPXT100
  QPXT10+QPXT10, QPXT40+QPXT40, QPXT60+QPXT60, QPXT70+QPXT70
  QPZXT10, QPZXT40, QPZXT60, QPZXT75
- Concrete cover:
  bottom: CV = 40 mm
  top: CV ≥ 35 mm (dependent on height of the shear force bars)
- Height:
  H = H_{min} to 250 mm (note minimum slab height dependent load-bearing level and fire protection)
- Fire resistance class:
  R0: Standard
  REI120: Projecting upper fire protection slab, 10 mm on both sides

Type designations in planning documents



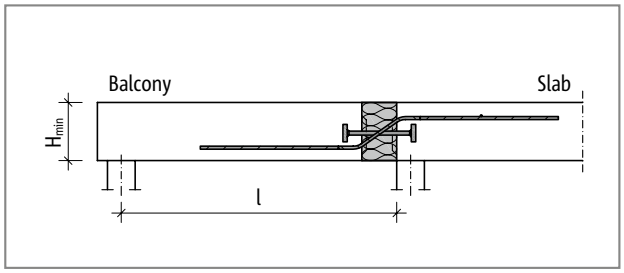
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).
This also applies with additional requirements as a result of precast concrete construction. For additional requirements determined by manufacturing or transportation there are solutions available with coupler bars.

C25/30 design

Schöck Isokorb® type	QPXT10	QPXT20	QPXT30	QPXT40	QPXT50	QPXT60	QPXT70	QPXT75	QPXT100
Design values with	$V_{Rd,z}$ [kN/element]								
Concrete C25/30	35.1	58.8	70.2	56.4	70.2	70.2	92.0	115.2	140.3

Isokorb® length [mm]	300	400	500	300	400	300	400	400	500
Shear force bars	2 ⌀ 10	3 ⌀ 10	4 ⌀ 10	2 ⌀ 12	3 ⌀ 12	2 ⌀ 14	3 ⌀ 14	3 ⌀ 14	4 ⌀ 14
Pressure bearing (pce)	1 ⌀ 14	2 ⌀ 12	2 ⌀ 14	2 ⌀ 12	2 ⌀ 14	2 ⌀ 14	3 ⌀ 12	4 ⌀ 12	4 ⌀ 14
H_{min} width R0 [mm]	180	180	180	190	190	200	200	200	200
H_{min} width REI120 [mm]	190	190	190	200	200	210	210	210	210

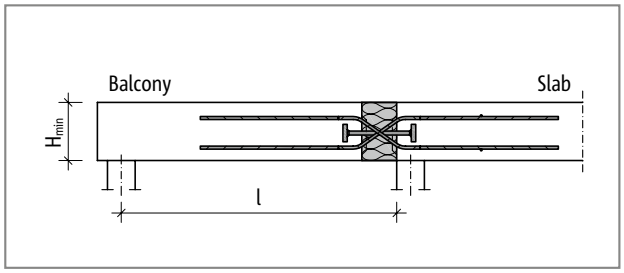


Schöck Isokorb® type QPXT: Static system

Design table type QPXT+QPXT

Schöck Isokorb® type	QPXT10+QPXT10	QPXT40+QPXT40	QPXT60+QPXT60	QPXT70+QPXT70
Design values with	$V_{Rd,z}$ [kN/element]			
Concrete C25/30	±35.1	±56.4	±70.2	±92.0

Isokorb® length [mm]	300	300	300	400
Shear force bars	2 x 2 ⌀ 10	2 x 2 ⌀ 12	2 x 2 ⌀ 14	2 x 3 ⌀ 14
Pressure bearing (pce)	1 ⌀ 14	2 ⌀ 12	2 ⌀ 14	3 ⌀ 12
H_{min} width R0 [mm]	190	200	210	210
H_{min} width REI120 [mm]	190	200	210	210



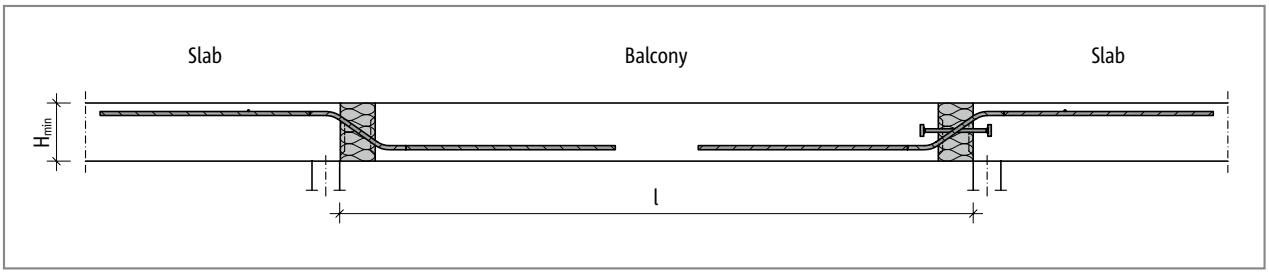
Schöck Isokorb® type QPXT+QPXT: Static system

Design

Design table type QPZXT

Schöck Isokorb® type	QPZXT10	QPZXT40	QPZXT60	QPZXT75
Design values with	$V_{Rd,z}$ [kN/element]			
Concrete C25/30	35.1	56.4	70.2	115.2

Isokorb® length [mm]	300	300	300	400
Shear force bars	2 ⌀ 10	2 ⌀ 12	2 ⌀ 14	3 ⌀ 14
Pressure bearing (pce)	-	-	-	-
H_{min} width R0 [mm]	180	190	200	200
H_{min} width REI120 [mm]	190	200	210	210



Schöck Isokorb® type QPZXT, QPXT: Static system

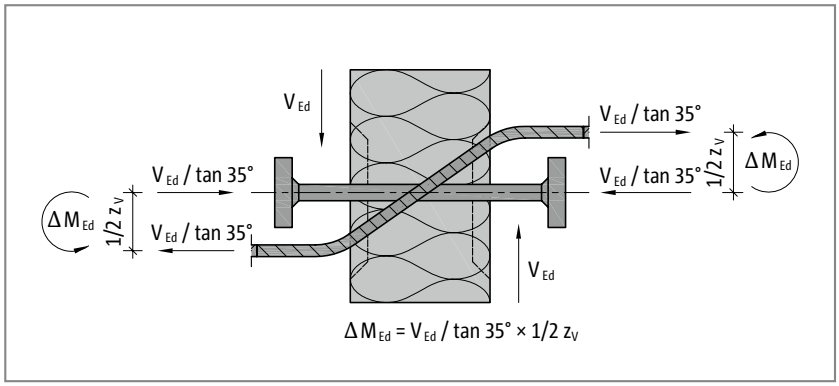
Notes on design

- For the transmission of standard horizontal forces additional Schöck Isokorb® type HPXT (see page 149) are required.
- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,max}$, whereby $V_{Rd,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- A static verification is to be provided for the adjacent reinforced concrete structural components for both sides of the Schöck Isokorb. With a connection using Schöck Isokorb® type QPXT+QPXT a freely rotatable support (pin connection) is to be accepted as static system.
- The Schöck Isokorb® type QPZXT for zero-stress connection requires a reinforcing tie in the lower position. Select $A_{s,req}$ according to recessed balcony example page 144 .
- With different concrete strength classes (e.g. balcony C32/40, inner slab C25/30) basically the weaker concrete is relevant for the design of the Schöck Isokorb®.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Design

Moments from excentric connection

For the design of the connection reinforcement on both sides of the shear force transmitting Schöck Isokorb® types QPXT and QPXT+QPXT moments from excentric connection are to be taken into account. These moments are in each case to be superimosed with the moments from the standard stressing if they have the same sign.
The following table values ΔM_{Ed} have been calculated with 100% utilisation of V_{Rd} with a lever arm $z_{v,max}$ = 140 mm .



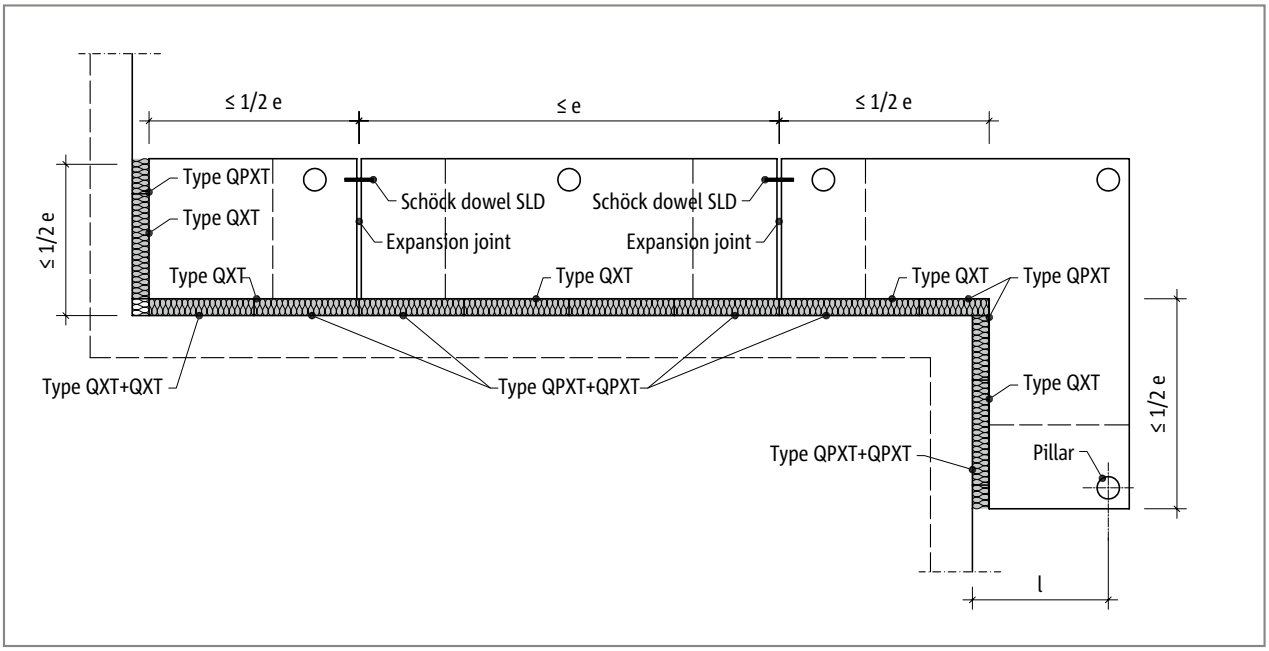
Schöck Isokorb® type	QPXT10, QPX-T10+QPXT10	QPXT20	QPXT30	QPXT40, QPX-T40+QPXT40	QPXT50
Design values with	Δ M_{Ed} [kNm/Element]				
Concrete C25/30	2.6	4.3	5.1	4.4	5.5

Schöck Isokorb® type	QPXT60, QPX-T60+QPXT60	QPXT70, QPX-T70+QPXT70	QPXT75	QPXT100
Design values with	Δ M_{Ed} [kNm/Element]			
Concrete C25/30	5.9	7.7	9.7	11.8

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type QPXT, QPXT+QPXT: Expansion joint arrangement

Schöck Isokorb® type		QPXT10	QPXT20	QPXT30	QPXT40	QPXT50 - QPXT100
Maximum expansion joint spacing		e [m]				
Insulating element thickness [mm]	120	17.0	19.8	17.0	19.8	17.0

Schöck Isokorb® type		QPXT10+QPXT10	QPXT40+QPXT40	QPXT60+QPXT60	QPXT70+QPXT70
Maximum expansion joint spacing		e [m]			
Insulating element thickness [mm]	120	17.0	19.8	17.0	17.0

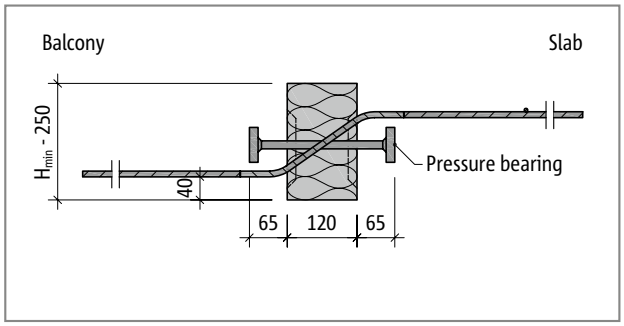
Schöck Isokorb® type		QPZXT10	QPZXT40	QPZXT60	QPZXT75
Maximum expansion joint spacing		e [m]			
Insulating element thickness [mm]	120	21.7	19.8	17.0	17.0

Edge distances

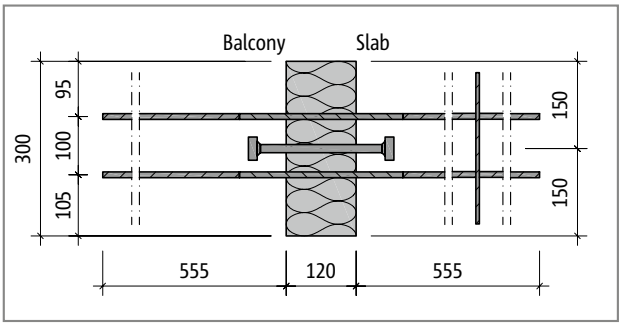
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

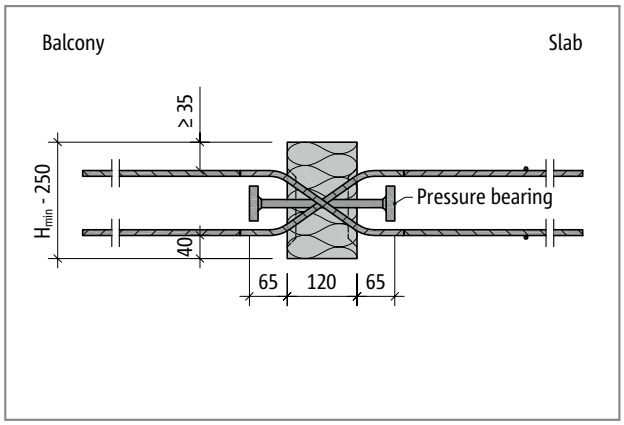
Product description



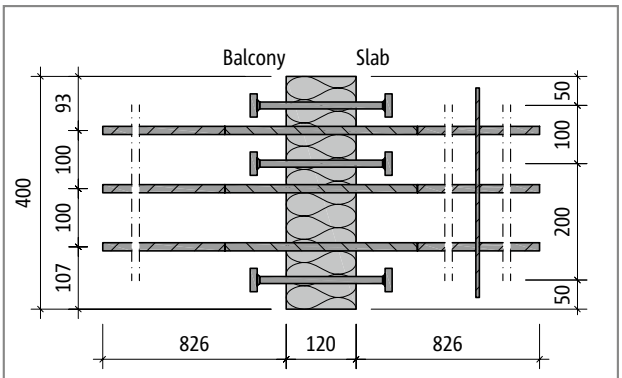
Schöck Isokorb® type QPXT: Product section



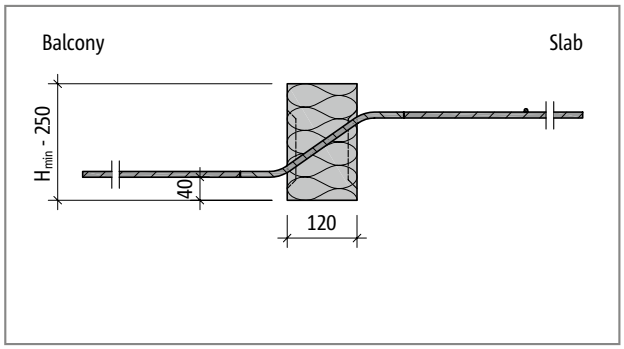
Schöck Isokorb® type QPXT10: Product plan view



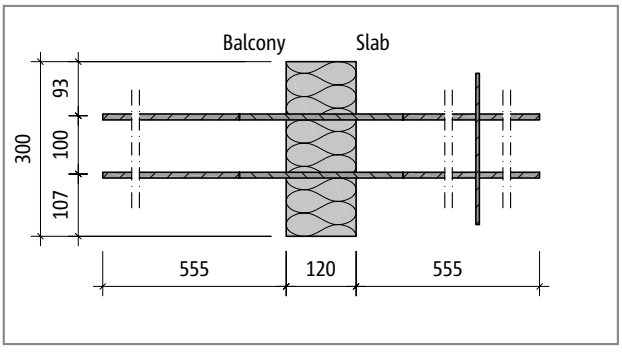
Schöck Isokorb® type QPXT+QPXT: Product section



Schöck Isokorb® type QPXT70: Product plan view



Schöck Isokorb® type QPZXT: Product section

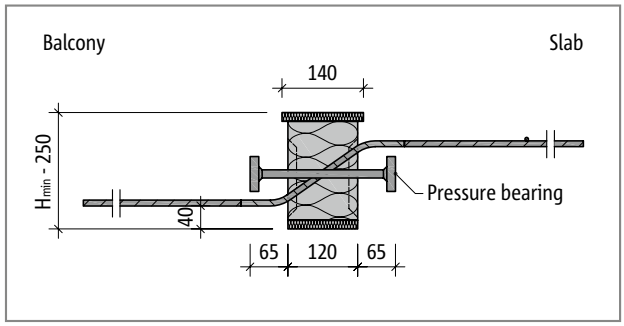


Schöck Isokorb® type QPZXT10: Product plan view

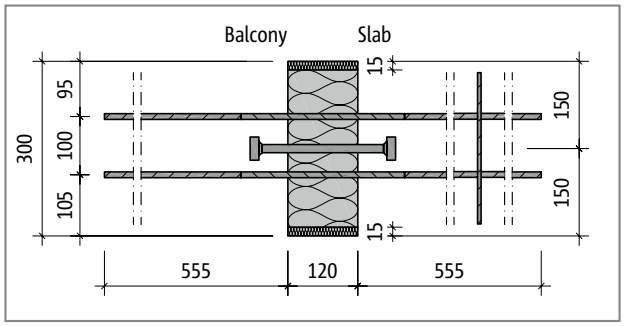
Product information

- Note minimum height H_{min} Schöck Isokorb® type QPXT, QPXT+QPXT, QPZXT.
- The length of the Schöck Isokorb® varies dependent on the load-bearing level.
- The upper fire protection slab projects on both sides of the Schöck Isokorb® by 10 mm.
- Download further product plan views and cross-sections at www.schoeck.co.uk/download

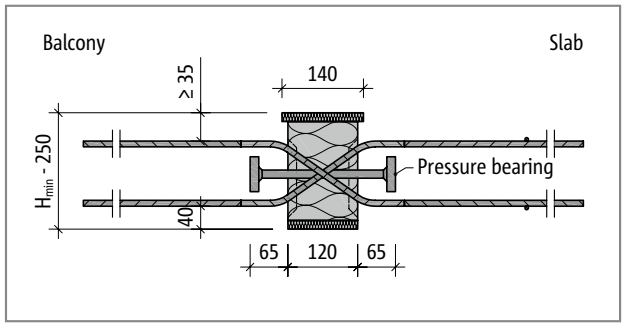
Fire protection configuration



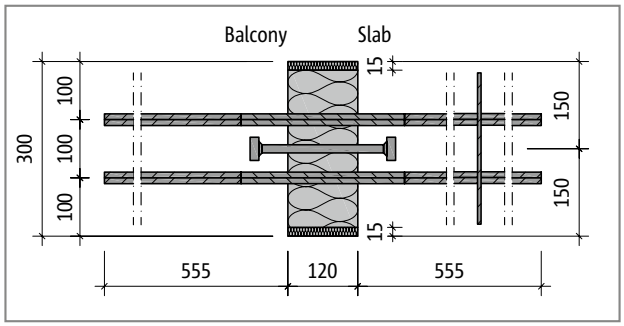
Schöck Isokorb® type QPXT with REI120: Product section; fire protection slab top and bottom



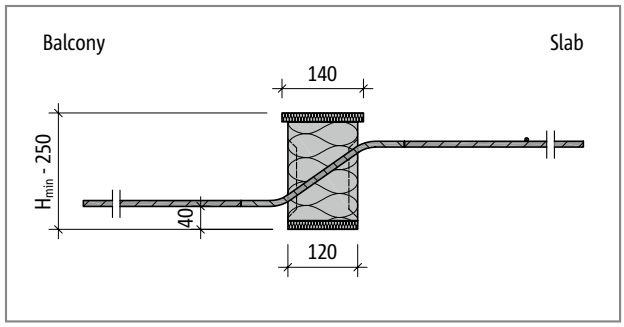
Schöck Isokorb® type QPXT10 with REI120: Product plan view; fire protection slab lateral



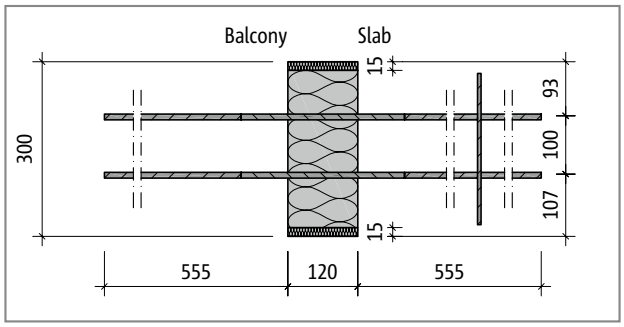
Schöck Isokorb® type QPXT+QPXT with REI120: Product section; fire protection slab top and bottom



Schöck Isokorb® type QPXT10+QPXT10 with REI120: Product plan view; fire protection slab lateral



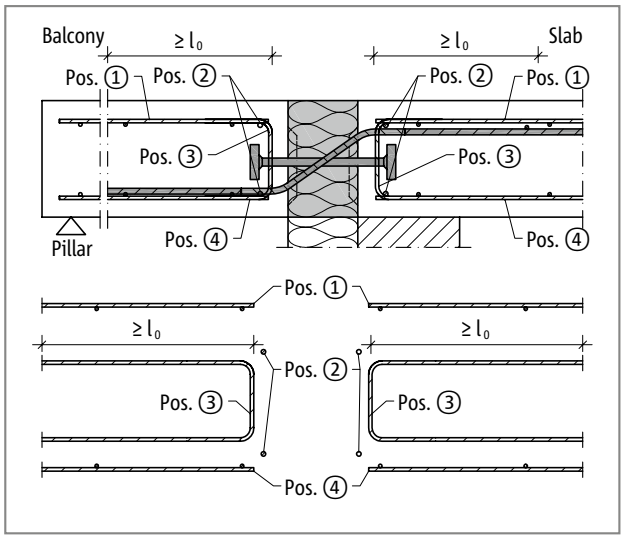
Schöck Isokorb® type QPZXT with REI120: Product section; fire protection slab top and bottom



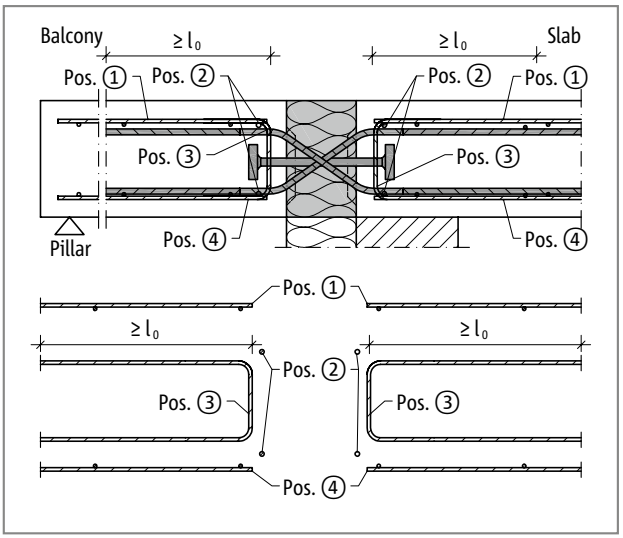
Schöck Isokorb® type QPZXT10 with REI120: Product plan view; fire protection lateral

On-site reinforcement - In-situ concrete construction

Schöck Isokorb® type QPXT10 to QPXT100 and type QPXT10+QPXT10 to QPXT70+QPXT70



Schöck Isokorb® type QPXT: On-site reinforcement



Schöck Isokorb® type QPXT+QPXT: On-site reinforcement

The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the shear force bars of the Schöck Isokorb® are 100% lapped, insofar as they lie in the tension zone.

Information about on-site reinforcement

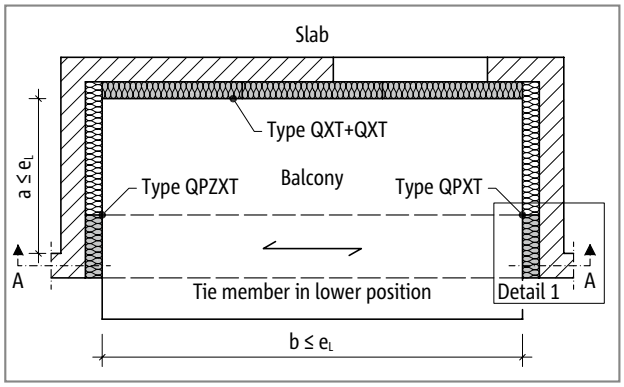
- Lapping of the reinforcement in the connecting reinforced concrete components must be applied as close as possible to the insulating element of the Schöck Isokorb®, the required concrete cover must be observed.
- The structural edging Pos. 5 should be selected so low that it can be arranged between the upper and lower reinforcement position.
- The Schöck Isokorb® type QPZXT for zero-stress connection requires a reinforcing tie in the lower position. Select $A_{s,req}$ according to recessed balcony example page 144 .
- The shear force bars are to be anchored with their straight ends in the pressure zone. In the tension zone the shear force bars are to be lapped.
- The indicative minimum concrete strength class of the external structural component is C32/40.

On-site reinforcement - In-situ concrete construction

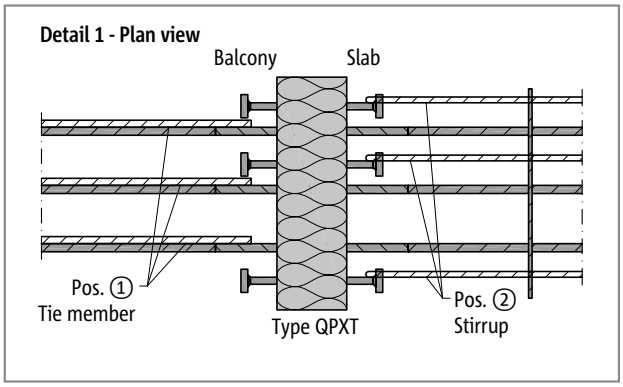
Schöck Isokorb® type		QPXT10, QPX-T10+QPXT10	QPXT20	QPXT30	QPXT40, QPX-T40+QPXT40	QPXT50
On-site reinforcement	Location	Concrete strength class ≥ C25/30				
Pos. 1 Lapping reinforcement						
Pos. 1	balcony/floor side	acc. to the specifications of the structural engineer				
Pos. 2 Steel bars along the insulation joint						
Pos. 2	balcony/floor side	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Stirrup						
Pos. 3 [mm²/m]	balcony/floor side	77	115	153	110	161
Pos. 4 Lapping reinforcement						
Pos. 4	balcony/floor side	necessary in the tension zone, as specified by the structural engineer				
Pos. 5 Lapping reinforcement						
Pos. 5		Edging acc. to BS EN 1992-1-1 (EC2), 9.3.1.4 (not shown)				

Schöck Isokorb® type		QPXT60, QPX-T60+QPXT60	QPXT70, QPX-T70+QPXT70	QPXT75	QPXT100
On-site reinforcement	Location	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement					
Pos. 1	balcony/floor side	acc. to the specifications of the structural engineer			
Pos. 2 Steel bars along the insulation joint					
Pos. 2	balcony/floor side	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Stirrup					
Pos. 3 [mm²/Element]	balcony/floor side	150	212	226	301
Pos. 4 Lapping reinforcement					
Pos. 4	balcony/floor side	necessary in the tension zone, as specified by the structural engineer			
Pos. 5 Structural edging at the free edge					
Pos. 5		Edging acc. to BS EN 1992-1-1 (EC2), 9.3.1.4 (not shown)			

Application case recessed balcony

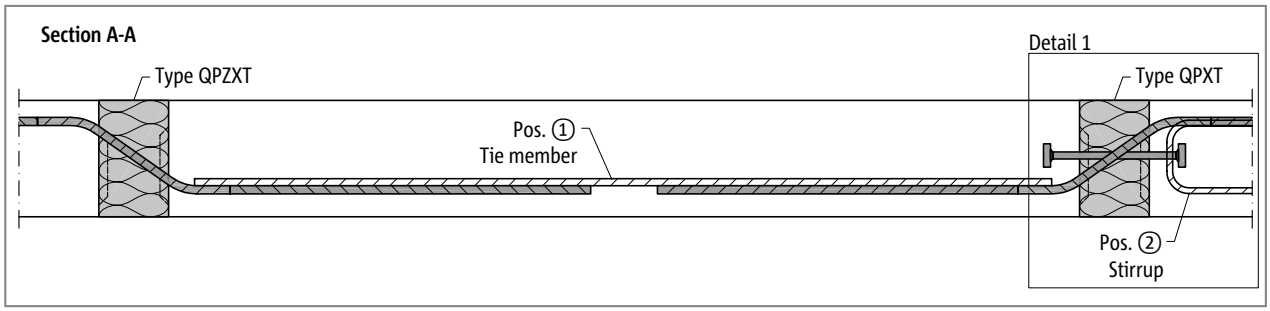


Schöck Isokorb® type QPZXT, QPXT: Plan view recessed balcony



Schöck Isokorb® type QPXT, QPZXT: Detail 1; Reinforcement connection tie

For zero-stress mounting a type QPZXT without pressure bearing is to be arranged on one side. On the opposite side a type QPXT with pressure bearing is then required. In order to maintain the equilibrium of forces a tie is to act as reinforcment between type QPZXT and type QPXT, which overlaps with the shear force transmitting Isokorb® bars.



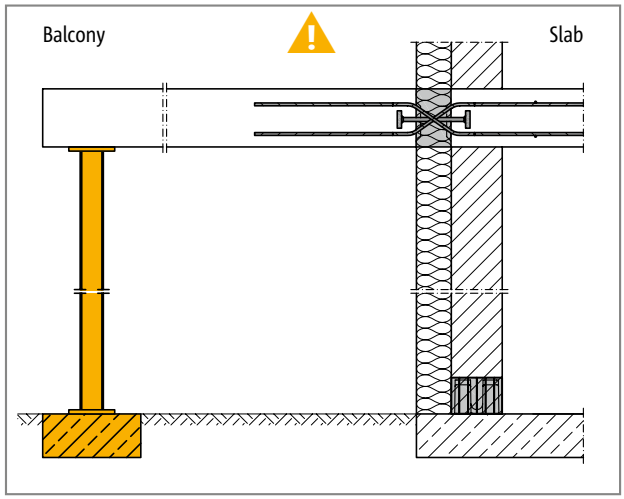
Schöck Isokorb® type	QPXT10 and QPZXT10	QPXT40 and QPZXT40	QPXT60 and QPZXT60	QPXT75 and QPZXT75
On-site reinforcement	Concrete strength class ≥ C25/30			
Pos. 1 Tie				
Pos. 1	2 • H10	2 • H12	2 • H16	3 • H16
Pos. 2 Stirrup (bracing)				
Pos. 2	1 • H10	2 • H10	2 • H10	3 • H10

Schöck Isokorb® type	QPXT10, QPZXT10	QPXT40, QPZXT40	QPXT60, QPZXT60	QPXT75, QPZXT75
Fixed point separation recessed balcony	e_L [m]			
a, b ≤	5.05	5.65	5.05	5.05

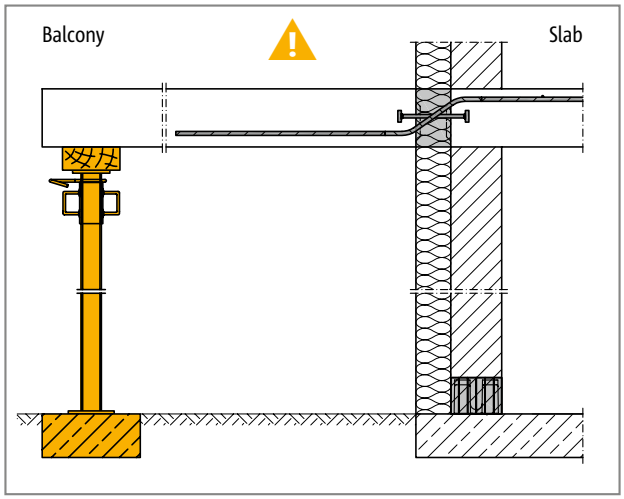
recessed balcony

- The fixed point separations a, b are to be selected witht a ≤ e_L and b ≤ e_L .
- The floor side bracing of the tie is carried out via on-site stirrups, which are tied to the pressure bearings.
- The required suspension reinforcement and the on-site slab reinforcement are not shown here.

Type of bearing: supported



Schöck Isokorb® type QPXT+QPXT: Continuous support required



Schöck Isokorb® type QPXT: Continuous support required

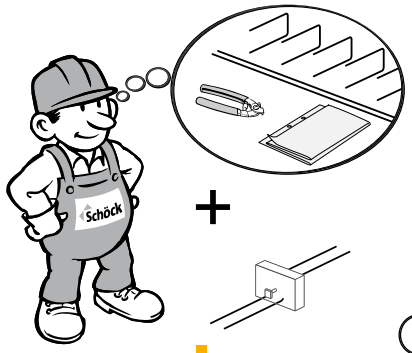
supported balcony

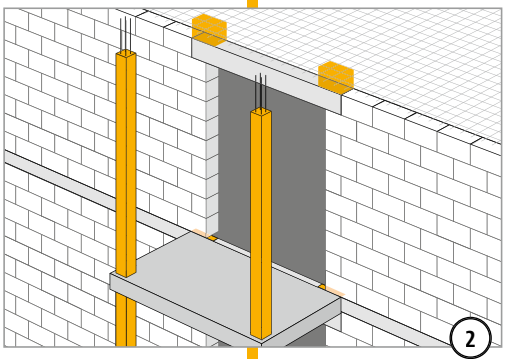
The Schöck Isokorb® type QPXT, QPXT+QPXT is developed for supported balconies. It transmits exclusively shear forces, no bending moments.

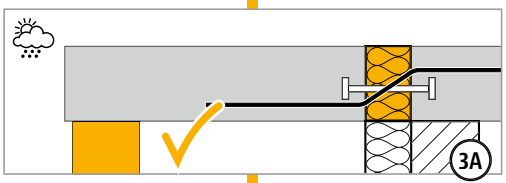
Warning - omitting the columns

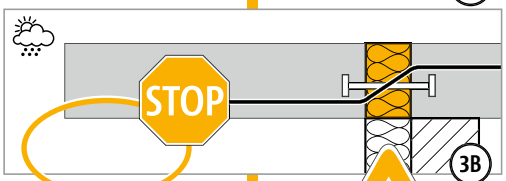
- The balcony will collapse if not supported.
- At all stages of construction, the balcony must be supported with statically suitable columns or supports.
- Even when completed, the balcony must be supported with statically suitable columns or supports.
- A removal of temporary support is permitted only after installation of the final support.

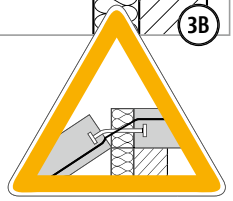
Installation instructions





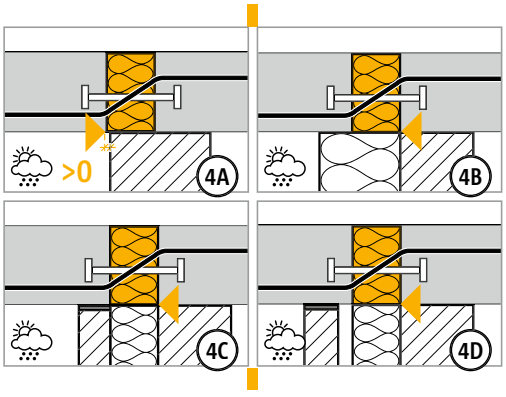


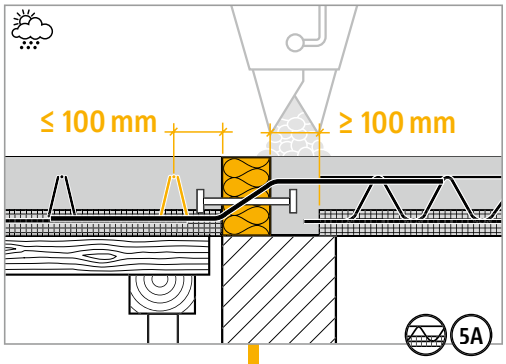


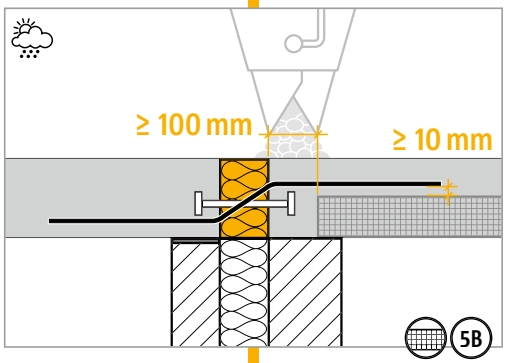


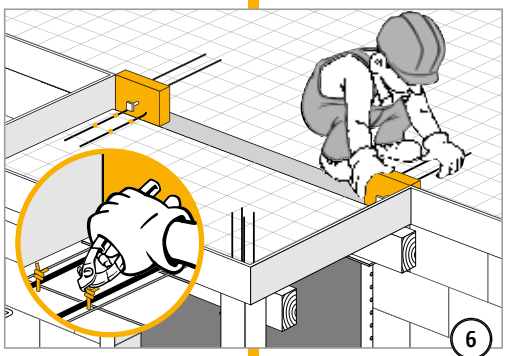
⚠ WARNING

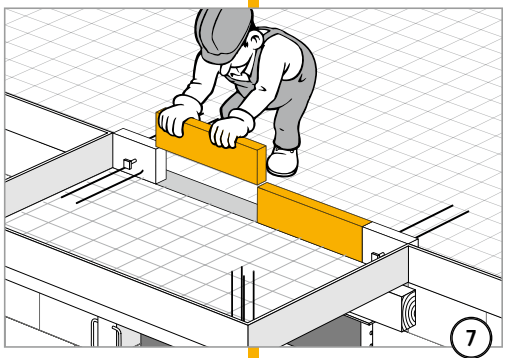
Without support the balcony will collapse!
The balcony must always be supported statically designed. Remove temporary support only after installation of final support.

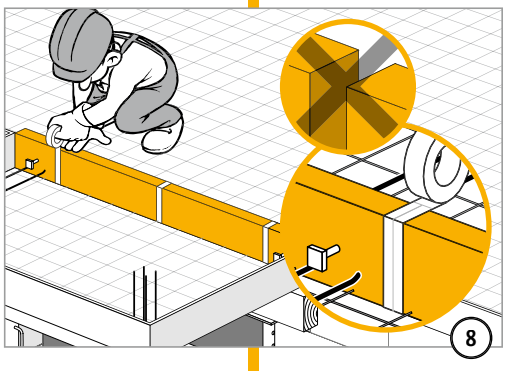




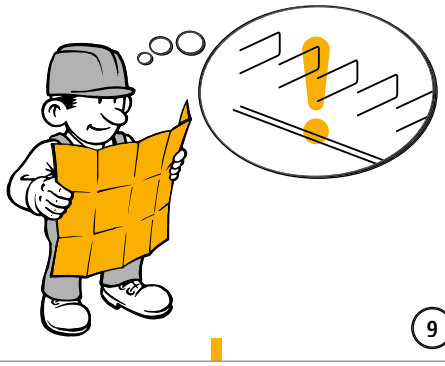


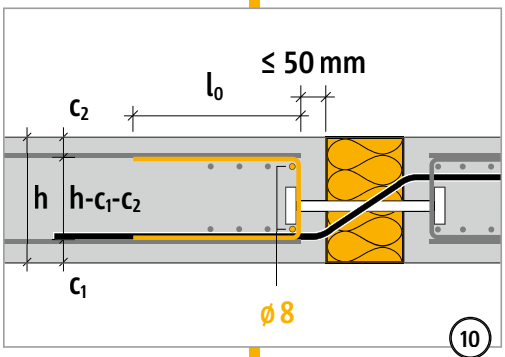


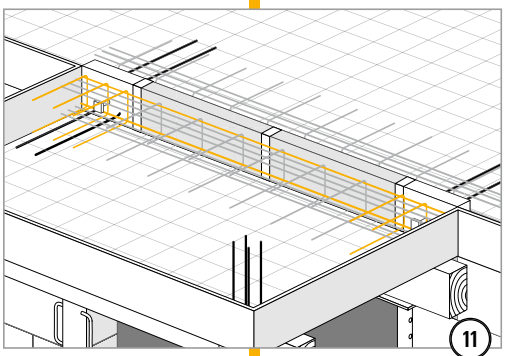


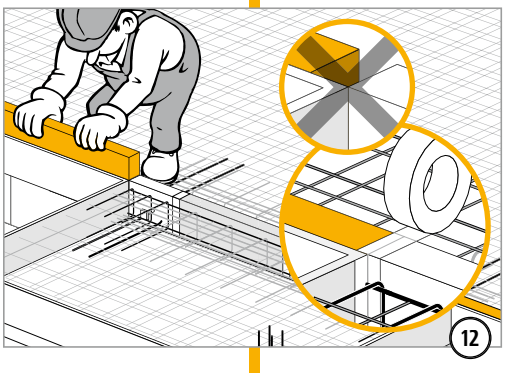


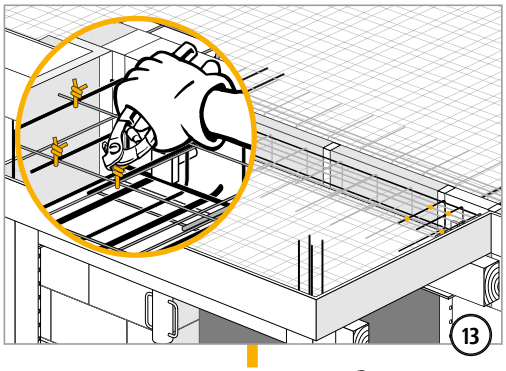
Installation instructions







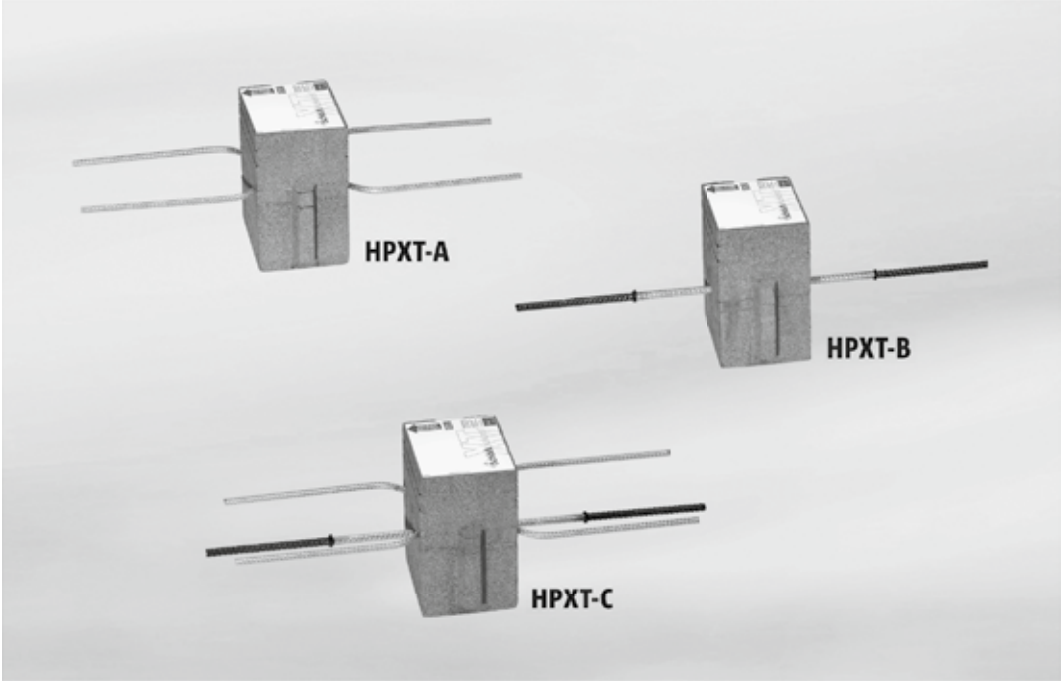




Check list

- ☐ Was the Schöck Isokorb® type matching the static system selected? Type QPXT and QPXT+QPXT count as pure shear force connection (pinned connection).
- ☐ Is the balcony so planned that a continuous support is ensured in all stages of construction and in the final status?
- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Are the Schöck FEM guidelines taken into acount with the calculation using FEM?
- ☐ Is the minimum slab thickness taken into consideration with Schöck Isokorb® types in fire protection configuration?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Is the required component geometry present with the connection to a floor or a wall? Is a special design required?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Are existing horizontal loads e.g. from wind pressure taken into account? Are additional Schöck Isokorb® supplementary type HPXT required for this?
- ☐ With precast balconies are possibly necessary gaps for the front side transportation anchors and downpipes with internal drainage taken into account? Is the maximum centre distance of 300 mm for the Isokorb® bars observed?

Schöck Isokorb® supplementary type HPXT



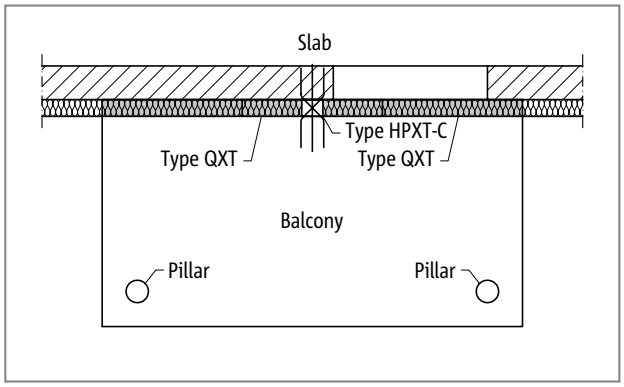
Schöck Isokorb® types HPXT-A, HPXT-B, HPXT-C

Schöck Isokorb® supplementary type HPXT
Suitable for standard existing horizontal forces.

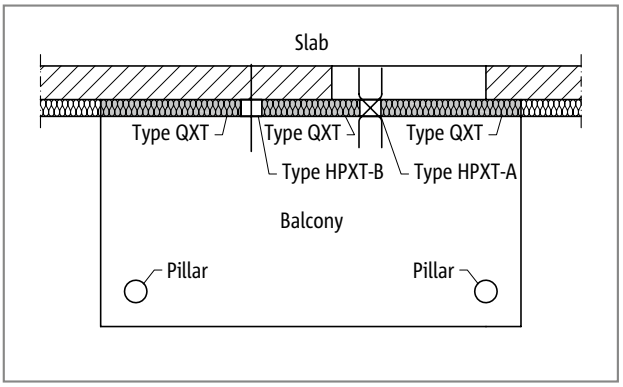
The Schöck Isokorb® supplementary type HPXT-A transmits forces parallel to the insulation layer.
The Schöck Isokorb® supplementary type HPXT-B transmits forces perpendicular to the insulation layer.
The Schöck Isokorb® supplementary type HPXT-C transits forces both parallel as well as perpendicular to the insulation layer.

The Schöck Isokorb® supplementary type HPXT-A or supplementary type HPXT-B is to be included only in combination with an approved Isokorb® type KXT, type QXT, type QPXT or type DXT.

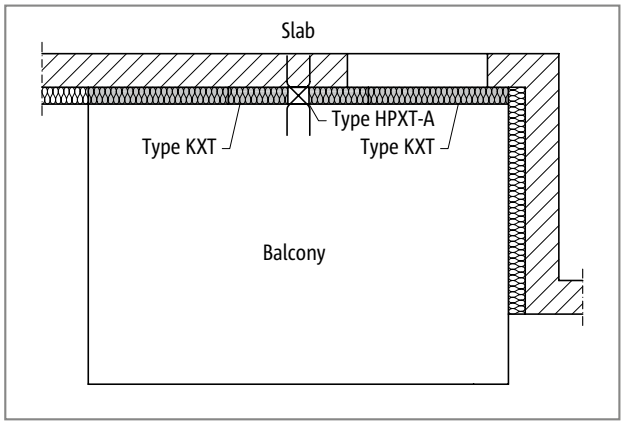
Element arrangement | Installation cross sections



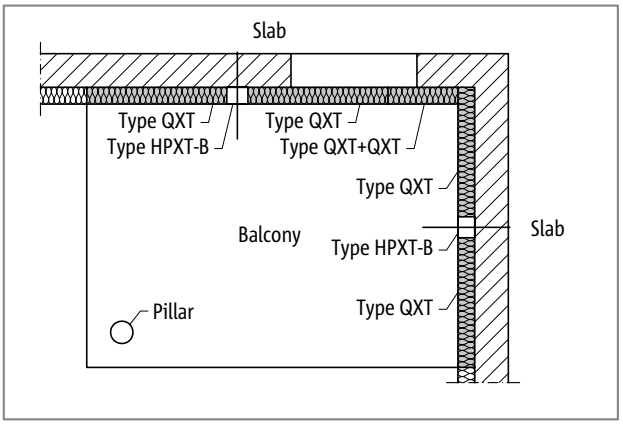
Schöck Isokorb® type HPXT: Balcony with column support



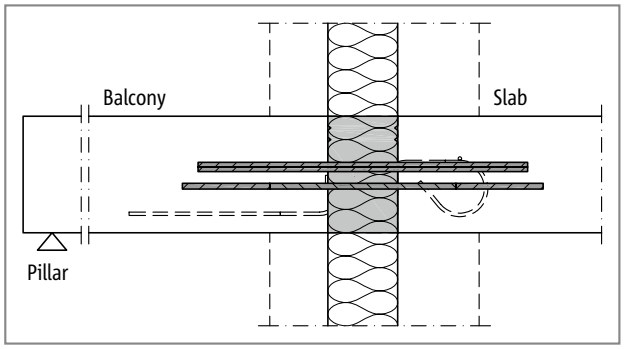
Schöck Isokorb® type HPXT: Balcony with column support



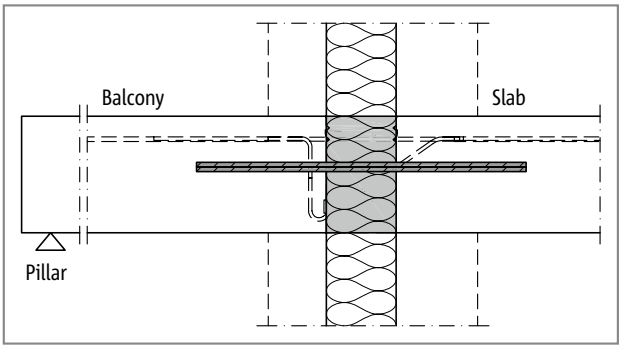
Schöck Isokorb® type HPXT: Balcony freely cantilevered



Schöck Isokorb® type HPXT: Supported on two sides with column



Schöck Isokorb® type QXT, HPXT-C: Indirect support, non-supporting cavity masonry



Schöck Isokorb® type KXT, HPXT-A: Indirect support, non-supporting cavity masonry

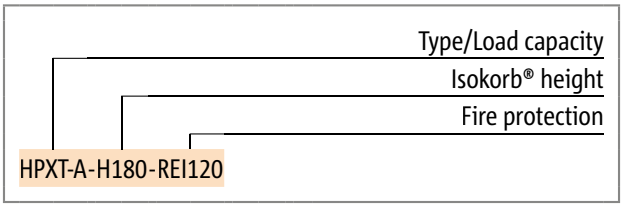
Product selection | Type designations | Special designs

Schöck Isokorb® supplementary type HPXT variants

The configuration of the Schöck Isokorb® supplementary type HPXT can be varied as follows:

- Variant:
  HPXT-A, HPXT-B and HPXT-C
- Height:
  H = 160 - 250 mm
- Fire resistance class:
  R0: Standard
  REI120: Projecting upper fire protection slab 10 mm on both sides

Type designations in planning documents



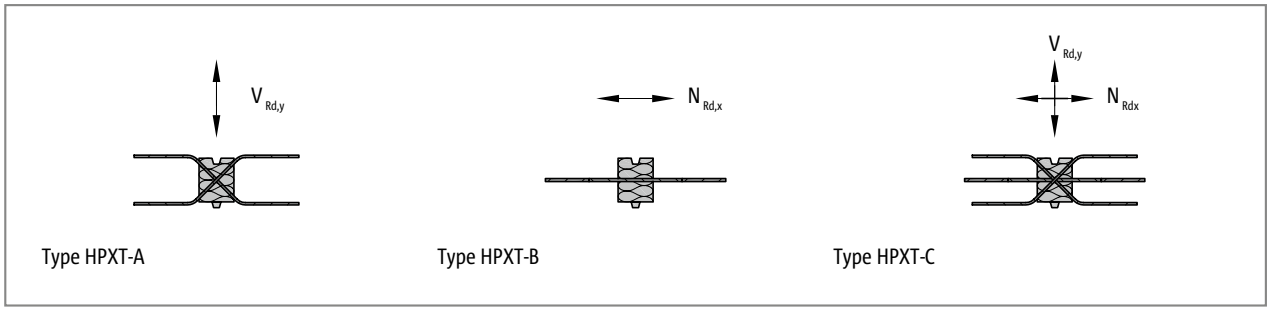
Special designs

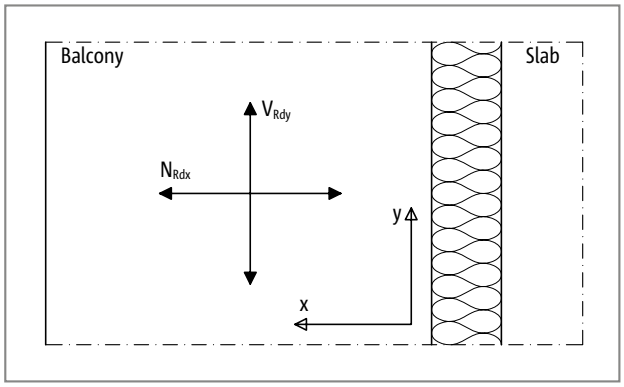
Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

Design

Schöck Isokorb® type	HPXT-A		HPXT-B		HPXT-C	
Design values with	$V_{Rd,y}$ [kN]	$N_{Rd,x}$ [kN]	$V_{Rd,y}$ [kN]	$N_{Rd,x}$ [kN]	$V_{Rd,y}$ [kN]	$N_{Rd,x}$ [kN]
C25/30	±8.6	0.0	0.0	±20.9	±8.6	±20.9

Shear force bars, horizontal	2 ⌀ 8	-	2 ⌀ 8
Tension bars/compression bars	-	1 ⌀ 10	1 ⌀ 10
Isokorb® length [mm]	150	150	150
Isokorb® height H [mm]	160 - 250	160 - 250	160 - 250





Schöck Isokorb® type HPXT: Sign convention for the design

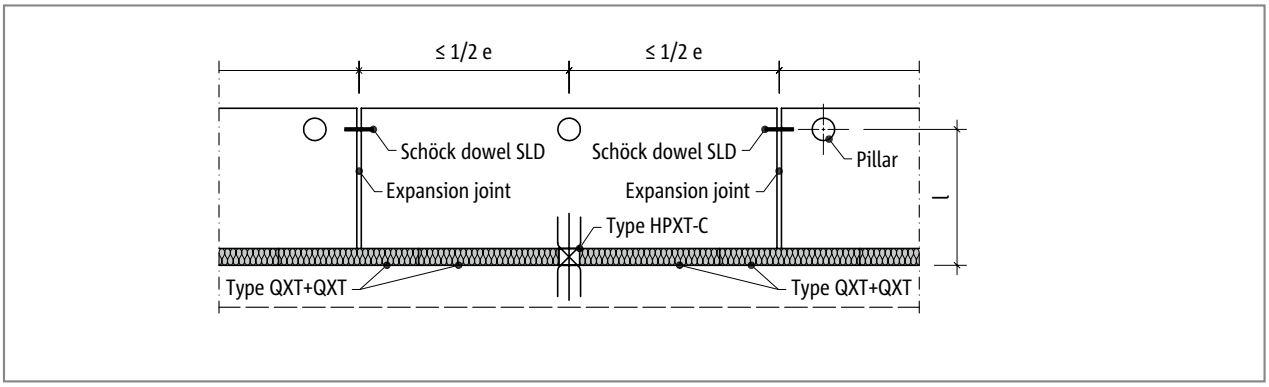
Notes on design

- With the design of a linear connection it is to be noted that the employment of the supplementary type HPXT, the design values of the linear connection can be reduced (e.g. type QXT with L = 1.0 m and supplementary type HPXT with L = 0.15 m in the regular exchange a reduction of v_{Rd} of the linear connection with type QXT this means by ca. 13 %).
- With the selection of type (supplementary type HPXT-A, HPXT-B or HPXT-C) and configuration, attention is to be paid that no unnecessary fixed points are created and the maximum expansion joint spacings (of e.g. type KXT, type QXT or type DXT) are maintained.
- The required number of Schöck Isokorb® supplementary type HPXT-A, HPXT-B or HPXT-C is to be determined according to static requirements.
- With different concrete strength classes (e.g. balcony C32/40, inner slab C25/30) basically the weaker concrete is relevant for the design of the Schöck Isokorb®.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type HPXT: Expansion joint arrangement

Schöck Isokorb® type HPXT combined with	KXT	KXT-HV, KXT-BH, KXT-WU, KXT-WO	QXT, QXT+QXT	QPXT, QPXT+QPXT, QPZXT	DXT
maximum expansion joint spacing from fixed point e/2 [m]	≤ e/2 see p. 59	10.9	≤ e/2 see p. 123	≤ e/2 see p. 139	9.9

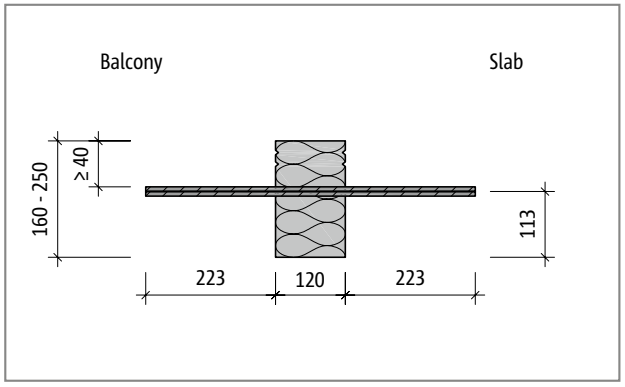
Edge distances

The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

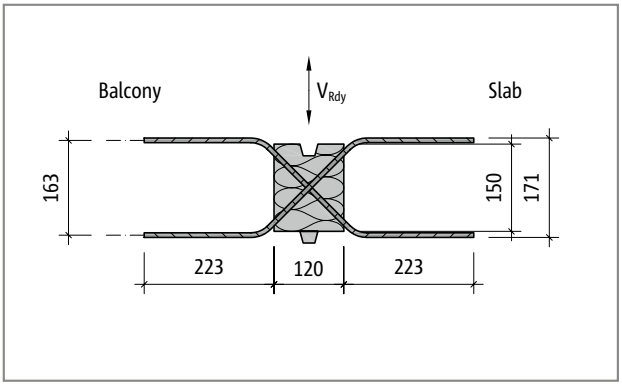
- For the centre distance of the tension bars from the free edge or from the expansion joint: $e_R \geq 50$ mm and $e_R \leq 150$ mm applies.
- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

Product description

Schöck Isokorb® supplementary type HPXT-A for transmission of horizontal force $V_{Ed,y}$ parallel to the insulation layer

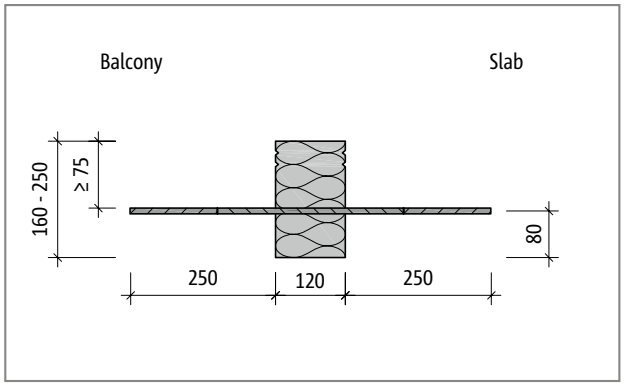


Schöck Isokorb® type HPXT-A: Product section

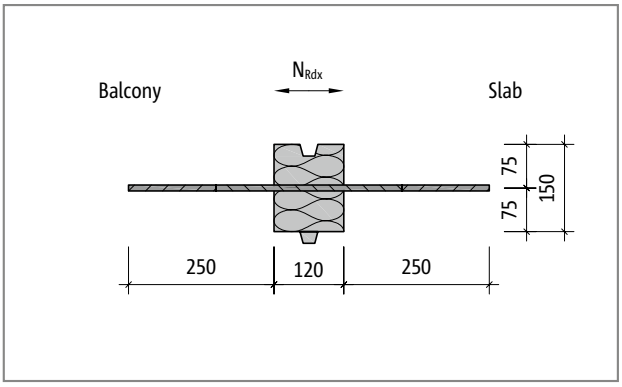


Schöck Isokorb® type HPXT-A: Product plan view

Schöck Isokorb® supplementary type HPXT-B for transmission ofn horizontal forces $N_{Ed,x}$ perpendicular to the insulation layer

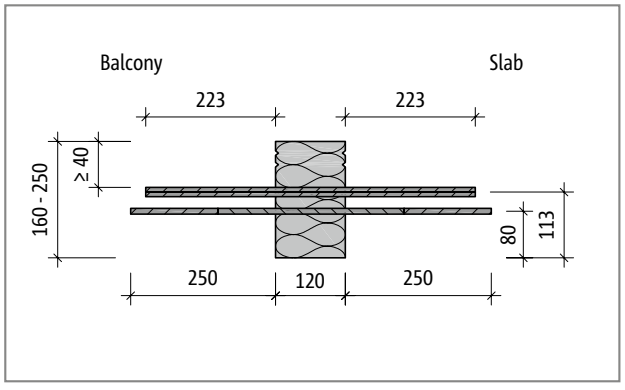


Schöck Isokorb® type HPXT-B: Product section

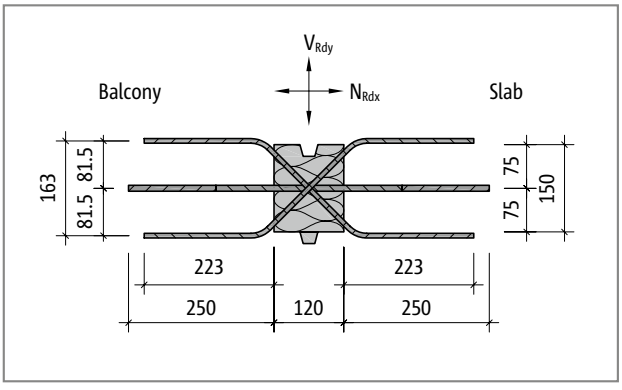


Schöck Isokorb® type HPXT-B: Product plan view

Schöck Isokorb® supplementary type HPXT-C for the transmission of horizontal forces $V_{Ed,y}$ parallel and $N_{Ed,x}$ perpendicular to the insulation layer



Schöck Isokorb® type HPXT-C: Product section



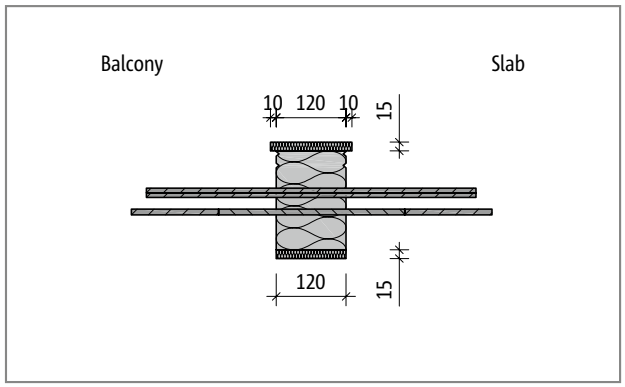
Schöck Isokorb® type HPXT-C: Product plan view

Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download

Fire protection configuration

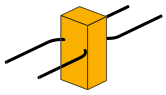
Product configuration with fire protection requirement



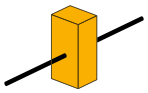
Schöck Isokorb® type HPXT-C Product section with REI90: Fire protection slab top and bottom

Installation instructions

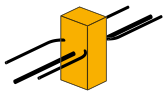
Typ HP-A
Typ HPXT-A

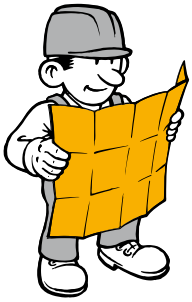


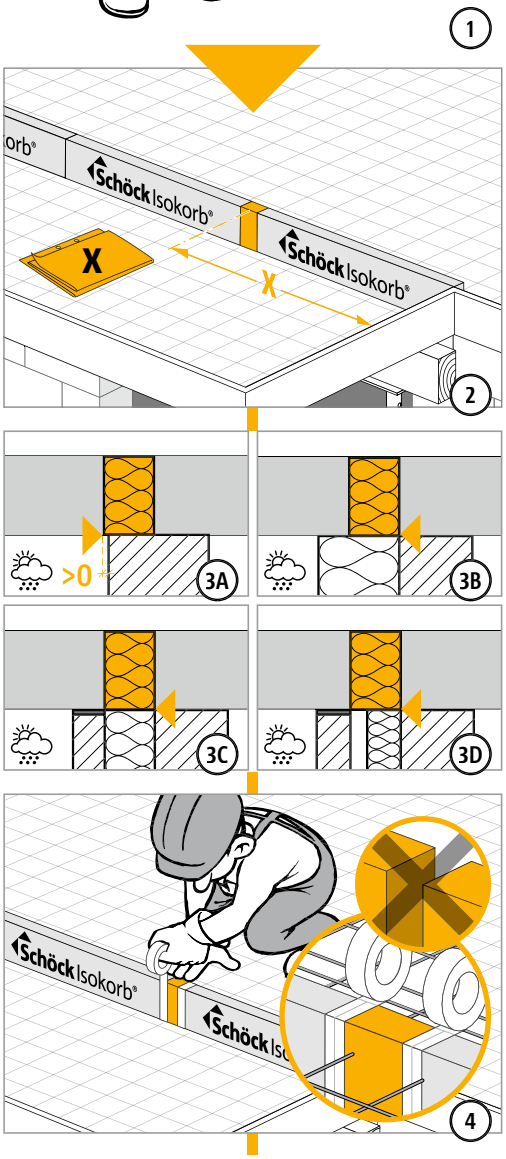
Typ HP-B
Typ HPXT-B

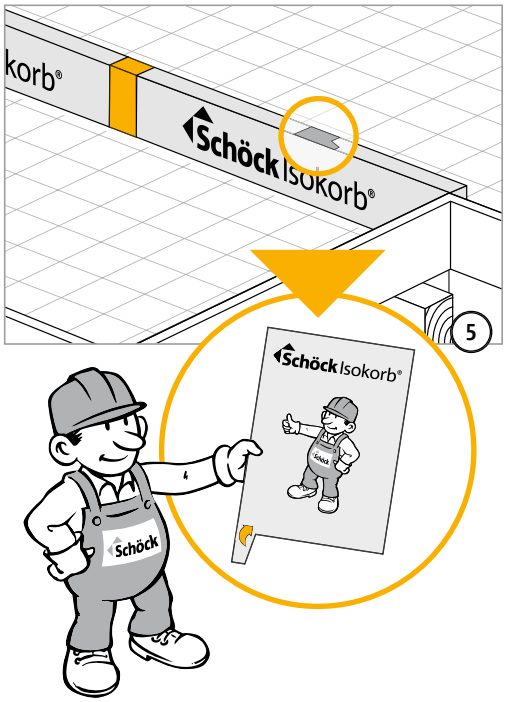


Typ HP-C
Typ HPXT-C





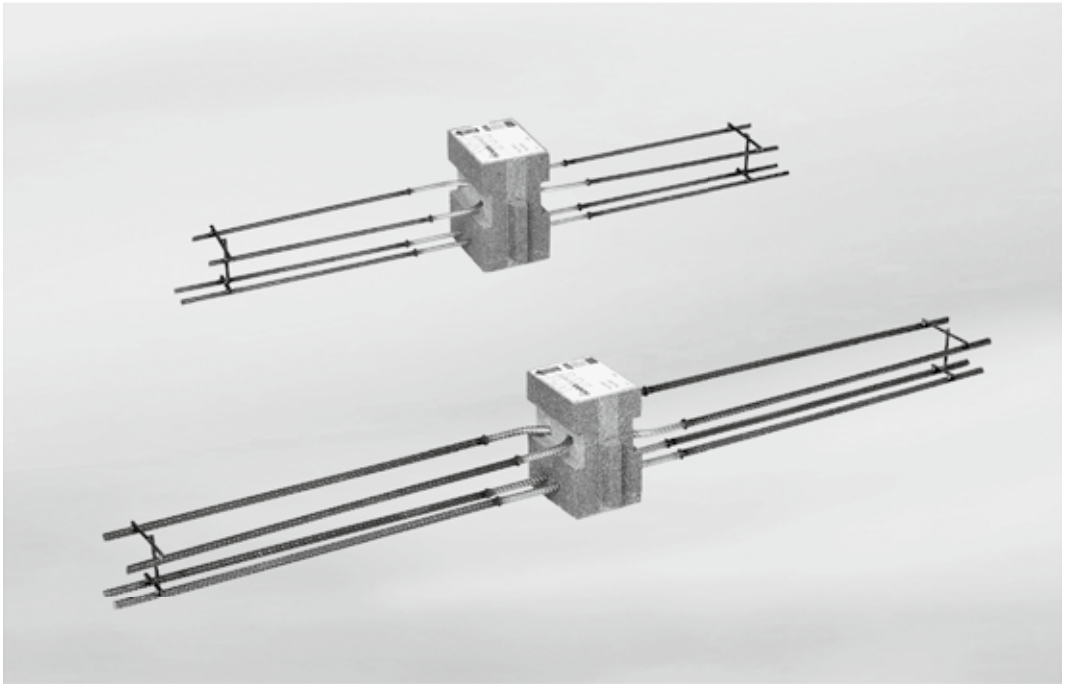




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ With a linear connection in combination with Schöck Isokorb® of length 1 m, has the reduction of the design values of the linear connection been taken into account?
- ☐ With the selection of the design table is the relevant concrete cover taken into account?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Is the required component geometry present with the connection to a floor or a wall? Is a special design required?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?

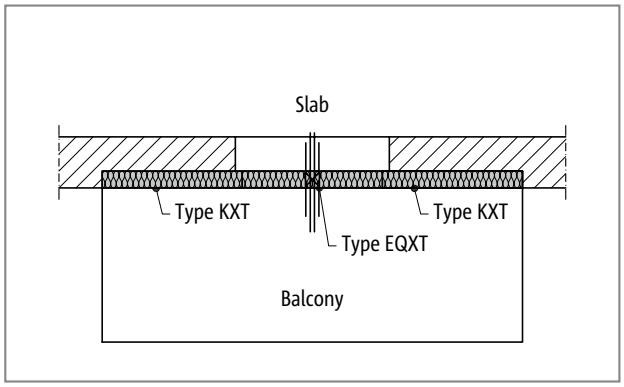
Schöck Isokorb® supplementary type EQXT



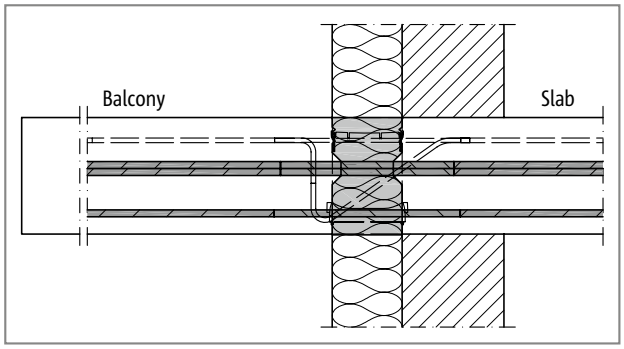
Schöck Isokorb® type EQXT1 (top), type EQXT2 (bottom)

Schöck Isokorb® supplementary type EQXT
Suitable for standard existing horizontal forces or positive moments.
It transmits horizontal shear forces and tension forces.
In combination with the Schöck Isokorb® type KXT it transmits horizontal shear forces and positive moments, or tension forces.
The Schöck Isokorb® supplementary type EQXT is to be included only in combination with an approved Isokorb® type KXT, type QXT, type QPXT or type DXT.

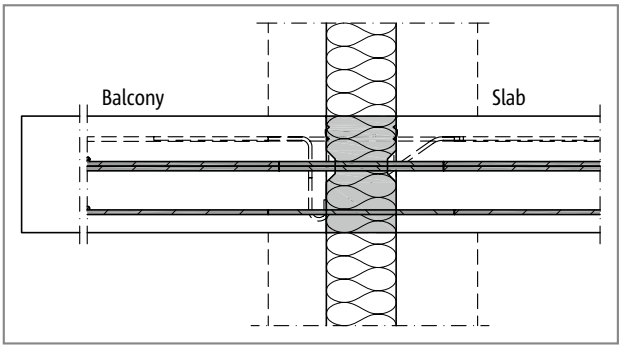
Element arrangement | Installation cross sections



Schöck Isokorb® type EQXT: Balcony freely projecting with positive moment loading



Schöck Isokorb® type KXT, EQXT: Thermal insulation composite system (EIFS)



Schöck Isokorb® type KXT, EQXT: Indirect support, non-load-bearing cavity masonry

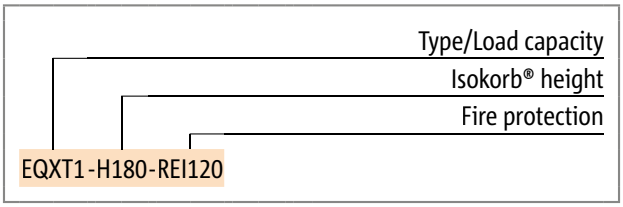
Product selection | Type designations | Special designs

Schöck Isokorb® supplementary type EQXT variants

The configuration of the Schöck Isokorb® supplementary type EQXT can be varied as follows:

- Load capacity:
  EQXT1 and EQXT2
- Height:
  H = 160 - 250 mm
- Fire resistance class:
  R0: Standard,
  REI120: Projecting upper fire protection slab 10 mm on both side

Type designations in planning documents



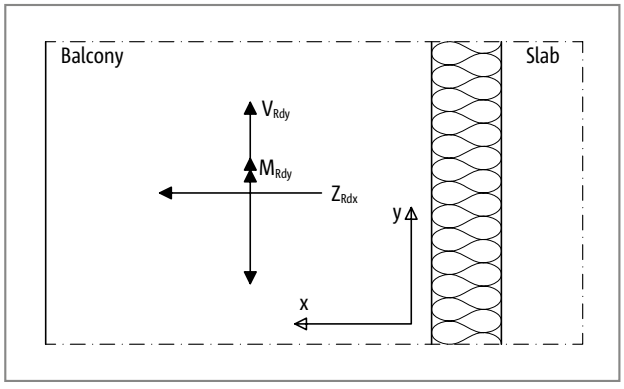
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

C25/30 design

Schöck Isokorb® type			EQXT1	EQXT2
Recommended design values with	Concrete cover CV [mm]		Concrete strength class ≥ C25/30	
	CV35	CV50	$M_{Rd,y}$ [kNm/Element] width $N_{Rd,x}$ = 0	
Isokorb® height H [mm]	160	-	3.8	8.3
	-	180	4.1	8.8
	170	-	4.3	9.3
	-	190	4.5	9.7
	180	-	4.7	10.2
	-	200	4.9	10.7
	190	-	5.1	11.2
	-	210	5.4	11.7
	200	-	5.6	12.2
	-	220	5.8	12.7
	210	-	6.0	13.2
	-	230	6.2	13.7
	220	-	6.5	14.2
	-	240	6.7	14.7
	230	-	6.9	15.2
	-	250	7.1	15.6
	240	-	7.3	16.1
	250	-	7.8	17.1
			$N_{Rd,x}$ ($Z_{Rd,x}$) [kN/Element] width $M_{Rd,y}$ = 0	
Isokorb® height	160 - 250		43.7	98.4
			$V_{Rd,y}$ [kN/element]	
Isokorb® height	160 - 250		±12.5	±28.2

Schöck Isokorb® type	EQXT1	EQXT2
Isokorb® length [mm]	150	150
Tension bars	2 ⌀ 8	2 ⌀ 12
Shear force bars horizontal	2 × 1 ⌀ 8	2 × 1 ⌀ 12



Schöck Isokorb® type EQXT: Sign convention for the design

Design

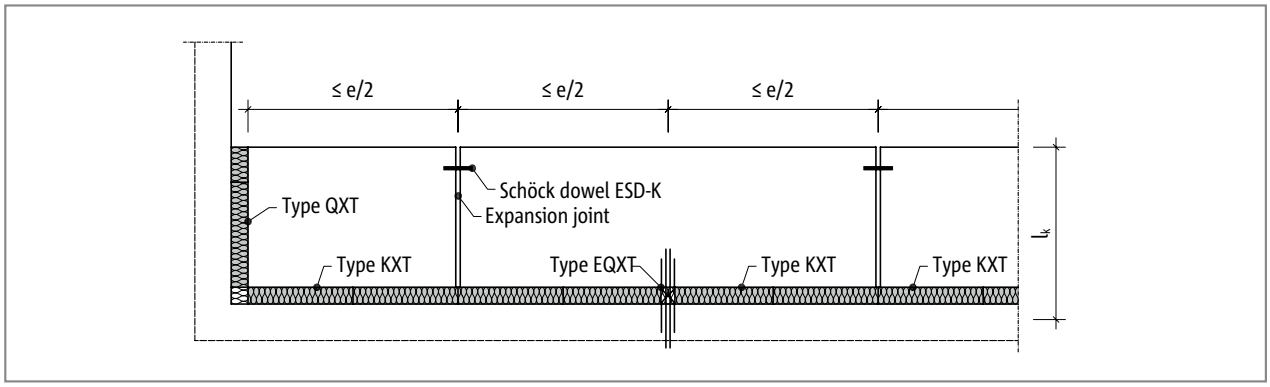
Notes on design

- With the design internal force variables either $M_{Rd,y}$ or $N_{Rd,x}$ ($Z_{Rd,x}$) applies, not both at the same time.
- A combinationen of the Schöck Isokorb® suplementary type EQXT with the Schöck Isokorb® type KXT as follows is recommended:
  Schöck Isokorb®supplementary type EQXT1 with Isokorb® supplementary type KXT40 to KXT50,
  Schöck Isokorb® supplementary type EQXT2 with at least supplementary type KXT55.
  For the activation of the positive design smoments the combination of the Schöck Isokorb® supplementary type EQXT2 is required at least with supplementary type KXT55.
- With the design of a linear connection it is to be noted that the use of the supplementary type EQXT can reduce the design values (e.g. type KXT with L = 1.0 m and supplementary type EQXT with L = 0.15 m in continuous transition a reduction of m_{Rd} and v_{Rd} of the linear connection with type KXT of ca. 13 %).
- With the selection of type (supplementary type EQXT) and configuration, attention is to be paid that no unnecessary fixed points are created and the maximum expansion joint spacings (of e.g. type KXT, type QXT or type DXT) are maintained.
- The required number of Schöck Isokorb® supplementary type EQXT is to be determined according to static requirements.
- The Schöck Isokorb® supplementary type EQXT is not to be installed at the slab edge.
- With different concrete strength classes (e.g. balcony C32/40, inner slab C25/30) basically the weaker concrete is relevant for the design of the Schöck Isokorb®.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type EQXT: Expansion joint formation using longitudinally displaceable shear force dowel, e.g. Schöck Dowel

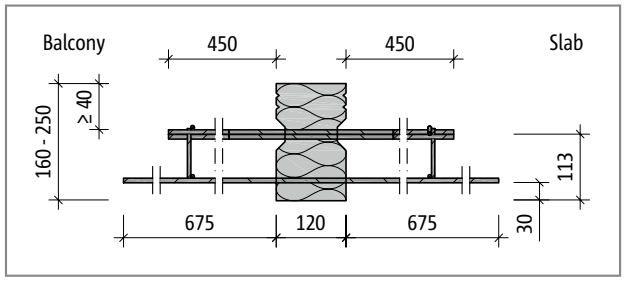
Schöck Isokorb® type EQXT combined with	KXT	KXT-HV, KXT-BH, KXT-WU, KXT-WO	QXT, QXT+QXT	QPXT, QPXT+QPXT, QPZXT	DXT
maximum expansion joint spacing from fixed point e/2 [m]	≤ e/2 see p. 59	10.9	≤ e/2 see p. 123	≤ e/2 see p. 139	9.9

Edge distances

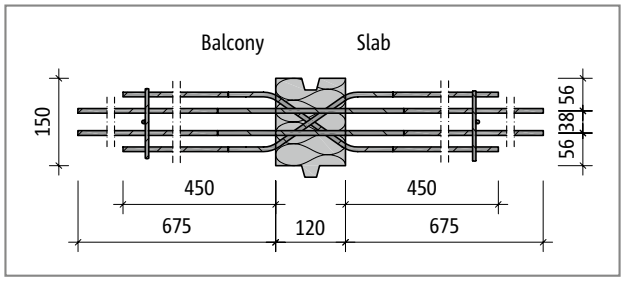
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the tension bars from the free edge or from the expansion joint: $e_R \geq 50$ mm and $e_R \leq 150$ mm applies.
- For the centre distance of the compression elements from the free edge or from the expansion joint: $e_R \geq 50$ mm applies.
- For the centre distance of the shear force bars from the free edge or from the exapansion joint: $e_R \geq 100$ mm and $e_R \leq 150$ mm applies.

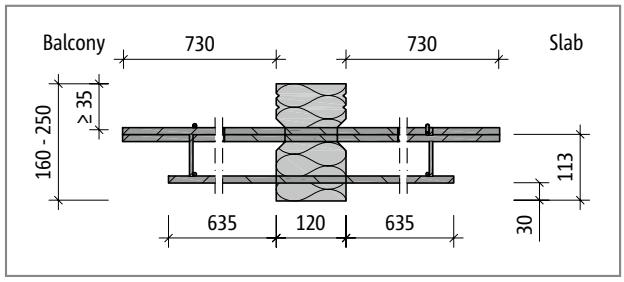
Product description | Fire protection configuration



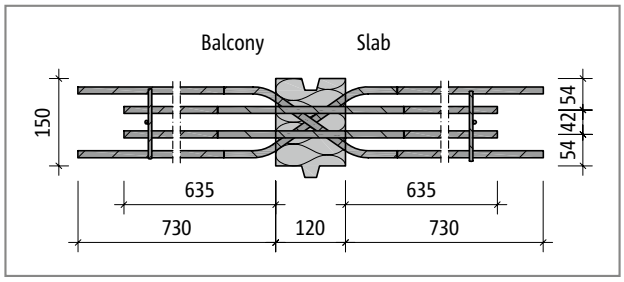
Schöck Isokorb® type EQXT1: Product section



Schöck Isokorb® type EQXT1: Product plan view



Schöck Isokorb® type EQXT2: Product section

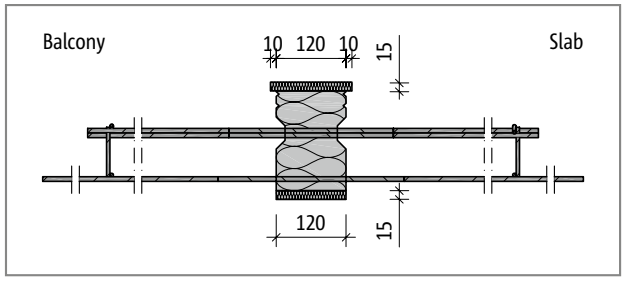


Schöck Isokorb® type EQXT2: Product plan view

Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download

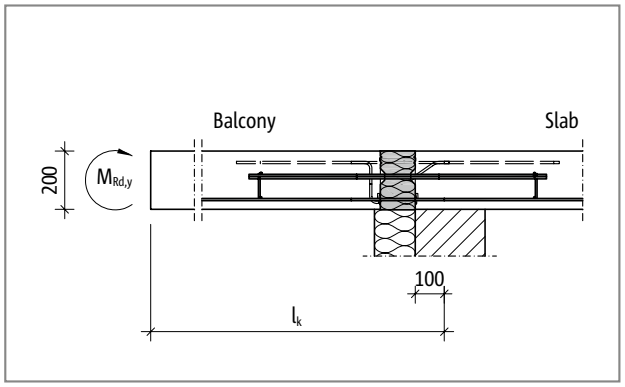
Product configuration with fire protection requirement

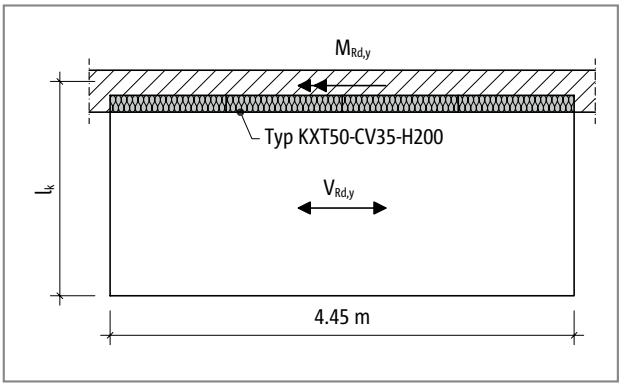


Schöck Isokorb® type EQXT1 Product section with REI120: fire protection slab top and bottom

Design example

Schöck Isokorb® type KXT and supplementary type EQXT with standard positive moment effect



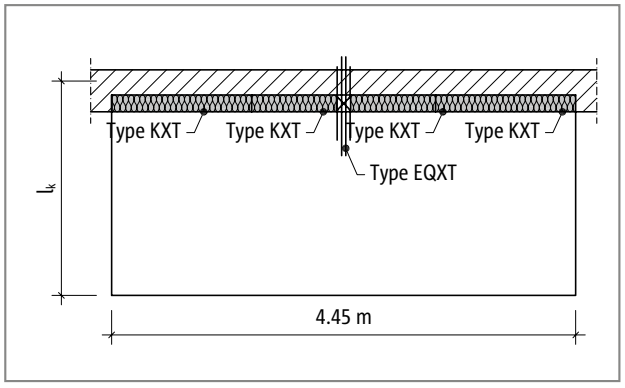


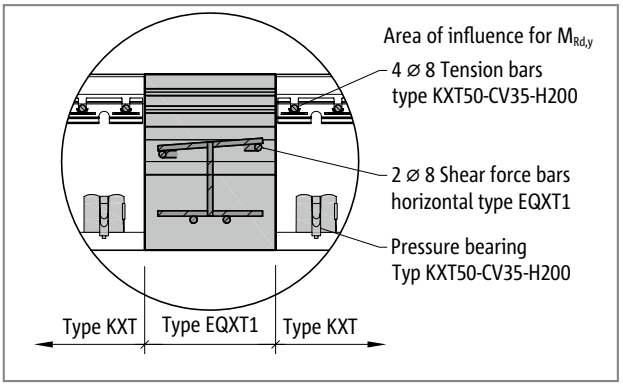
given: cantilever slab connection with Schöck Isokorb® type KXT50-CV35-H200, concrete strength class C25/30
design of the connection and selection of the appropriate Schöck Isokorb® type KXT load-bearing level see p. 67
Standard positive moment and positive normal force:
$V_{Ed,y}$ = 11.0 kN/slab
$M_{Ed,y}$ = 4.1 kNm/slab

selected: Schöck Isokorb® supplementary type EQXT1
$V_{Rd,y}$ = 12.5 kN ≥ $V_{Ed,y}$ = 11.0 kN/slab
$M_{Rd,y}$ = 5.6 kNm ≥ $M_{Ed,y}$ = 4.1 kNm/slab

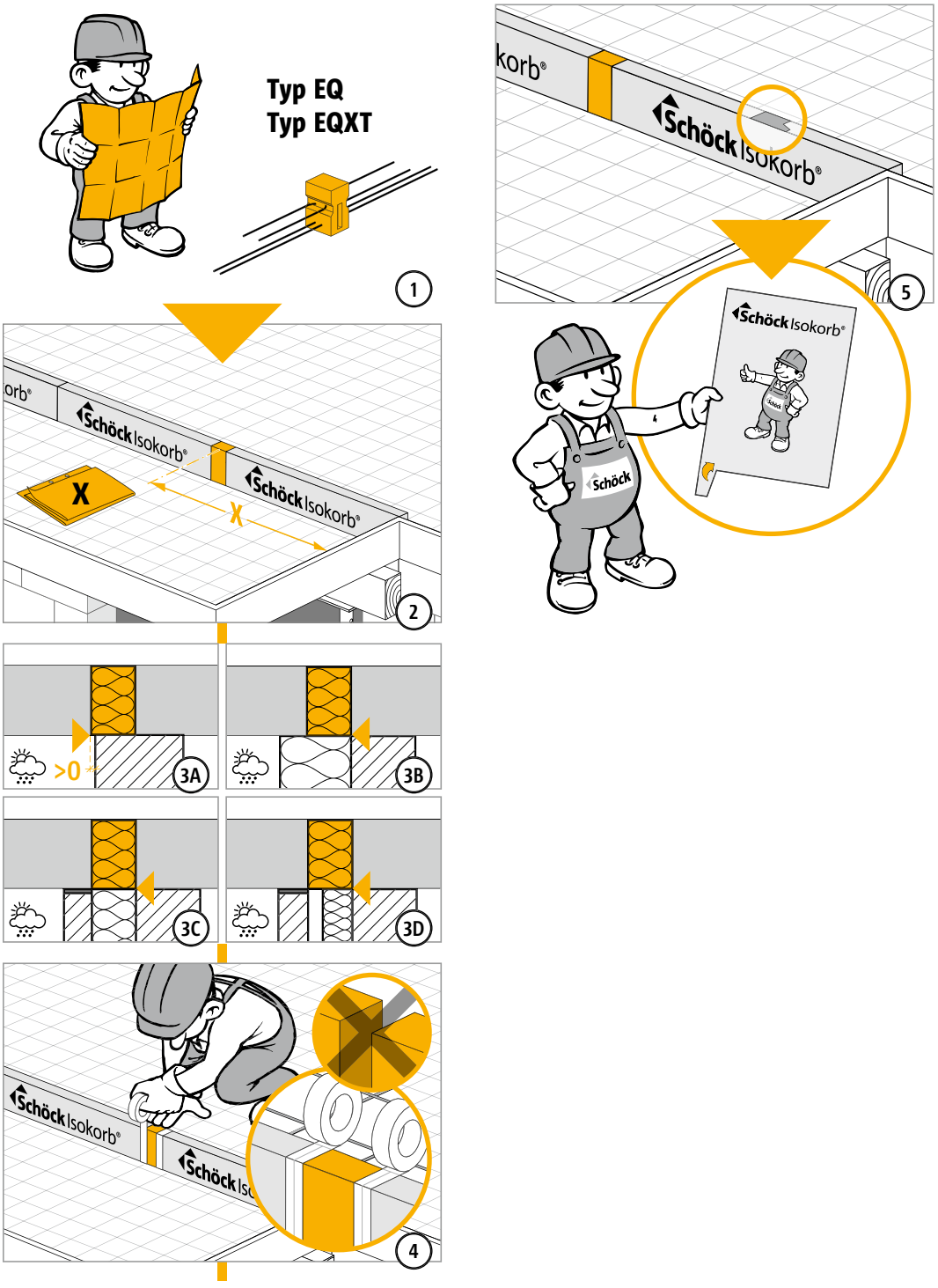
Design example

- For the activation of $M_{Rd,y}$ adjacent Schöck Isokorb® type KXT are required directly on the supplementary type EQXT.
- Configuration of the Schöck Isokorb® supplementary type EQXT in accordance with page 164 and the check list.





Installation instructions



Check list

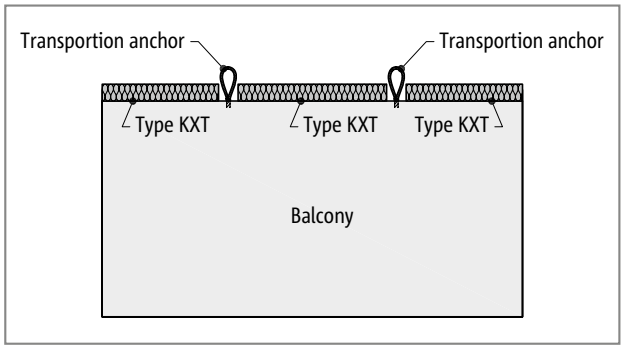
- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ With a linear connection in combination with Schöck Isokorb® of length 1 m, has the reduction of the design values of the linear connection been taken into account?
- ☐ With the selection of the design table is the relevant concrete cover taken into account?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Is the required component geometry present with the connection to a floor or a wall? Is a special design required?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?

Schöck Isokorb® supplementary type ZXT

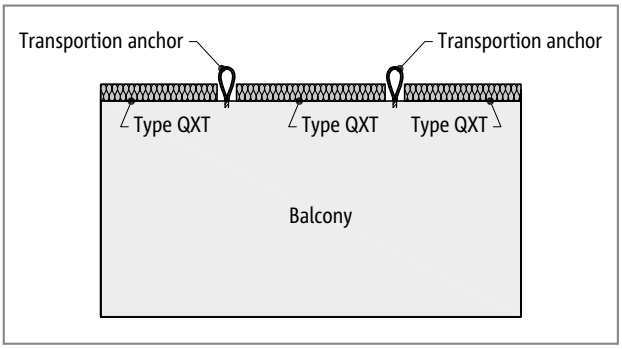
Schöck Isokorb® supplementary type ZXT

Schöck Isokorb® supplementary type ZXT
Suitable as insulation connecting pieces for various installation situations and fire protection requirements.
The Schöck Isokorb® supplementary type ZXT transmits no forces.

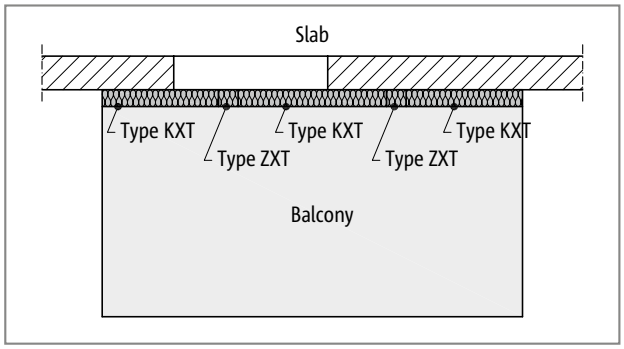
Element arrangement



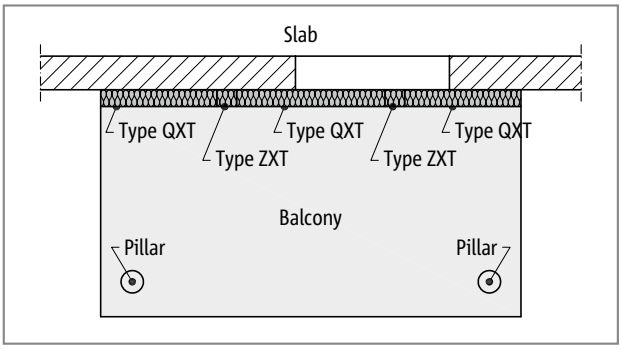
Schöck Isokorb® type KXT: Element balcony with transport anchors; insulation type ZXT can be inserted on-site



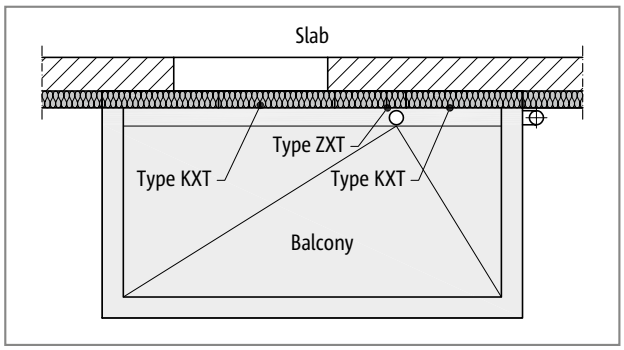
Schöck Isokorb® type QXT: Element balcony with transport anchors; insulation type ZXT can be inserted on-site



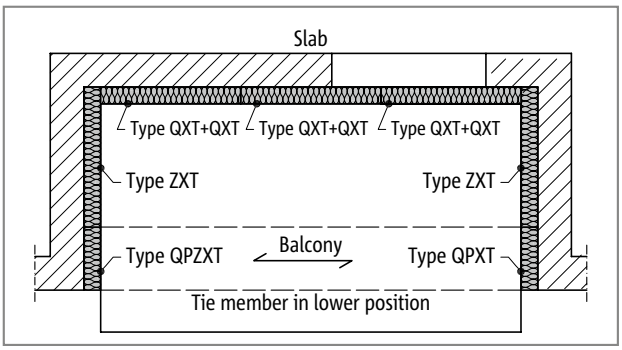
Schöck Isokorb® type ZXT, KXT: balcony freely projecting



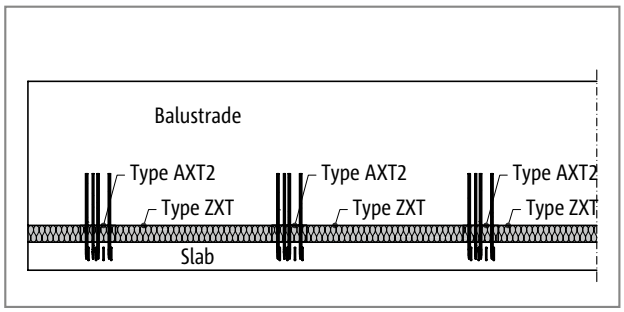
Schöck Isokorb® type ZXT, QXT: balcony with column support



Schöck Isokorb® type ZXT, KXT: Recess for drainage with Schöck Isokorb® type ZXT

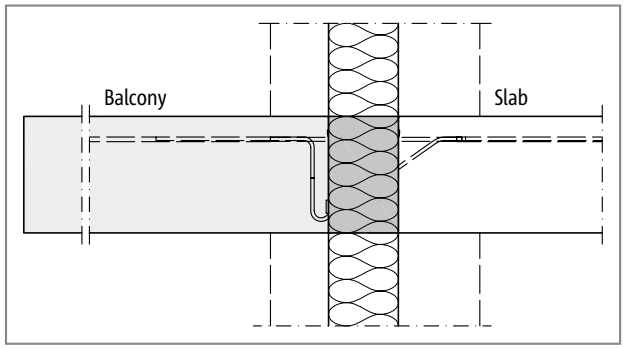


Schöck Isokorb® type ZXT, QXT+QXT, QPXT, QPZXT: Three-sided supported recessed balcony with tie

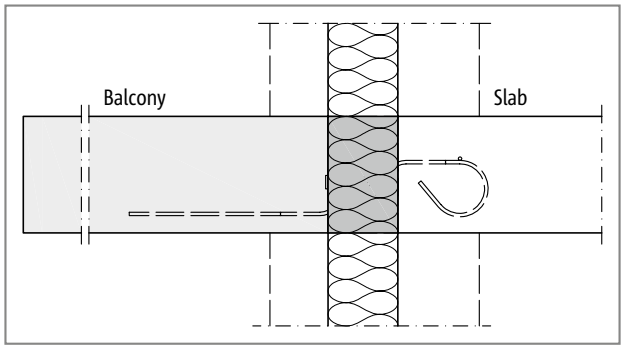


Schöck Isokorb® type AXT, ZXT: Ballustrade (type AXT2)

Installation cross sections | Product selection | Type designations



Schöck Isokorb® type ZXT, KXT: indirect support, non-load-bearing cavity masonry



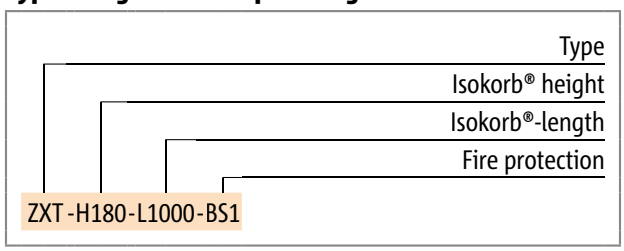
Schöck Isokorb® type ZXT, QXT: indirect support, non-load-bearing cavity masonry

Schöck Isokorb® supplementary type ZXT variants

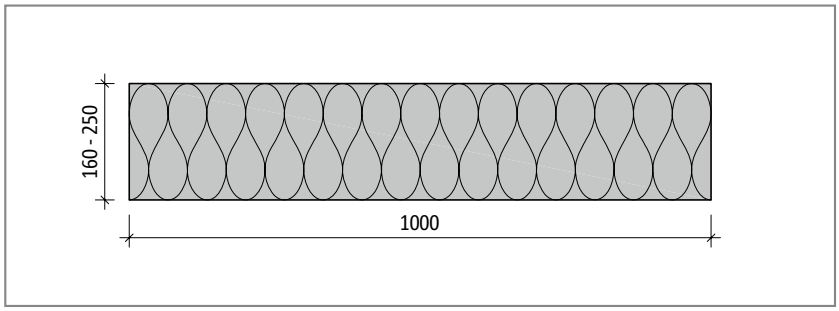
The configuration of the Schöck Isokorb® supplementray type ZXT can be varied as follows:

- Height:
  H = 160 - 250 mm
- Length:
  L = 1000 mm (L = 100 mm, L = 150 mm on request)
- Fire resistance class
  R0: Standard
  BS1: Fire protection slab top and bottom, upper fire protection slab without projection with rail and fire protection band
  BS2: Fire protection slab top and bottom, upper fire protection slab with projection, both sides 10 mm

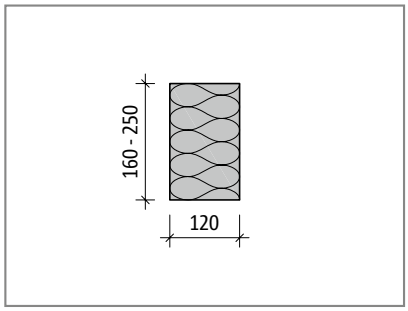
Type designations in planning documents



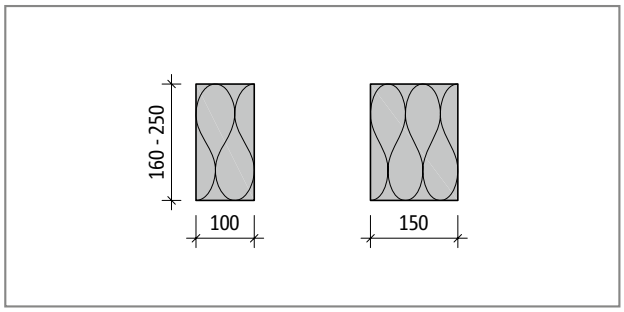
Product description



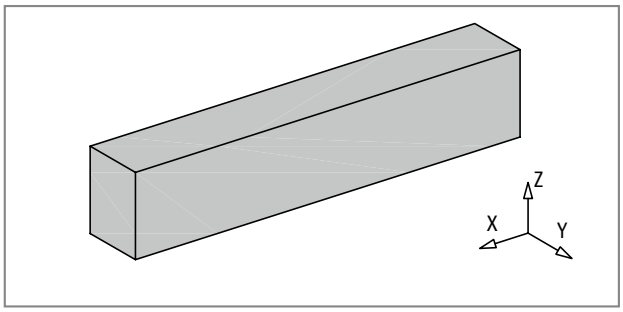
Schöck Isokorb® type ZXT-L1000: Product view



Schöck Isokorb® type ZXT: Product section



Schöck Isokorb® type ZXT-L100, ZXT-L150: Product view



Schöck Isokorb® type ZXT: 3D-model

Product information

- The Schöck Isokorb® type ZXT is supplied in 1000 mm lengths (100 mm and 150 mm lengths on request)
- The Schöck Isokorb® type can, as necessary, be shortened to the desired length.
- Download further product plan views and cross-sections at www.schoeck.co.uk/download

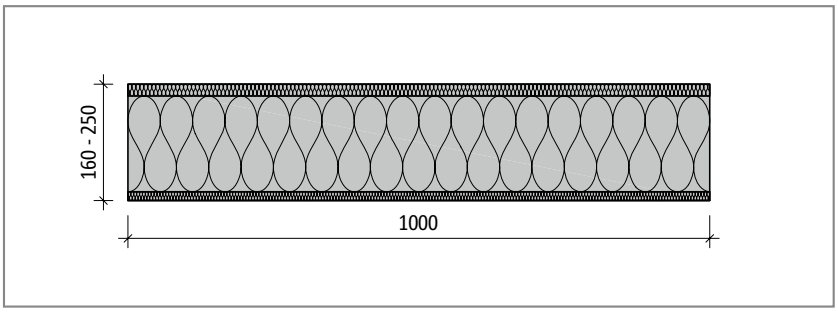
Notes on design

- Edge and centre distances of the adjacent Schöck Isokorb® types are to be noted.
- With the design of a linear connection it is to be noted that the employment of the Schöck Isokorb® supplementary type ZXT can reduce the design values (e.g. Schöck Isokorb® type with L = 1.0 m and Schöck Isokorb® supplementary type ZXT with L = 0.1 m in continuous transition means a reduction of m_{Rd} of the linear connection of ca. 9%).

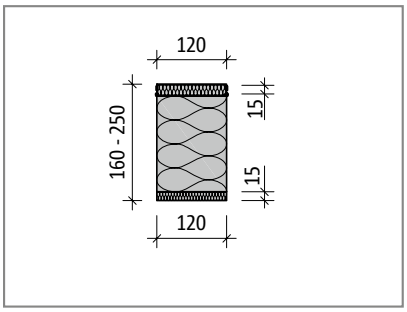
Fire protection configuration

Schöck Isokorb® supplementary type ZXT-BS1

Fire protection slab top and bottom, without projection



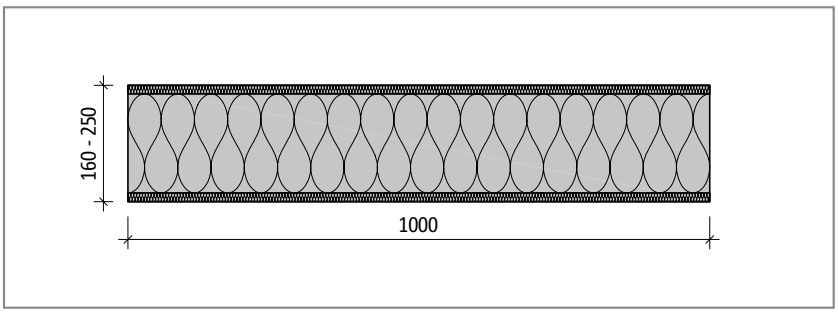
Schöck Isokorb® type ZXT-BS1: Product view; fire protection slab top and bottom flush



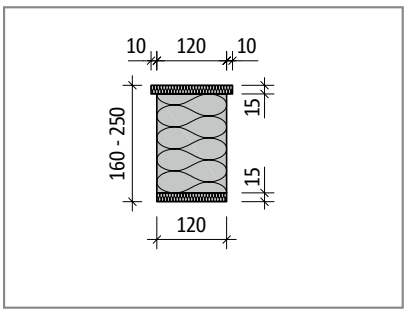
Schöck Isokorb® type ZXT-BS1: Product section

Schöck Isokorb® supplementary type ZXT-BS2

Fire protection slab top and bottom, upper fire protection slab with projection, both sides 10 mm



Schöck Isokorb® type ZXT-BS2: Product view; fire protection slab top and bottom



Schöck Isokorb® type ZXT-BS2: Product section

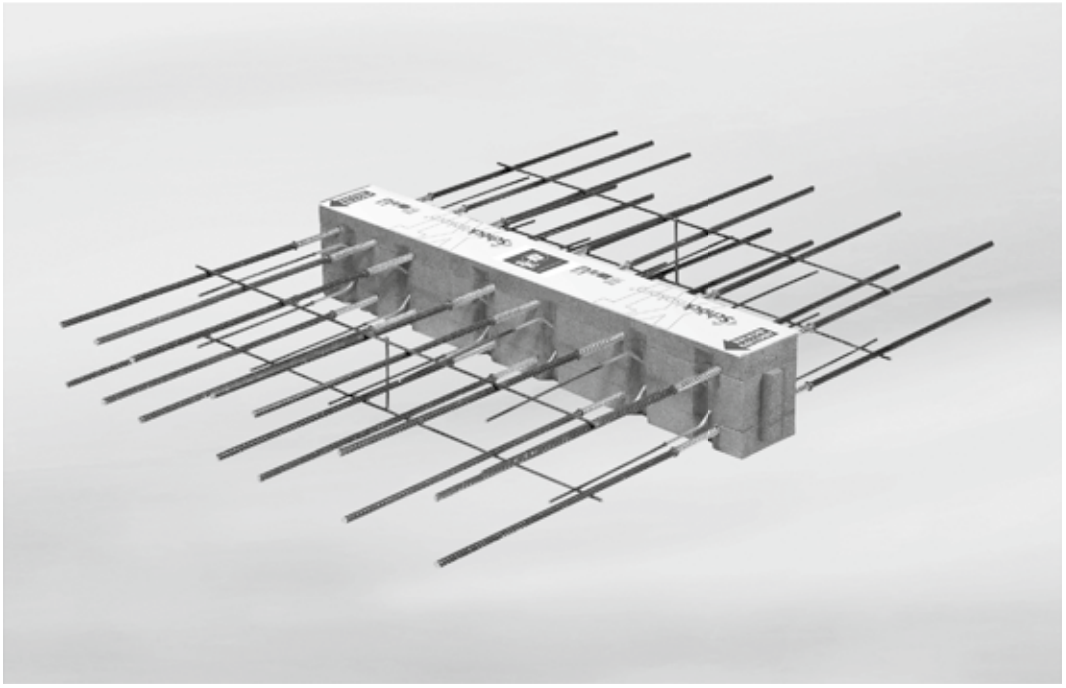
Fire protection

- The Schöck Isokorb® type ZXT-BS1 is suitable for employment with Schöck Isokorb® type KXT and AXT.
- The Schöck Isokorb® type ZXT-BS2 is suitable for employment with Schöck Isokorb® type KXT-HV, KXT-BH, KXT-WU, KXT-WO, QXT, QPXT, DXT, FXT and OXT.
- The Schöck Isokorb® type ZXT-BS1 can be employed retrospectively (e.g transport anchor holes with prefabricated balconies), as fire protection slabs are without projection.
- The fire protection class of the Schöck Isokorb® supplementary type ZXT corresponds with the maximum fire protection class of the connected, load-bearing Schöck Isokorb® type (e.g. KXT→REI120 or AXT→R90).

Check list

- ☐ With a linear connection in combination with Schöck Isokorb® of length 1 m, has the reduction of the design values of the linear connection been taken into account?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?

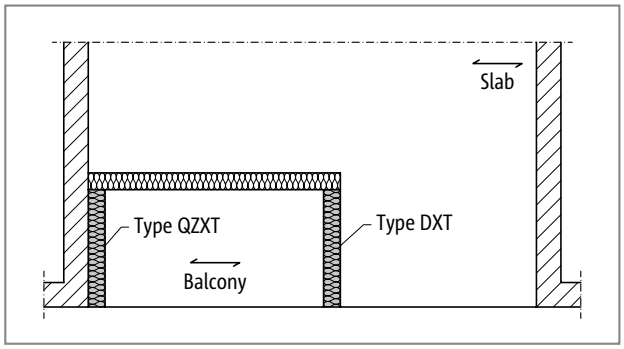
Schöck Isokorb® type DXT



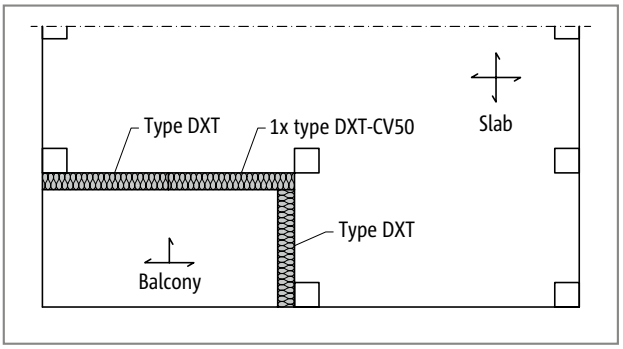
Schöck Isokorb® type DXT

Schöck Isokorb® type DXT
Suitable for continuous floors. It transmits negative moments and positive shear forces with cantilever balconies or positive field moments combined with shear forces.

Element arrangement | Element configurations | Installation cross sections



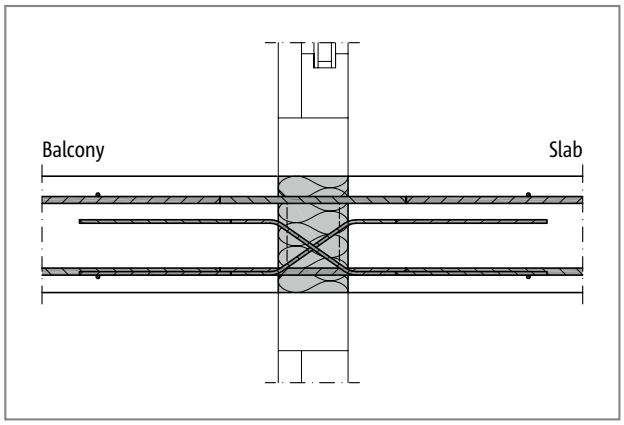
Schöck Isokorb® type DXT, QZXT: Floor stressed one way



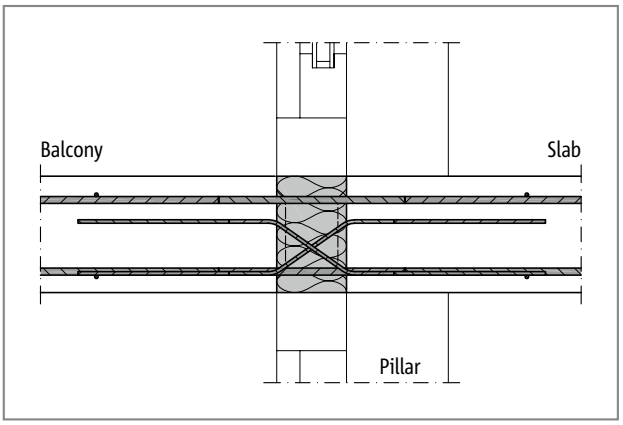
Schöck Isokorb® type DXT: Employment in floor slabs

Element arrangement

- The Schöck Isokorb® transmits moments perpendicular to the insulation joint, it transmits no moments parallel to the insulation joint, therefore it is not suitable for application within punctually supported floors or in balconies with four supports.



Schöck Isokorb® type DXT: Installation section; oneway stressed floor



Schöck Isokorb® type DXT: Installation section; floor slab

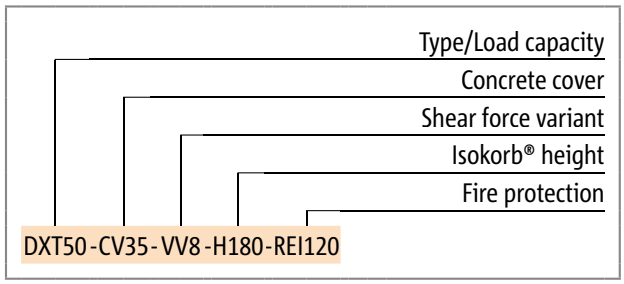
Product selection | Type designations | Special designs

Schöck Isokorb® type DXT variants

The configuration of the Schöck Isokorb® type DXT can be varied as follows:

- Load capacity:
  DXT30, DXT50, DXT70, DXT90
  DXT20 available on request
- Concrete cover of tension bars:
  CV35: top CV = 35 mm, bottom CV = 30 mm (e.g. DXT50-CV35-VV6-H200)
  CV50: top CV = 50 mm, bottom CV = 50 mm
- Shear force variant:
  Dependent on diameter of the shear force bars VV6, VV8, VV10, (e.g: DXT50-CV35-VV8-H200)
- Height:
  H = H_{min} to 250 mm (H_{min} is dependent on concrete cover and shear force load-bearing level see p. 178)
- Fire resistance class:
  R0: Standard
  REI120: Projecting upper and lower fire protection slab, both sides 10 mm

Type designation in planning documents



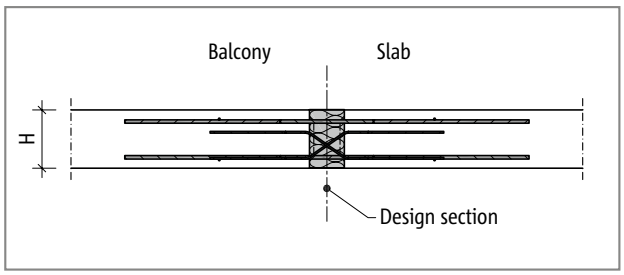
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

C25/30 design

Schöck Isokorb® type			DXT30-...-VV6	DXT30-...-VV8	DXT30-...-VV10	DXT50-...-VV6	DXT50-...-VV8	DXT50-...-VV10
Design values with	Concrete cover CV [mm]		Concrete strength class ≥ C25/30					
	CV35	CV50	$m_{Rd,y}$ [kNm/m]					
Isokorb® height H [mm]	160		±15.7	-	-	±22.9	-	-
		200	±16.6	-	-	±24.3	-	-
	170		±17.6	±15.4	-	±25.7	±23.5	-
		210	±18.5	±16.2	-	±27.1	±24.8	-
	180		±19.5	±17.0	±13.9	±28.5	±26.1	±22.9
		220	±20.4	±17.9	±14.6	±29.9	±27.3	±24.1
	190		±21.3	±18.7	±15.3	±31.2	±28.6	±25.2
		230	±22.3	±19.5	±15.9	±32.6	±29.8	±26.3
	200		±23.2	±20.3	±16.6	±34.0	±31.1	±27.4
		240	±24.2	±21.2	±17.3	±35.4	±32.4	±28.5
	210		±25.1	±22.0	±18.0	±36.8	±33.6	±29.6
		250	±26.1	±22.8	±18.6	±38.1	±34.9	±30.7
	220		±27.0	±23.6	±19.3	±39.5	±36.2	±31.8
	230		±28.9	±25.3	±20.7	±42.3	±38.7	±34.1
	240		±30.8	±26.9	±22.0	±45.1	±41.2	±36.3
	250		±32.7	±28.6	±23.4	±47.8	±43.8	±38.5
Shear force variant			$v_{Rd,z}$ [kN/m]					
	VV6/VV8/VV10		±42.3	±75.2	±117.5	±42.3	±75.2	±117.5

Schöck Isokorb® type	DXT30-...-VV6	DXT30-...-VV8	DXT30-...-VV10	DXT50-...-VV6	DXT50-...-VV8	DXT50-...-VV10
Isokorb® length [mm]	1000			1000		
Tension bars/compression members	2 × 5 ⌀ 12			2 × 7 ⌀ 12		
Shear force bars	2 x 6 ⌀ 6	2 x 6 ⌀ 8	2 x 6 ⌀ 10	2 x 6 ⌀ 6	2 x 6 ⌀ 8	2 x 6 ⌀ 10
H_{min} with CV35 [mm]	160	170	180	160	170	180
H_{min} with CV50 [mm]	200	210	220	200	210	220



Schöck Isokorb® type DXT: Static system

C25/30 design

Schöck Isokorb® type			DXT70-...-VV6	DXT70-...-VV8	DXT70-...-VV10	DXT90-...-VV6	DXT90-...-VV8	DXT90-...-VV10
Design values with	Concrete cover CV [mm]		Concrete strength class ≥ C25/30					
	CV35	CV50	$m_{Rd,y}$ [kNm/m]					
Isokorb® height H [mm]	160		±33.9	-	-	±41.1	-	-
		200	±35.9	-	-	±43.6	-	-
	170		±37.9	±35.7	-	±46.1	±43.9	-
		210	±40.0	±37.7	-	±48.6	±46.3	-
	180		±42.0	±39.6	±36.5	±51.0	±48.6	±45.5
		220	±44.0	±41.5	±38.2	±53.5	±51.0	±47.7
	190		±46.1	±43.4	±40.0	±56.0	±53.3	±49.9
		230	±48.1	±45.4	±41.8	±58.5	±55.7	±52.1
	200		±50.2	±47.3	±43.6	±60.9	±58.0	±54.3
		240	±52.2	±49.2	±45.3	±63.4	±60.4	±56.5
	210		±54.2	±51.1	±47.1	±65.9	±62.8	±58.7
		250	±56.3	±53.0	±48.9	±68.4	±65.1	±61.0
	220		±58.3	±55.0	±50.6	±70.8	±67.5	±63.2
	230		±62.4	±58.8	±54.2	±75.8	±72.2	±67.6
	240		±66.5	±62.6	±57.7	±80.8	±76.9	±72.0
	250		±70.6	±66.5	±61.3	±85.7	±81.6	±76.4
Shear force variant			$v_{Rd,z}$ [kN/m]					
	VV6/VV8/VV10		±42.3	±75.2	±117.5	±42.3	±75.2	±117.5

Schöck Isokorb® type	DXT70-...-VV6	DXT70-...-VV8	DXT70-...-VV10	DXT90-...-VV6	DXT90-...-VV8	DXT90-...-VV10
Isokorb® length [mm]	1000			1000		
Tension bars/compression members	2 × 10 ⌀ 12			2 × 12 ⌀ 12		
Shear force bars	2 x 6 ⌀ 8	2 x 6 ⌀ 10	2 x 6 ⌀ 6	2 x 6 ⌀ 6	2 x 6 ⌀ 10	2 x 6 ⌀ 8
H_{min} with CV35 [mm]	160	170	180	160	170	180
H_{min} with CV50 [mm]	200	210	220	200	210	220

Notes on design

- With different concrete strength classes (e.g. balcony C32/40, inner slab C25/30) basically the weaker concrete is relevant for the design of the Schöck Isokorb®.
- The indicative minimum concrete strength class of the external structural component is C32/40.
- A static verification is to be provided for the adjacent reinforced concrete structural component on both sides of the Schöck Isokorb®.
- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,max}$, whereby $V_{Rd,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- The Schöck Isokorb® type DXT transmits only bending moments perpendicular to the insulation slab. The Schöck Isokorb® transmits no torsion moments. Therefore the arrangement of a Schöck Isokorb® type DXT is not sensible in a punctually supported slab without downstand beams.

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes. With fixed points such as, for example, corners of balconies, parapets and balustrades or with the employment of the supplementary types HPXT or EQXT half the maximum expansion joint spacing e/2 from the fixed point applies.

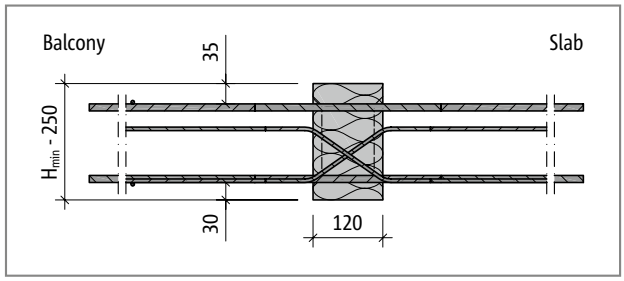
Schöck Isokorb® type		DXT30	DXT50	DXT70	DXT90
Maximum expansion joint spacing e		e [m]			
Insulating element thickness [mm]	120	19.8			

Edge distances

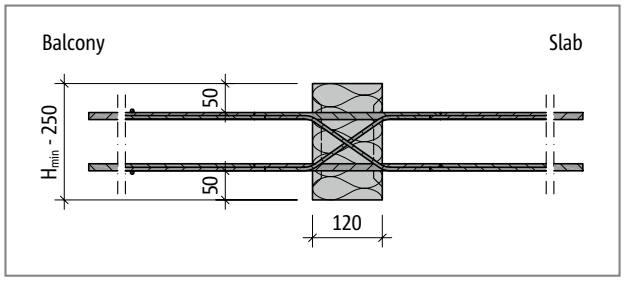
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the centre distance of the tension bars from the free edge or from the expansion joint: $e_R \geq 50$ mm and $e_R \leq 150$ mm applies.
- For the centre distance of the compression members from the free edge or from the expansion joint the following applies: $e_R \geq 50$ mm.
- For the centre distance of the shear force bars from the free edge or from the expansion joint the following applies: $e_R \geq 100$ mm and $e_R \leq 150$ mm.

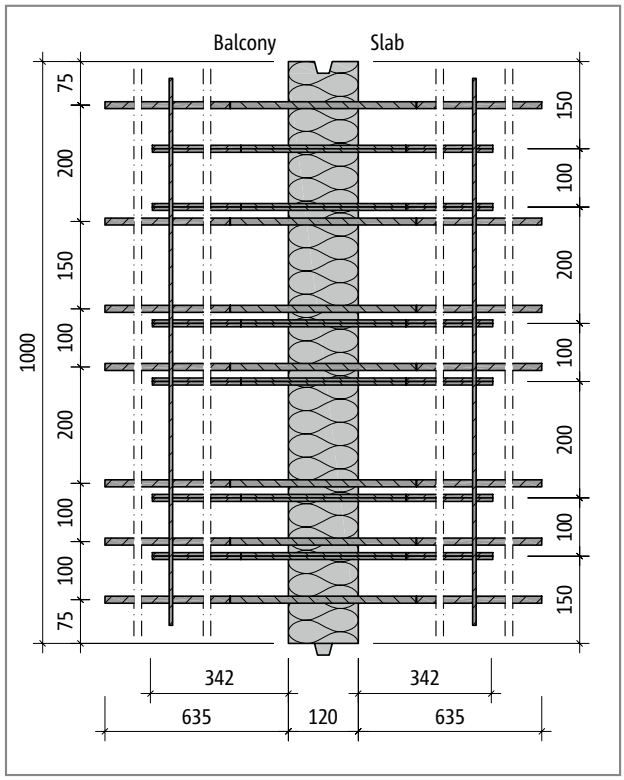
Product description | Fire protection configuration



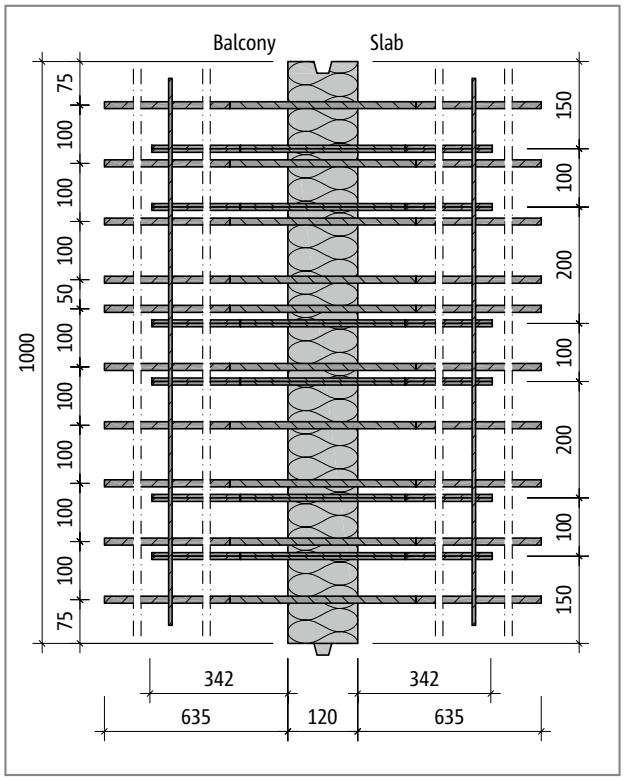
Schöck Isokorb® type DXT with CV35: Product section



Schöck Isokorb® type DXT with CV50: Product section



Schöck Isokorb® type DXT50-VV6: Plan view

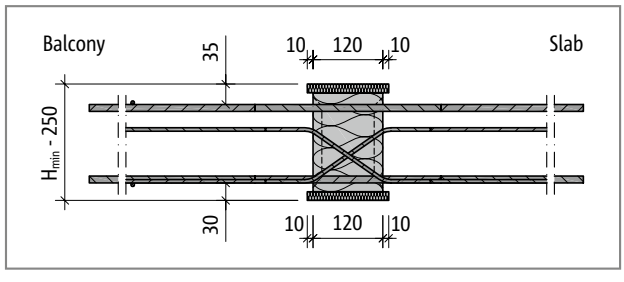


Schöck Isokorb® type DXT70-VV6: Plan view

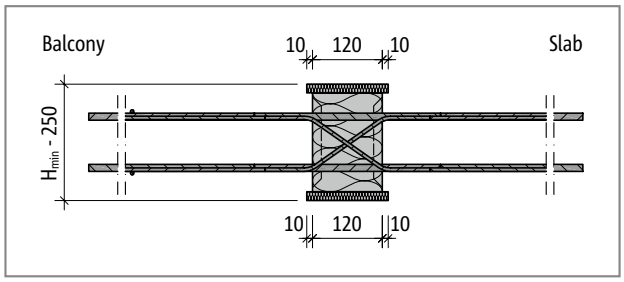
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download

Product configuration with fire protection requirement

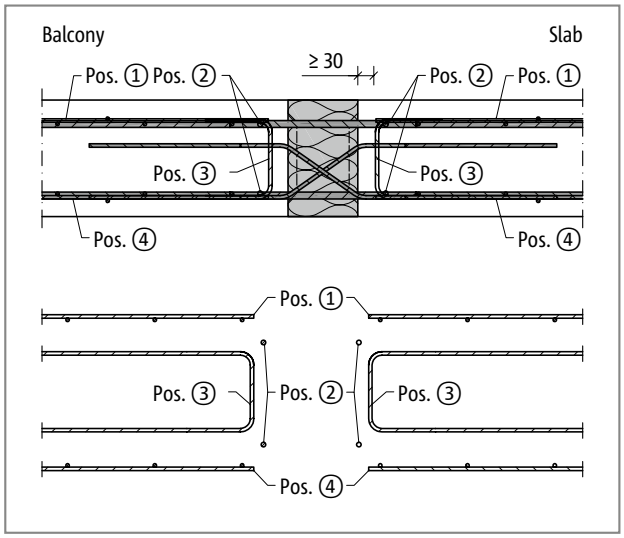


Schöck Isokorb® type DXT-CV35 with REI120: Product section



Schöck Isokorb® type DXT-CV35 with REI120: Product section

On-site reinforcement



Schöck Isokorb® type DXT: On-site reinforcement

The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing inner slab reinforcement can be taken into account as long as the maximum separation to the tension bars of the Schöck Isokorb® of 4⌀ is maintained. Additional reinforcement may be required.

Schöck Isokorb® type	DXT30-...-VV6	DXT30-...-VV8	DXT30-...-VV10	DXT50-...-VV6	DXT50-...-VV8	DXT50-...-VV10
On-site reinforcement	Concrete strength class ≥ C25/30					
Pos. 1 Lapping reinforcement (required with negative moment))						
Pos. 1 [mm²/m]	565	565	565	791	791	791
Pos. 2 Steel bars along the insulation joint						
Pos. 2	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Edge and suspension reinforcement						
Pos. 3	H8@150	H8@150	H8@100	H8@150	H8@150	H8@100
Pos. 4 Lapping reinforcement (required with positive moment)						
Pos. 4 [mm²/m]	565	565	565	791	791	791

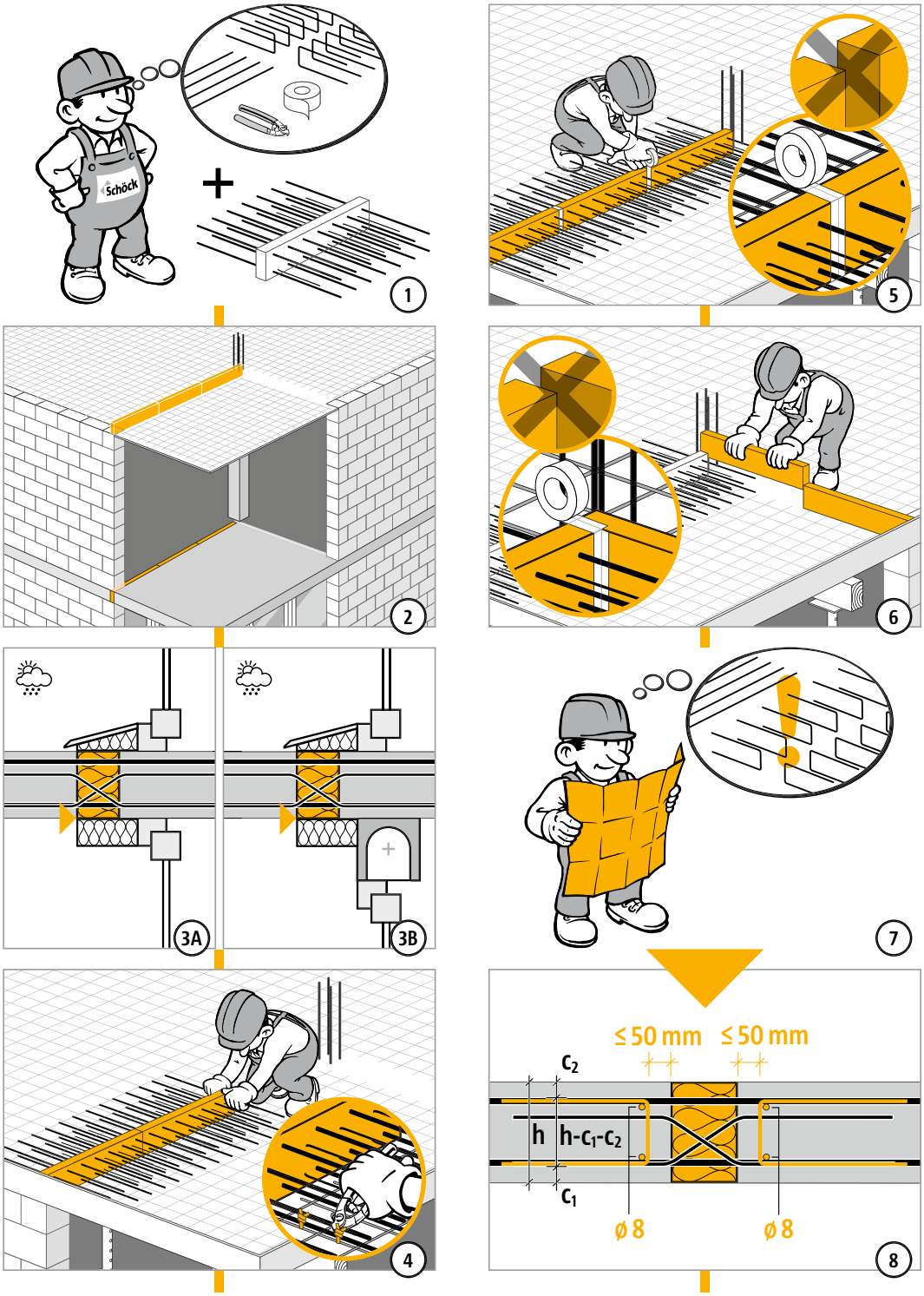
Schöck Isokorb® type	DXT70-...-VV6	DXT70-...-VV8	DXT70-...-VV10	DXT90-...-VV6	DXT90-...-VV8	DXT90-...-VV10
On-site reinforcement	Concrete strength class ≥ C25/30					
Pos. 1 Lapping reinforcement (required with negative moment))						
Pos. 1 [mm²/m]	1130	1130	1130	1357	1357	1357
Pos. 2 Steel bars along the insulation joint						
Pos. 2	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8	2 • 2 • H8
Pos. 3 Edge and suspension reinforcement						
Pos. 3	H8@150	H8@150	H8@100	H8@150	H8@150	H8@100
Pos. 4 Lapping reinforcement (required with positive moment)						
Pos. 4 [mm²/m]	1130	1130	1130	1357	1357	1357

On-site reinforcement

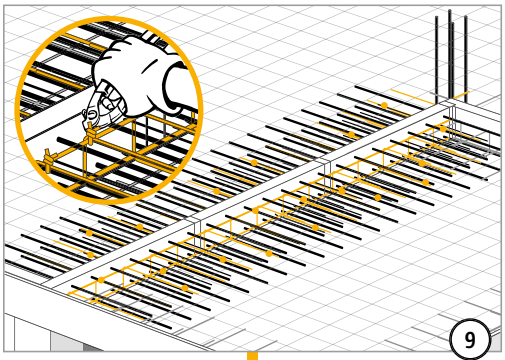
Information about on-site reinforcement

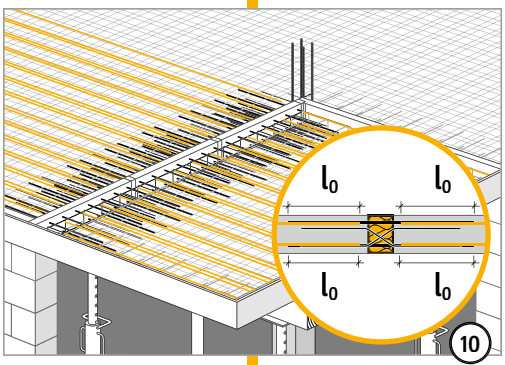
- For the determination of the lap length the regulations acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length with m_{Ed}/m_{Rd} is permitted. For the lap (l) with the Schöck Isokorb®, with the type DXT, a length of the tension bars of 605 mm can be included in the calculation.
- Edge and suspension reinforcement (Pos. 3) is to be arranged on both sides of the Isokorb® type DXT. Details in the table apply for Schöck Isokorb® with a loading of 100% of the maimum design internal forces with C25/30.

Installation instructions



Installation instructions

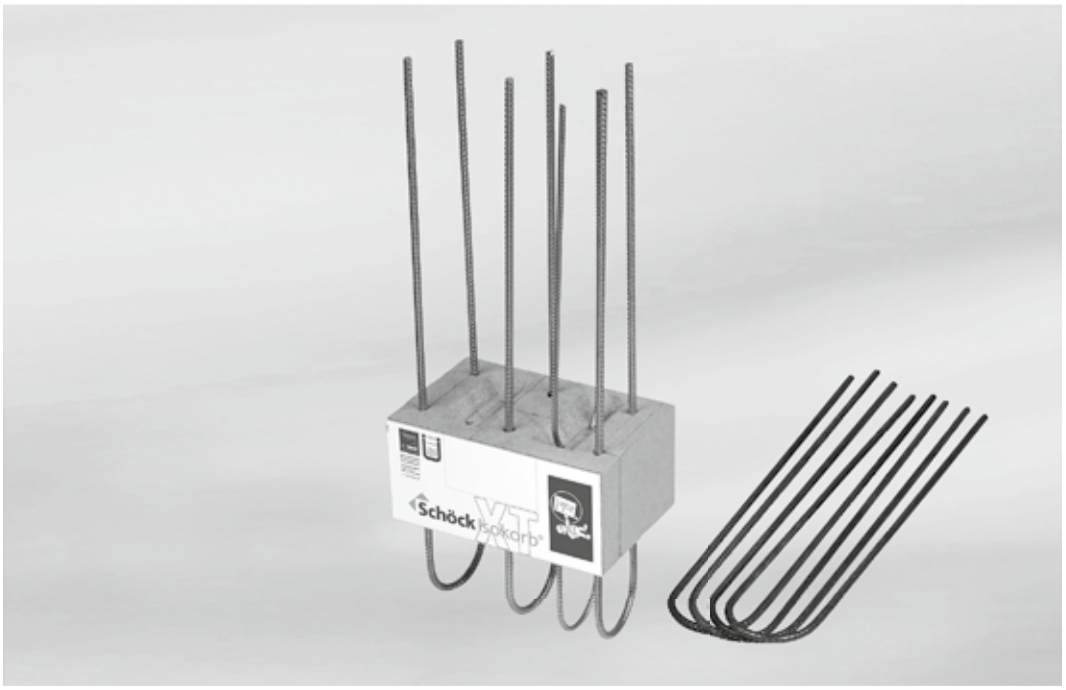




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ With the selection of the design table is the relevant concrete cover taken into account?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ With a connection at a corner using Schöck Isokorb® type DXT have the minimum slab thickness (≥ 200 mm) and the required concrete cover (-CV50) been taken into account?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?

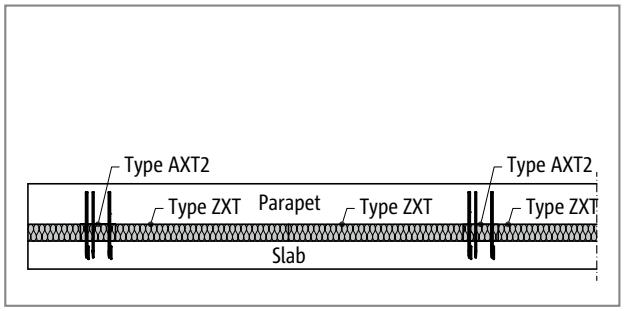
Schöck Isokorb® type AXT



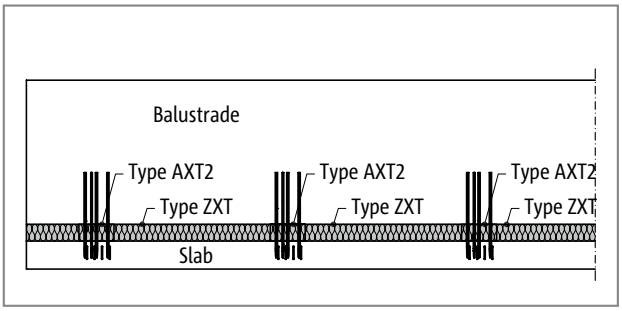
Schöck Isokorb® type AXT

Schöck Isokorb® type AXT
Suitable for parapets and balustrades. It transmits moments and shear forces, which result from an action in the same direction. In addition the Schöck Isokorb® type AXT transmits compressive forces.

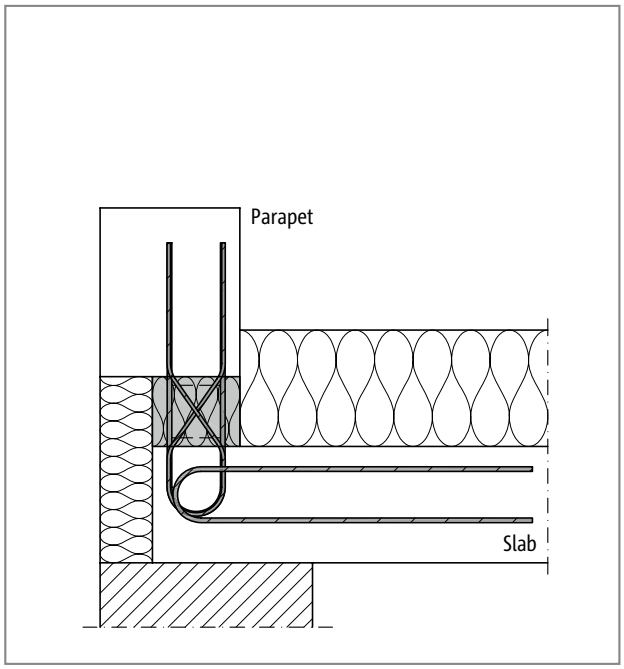
Element arrangement | Installation cross sections



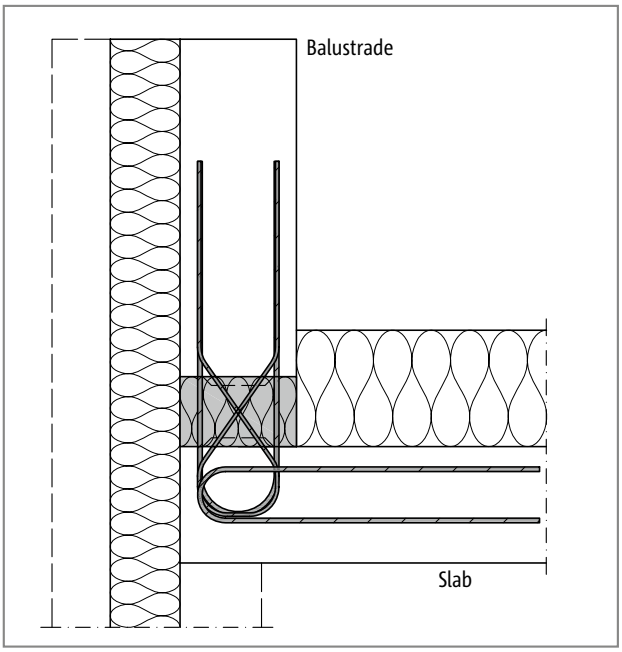
Schöck Isokorb® type AXT, ZXT: Parapet (type AXT1)



Schöck Isokorb® type AXT, ZXT: Ballustrade (type AXT2)



Schöck Isokorb® type AXT: Connection to a parapet (type AXT1)



Schöck Isokorb® type AXT: Balustrade (type AXT2) with non-load-bearing intermediate masonry

Element arangement/installation cross-section

- For insulation between the Schöck Isokorb®, Schöck Isokorb® supplementary type ZXT (see p.169) are available in R0 or as fire protection model.

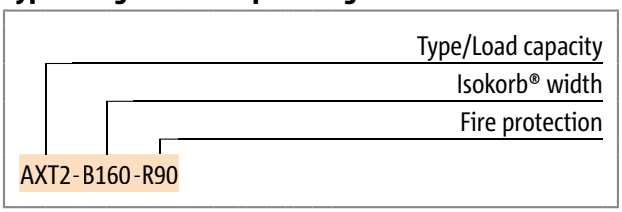
Product selection | Type designations | Special designs | Design force direction

Schöck Isokorb® type AXT variants

The configuration of the Schöck Isokorb® type AXT can be varied as follows:

- Load capacity:
  AXT1 for parapets
  AXT2 for balustrades
- Isokorb® width:
  B = 150 - 250 mm, R0
  B = 160 - 250 mm, R90
- Floor height:
  h = 160 - 250 mm
- Fire resistance class:
  R0 (Standard), R90

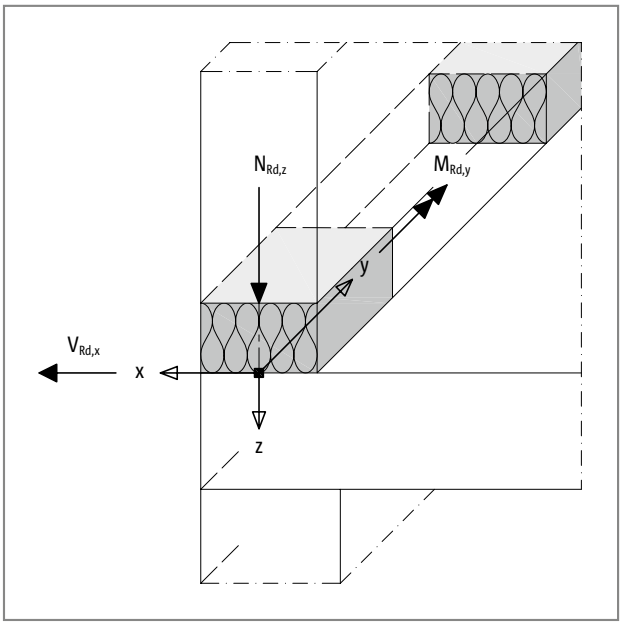
Type designations in planning documents



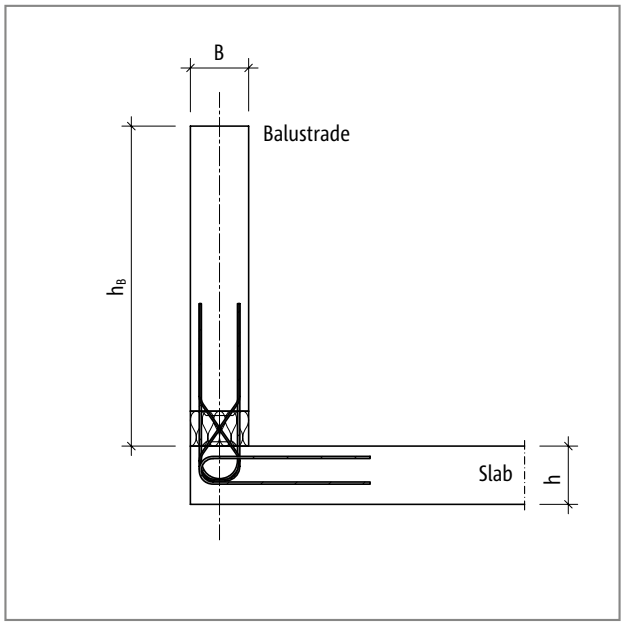
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

Direction of forces



Schöck Isokorb® Typ AXT: Sign convention for the design



Schöck Isokorb® type AXT: Static system

Determination of spacing

Determination of the maximum spacing

The maximum spacing a_{max} of the Schöck Isokorb® type AXT is dependent on the moments $m_{Ed,y}$, normal forces $n_{Ed,z}$ and shear forces $v_{Ed,x}$ acting on them. It can be determined with the aid of the procedure described below.
DThe verification is produced if the selected distance a_{prov} is ≤ a_{max} = min ($a_{max,1}$; $a_{max,2}$). In this case no further verification of the design internal forces is required.

Procedure:

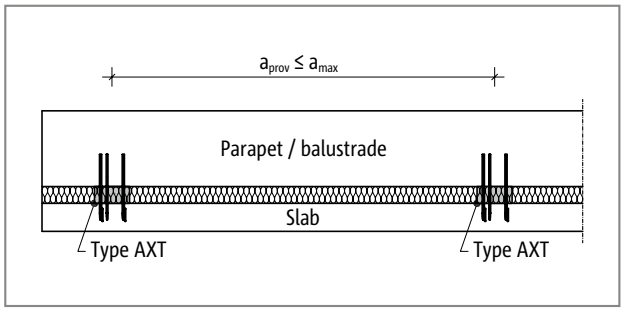
Determination of $a_{max,1\ (diagram)}$

The maximum spacing $a_{max,1}$ of the Schöck Isokorb® type AXT can be determined depending on the moments $m_{Ed,y}$ and normal forces $n_{Ed,z}$ acting on them with the aid of the following diagram.

- Determination of the acting moments $m_{Ed,y}$ and normal forces $n_{Ed,z}$
- Calculation of the ratio $n_{Ed,z}/m_{Ed,y}$
- Read up the righthand axis for $n_{Ed,z}/m_{Ed,y}$ using the calculated ratio ①
- Draw a horizontal line up to the intersection with the appropriate curve (note Schöck Isokorb® type and width)
- Draw a vertical line through the intersection and read off $N_{Rd,z}$ (intersection of the vertical line with the $N_{Rd,z}$ axis) ②
- Determine the maximum distance: $a_{max,1}$ = $N_{Rd,z}/n_{Ed,z}$

Determination of $a_{max,2}$

The maximum spacing $a_{max,2}$ of the Schöck Isokorb® type AXT depends on the shear force and is determined through the relationship $a_{max,2} = V_{Rd,x}/v_{Ed,x}$.



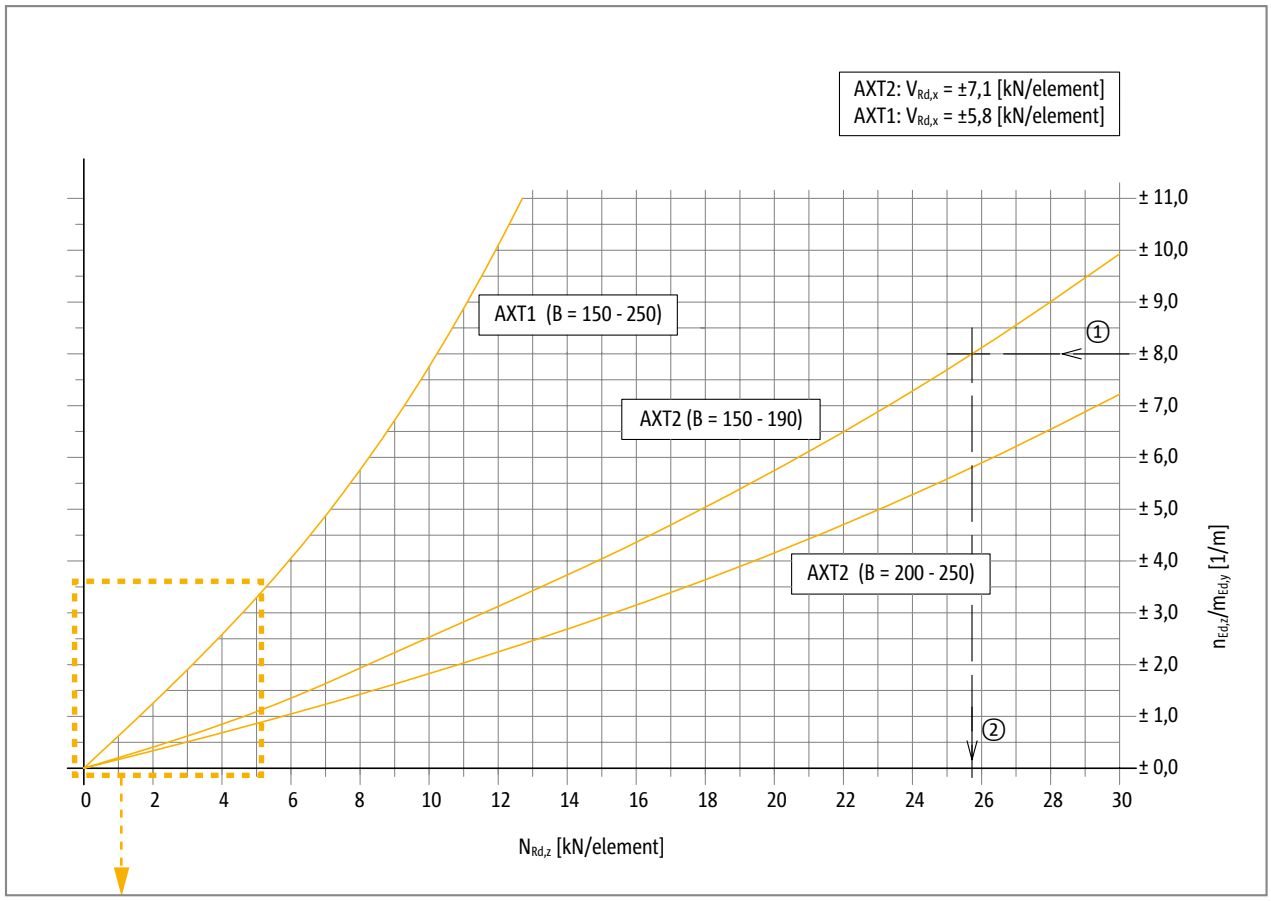
Schöck Isokorb® type AXT: Verification achieved, if selected distance a_{prov} ≤ a_{max}

Numerical example determination of centre distances

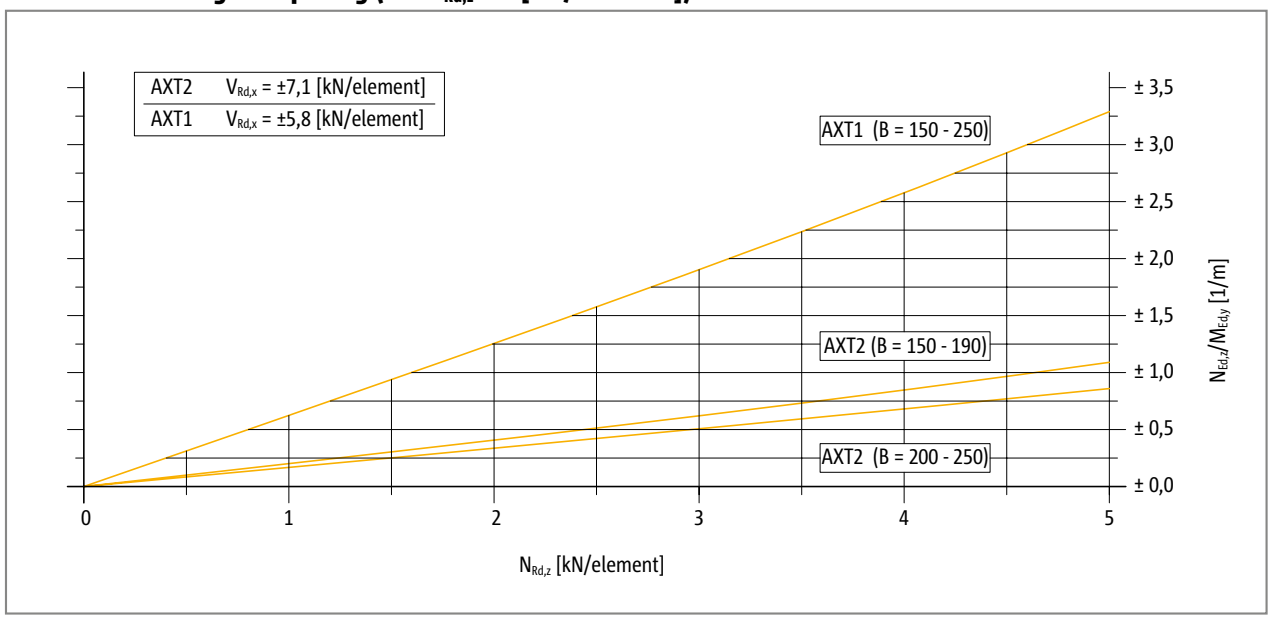
given:	AXT2	B = 190 mm
internal forces per meter connection length		
	$n_{Ed,z}$	= 12.0 kN/m
	$v_{Ed,x}$	= 2.0 kN/m
	$m_{Ed,y}$	=1.5 kNm/m
Determination of $a_{max,1}$		
input value ①	$n_{Ed,z}/m_{Ed,y}$	= 12.0 [kN/m] / 1.5[kNm/m] = 8.0 [1/m]
read off ②	$N_{Rd,z}$	= 25.7 kN
	$a_{max,1}$	= 25.7 kN / 12.0 [kN/m] = 2.14 m
Determination of a_{max2}	$a_{max,2}$	= 7.1 kN / 2.0 [kN/m] = 3.55 m
⇒	a_{max}	**= 2.14 m**

Determination of spacing

Diagram spacing (0 < $N_{Rd,z}$ < 30 [kN/element])



Detailed view diagram spacing (0 < $N_{Rd,z}$ < 5 [kN/element])



Determination of spacing

- For $n_{ed,z}$ = 0 or $m_{ed,y}$ = 0, use design variants A,B, or C.

Design variants

The Schöck Isokorb® type AXT, independent of the allowable normal force $N_{Rd,z}$ and the allowable moment $M_{Rd,y}$, has a constant allowable shear force $V_{Rd,x}$. The allowable moment $M_{Rd,y}$ and the allowable normal forces $N_{Rd,z}$ determine each other mutually in an interaction. For the design of the Schöck Isokorb® type AXT there are three **design variants A,B,C** available.

- **Design variant A**:
  In the **design table** the interaction formula solved once according to the allowable moment $M_{Rd,y}$ [kNm/element] depending on an acting normal force $N_{Ed,z}$ [kN/element] is given and solved once according to the allowable normal force $N_{Rd,z}$ kN/element] depending on an acting moment $M_{Ed,y}$ [kNm/element]. Verification achieved: $N_{Ed,z} \leq N_{Rd,z}(M_{Ed,y})$ or $M_{Ed,y} \leq M_{Rd,y}(N_{Ed,z})$ and $V_{Ed,x} \leq V_{Rd,x}$
- **Design variant B**:
  In the **design diagramm** the interaction of allowable normal force $N_{Rd,z}$ [kN/element] and moment load $M_{Rd,y}$ [kN/element] is presented graphically. The verification is achieved, if the intersection of acting normal force $N_{Ed,z}$ [kN/element] and acting moment $M_{Ed,y}$ [kN/element] lies below or on the graph applicable for the respective Schöck Isokorb® type.
- **Design variant C**:
  In the **interaction table** the allowable moments $M_{Rd,y}$ [kN/element] are given depending on the allowable normal force $N_{Rd,z}$ [kN/element].

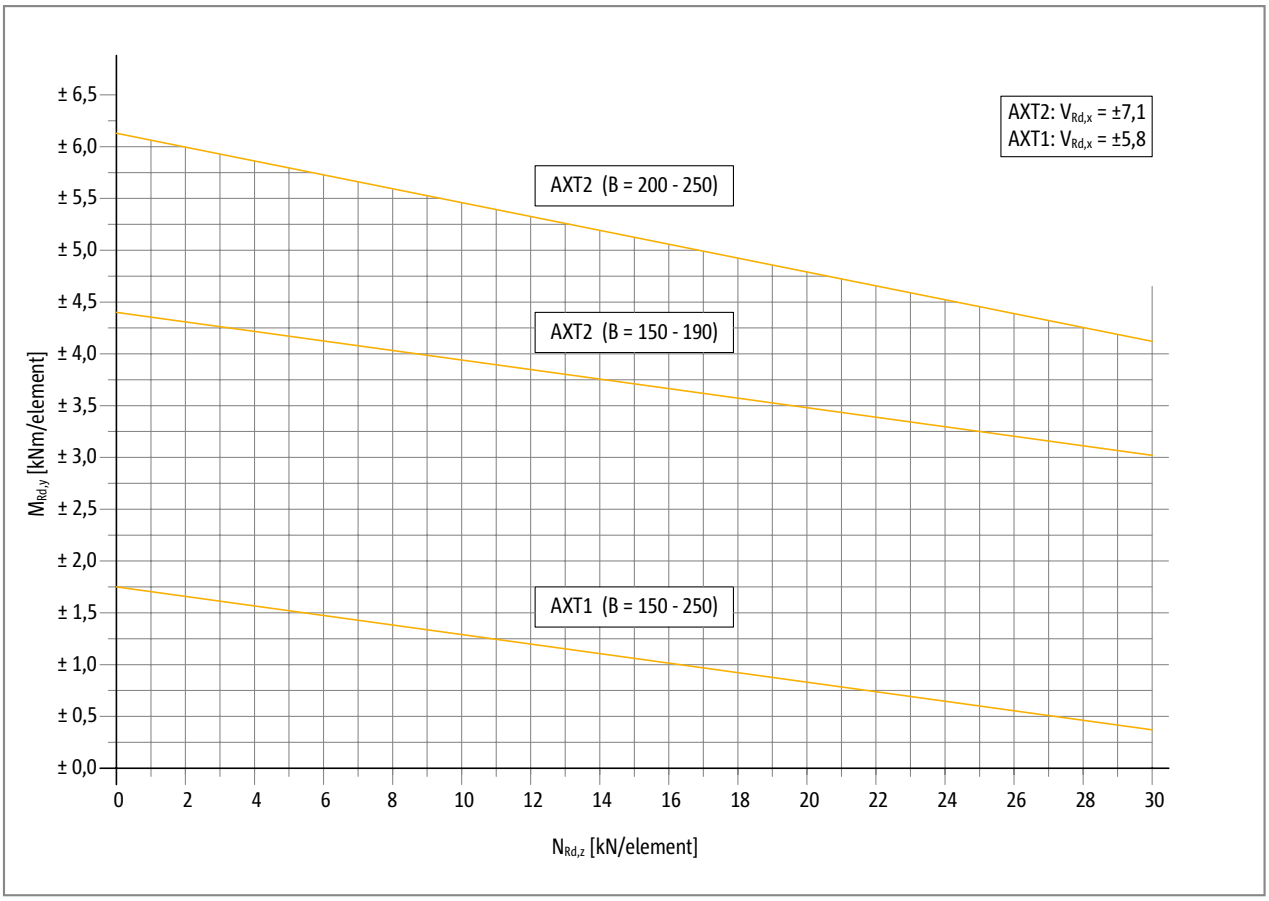
Design variant A: Design table

Schöck Isokorb® type		AXT1	AXT2
Design values with		Concrete strength class ≥ C25/30	
		$M_{Rd,y}$ [kNm/element]	
Isokorb® width [mm]	150 - 190	$\leq 1{,}75 - 0{,}046 \cdot N_{Ed,z}$	$\leq 4{,}40 - 0{,}046 \cdot N_{Ed,z}$
	200 - 250	$\leq 1{,}75 - 0{,}046 \cdot N_{Ed,z}$	$\leq 6{,}13 - 0{,}066 \cdot N_{Ed,z}$
		$N_{Rd,z}$ [kN/Element]	
	150 - 190	$\leq 38{,}04 - \frlvert M_{Ed,y} \frrvert / 0{,}046$	$\leq 95{,}65 - \frlvert M_{Ed,y} \frrvert / 0{,}046$
	200 - 250	$\leq 38{,}04 - \frlvert M_{Ed,y} \frrvert / 0{,}046$	$\leq 92{,}89 - \frlvert M_{Ed,y} \frrvert / 0{,}066$
		$V_{Rd,x}$ [kN/Element]	
	150 - 250	±5.8	±7.1

Schöck Isokorb® type	AXT1	AXT2
Isokorb® length [mm]	250	250
Tension bars/compression bars	2 × 2 ⌀ 8	2 × 3 ⌀ 8
Shear force bars	1 ⌀ 6 + 1 ⌀ 6	1 ⌀ 6 + 1 ⌀ 6
Connection stirrup	2 ⌀ 8	4 ⌀ 8
Balustrade/parapet B_{min} R0	150	150
Balustrade/parapet B_{min} R90	160	160
Floor h_{min} [mm]	160	160

Design variants

Design variant B: Design diagram



Design variant C: Interaction table

Schöck Isokorb® type		AXT1 (B = 150 - 250)	AXT2 (B = 150 - 190)	AXT2 (B = 200 - 250)
Design values with		Concrete strength class ≥ C25/30		
		$M_{Rd,y}$ [kNm/element]		
$N_{Rd,z}$ [kN/Element]	0.0	±1.7	±4.4	±6.1
	5.0	±1.5	±4.2	±5.8
	10.0	±1.3	±3.9	±5.5
	15.0	±1.1	±3.7	±5.1
	20.0	±0.8	±3.5	±4.8
	25.0	±0.6	±3.3	±4.5
	30.0	±0.4	±3.0	±4.2

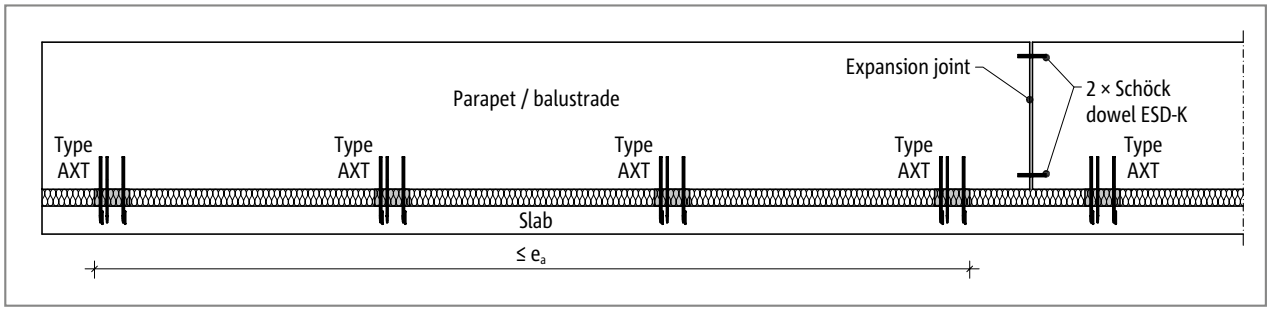
Notes on design

- The design values of the Schöck Isokorb® type AXT apply only for an identically directed action, i.e. negative shear force with positive moment or positive shear force with negative moment. The Schöck Isokorb® type FXT is recommended for further action combinations.
- The design values for a concrete strength class ≥ C25/30 are given for balustrade side and floor side.
- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,\,max}$, whereby $V_{Rd,\,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\Theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- The indicative minimum concrete strength class of the external structural component is C32/40.

Expansion joint spacing

Maximum expansion joint spacing

Expansion joints are to be arranged in the external structural components. The longitudinal change due to temeperature is related to the maximum distance e_a of the outer edges of the outermost Schöck Isokorb® types. With this the outer structural component can project laterally over the Schöck Isokorb®.
With fixed points such as, for example corners, half the maximum length e_a applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



Schöck Isokorb® type AXT: Expansion joint configuration

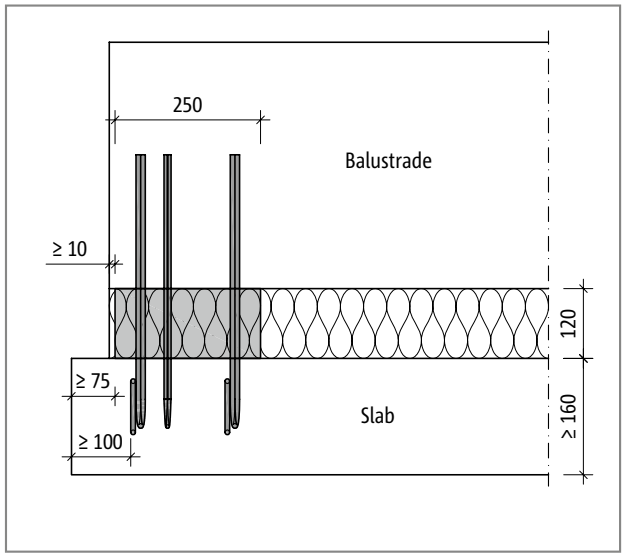
Schöck Isokorb® type		AXT
Spacing		e_a [m]
Insulating element thickness [mm]	120	23.0

Edge distances

The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the distance of the insulation member from the edge of the balustrade or of the insulation joint in the balustrade the following applies: $e_R \geq 10$ mm.
- For the distance of the insulation member from the edge of the floor the following applies $e_R \geq 75$ mm.
- FFor the distance of the connection stirrup from the edge of the floor the following applies: $e_R \geq 100$ mm.

Edge spacing

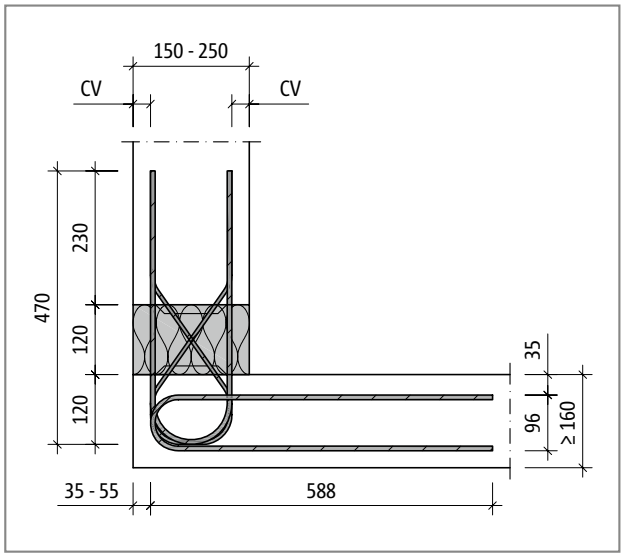


Schöck Isokorb® type AXT: View edge distances

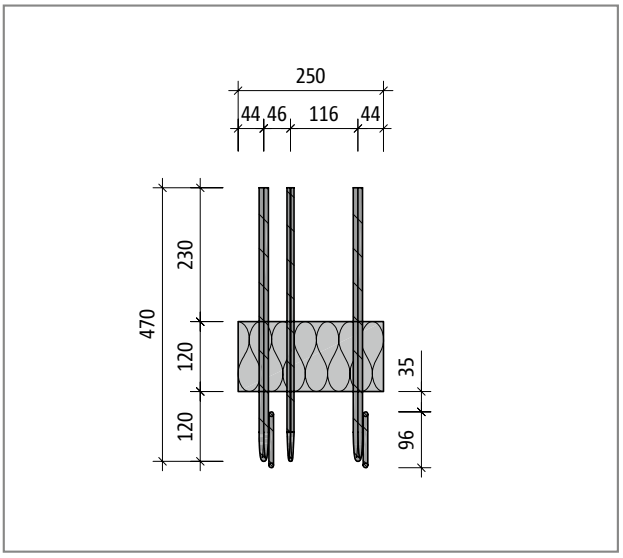
Edge distances

- The edge distances in floor and balustrade are not required to be the same.

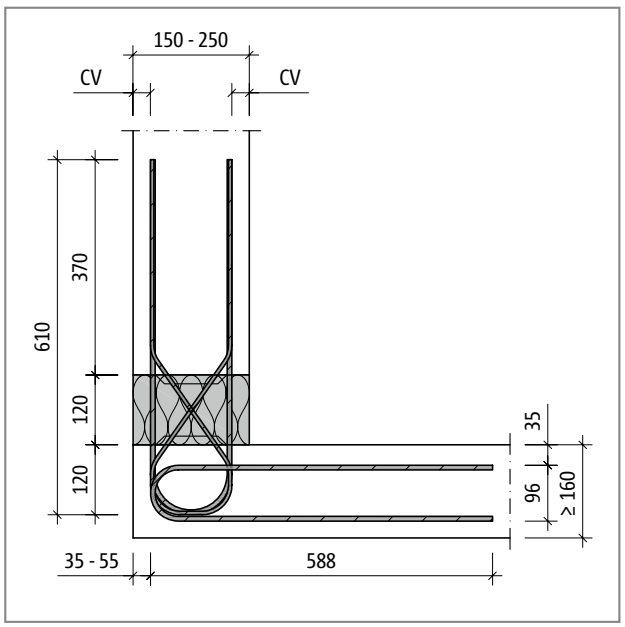
Product description



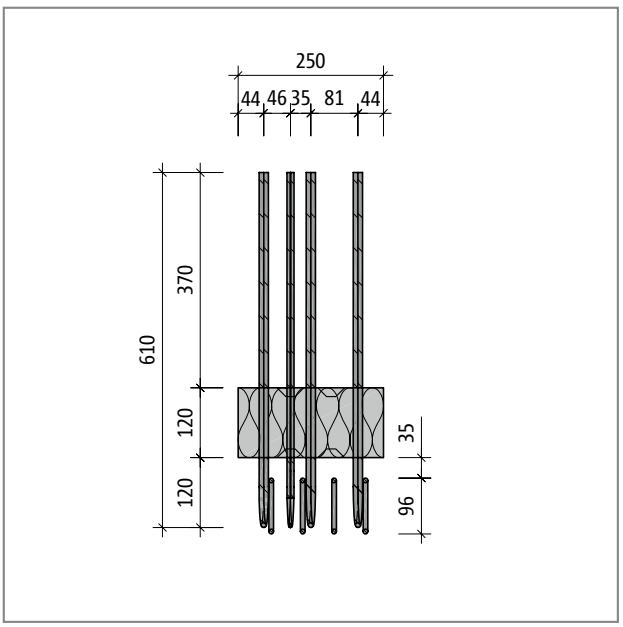
Schöck Isokorb® type AXT1: Product section



Schöck Isokorb® type AXT1: Product view



Schöck Isokorb® type AXT2: Product section



Schöck Isokorb® type AXT2: Product view

Product information

- Minimum width of the balustrade or parapet B_{min} = 150 mm, note minimum floor height$_{min}$ = 160 mm.
- Download further product plan views and cross-sections at www.schoeck.co.uk/download
- The concrete cover of the connection stirrup should be at least 35 mm.

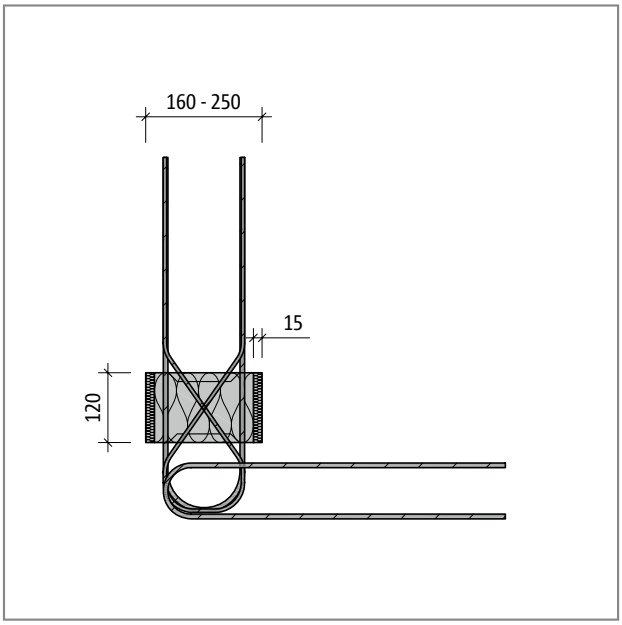
Concrete cover | Fire protection configuration

Concrete cover

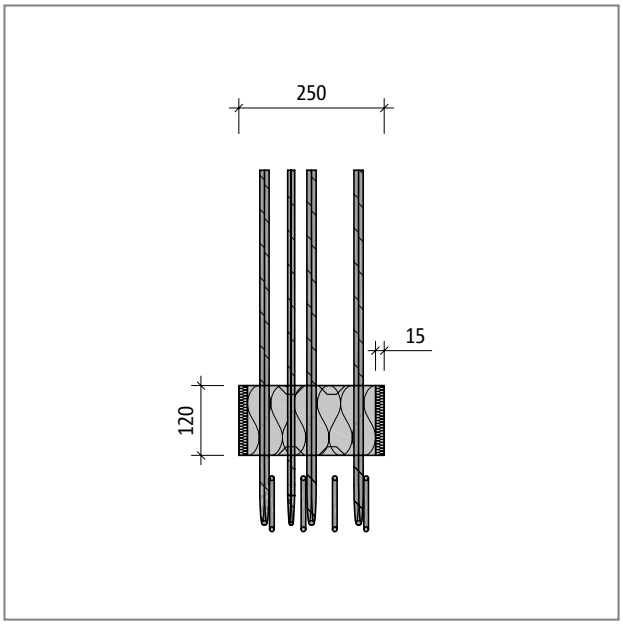
The concrete cover CV of the Schöck Isokorb® type AXT varies depending on the width of the balustrade. As stainless, ribbed reinforcing steel is used exclusively for the reinforcement of the balustrade in the area of the Shöck Isokorb® there is no risk of corrosion. Therefore, also with an exposure class XC3/4, a concrete cover in the area of the Schöck Isokorb® type AXT of CV = 25 mm is sufficient.

Schöck Isokorb® type		AXT1, AXT2
Concrete cover with		CV [mm]
Isokorb® width [mm]	150	25
	160	30
	170	35
	180	40
	190	45
	200	30
	210	35
	220	40
	230	45
	240	50
	250	55

Product configuration with fire protection requirement

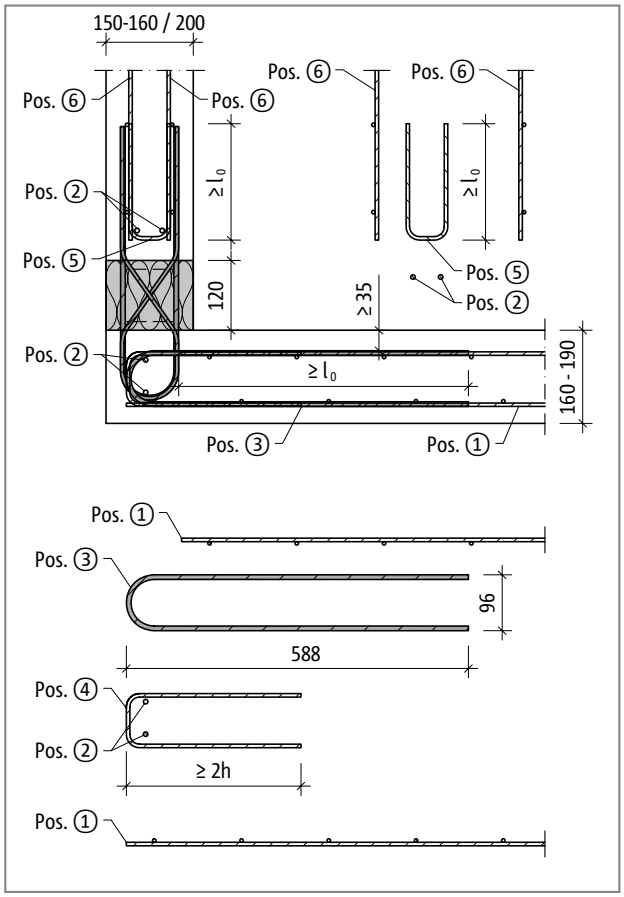


Schöck Isokorb® type AXT2 with R90: product section; fire protection slabs at the sides

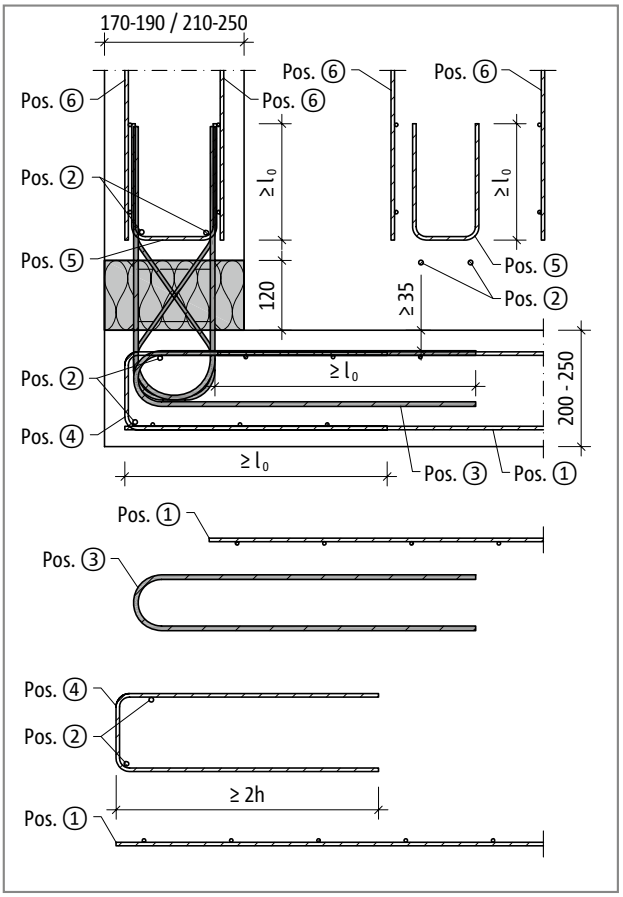


Schöck Isokorb® type AXT2 with R90: product section; fire protection slabs at the sides

On-site reinforcement



Schöck Isokorb® type AXT: On-site reinforcement on the inside (B =150 - 160 and B = 200)



Schöck Isokorb® type AXT: On-site reinforcement on the outside (B =170 - 190 and B = 210 - 250)

The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this the effective moment, the effective normal force and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing floor reinforcement can be taken into account so far as the maximum separation to the tension bars of 4⌀ is maintained. Additional reinforcement may be required.

On-site reinforcement

Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars/compression members.

Schöck Isokorb® type		AXT1	AXT2
	Location	Concrete strength class ≥ C25/30	
Pos. 1 Lapping reinforcement			
Pos. 1 [mm²/Element]	Floor side	100	201
Lap length l_0 [mm]	Floor side	451	451
Pos. 2 Steel bars along the insulation joint			
Pos. 2	floor side/balustrade side	4 • H8	4 • H8
Pos. 3 Factory supplied connection stirrup			
Pos. 3	Floor side	2 • H8	4 • H8
Pos. 4 Structural edging for the floor height h = 200 - 250 mm			
Pos. 4	Floor side	H8@150	H8@150
Pos. 5 Stirrup as suspension reinforcement			
Pos. 5	balustrade side	H8@250	H8@250
Lap length l_0 [mm]	balustrade side	200	332
Pos. 6 Lapping reinforcement			
Pos. 6 [mm²/Element]	balustrade side	100	151
Lap length l_0 [mm]	balustrade side	200	332

Information about on-site reinforcement

- Alternative connection reinforcement is possible. For the determination of the lap length the rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted.
- For the reinforcing steel connection stirrups supplied ex works, the upper concrete cover c_v in the floor slab is to be selected dependent on the exposure class.
- With the Schöck Isokorb® widths B=150, 160, 200 the concrete cover CV is ≤ 35 mm. The reinforcement is therefore to be arranged within the tension/compression bars.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Design example

Design example

Given: concrete floor C25/30,
concrete balustrade C25/30

Balustrade
B = 200 mm
h_B = 1.00 m

Loading:

Own weight and expansion g_k = 6 kN/m
Wind w_k = 0.8 kN/m²
Cross beam load q_k = 1.0 kN/m
Selected: Schöck Isokorb® type AXT2 B = 200 mm
spacing a_{prov} = 2.00 m

Effect per Schöck Isokorb®

$N_{Ed,z} = \gamma_G \cdot g_k \cdot a_{prov}$
$N_{Ed,z} = 1.35 \cdot 6\ kN/m \cdot 2.00\ m = 16.2\ kN$
$V_{Ed,x} = -(\gamma_Q \cdot w_k \cdot h_B + \gamma_Q \cdot \Psi_0 \cdot q_k) \cdot a_{prov}$
$V_{Ed,x} = -(1.5 \cdot 0.8\ kN/m^2 \cdot 1.00\ m + 1.5 \cdot 0.7 \cdot 1.0\ kN/m) \cdot 2.0\ m = -4.5\ kN$
$M_{Ed,y} = (\gamma_Q \cdot w_k \cdot h^2_B/2 + \gamma_Q \cdot \Psi_0 \cdot q_k \cdot h_B) \cdot a_{prov}$
$M_{Ed,y} = (1.5 \cdot 0.8\ kN/m^2 \cdot 1.0\ m^2/2 + 1.5 \cdot 0.7 \cdot 1.0\ kN/m \cdot 1.0\ m) \cdot 2.0\ m = 3.3\ kNm$

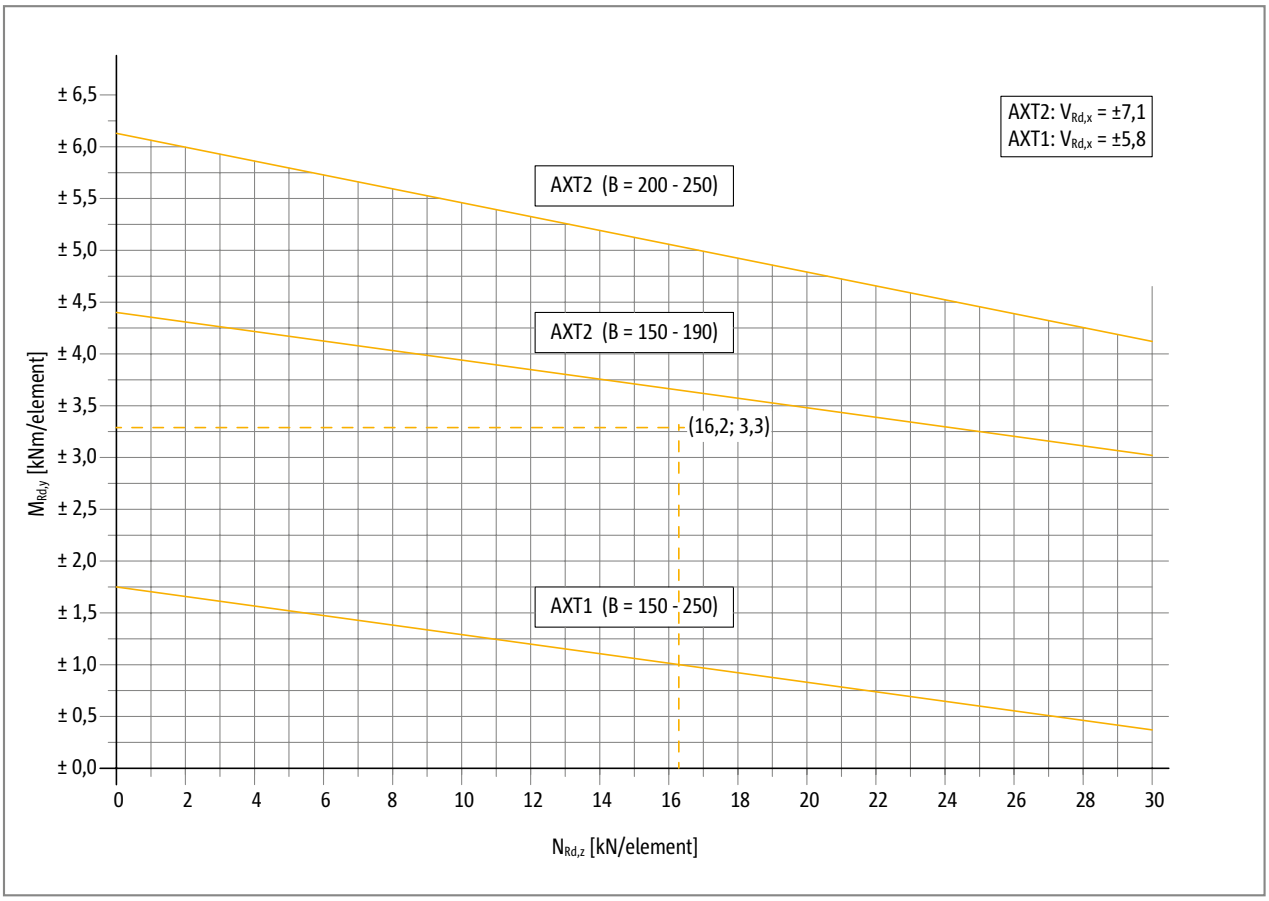
Note: For the verification with selected or predetermined spacing 1 design variant is sufficient. Alternatively the verification of the maximum centre distances page 190 is enough.

Design variant A

Design table Schöck Isokorb® type AXT2 B = 200 mm
Moment load-bearing capacity $M_{Rd,y} \leq 6.13 - 0.066 \cdot N_{Ed,z}$
$M_{Rd,y} \leq 6.13 - 0.066 \cdot 16.2\ kN = 5.1\ kNm$
$\Rightarrow$ $M_{Ed,y} = 3.3\ kNm \leq M_{Rd,y} = 5.1\ kNm \rightarrow$ NW o.k. ✓
Shear force load-bearing capacity $V_{Rd,x} = -7.1\ kN$
$\Rightarrow$ $V_{Ed,x} = -4.5\ kN \leq V_{Rd,x} = -7.1\ kN \rightarrow$ NW o.k. ✓
Note: The check is concerned with an interaction, either the moment verification or the verification of the normal force is enough.

Design example

Design model B
Design diagram



The point ($N_{Ed,z}$; $M_{Ed,y}$) = (16.2 kN; 3.3 kNm) lies below the line of the Schöck Isokorb® type AXT2 (B = 200 - 250).
With this the verification is achieved.

Shear force load-bearing capacity $V_{Rd,x}$ = - 7.1 kN

⇒ $V_{Ed,x}$ = -4.5 kN ≤ $V_{Rd,x}$ = - 7.1 kN → NW o.k. ✓

Design variant C

Interaction table $M_{Rd,y}$ = ± 4.8 kNm with $N_{Rd,z}$ = 20 kN

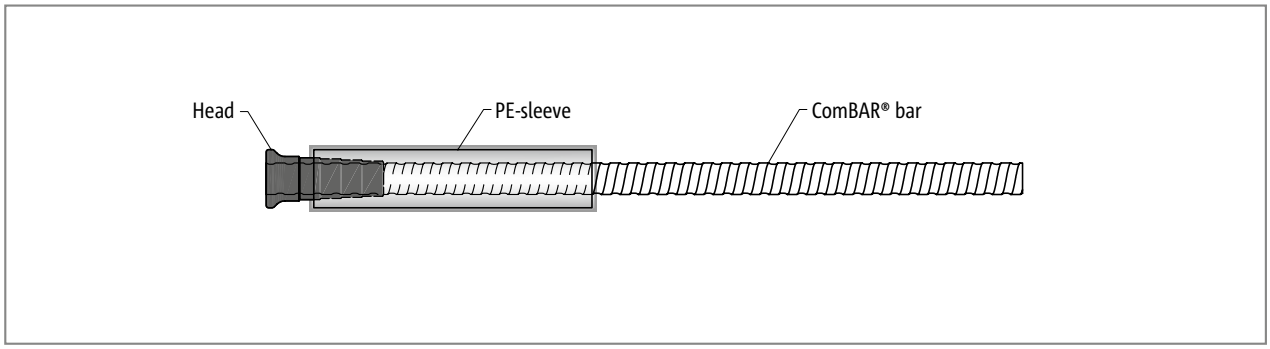
⇒ $M_{Ed,y}$ = 3.3 kNm ≤ $M_{Rd,y}$ = ± 4.8 kNm → NW o.k.✓

$N_{Ed,z}$ = 16.2 kN ≤ $N_{Rd,z}$ = 20 kN → NW o.k. ✓

Shear force load-bearing capacity $V_{Rd,x}$ = - 7,1 kN

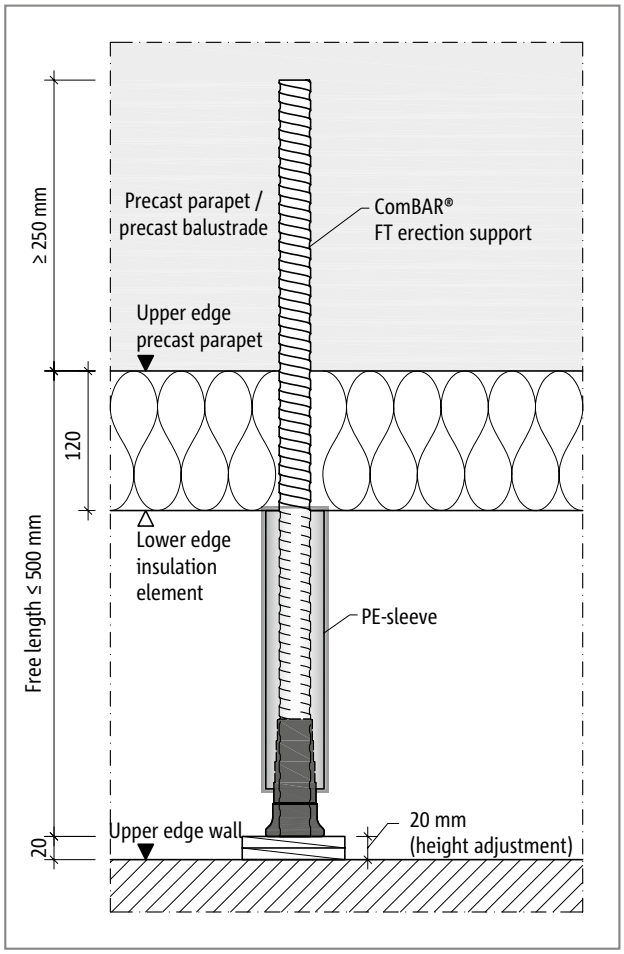
⇒ $V_{Ed,x}$ = - 4.5 kN ≤ $V_{Rd,x}$ = - 7.1 kN → NW o.k. ✓

Schöck ComBAR® FT erection support



Schöck ComBAR® FT erection support: ComBAR® single-headed bar with sleeve

Schöck ComBAR® type	FT erection support L=650 mm	FT erection support L=850 mm
Diameter [mm]	25	25
Bar length [mm]	650	850
Max. load per support [kN]	30	30
Max. free length [mm]	500	500
Min. anchoring length FT [mm]	250	250

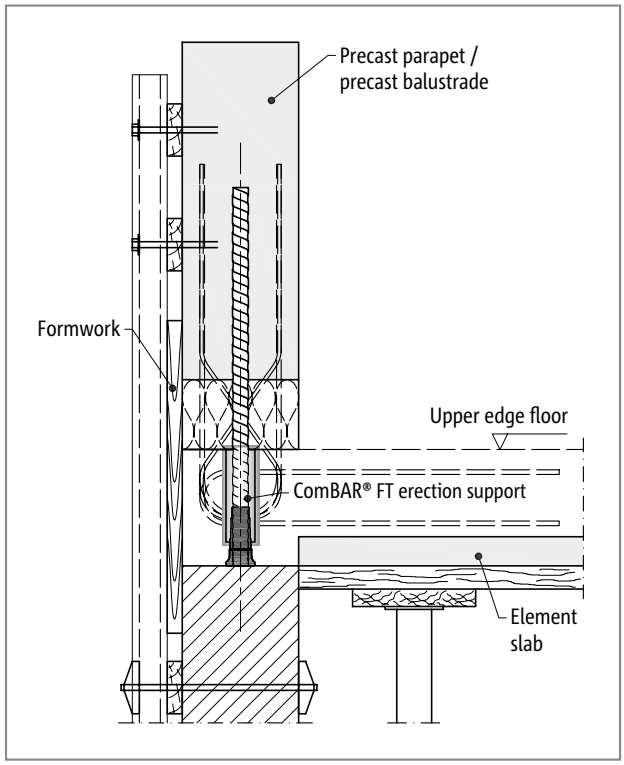


Schöck ComBAR® FT erection support: planning dimensions

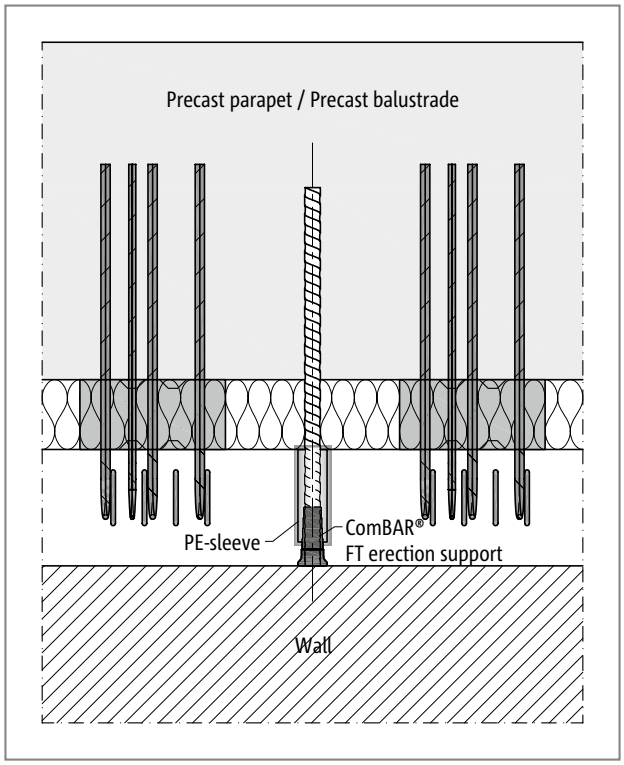
Product

- In the structural state the Schöck ComBAR FT erection support can accept the given load for a short time only.
- The Schöck ComBAR FT erection support is to be used only in combination with the Schöck Isokorb® type AXT.
- The sleeve is structurally necessary and is to be imbedded in concrete in the floor.

Schöck ComBAR® FT erection support

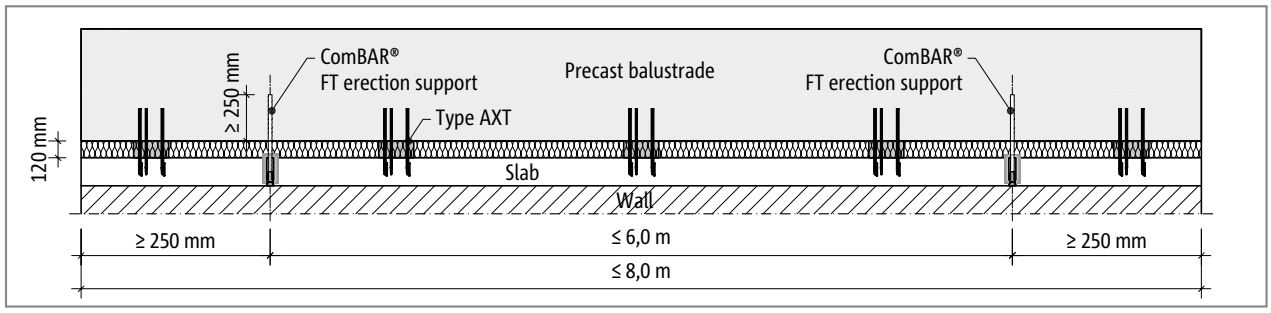


Schöck ComBAR® FT erection support: Installation in a precast concrete parapet; section



Schöck ComBAR® FT erection support: Installation in a precast concrete parapet; view

Area of application



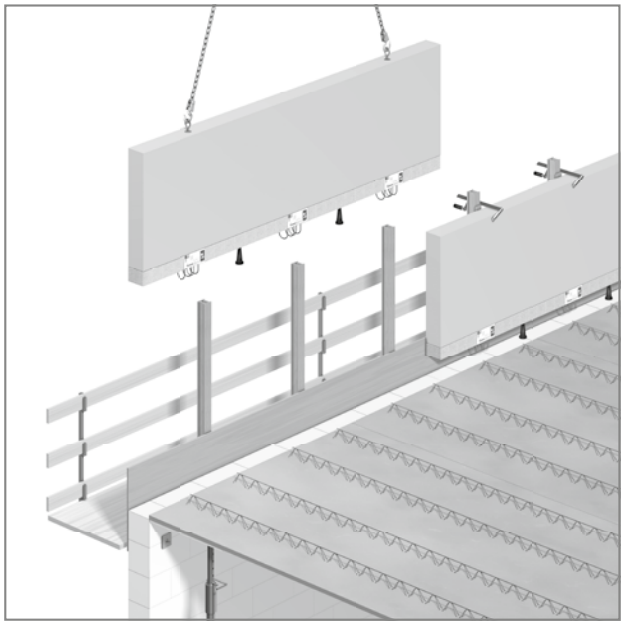
Schöck Isokorb® type AXT with ComBAR® FT erection support: Edge separations and minimum embedment length in the precast concrete balustrade

Precast concrete balustrade/precast concrete parapeta

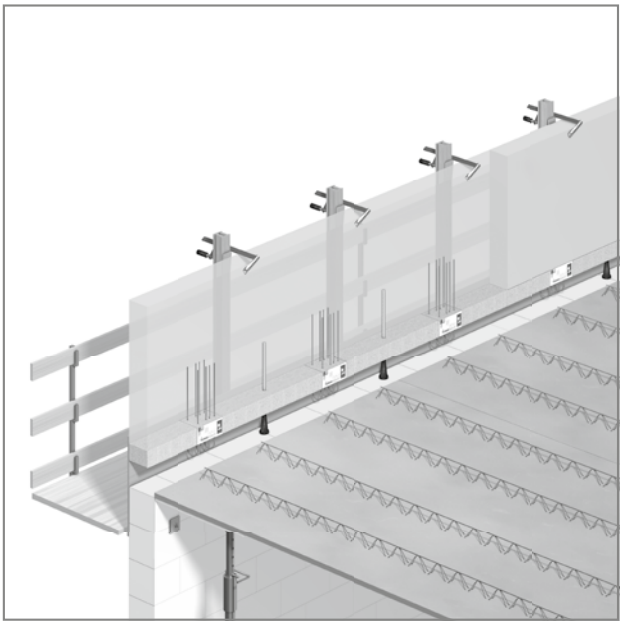
- Total weight ≤ 60 kN (30 kN/ComBAR® FT erection support)
- Overall length ≤ 8.0 m
- Thickness ≥ 150 mm
- Concrete strength class ≥ C25/30
- Reinforcement inside and outside
- Number of Schöck ComBAR® FT erection supports per precast concrete part ≤ 2

Schöck ComBAR® FT erection support

Installation precast concrete balustrade/precast concrete parapet



Schöck Isokorb® type AXT with ComBAR® FT erection support: Raising of the precast concrete parapeta

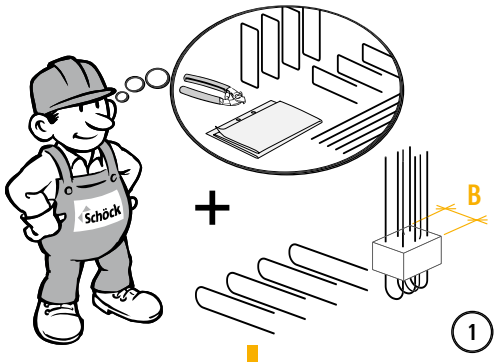


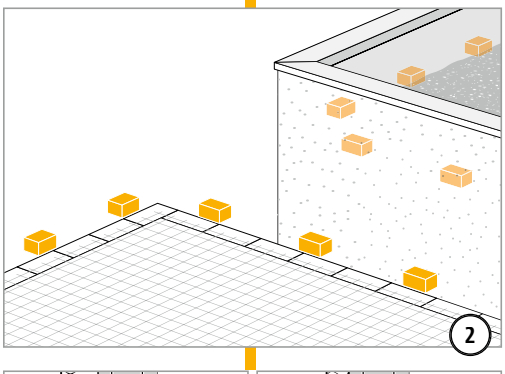
Schöck Isokorb® type AXT with ComBAR® FT erection support: Securing of the aligned precast concrete parapet

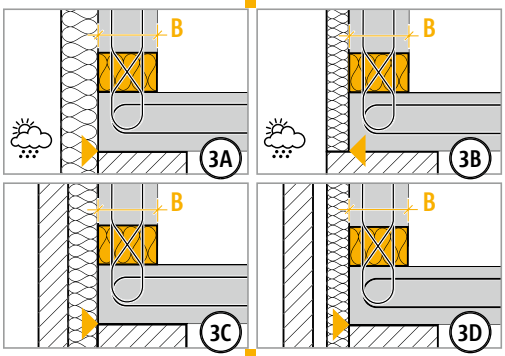
Installation

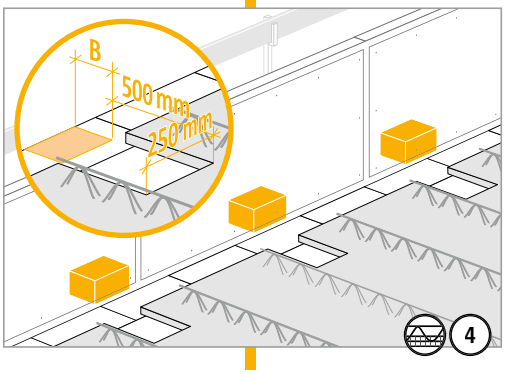
- The sleeve is part of the product.
- Mount parapet.
- Place parapet at the installation point and adjust height using adjustment shims.
- Secure using c-clamps.
- Install connection stirrups.

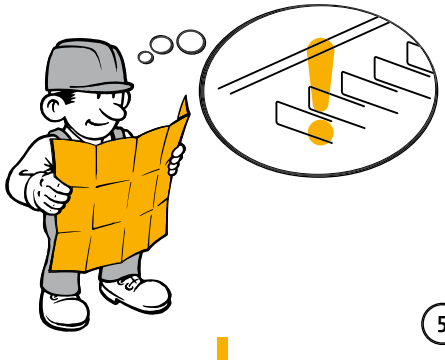
Installation instructions

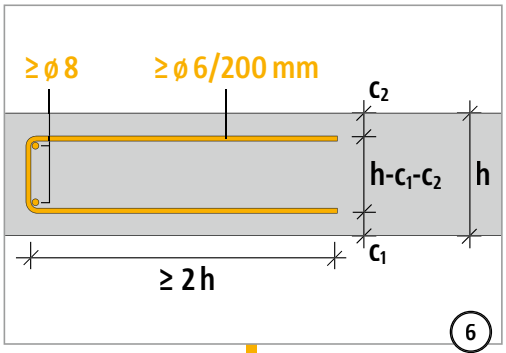


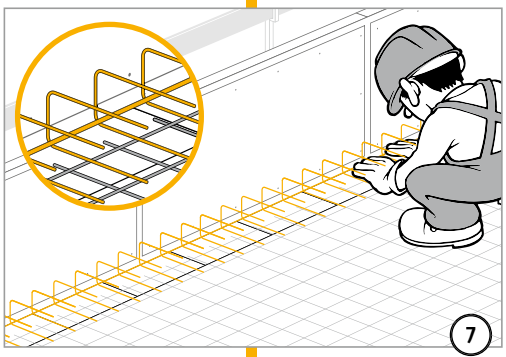


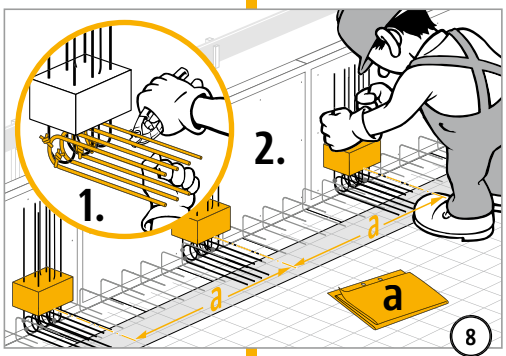


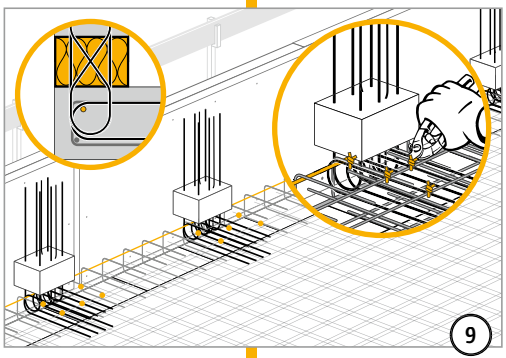


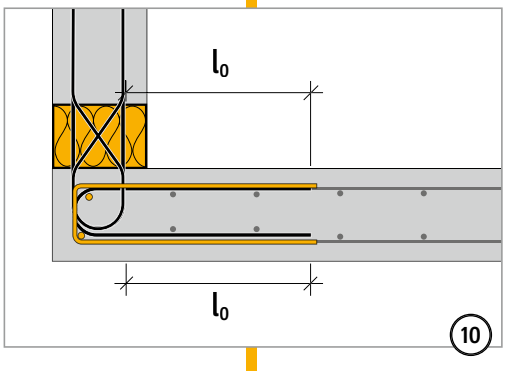




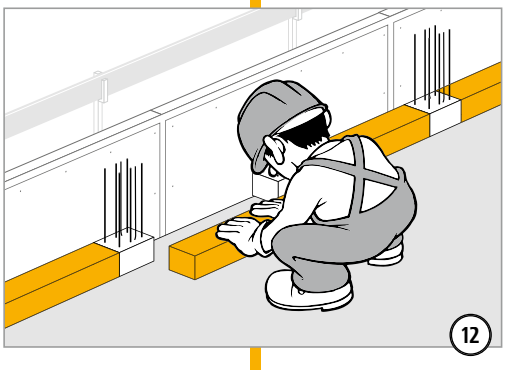


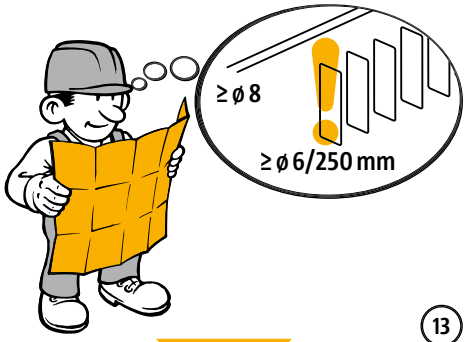






Installation instructions





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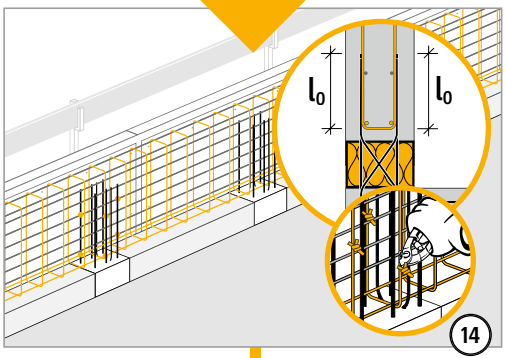
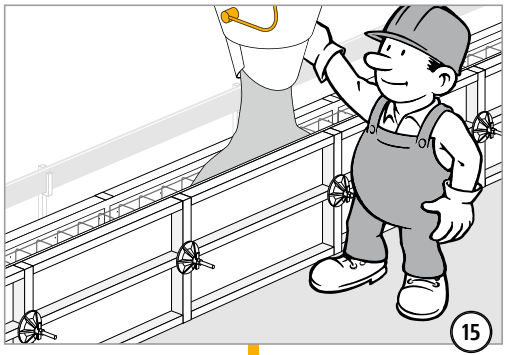
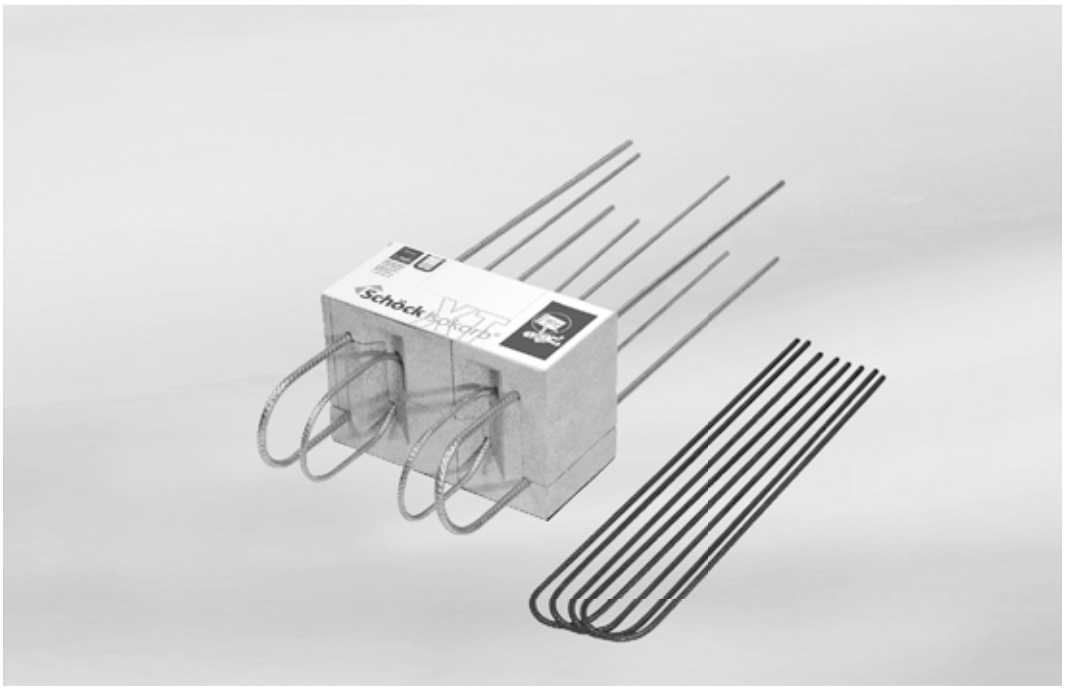




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the maximum separation of the outermost Schöck Isokorb® types as a result of expansion in the outer structural components been maintained?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?

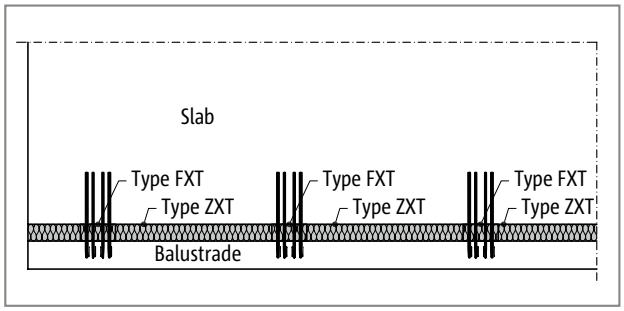
Schöck Isokorb® type FXT



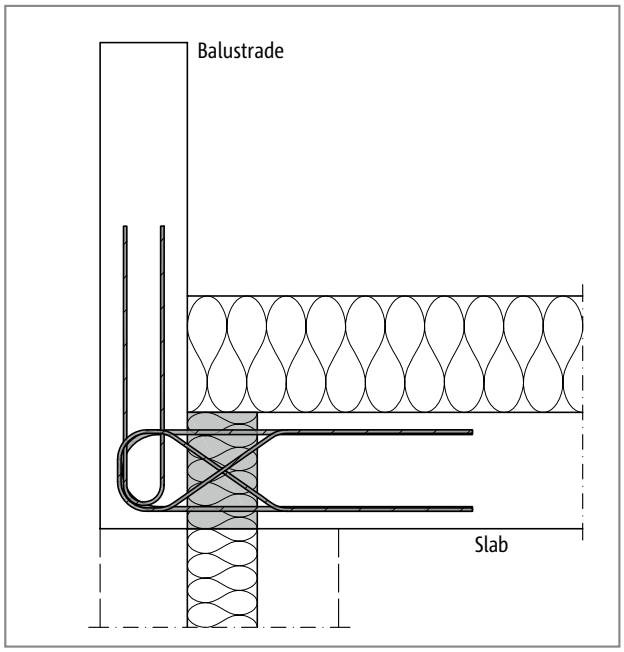
Schöck Isokorb® type FXT

Schöck Isokorb® type FXT
Suitable for advanced balustrades. It transmits normal forces, positive and negative moments and shear forces.

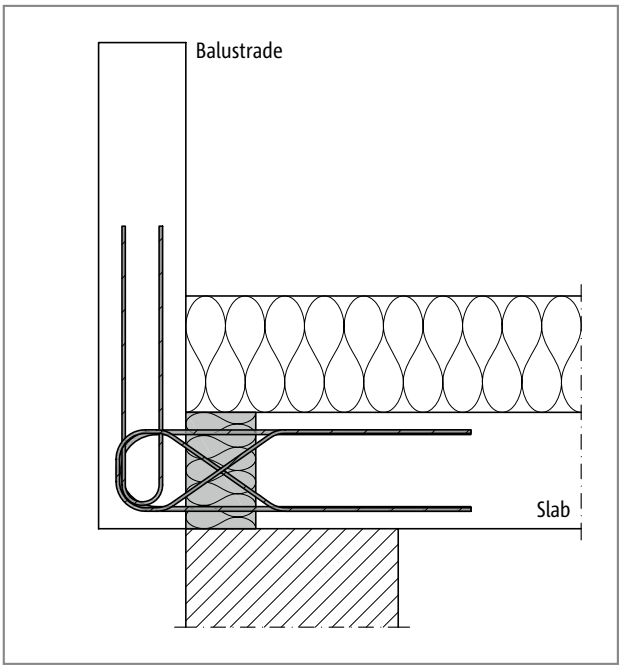
Element arrangement | Installation cross sections



Schöck Isokorb® type FXT, ZXT: Advanced balustrade



Schöck Isokorb® type FXT: Connection of an advanced balustrade with non-load-carrying cavity wall



Schöck Isokorb® type FXT: Connection of an advanced balustrade with heat insulating masonry

Element arangement/installation cross-section

- For insulation between the Schöck Isokorb®, Schöck Isokorb® supplementary type ZXT (see p.169) are available in R0 or as fire protection model.

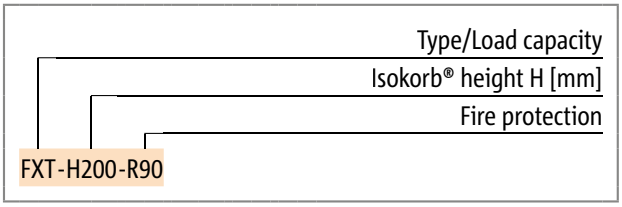
Product selection | Type designations | Special designs | Design force direction

Schöck Isokorb® types FXT variants

The configuration of the Schöck Isokorb® type FXT can be varied as follows:

- Isokorb® height:
  H = 160 - 250 mm
- Balustrade widths:
  b = 150 - 250 mm
- Fire resistance class:
  R0 (Standard), R90

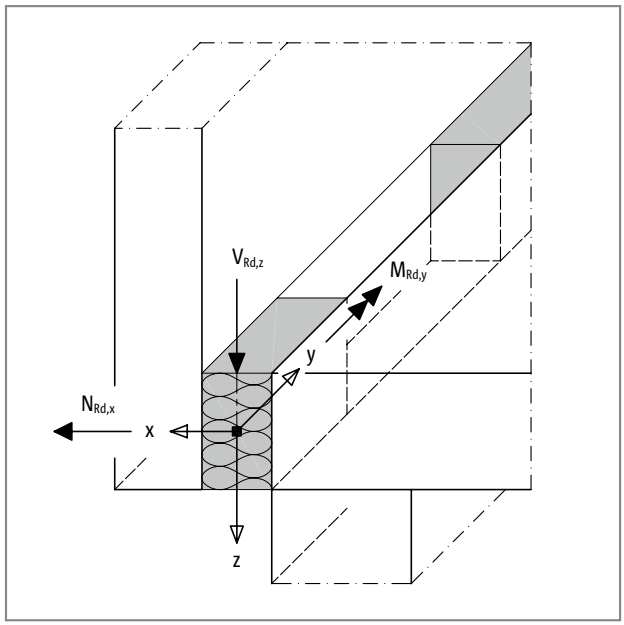
Type designations in planning documents



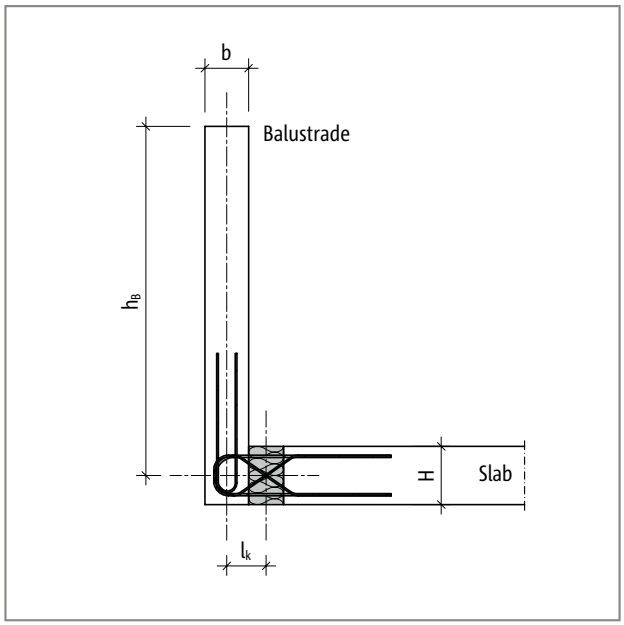
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

Direction of forces



Schöck Isokorb® type FXT: Sign convention for the design



Schöck Isokorb® type FXT: Static system

Determination of spacing

Determination of the maximum spacing

The maximum spacing a_{max} of the Schöck Isokorb® type FXT is dependent on the moments $m_{Ed,y}$, normal forces $n_{Ed,x}$ and shear forces $v_{Ed,z}$ acting on them. It can be determined with the aid of the procedure described below.
The verification is produced if the selected distance a_{prov} it ≤ a_{max} = min ($a_{max,1}$; $a_{max,2}$). In this case no further verification of the design internal forces is required.

Procedure:

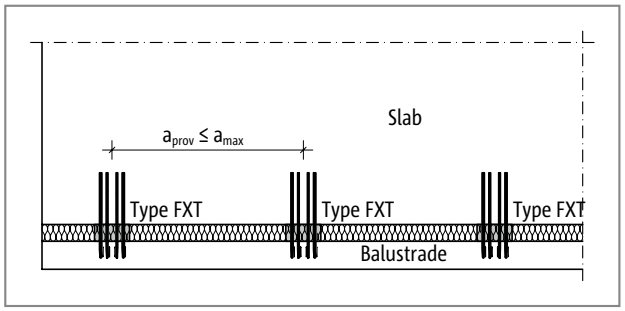
Determination of $a_{max,1}$ (diagram)

The maximum spacing $a_{max,1}$ of the Schöck Isokorb® type FXT can be determined depending on the moments $m_{Ed,y}$ and normal forces $n_{Ed,x}$ acting on them with the aid of the following diagram.

- Determination of the acting moments $m_{Ed,y}$ and normal forces $n_{Ed,x}$
- Calculation of the ratio $n_{Ed,x}/m_{Ed,y}$
- Read up the righthand axis for $n_{Ed,z}/m_{Ed,y}$ using the calculated ratio ①
- Draw a horizontal line up to the intersection with the appropriate curve (note Schöck Isokorb® type and width)
- Draw a vertical line through the intersection and read off $N_{Rd,z}$ (intersection of the vertical line with the $N_{Rd,z}$ axis) ②
- Determine the maximum distance: $a_{max,1}$ = $N_{Rd,x}/n_{Ed,z}$

Determination of $a_{max,2}$

The maximum spacing $a_{max,2}$ of the Schöck Isokorb® type FXT depends on the shear force and is determined through the relationship $a_{max,2} = V_{Rd,x}/v_{Ed,x}$.



Schöck Isokorb® type FXT: Verification achieved, if the selected distance a_{prov} ≤ a_{max}

Determination of spacing

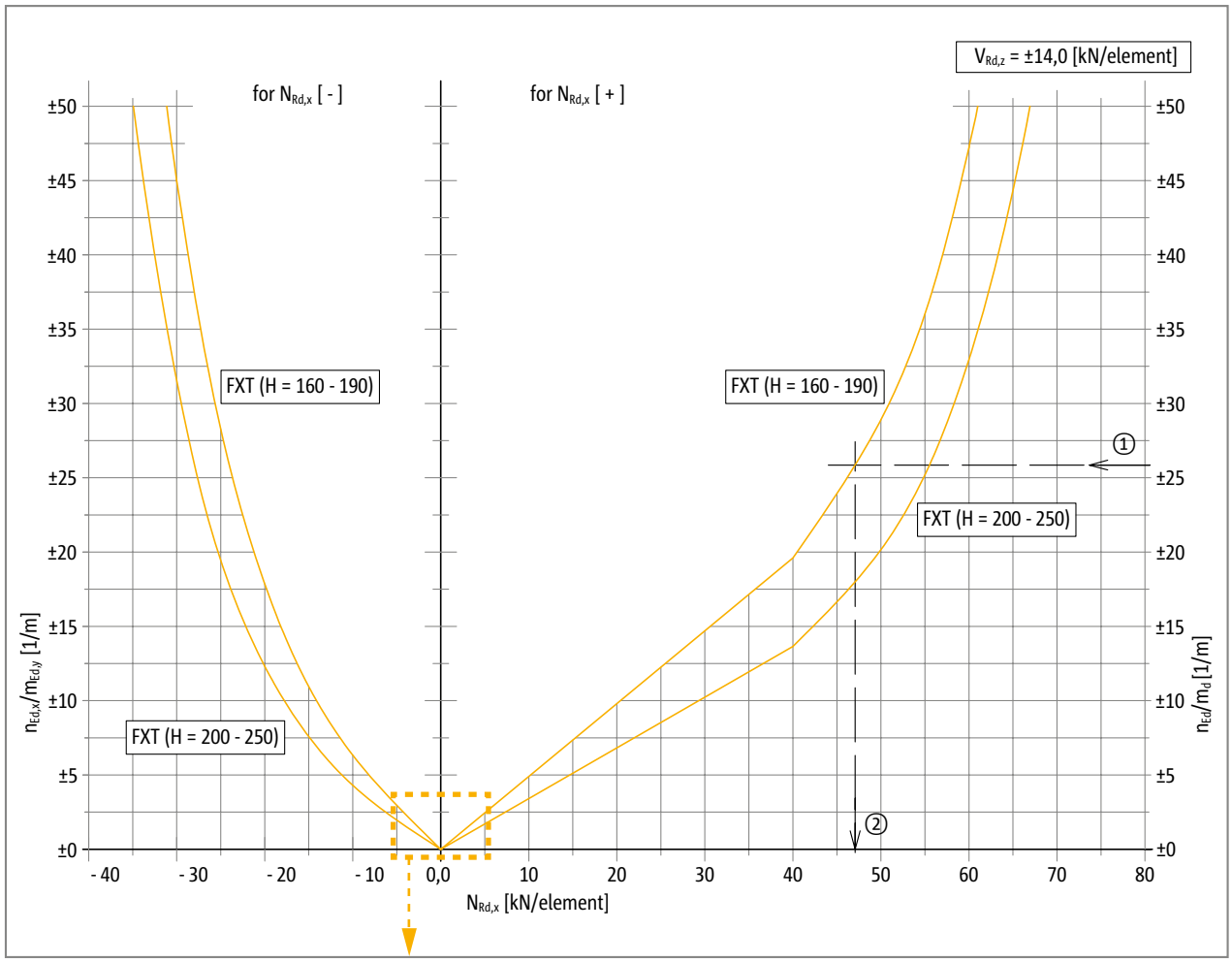
- For $n_{ed,z}$ = 0 or $m_{ed,y}$ = 0, use design variants A,B, or C.

Design example

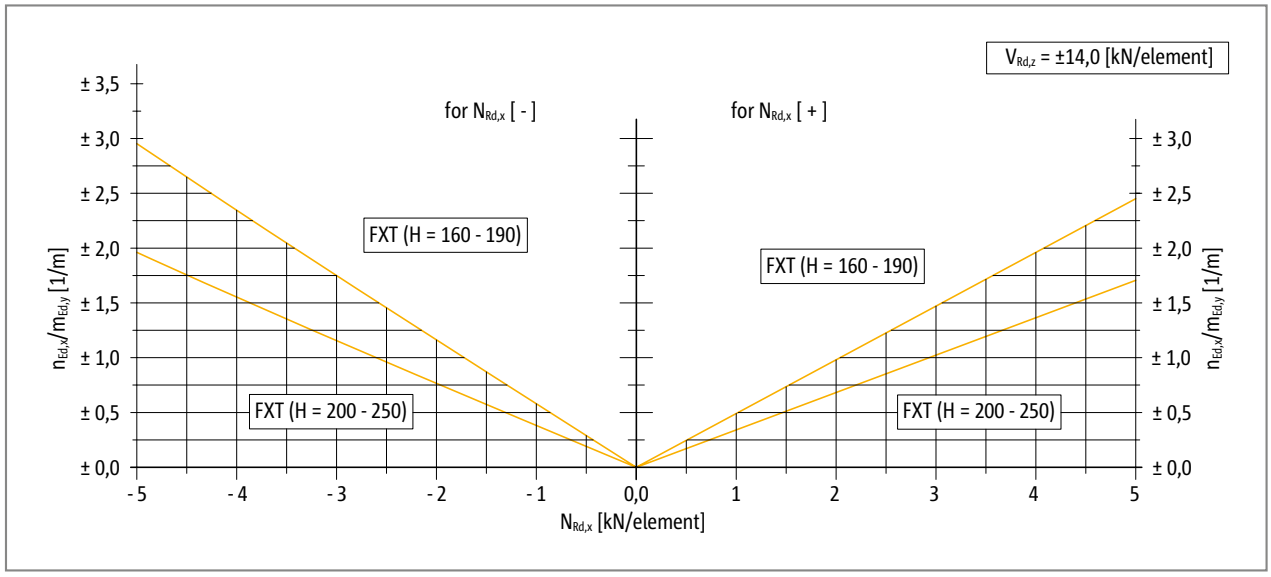
- For numerical example for the maximum spacing see type AXT page 190.

Determination of spacing

Diagram determination of the spacing C25/30



Detailed extract diagram spacing C25/30 (-5 < $N_{Rd,z}$ < 5 [kN/element])



Design variants C25/30

Ther Schöck Isokorb® type FXT, independent of the allowable normal force $N_{Rd,x}$ and the allowable moment $M_{Rd,y}$, has a constant allowable shear force $V_{Rd,z}$. The allowable moment $M_{Rd,y}$ and the allowable normal forces $N_{Rd,x}$ determine each other mutually in an interaction.
For the design of the Schöck Isokorb® type FXT there are three **design variants A,B,C** available.

- **Design variant A**:
  In the **design table**the interaction formula is given solved once according to the allowable moment $M_{Rd,y}$ [kNm/element] depending on a normal force $N_{Ed,x}$ [kN/element] and solved once according to the allowable normal force $N_{Rd,x}$ [kN/element] depending on an effective moment $M_{Ed,y}$[kNm/element]. Verification satisfied: $N_{Ed,x} \leq N_{Rd,x}(M_{Ed,y})$ or $M_{Ed,y} \leq M_{Rd,y}(N_{Ed,x})$ and $V_{Ed,z} \leq V_{Rd,z}$
- **Design variant B**:
  In the **design diagram** the interaction of the allowable normal force $N_{Rd,x}$ [kN/element] and moment loading $M_{Rd,y}$ [kN/Element] is presented graphically. The verification is achieved, if the intersection of the acting normal force $N_{Ed,x}$ [kN/element] and effective moment $M_{Ed,y}$ [kN/element] lies below or on the graph applicable for the respective Schöck Isokorb® type.
- **Design variant C:**:
  In the **interaction table** the allowable moments $M_{Rd,y}$ [kN/element] are given depending on the allowable normal force $N_{Rd,x}$ [kN/element].

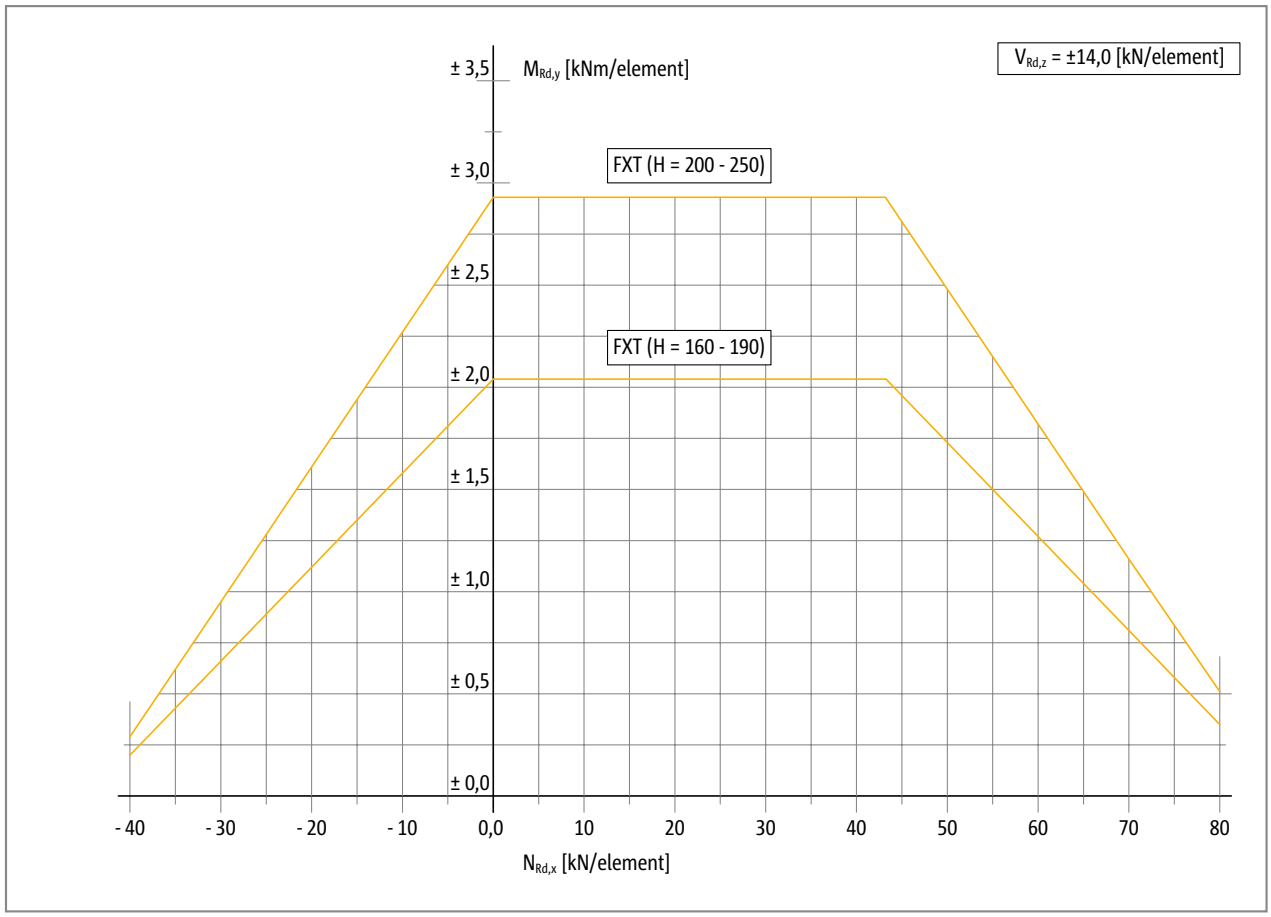
Design variant A: Design table

Schöck Isokorb® type		FXT	
Design values with		Floor (XC1) concrete strength class ≥ C25/30 Balustrade (XC4) concrete strength class ≥ C25/30	
		for	$M_{Rd,y}$ [kNm/element]
Isokorb® height H [mm]	160 - 190	$-40 \leq N_{Ed,x} < 0$	$\pm \lvert 2.04 + 0.046 \cdot N_{Ed,x} \rvert$
		$0 \leq N_{Ed,x} \leq 43.2$	±2.04
		$43.2 < N_{Ed,x} \leq 80$	$\pm \lvert 4.03 - 0.046 \cdot N_{Ed,x} \rvert$
	200 - 250	$-40 \leq N_{Ed,x} < 0$	$\pm \lvert 2.93 + 0.066 \cdot N_{Ed,x} \rvert$
		$0 \leq N_{Ed,x} \leq 43.2$	±2.93
		$43.2 < N_{Ed,x} \leq 80$	$\pm \lvert 5.78 - 0.066 \cdot N_{Ed,x} \rvert$
		$V_{Rd,z}$ [kN/element]	
	160 - 250	±14.0	

Schöck Isokorb® type	FXT
Isokorb® length [mm]	250
Tension bars/compression bars	2 × 2 ⌀ 8
Shear force bars	2 ⌀ 6 + 2 ⌀ 6
Connection stirrup	4 ⌀ 6
Balustrade b_{min} [mm]	150
Floor h_{min} [mm]	160

Design variants C25/30

Design variant B: Design diagram



Design variant C: Interaction table

Schöck Isokorb® type		FXT (H = 160 - 190)	FXT (H = 200 - 250)
Design values with		Floor (XC1) concrete strength class ≥ C25/30 Balustrade (XC4) concrete strength class ≥ C25/30	
		$M_{Rd,y}$ [kNm/element]	
$N_{Rd,x}$ [kN/Element]	-40.0	±0.20	±0.29
	-30.0	±0.66	±0.95
	-20.0	±1.12	±1.61
	-10.0	±1.58	±2.27
	0 - 40.0	±2.04	±2.93
	50.0	±1.73	±2.48
	60.0	±1.27	±1.82
	70.0	±0.81	±1.16
	80.0	±0.35	±0.50

Notes on design

- The design values for a concrete strength class ≥ C25/30 are given for balustrade side and floor side.
- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,max}$, whereby $V_{Rd,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\Theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- The indicative minimum concrete strength class of the external structural component is C32/40.

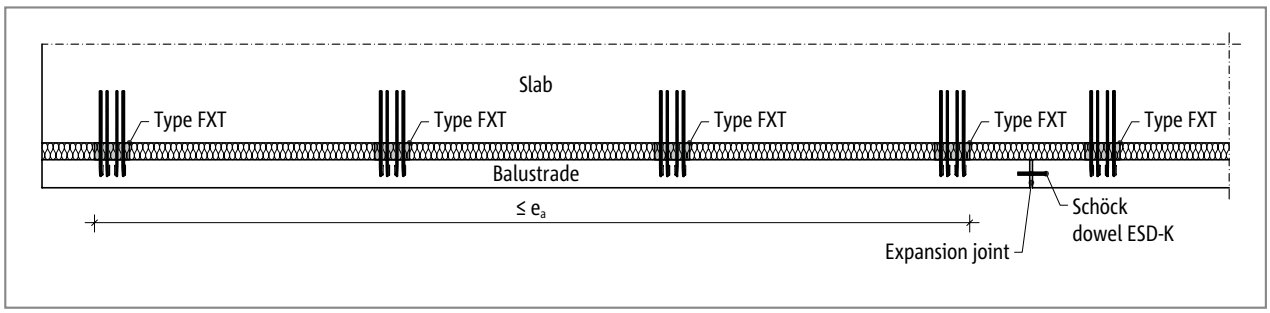
Design example

- Example for the design variants see type AXT page 200

Expansion joint spacing | Edge spacing

Maximum expansion joint spacing

Expansion joints are to be arranged in the external structural components. The longitudinal change due to temeperature is related to the maximum distance e_a of the outer edges of the outermost Schöck Isokorb® types. With this the outer structural component can project laterally over the Schöck Isokorb®.
With fixed points such as, for example corners, half the maximum length e_a applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



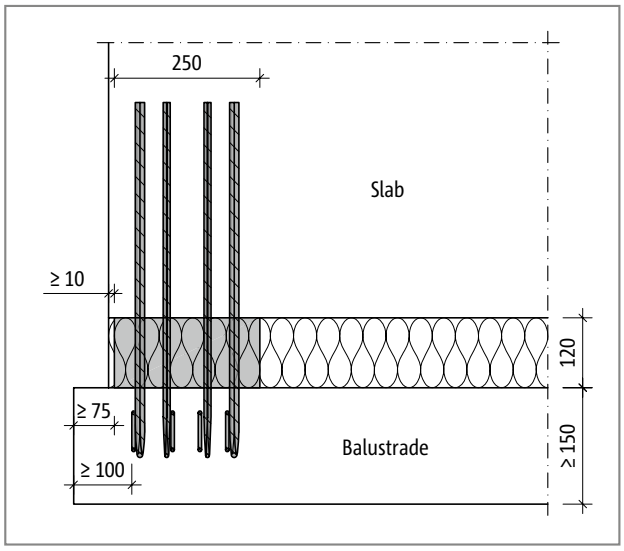
Schöck Isokorb® type FXT: Expansion joint arrangement

Schöck Isokorb® type		FXT
Spacing		e_a [m]
Insulating element thickness [mm]	120	23.0

Edge distances

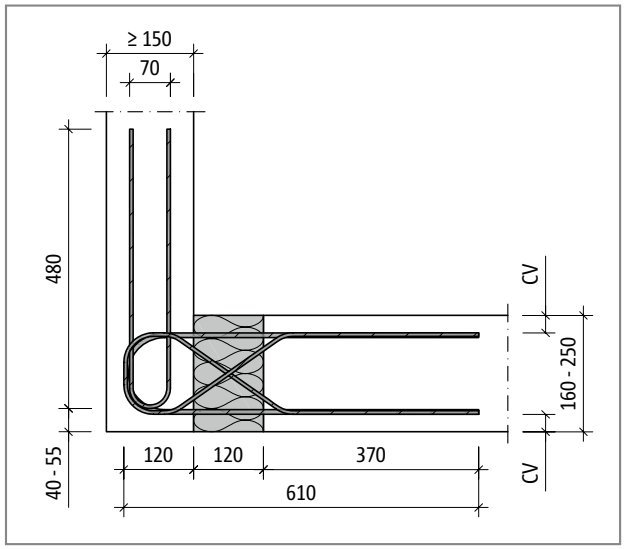
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- For the distance of the insulation member from the edge of the floor the following applies: $e_R \geq 10$ mm.
- For the distance of the insulation member from the edge of the balustrade or of the insulation joint the following applies: $e_R \geq 75$ mm.
- For the distance of the connection stirrup from the edge of the balustrade or of the insulation joint in the balustrade the following applies: $e_R \geq 100$ mm.

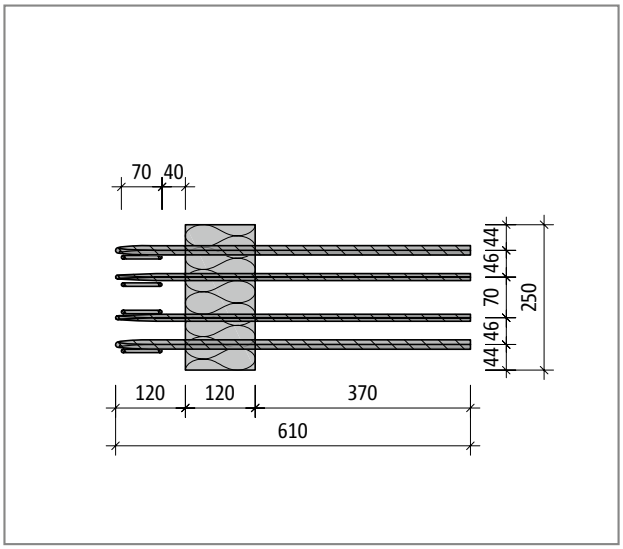


Schöck Isokorb® type FXT: Top view edge distances

Product description | Concrete cover



Schöck Isokorb® type FXT: Product section



Schöck Isokorb® type FXT: Product plan view

Product information

- Minimum width of the balustrade b_{min} = 150 mm, minimum floor cover height H_{min} = 160 mm.
- Download further product plan views and cross-sections at www.schoeck.co.uk/download

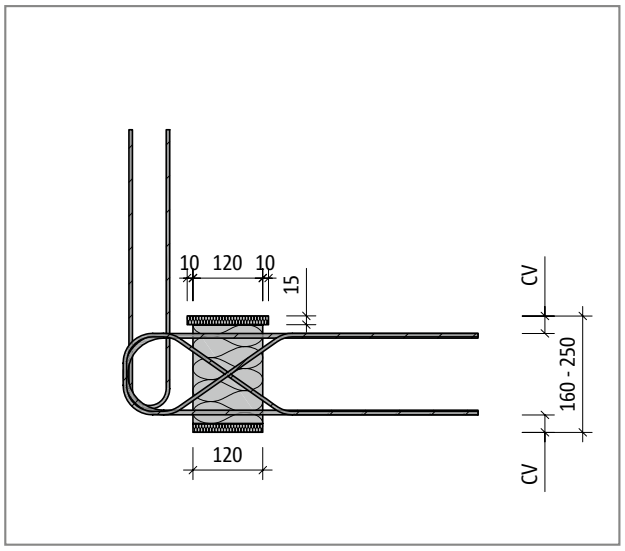
Concrete cover

The concrete cover CV of the Schöck Isokorb® type FXT varies depending on the floor height. As stainless, ribbed reinforcing steel is used exclusively for the reinforcement of the balustrade in the area of the Shöck Isokorb® there is no risk of corrosion. Therefore, also with an exposure class XC3/4, a concrete cover in the area of the Schöck Isokorb® type FXT of CV = 30 mm is sufficient. For the reinforcing steel connection stirrups supplied ex works, the upper concrete cover cv in the floor slab is to be selected dependent on the exposure class.

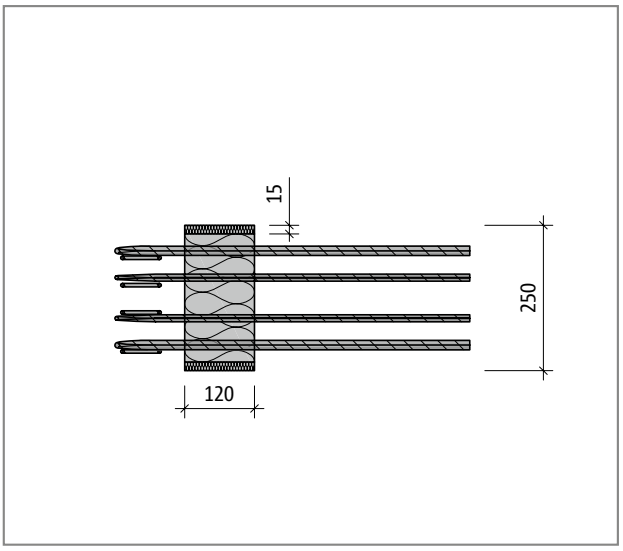
Schöck Isokorb® type		FXT
Concrete cover with		CV [mm]
Isokorb® height H [mm]	160	30
	170	35
	180	40
	190	45
	200	30
	210	35
	220	40
	230	45
	240	50
	250	55

Fire protection configuration

Product configuration with fire protection requirement

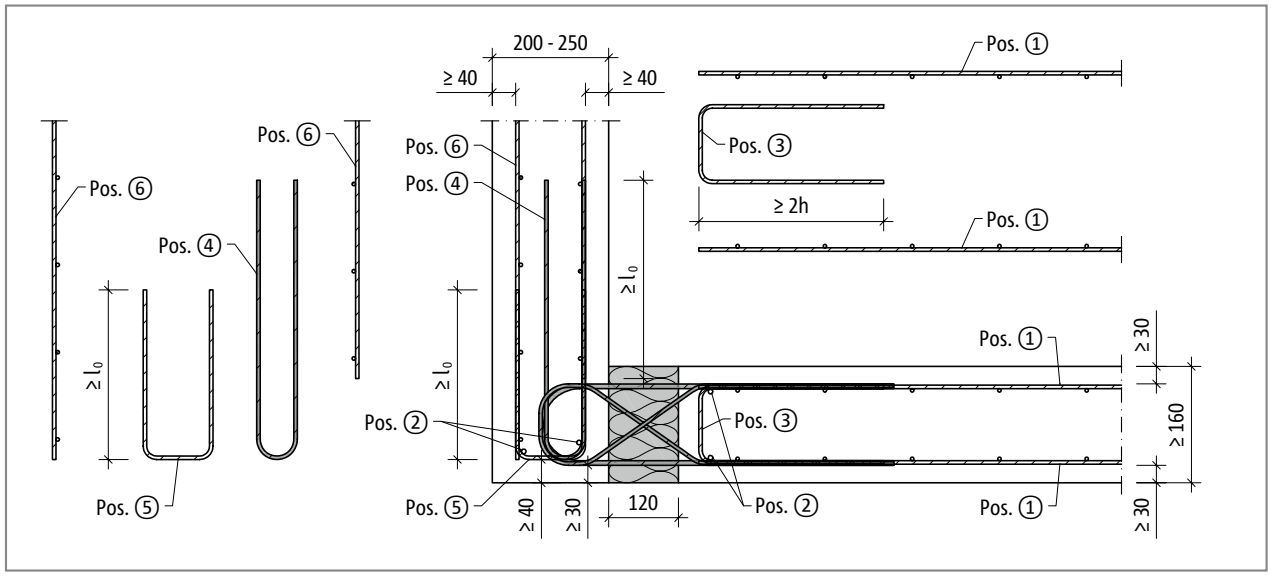


Schöck Isokorb® type FXT with R90: Product section; fire protection slab top and bottom



Schöck Isokorb® type FXT with R90: Product plan view; fire protection slabs at the sides

On-site reinforcement



Schöck Isokorb® type FXT: On-site reinforcement balustrade width b = 200 - 250; on-site reinforcement b = 150 - 190 such as b = 200 - 250 without Pos. 5

The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this the effective moment, the effective normal force and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing floor reinforcement can be taken into account so far as the maximum separation to the tension bars of 4⌀ is maintained. Additional reinforcement may be required.

Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars/compression members.

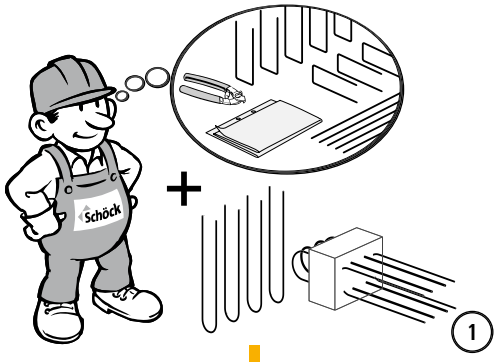
Schöck Isokorb® type		FXT
On-site reinforcement	Location	Concrete strength class ≥ C25/30
Pos. 1 Lapping reinforcement		
Pos. 1 [mm²/Element]	Floor side	100
Lap length l_0 [mm]	Floor side	332
Pos. 2 Steel bars along the insulation joint		
Pos. 2	floor side/balustrade side	4 • H8
Pos. 5 Stirrup as suspension reinforcement		
Pos. 3	Floor side	H8@250
Pos. 3 Factory supplied connection stirrup		
Pos. 4	balustrade side	4 • H8
Pos. 5 Structural edging (not applicable with b = 150 - 190 mm)		
Pos. 5	balustrade side	H8@200
Lap length l_0 [mm]	balustrade side	340
Pos. 6 Lapping reinforcement		
Pos. 6 [mm²/Element]	balustrade side	113
Lap length l_0 [mm]	balustrade side	340

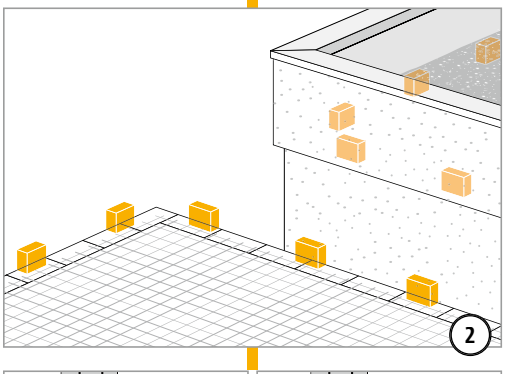
Information about on-site reinforcement

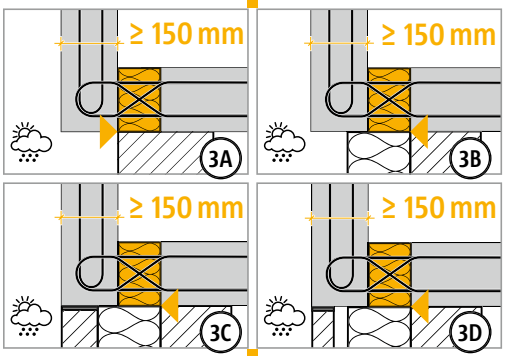
- Alternative connection reinforcement is possible. For the determination of the lap length the rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted.

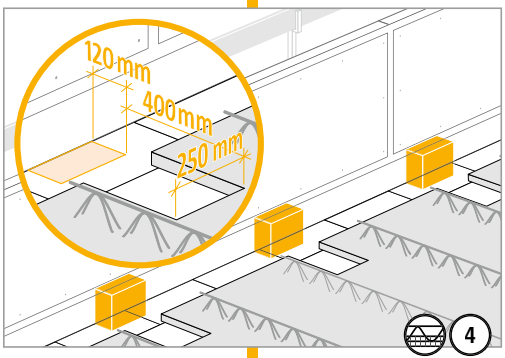
- Pos. 5 may be dispensed with on-site reinforcement for balustrade widths b = 150 - 190 mm (without diagram).
- The indicative minimum concrete strength class of the external structural component is C32/40.

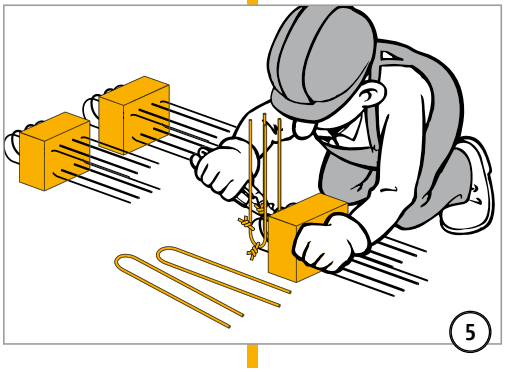
Installation instructions

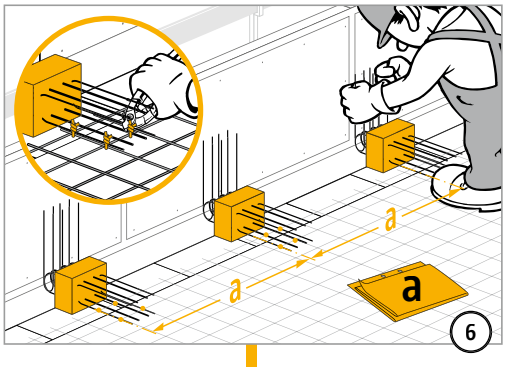


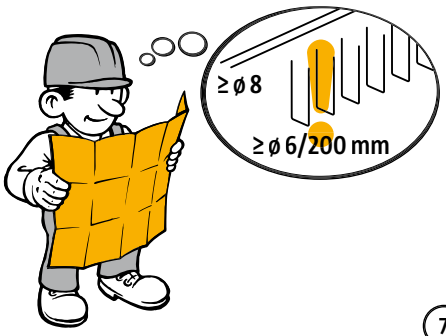


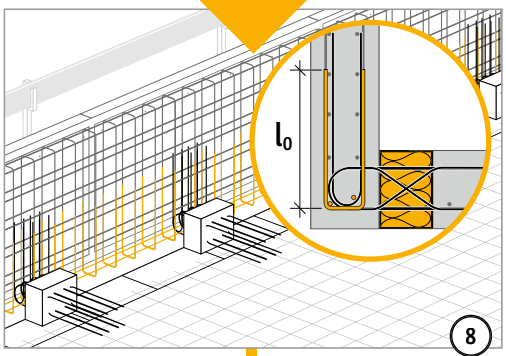


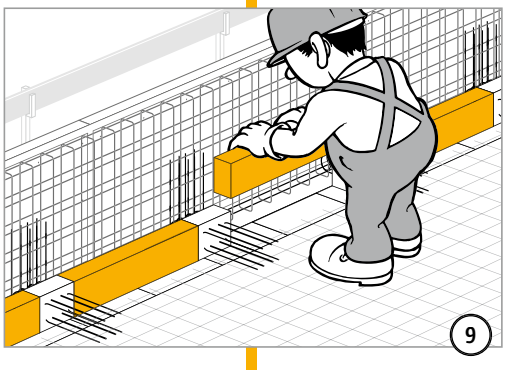


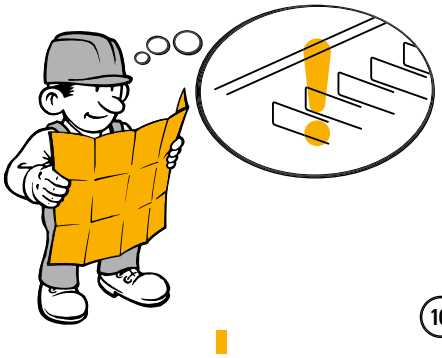




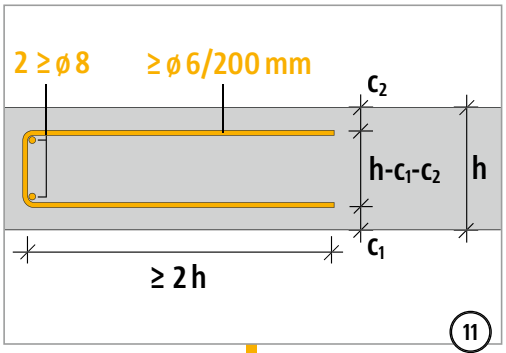


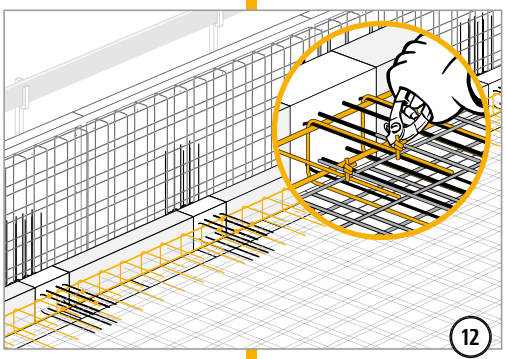


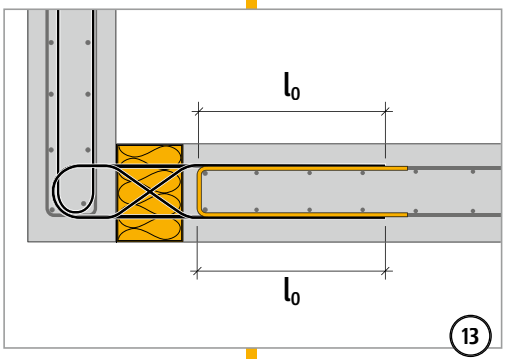




Installation instructions



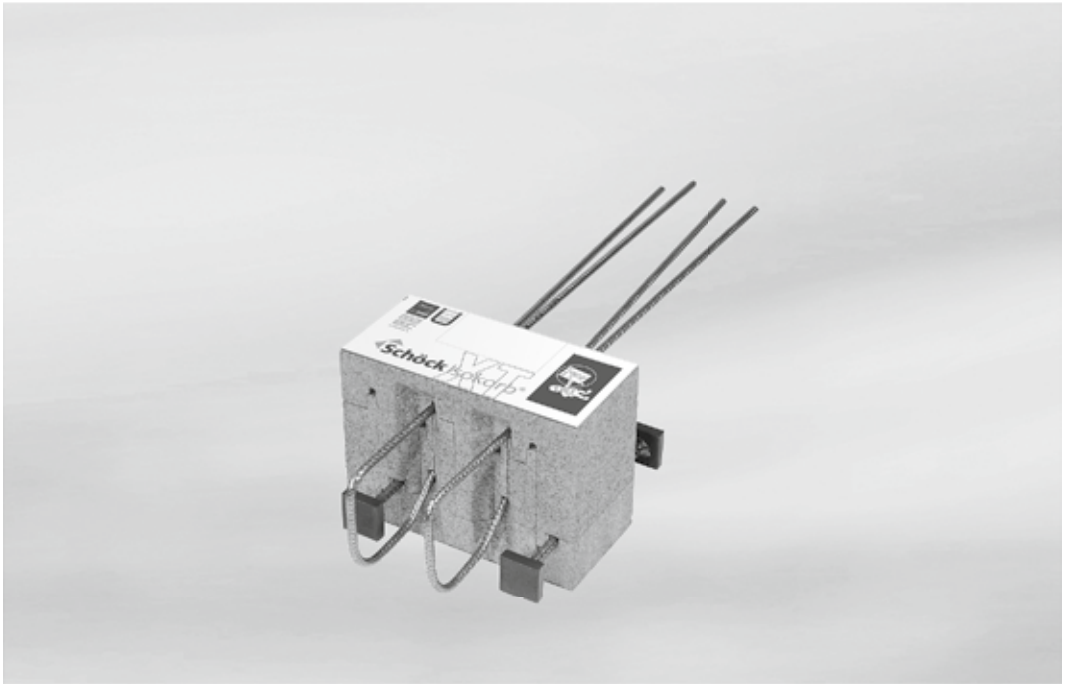




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the maximum separation of the outermost Schöck Isokorb® types as a result of expansion in the outer structural components been maintained?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?

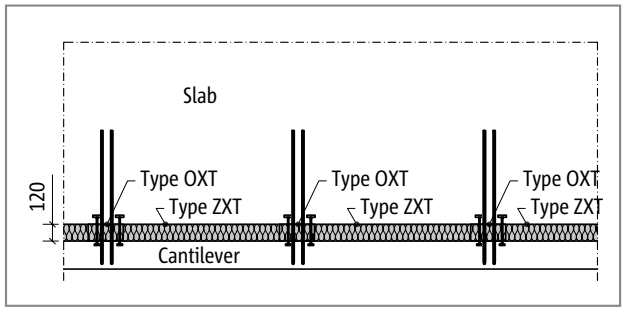
Schöck Isokorb® type OXT



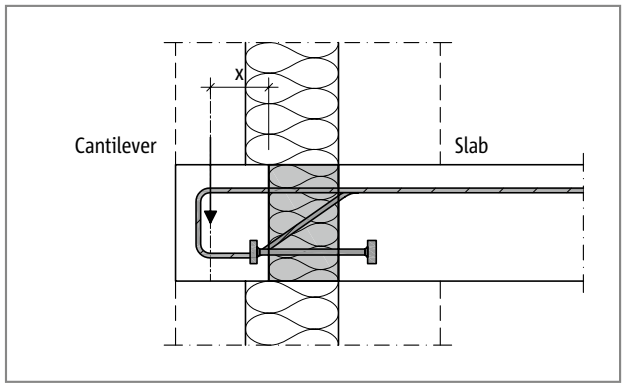
Schöck Isokorb® type OXT

Schöck Isokorb® type OXT
Suitable for cantilever elements. It transmits positive shear forces and normal forces.

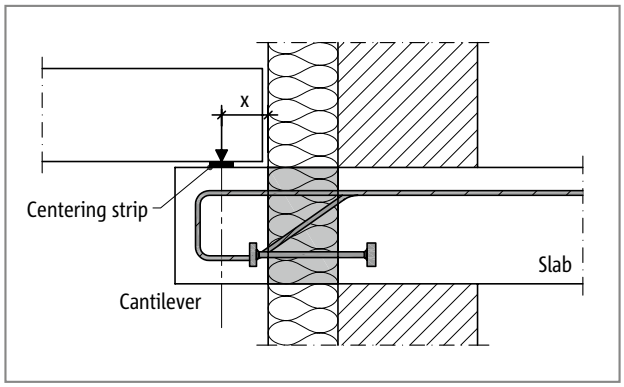
Element arrangement | Installation cross sections



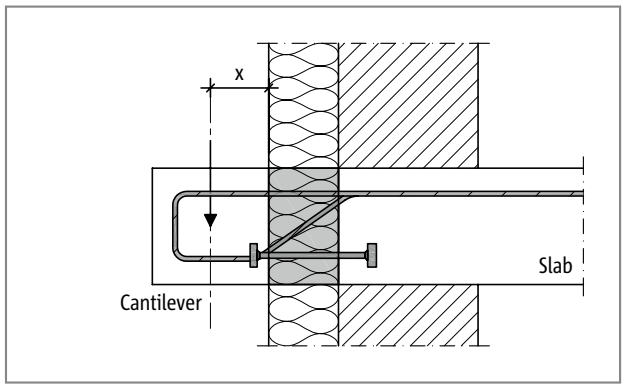
Schöck Isokorb® type OXT, ZXT: Cantilever element



Schöck Isokorb® type OXT: Cantilever element with non-load bearing cavity masonry



Schöck Isokorb® type OXT: Connection of a cantilever element as floor support; centring battens prevent a displacement of the load application point



Schöck Isokorb® type OXT: Surrounding cornice

Element arangement/installation cross-section

- For insulation between the Schöck Isokorb®, Schöck Isokorb® supplementary type ZXT (see p.169) are available in R0 or as fire protection model.
- For surrounding cornices larger cantilever depths are also available to maintain the specific edge conditions.

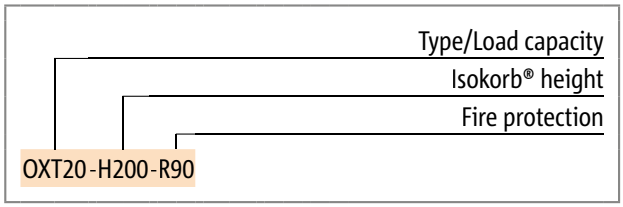
Product selection | Type designations | Special designs

Schöck Isokorb® type OXT variants

The configuration of the Schöck Isokorb® type OXT can be varied as follows:

- Isokorb® height:
  H = 180 - 250 mm
- Cantilever depths:
  OXT16: Cantilever depth 160 mm (CV35) and 155 mm (CV30)
  OXT20: Cantilever depth 200 mm (CV35) and 195 mm (CV30)
- Fire resistance class:
  R0 (Standard), R90

Type designations in planning documents



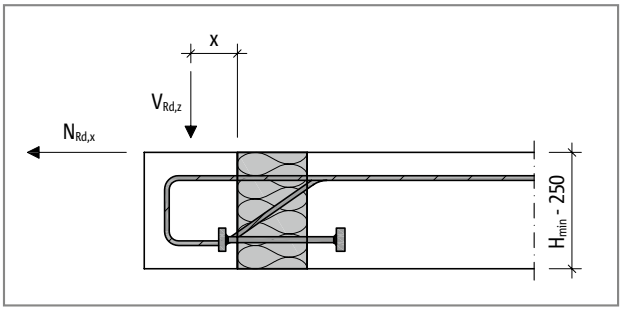
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

C25/30 design

Schöck Isokorb® type		OXT16	OXT20
Design values with		Balcony-side concrete strength class ≥ C25/30 Floor-side concrete strength class ≥ C25/30	
		$V_{Rd,z}$ [kN/element]	
Position of the load application point [mm]	60 - 75	25.1	25.1
	85	24.2	24.2
	95	23.1	23.1
	105	22.2	22.2
	115		21.3
	125		20.5
	135		19.8
	145		19.1
		$N_{Rd,x}$ [kN/Element]	
		≤ ±1/10 $V_{Ed,z}$	≤ ±1/10 $V_{Ed,z}$

Schöck Isokorb® type	OXT16	OXT20
Isokorb® length [mm]	250	250
Tension/compression bars	2 ⌀ 8	2 ⌀ 8
Pressure bearing (pce)	2 ⌀ 10	2 ⌀ 10
Maximum distance x_{max} [mm]	105	145
Minimum height floor H_{min} [mm]	180	180



Schöck Isokorb® type OXT: Distance of the load application point x (load distance)

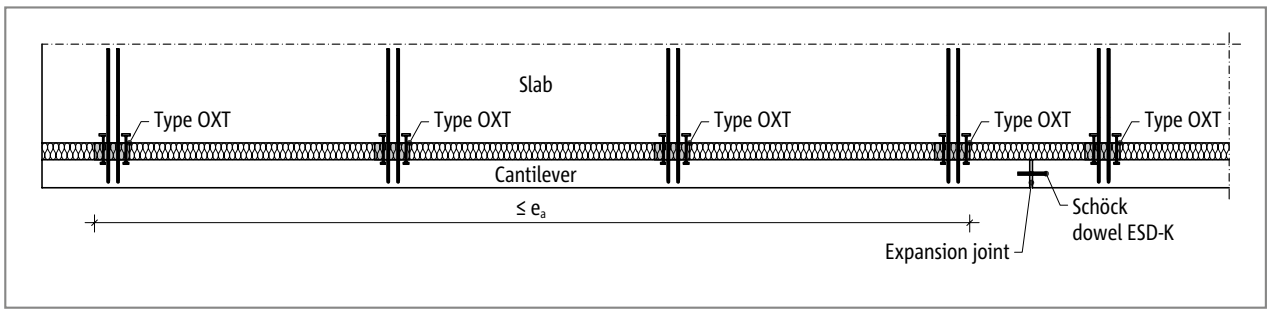
Notes on design

- The shear force loading of the slabs in the area of the insulation joint is to be limited to $V_{Rd,max}$, whereby $V_{Rd,max}$, acc. to BS EN 1992-1-1 (EC2), Exp. (6.9) is determined for $\Theta = 45°$ and $\alpha = 90°$ (slab load-bearing capacity).
- The allowable normal force $N_{Rd,x}$ is dependent on the actual effective shear force $V_{Ed,z}$
- The indicative minimum concrete strength class of the external structural component is C32/40.

Expansion joint spacing | Edge spacing

Maximum expansion joint spacing

Expansion joints are to be arranged in the external structural components. The longitudinal change due to temeperature is related to the maximum distance e_a of the outer edges of the outermost Schöck Isokorb® types. With this the outer structural component can project laterally over the Schöck Isokorb®.
With fixed points such as, for example corners, half the maximum length e_a applies.
The shear force transmission in the expansion joint can be ensured using a longitudinally displaceable shear force dowel, e.g. Schöck Dowel.



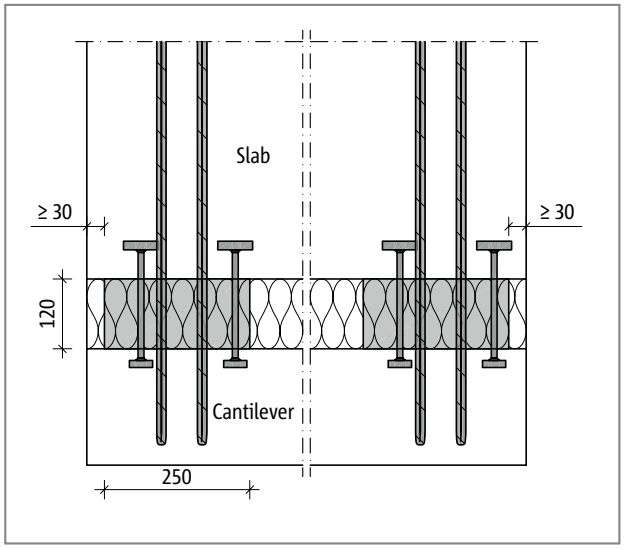
Schöck Isokorb® type OXT: Expansion joint arrangement

Schöck Isokorb® type		OXT16, OXT20
Spacing		e_a [m]
Insulating element thickness [mm]	120	21.7

Edge distances

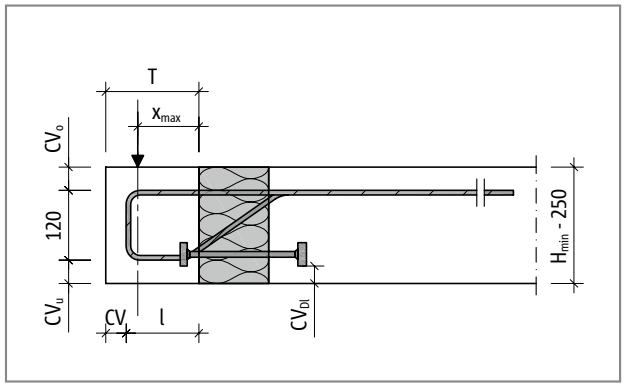
The Schöck Isokorb® must be so arranged at the expansion joint that the following conditions are met:

- The distance of the insulation member from the edge of the structural component or of the expansion joint: $e_R \geq 30$ mm applies.

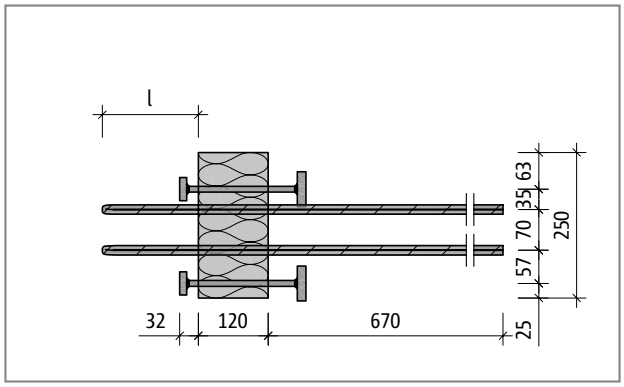


Schöck Isokorb® type OXT: Edge distance to be maintained

Product description | Concrete cover



Schöck Isokorb® type OXT: Product section



Schöck Isokorb® type OXT: Product plan view

Schöck Isokorb® type	OXT16	OXT20
Isokorb® length [mm]	250	250
Loop length l [mm]	125	165
Maximum distance x_{max} [mm]	105	145
Cantilever depth T (CV30) [mm]	155	195
Cantilever depth T (CV35) [mm]	160	200
Minimum height floor H_{min} [mm]	180	180

Concrete cover

The concrete covers CV_o, CV_u and CV_{Dl} of the Schöck Isokorb® type OXT vary in depending on the floor height. As stainless, ribbed reinforcing steel is used for the reinforcement of the balustrade in the area of the Schöck Isokorb® there is no risk of corrosion. Therefore, also with an exposure class XC3/4 a concrete cover in the area of the Schöck Isokorb® type OXT of CV = 30 mm is sufficient.

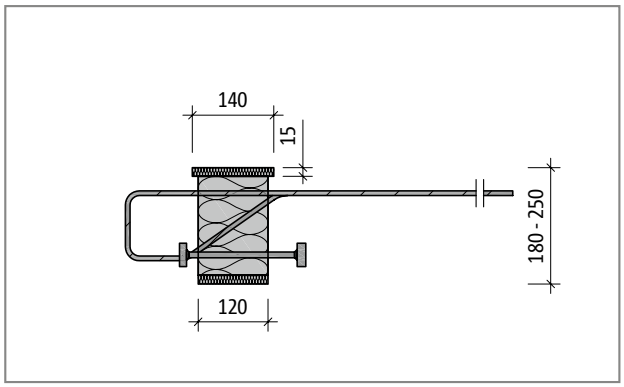
Schöck Isokorb® type		OXT16, OXT20		
Concrete cover with		CV_o	CV_u	CV_{Dl}
Isokorb® height H [mm]	180	30	30	30
	190	35	35	35
	200	40	40	30
	210	45	45	35
	220	50	50	40
	230	50	60	50
	240	50	70	60
	250	50	80	70

Product information

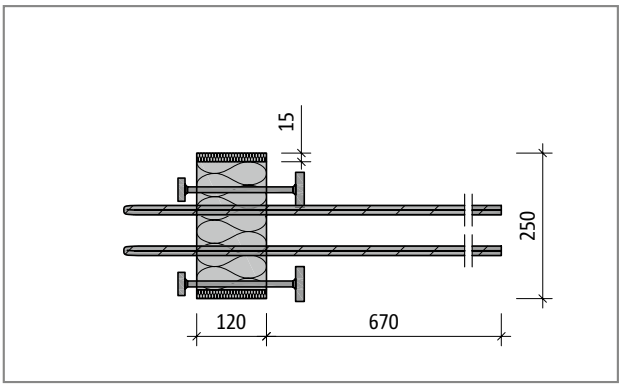
Download further product plan views and cross-sections at www.schoeck.co.uk/download

Fire protection configuration

Product configuration with fire protection requirement

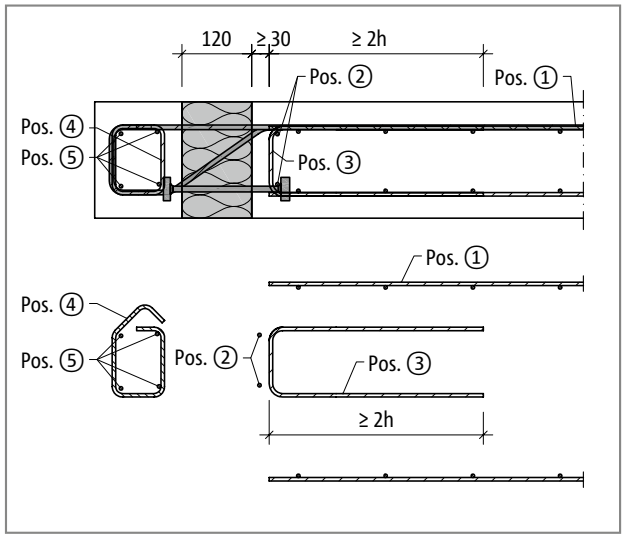


Schöck Isokorb® type OXT with R90: Product section; fire protection slab top and bottom



Schöck Isokorb® type OXT with R90: Product plan view; fire protection slabs at the sides

On-site reinforcement



Schöck Isokorb® type OXT: On-site reinforcement

The reinforcement of the reinforced concrete slab is determined from the structural engineer's design. With this the effective moment, the effective normal force and the effective shear force should be taken into account.
In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing floor reinforcement can be taken into account so far as the maximum separation to the tension bars of 4⌀ is maintained. Additional reinforcement may be required.

Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars/compression members.

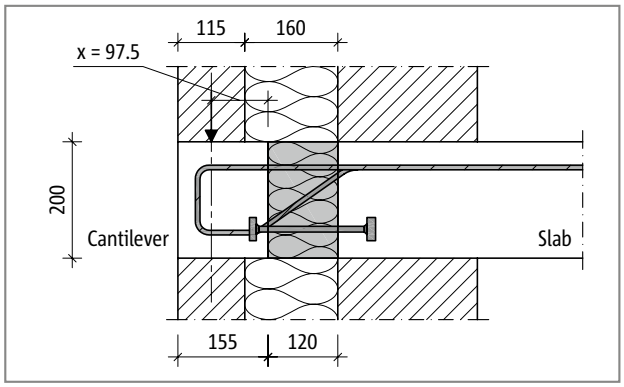
Schöck Isokorb® type		OXT
On-site reinforcement	**Location**	**Concrete strength class ≥ C25/30**
Pos. 1 Lapping reinforcement		
Pos. 1 [mm²/Element]	**Floor side**	200
Lap length l_0 [mm]	**Floor side**	640
Pos. 2 Steel bars along the insulation joint		
Pos. 2	**Floor side**	2 • H8
Pos. 5 Stirrup as suspension reinforcement		
Pos. 3	**Floor side**	H8@250
Pos. 4 Stirrup		
Pos. 4	**Cantilever side**	5 • H8
Pos. 5 Steel bar along the insulation joint		
Pos. 5	**Cantilever side**	4 • H8 or acc. to static requirements

Information about on-site reinforcement

- Alternative connection reinforcement is possible. The rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply for the determination of lap lengths. A reduction of the required lap length with V_{Ed}/V_{Rd} is permitted.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Design example

Wall structure design example



Schöck Isokorb® type OXT: Wall structure for design example

Design example

Given:
Cantilever side concrete C25/30
Floor side concrete C25/30
Overall length of cantilever l = 15.00 m
Height of outer masonry tier: h_{MW} = 2.50 m
Thickness of the outer masonry tier: d_{MW} = 11.5 cm
Thickness of insulation material: d_D = 16 cm
Height of the cantilever or thickness of the floor: $h_{Concrete}$ = 20 cm
Wind load $n_{Ed,x}$ = 1.0 kN/m²
(height to be taken into account for the wind load: h_{Wind} = 0.60 m)
Specific weight concrete $\gamma_{Concrete}$ = 25.00 kN/m³,
Specific weight masonry γ_{MW} = 22.00 kN/m³

Required: Required number of Schöck Isokorb® type OXT related to the overall length of the cantilever.

Shear force:
$V_{Ed,z,ges.} = \gamma_G \cdot l \cdot (\gamma_{MW} \cdot h_{MW} \cdot d_{MW} + \gamma_{Concrete} \cdot h_{Concrete} \cdot T_{Console})$
$= 1.35 \cdot 15.00\ m \cdot (22.00\ [kN/m^3] \cdot 2.50\ m \cdot 0.115\ m + 25.00\ [kN/m^3] \cdot 0.20\ m \cdot 0.155\ m)$
$= 143.8\ kN$
$N_{Ed,x,ges.} = \gamma_Q \cdot l \cdot n_{Ed,x} \cdot h_{Wind} = 1.5 \cdot 15.00\ m \cdot 1.0\ [kN/m^2] \cdot 0.60\ m$
$= 13.5\ kN$

Note: Assuming cantilever depth T = 155mm, type OXT16 is selected.

Design table:
x = 160 mm + 115 mm/2 -120 mm = 97.5 mm, i.e. x < 105 mm.
$V_{Rd,z}$ = 22.2 [kN/element]
$V_{Ed,z,ges.}/V_{Rd,z}$ = 143.8 kN/22.2 [kN/element] = 6.5 · element,
⇒ 7 Schöck Isokorb® type OXT required,
spacing ≤ 15.00 m/7 = 2.14 m

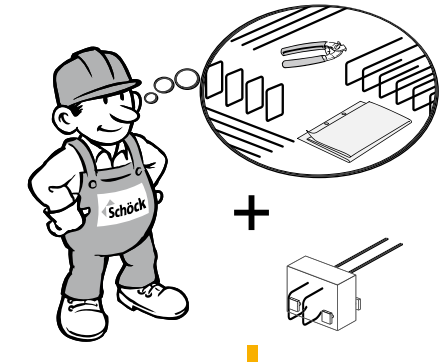
$V_{Ed,z} = V_{Ed,z,ges.}/7 = 143.8\ kN/7 = 20.5\ [kN/element] \leq V_{Rd,z} = 22.2\ kN \rightarrow$ NW o.k.✓

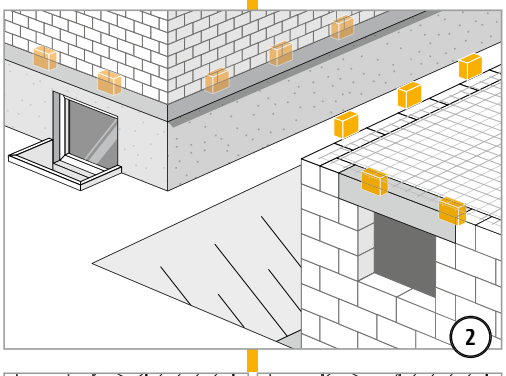
Normal force:
$N_{Rd,x} = 1/10 \cdot V_{Ed,z} = 1/10 \cdot 20.5\ [kN/element] = 2.05\ [kN/element]$
$N_{Rd,x,ges.}/7 = 13.5\ kN/7 = 1.9\ [kN/element]$
1.9 [kN/element] < 2.05 [kN/element] → NW o.k.✓

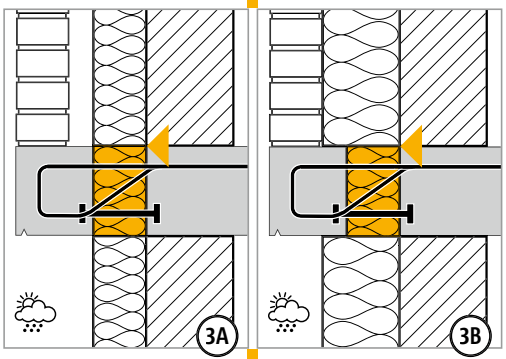
Note: The required number of Schöck Isokorb® type OXT is determined by the shear force acceptance capacity $V_{Rd,z}$. The allowable normal force $N_{Rd,x}$ results depending on the actual effective shear force $V_{Ed,z}$.

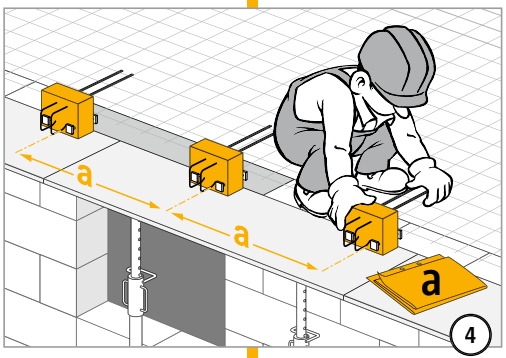
Selected: 10 elements of the Schöck Isokorb® type OXT16-H200 which, taking into account the required expansion joint, are arranged at the ends of the cantilever and distributed evenly between over the length. Using 10 Schöck Isokorb® type OXT the position of the expansion joint can vary to maintain sensible edge distances of the Isokorb. Through this the deflection camber of the cantilever can, in any case, be minimised.

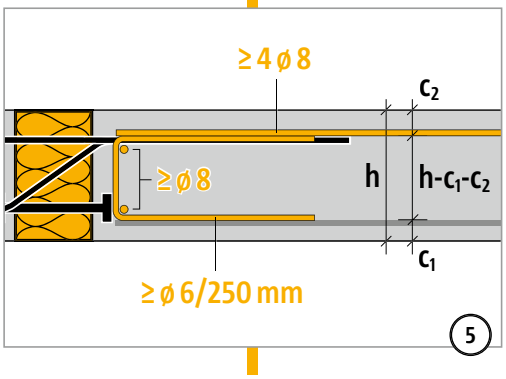
Installation instructions

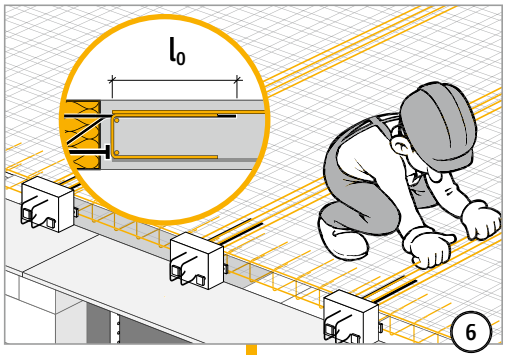


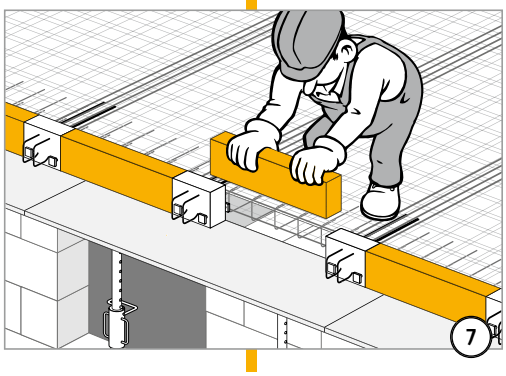


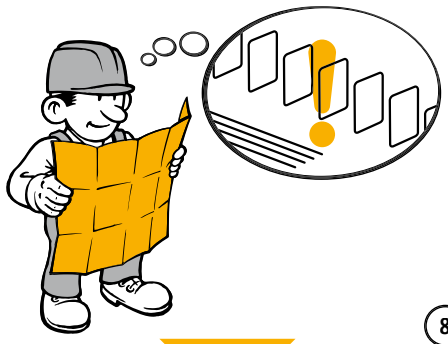


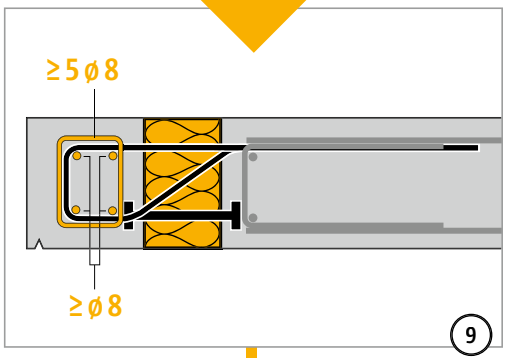


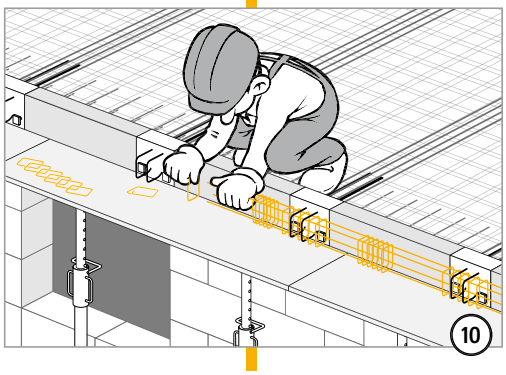




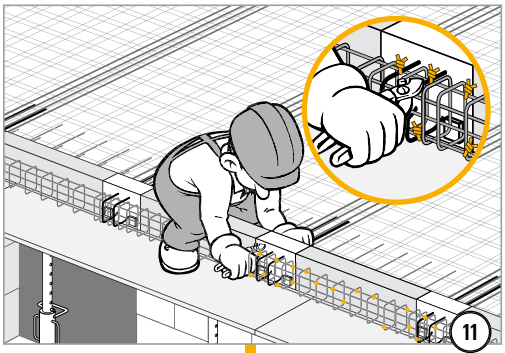


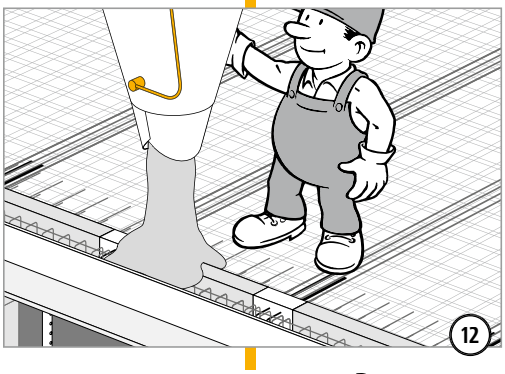






Installation instructions

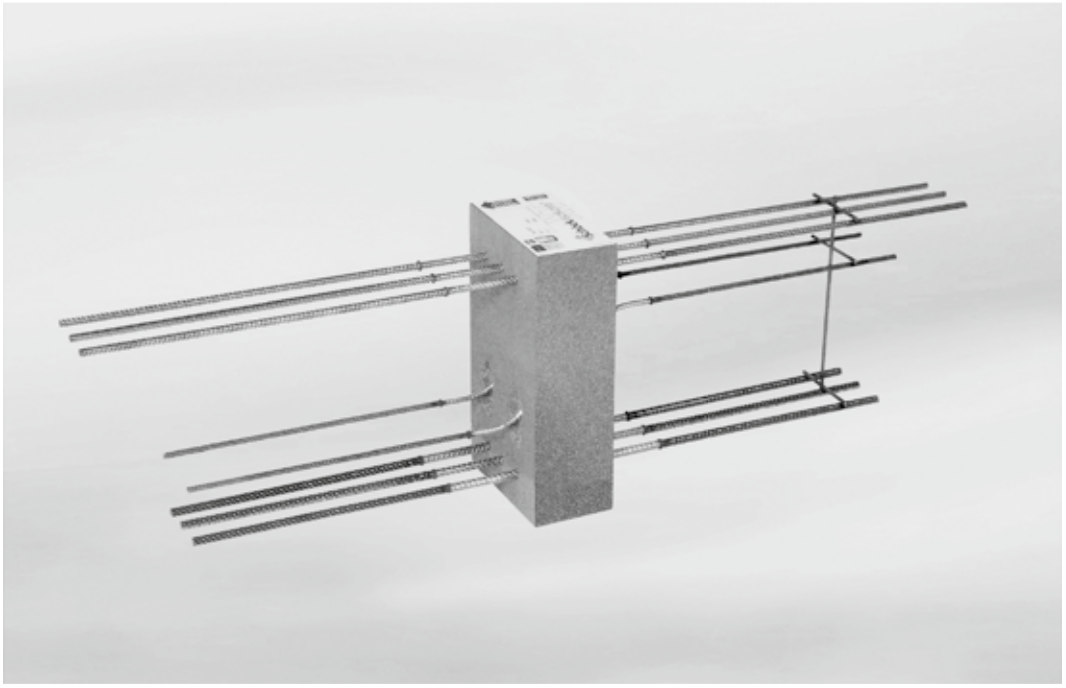




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the maximum separation of the outermost Schöck Isokorb® types as a result of expansion in the outer structural components been maintained?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?

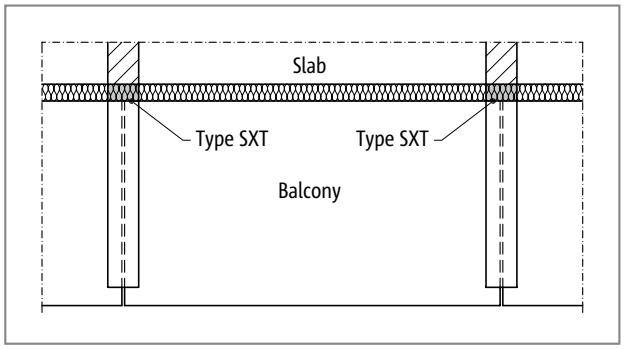
Schöck Isokorb® type SXT



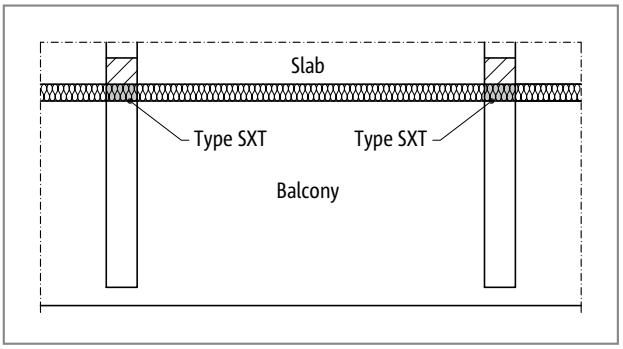
Schöck Isokorb® type SXT

Schöck Isokorb® type SXT
Suitable for cantilevered downstand beams and reinforced concrete beams. It transmits negative moments and positive shear forces.

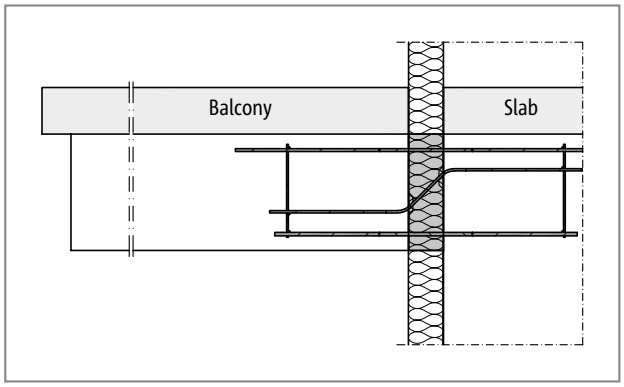
Element arrangement | Installation cross sections



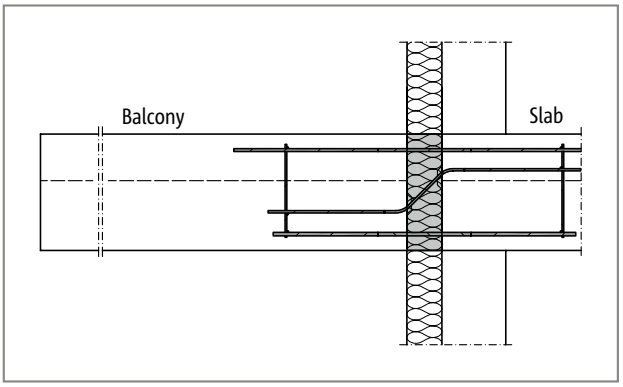
Schöck Isokorb® type SXT: Balcony construction with freely cantilevered downstand beams (precast balcony)



Schöck Isokorb® type SXT: Balcony construction with freely cantilevered downstand beams



Schöck Isokorb® type SXT: Balcony construction with freely cantilevered downstand beams (precast balcony))



Schöck Isokorb® type SXT: Balcony construction with freely cantilevered downstand beams

Product selection | Type designations | Special designs

Schöck Isokorb® type SXT variants

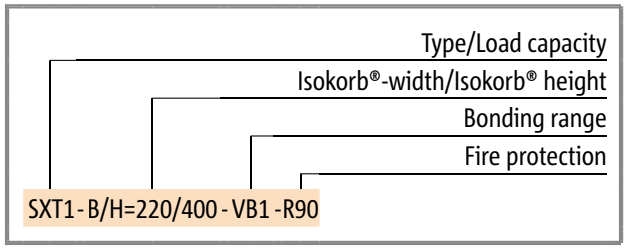
The configuration of the Schöck Isokorb® type SXT can vary as follows:

- Load capacity:
  SXT1 to SXT4
- Bonding range:
  VB1 good bond (bonding range I)
  VB2 good bond (bonding range II)
- Width:
  B = 220 mm
- Height:
  H = 400 mm
- Fire resistance class:
  R0: Standard
  R90: Projecting upper fire protection slab, 10 mm both sides

Variants

- State the desired dimensions on ordering.

Type designations in planning documents



Special designs

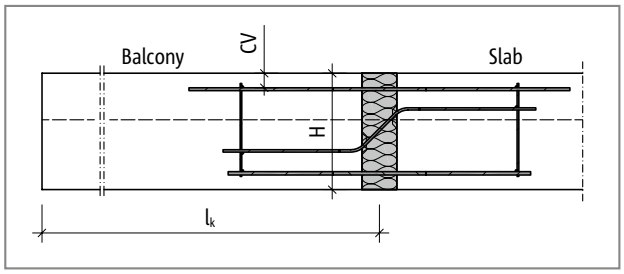
Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

Design

Concrete strength class ≥ C25/30

Schöck Isokorb® type		SXT1	SXT2	SXT3	SXT4
Design values with		Concrete strength class ≥ C25/30			
		$M_{Rd,y}$ [kNm/element]			
Isokorb® height H [mm]	400	-29.6	-35.4	-47.7	-71.1
		$V_{Rd,z}$ [kN/element]			
	400	30.9	48.3	69.5	94.7

Schöck Isokorb® type	SXT1	SXT2	SXT3	SXT4
Isokorb® height H [mm]	400	400	400	400
Isokorb® width [mm]	220	220	220	220
Tension bars	3 ⌀ 10	3 ⌀ 12	3 ⌀ 14	3 ⌀ 16
Tension bars VB1 (good))	594	725	820	1340
Tension bars VB2 (poor)	835	1000	1160	1870
Shear force bars	2 ⌀ 8	2 ⌀ 10	2 ⌀ 12	2 ⌀ 14
Compression bars	3 ⌀ 12	3 ⌀ 14	3 ⌀ 16	3 ⌀ 20
Compression bar length	460	535	675	820



Schöck Isokorb® type SXT: Static system

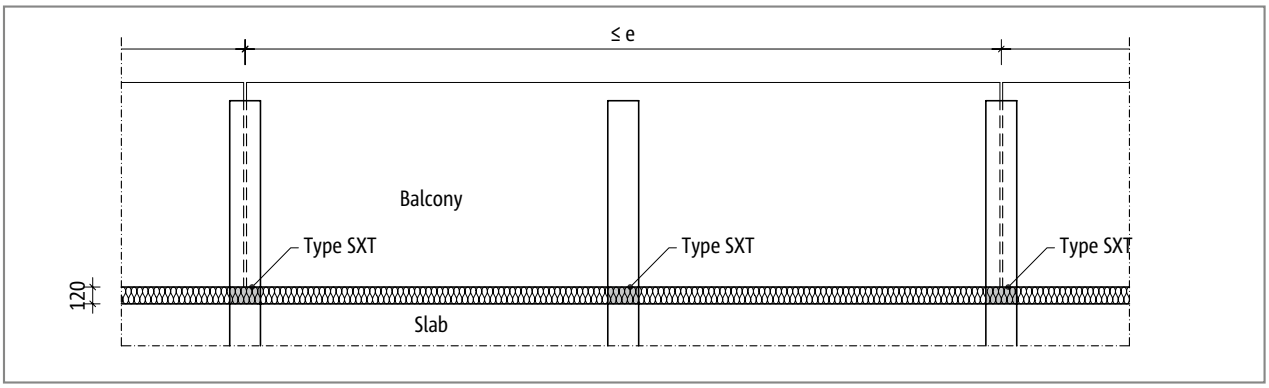
Notes on design

- Poor bonding conditions (bonding range I) are the basis for the determination of the compression member anchoring lengths.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes.



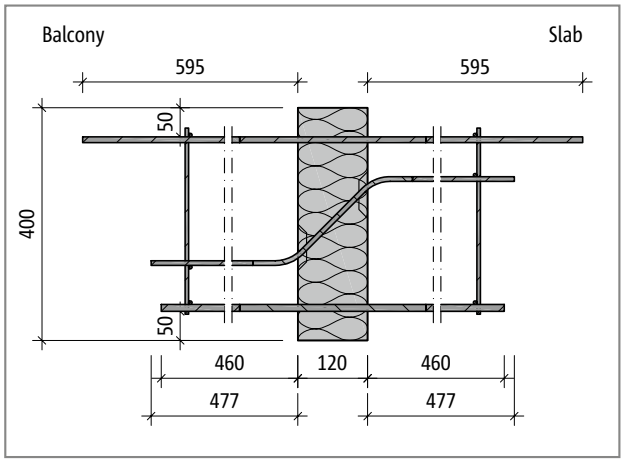
Schöck Isokorb® type SXT: Expansion joint configuration

Schöck Isokorb® type		SXT1	SXT2	SXT3	SXT4
Maximum expansion joint spacing e		e [m]			
Insulating element thickness [mm]	120	19.8	17.0	15.5	13.5

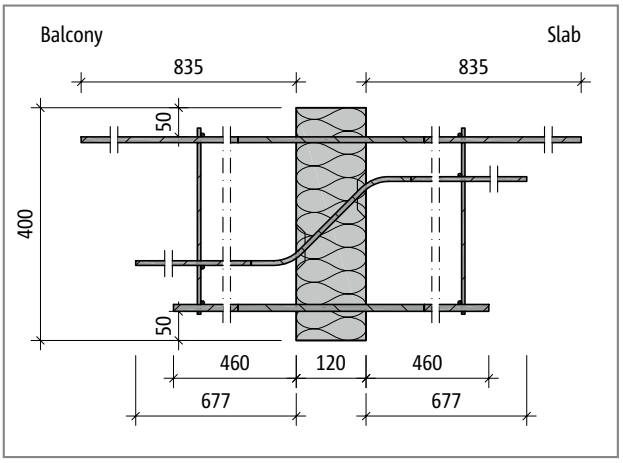
Expansion joints

- The expansion joint spacings can be enlarged, if there is no fixed connection between balcony slabs and downstand beams, e. g. through laying of a sliding foil.

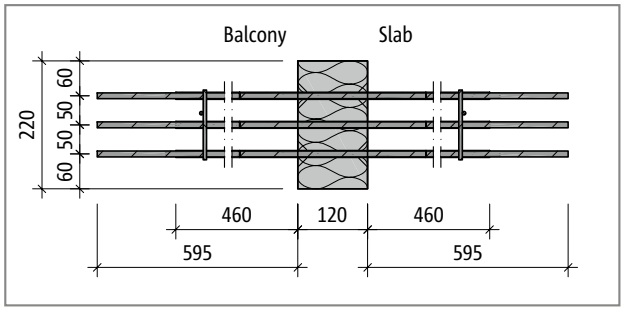
Product description



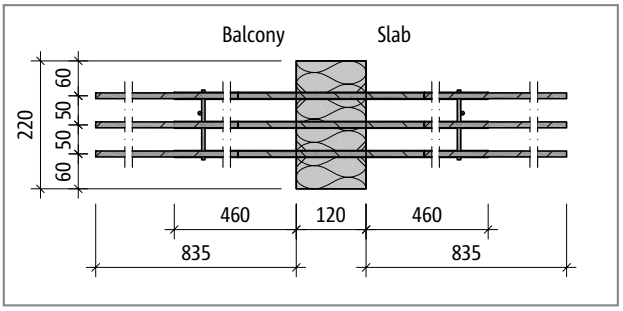
Schöck Isokorb® type SXT1-VB1: Product section



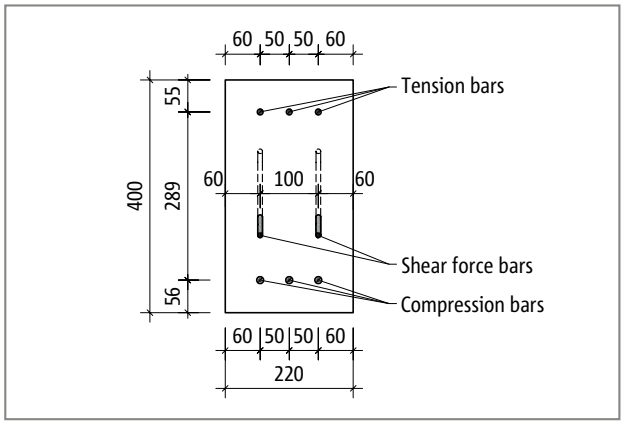
Schöck Isokorb® type SXT1-VB2: Product section



Schöck Isokorb® type SXT1-VB1: Product plan view



Schöck Isokorb® type SXT1-VB2: Product plan view

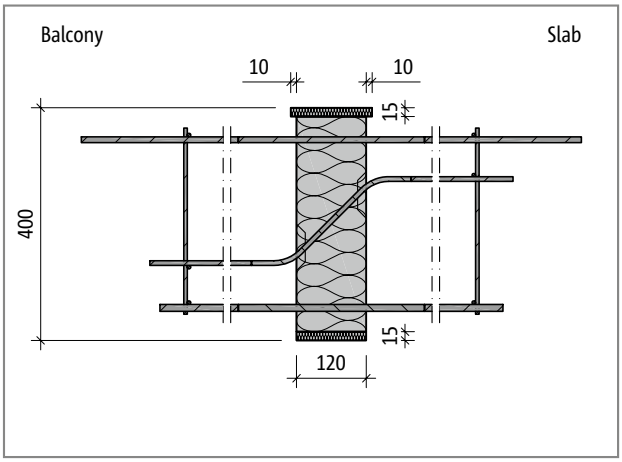


Schöck Isokorb® type SXT1: Product view

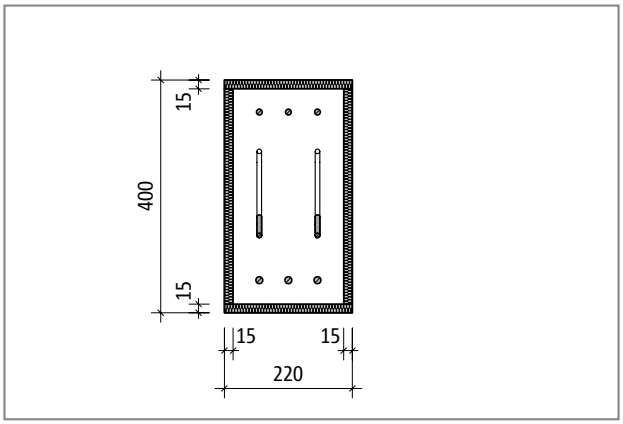
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download

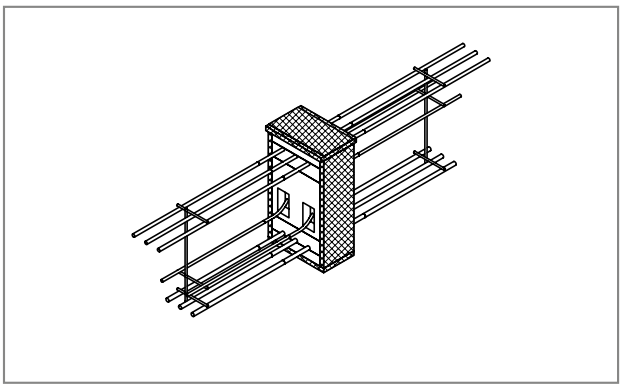
Fire protection configuration



Schöck Isokorb® type SXT1 with R90: Product section; fire protection slab top and bottom

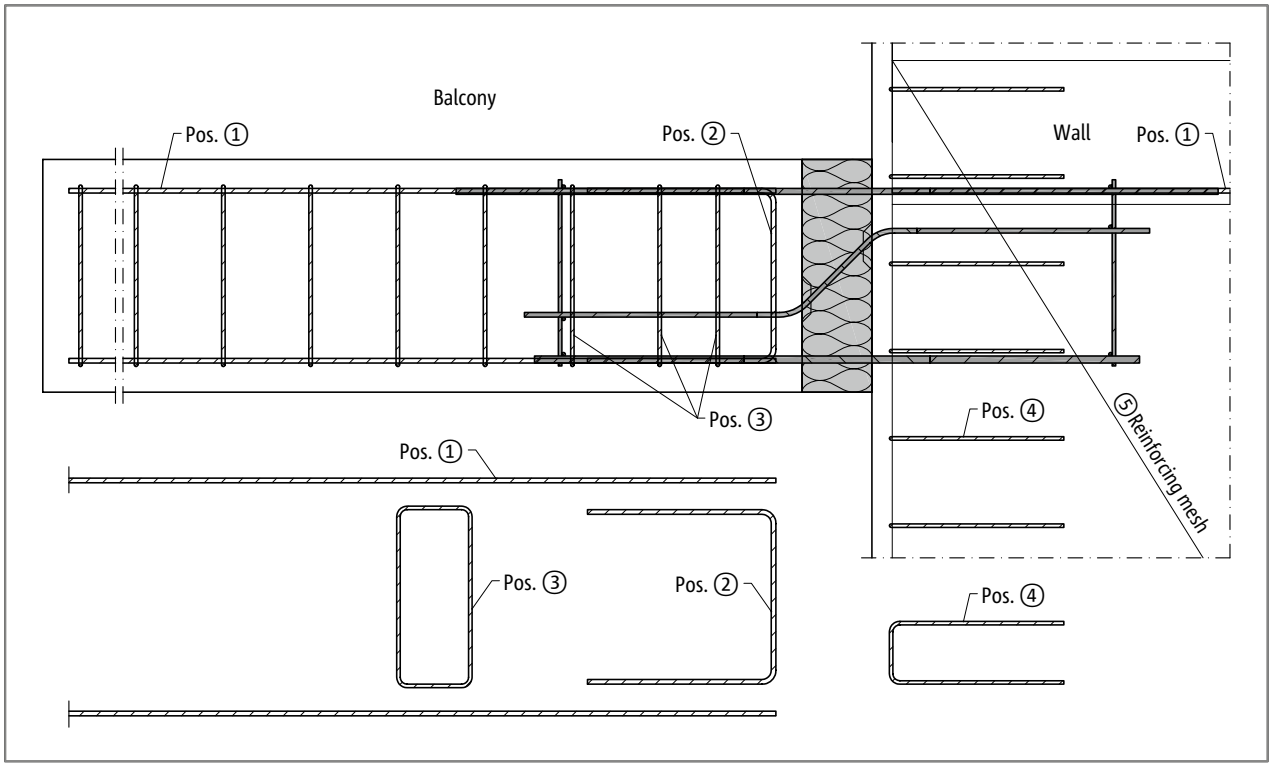


Schöck Isokorb® type SXT1 with R90: Product view; fire protection slabs perimeter



Schöck Isokorb® type SXT1 with R90: fire protection slabs perimeter

On-site reinforcement



Schöck Isokorb® type SXT: On-site reinforcement

Recommendation for the on-site connection reinforcement

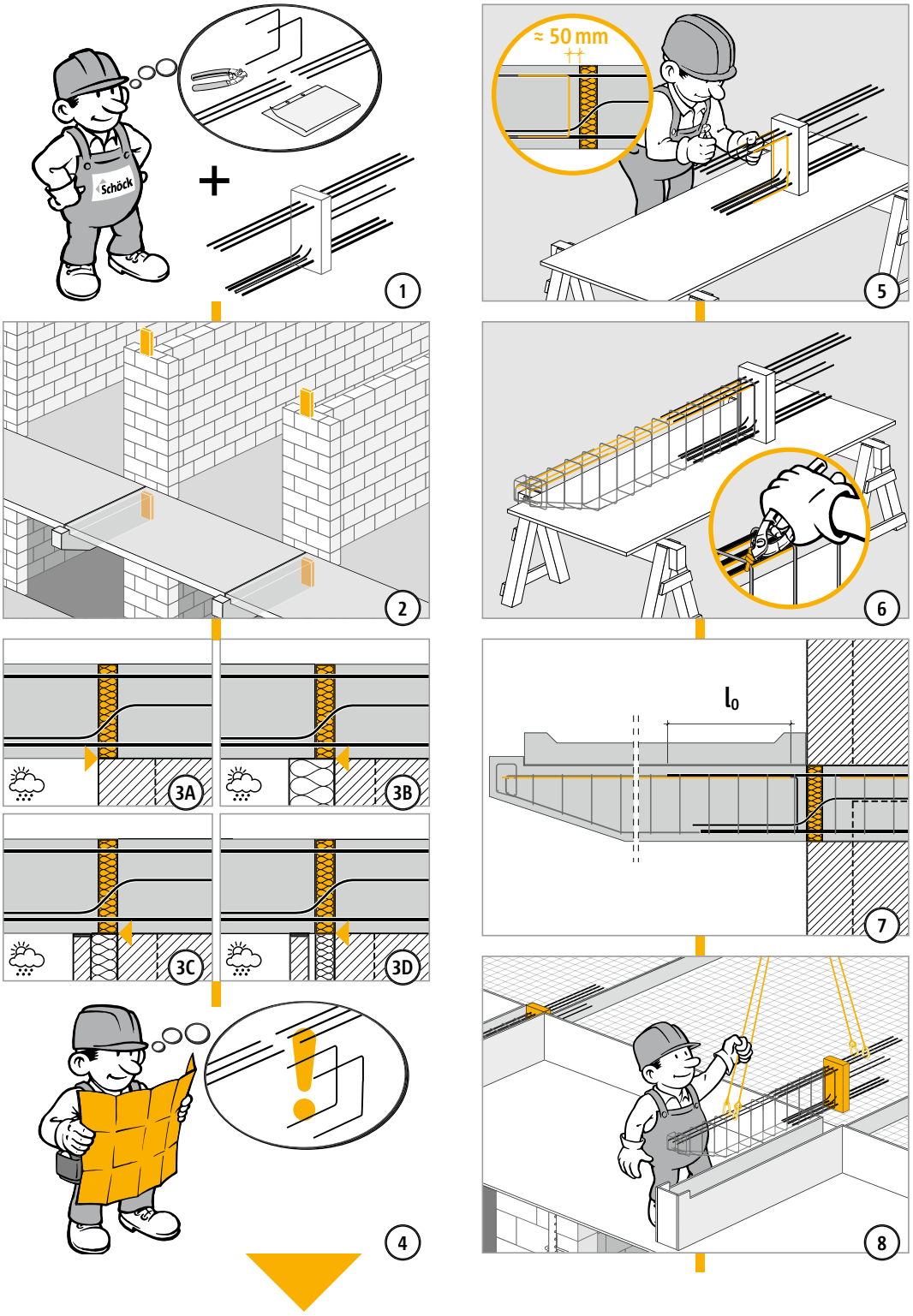
Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars/compression members.

Schöck Isokorb® type	SXT1	SXT2	SXT3	SXT4
On-site reinforcement	**Concrete strength class ≥ C25/30**			
Pos. 1 Lapping reinforcement				
Pos. 1	3 • H10	3 • H12	3 • H16	3 • H16
Lap length VB1 (good)	564	676	789	1239
Lap length VB2 (poor)	805	966	1127	1770
Pos. 2 Suspension reinforcement				
Pos. 2 [mm²]	71	111	160	218
Pos. 3 Stirrup				
Pos. 3	acc. to the specifications of the structural engineer			
Pos. 4 Structural edging at the free edge				
Pos. 4	acc. to BS EN 1992-1-1 (EC2), 9.3.1.4			
Pos. 5 Wall reinforement and lapping reinforcement shear force bar				
Pos. 5	acc. to the specifications of the structural engineer			

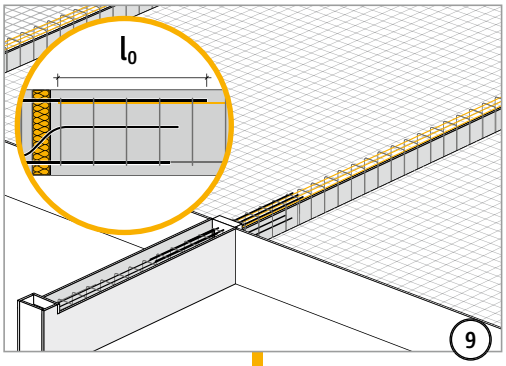
Information about on-site reinforcement

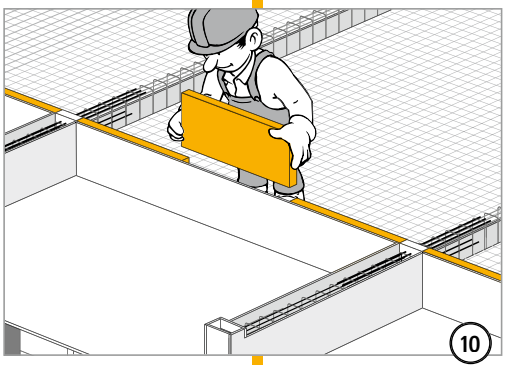
- Alternative connection reinforcement is possible. For the determination of the lap length the rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Installation instructions



Installation instructions

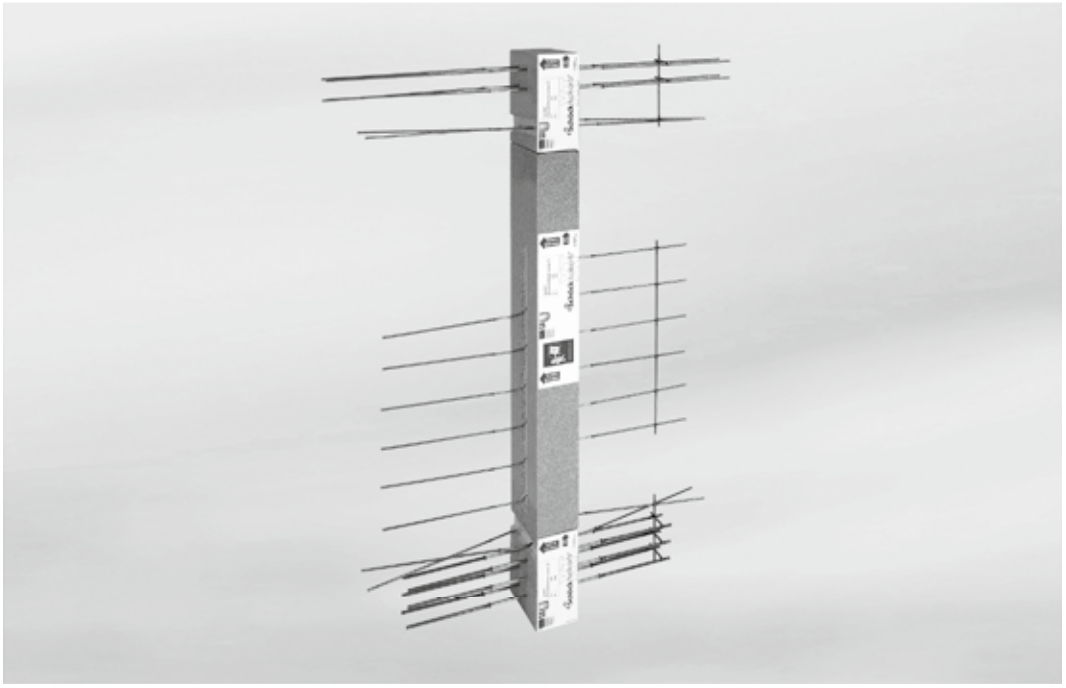




Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?
- ☐ Has the bonding range (good - VB1; poor - VB2) been defined and given in the type designation?

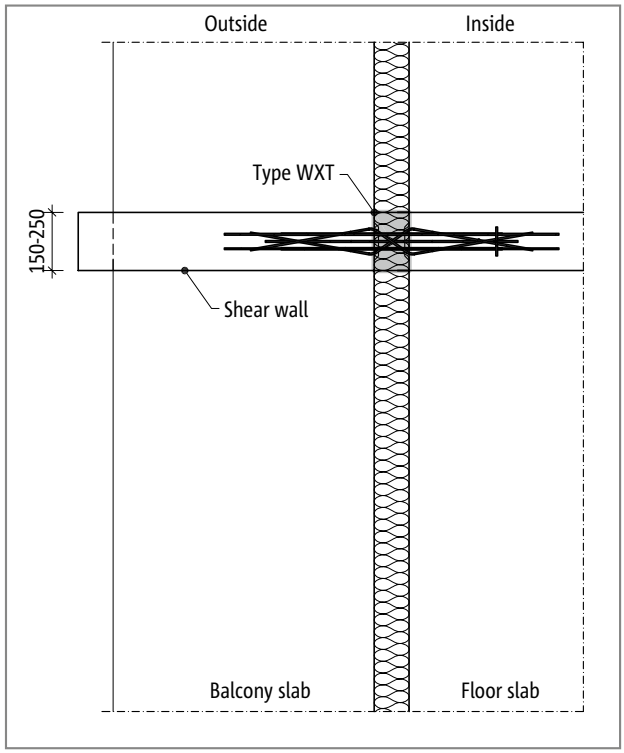
Schöck Isokorb® type WXT



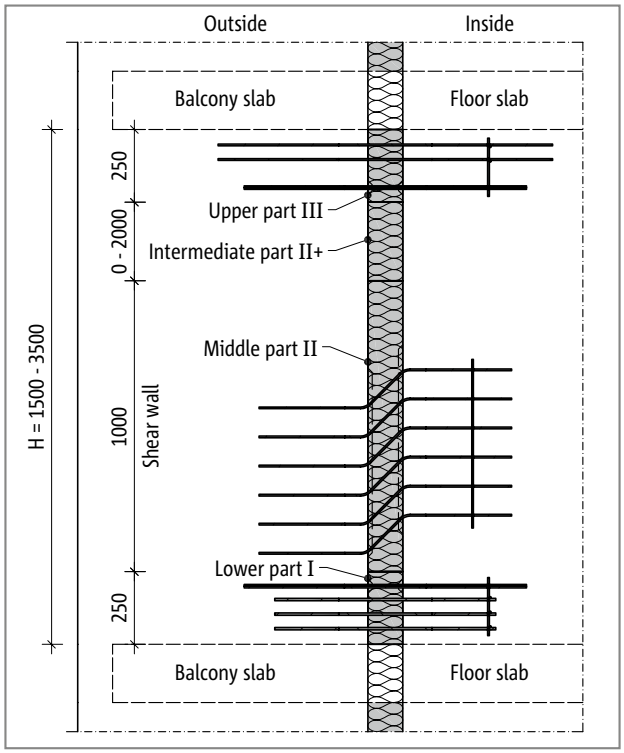
Schöck Isokorb® type WXT

Schöck Isokorb® type WXT
Suitable for cantelevered shear walls. It transmits negative moments and positive shear forces. In addition, horizontal shear forces are transmitted.

Element arrangement | Installation cross section | Product selection | Type designations | Special designs



Schöck Isokorb® type WXT: Plan view; balcony construction with heat insulated load-bearing shear walls



Schöck Isokorb® type WXT: Balcony construction with heat insulated load-bearing shear walls

Element arrangement

- The Schöck Isokorb® type WXT consists of at least 3 parts: Bottom part I, middle part II, top part III. Depending on height an insulation intermediate part II+ is required.

Schöck Isokorb® type WXT variants

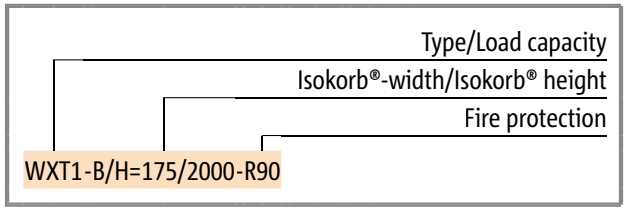
The configuration of the Schöck Isokorb® type WXT can vary as follows:

- Load capacity: WXT1 to WXT4
- Width: B = 150 - 250 mm with R0, B = 160 - 250 mm with R90
- Height: H = 1500 - 3500 mm
- Fire resistance class:
  R0: Standard
  R90: Projecting upper fire protection slab, both sides 10 mm

Variants

- State the desired dimensions on ordering.

Type designations in planning documents



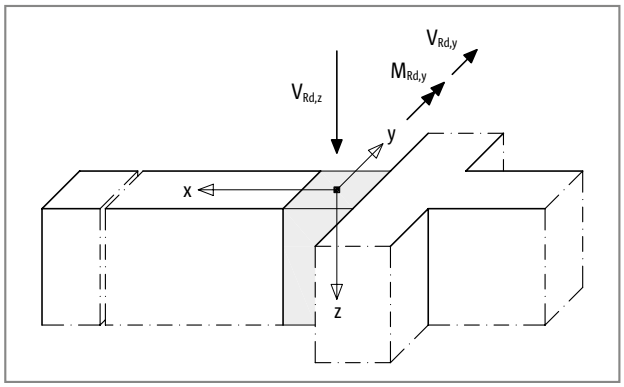
Special designs

Please contact the design support department if you have connections that are not possible with the standard product variants shown in this information (contact details on page 3).

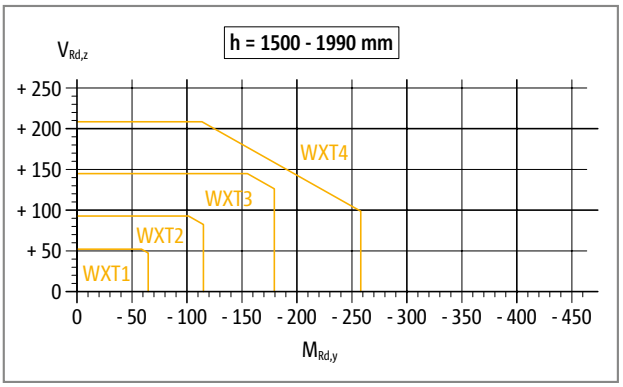
C25/30 design

Schöck Isokorb® type		WXT1	WXT2	WXT3	WXT4
Design values with		Concrete strength class ≥ C25/30			
		$M_{Rd,y}$ [kNm/element]			
Isokorb® height H [mm]	1500 - 1990	-58.6	-101.4	-154.9	-113.6
	2000 - 2490	-80.8	-140.0	-213.9	-156.9
	2500 - 3500	-103.0	-178.5	-272.8	-200.2
Isokorb® height H [mm]		$V_{Rd,z}$ [kN/element]			
	1500 - 3500	52.2	92.7	144.9	208.6
		$V_{Rd,y}$ [kN/element]			
	1500 - 3500	±13.4	±13.4	±13.4	±13.4

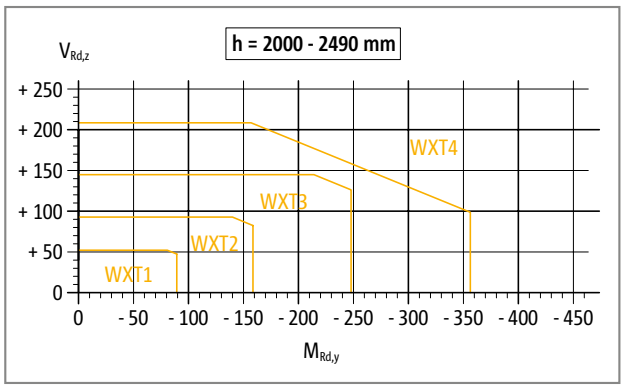
Schöck Isokorb® type	WXT1	WXT2	WXT3	WXT4
Tension bars	4 ⌀ 6	4 ⌀ 8	4 ⌀ 10	4 ⌀ 12
Compression bars	6 ⌀ 8	6 ⌀ 10	6 ⌀ 12	6 ⌀ 14
Shear force bars vertical	6 ⌀ 6	6 ⌀ 8	6 ⌀ 10	6 ⌀ 12
Shear force bars horizontal	2 × 2 ⌀ 6	2 × 2 ⌀ 6	2 × 2 ⌀ 6	2 × 2 ⌀ 6
B_{min} with R0 [mm]	150	150	150	150
B_{min} with R90 [mm]	160	160	160	160



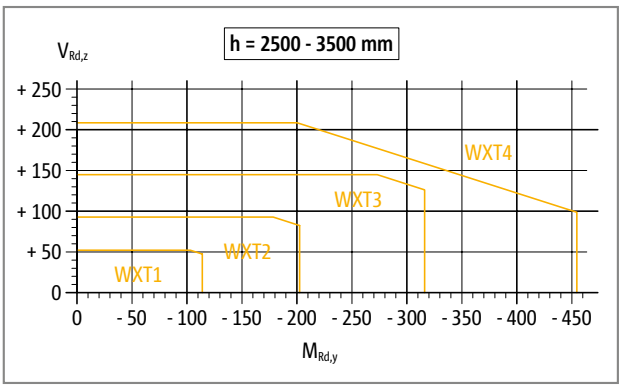
Schöck Isokorb® type WXT: Sign convention for the design



Schöck Isokorb® type WXT: Interaction diagram C25/30 H = 1500 - 1990



Schöck Isokorb® type WXT: Interaction diagram C25/30 H = 2000 - 2500



Schöck Isokorb® type WXT: Interaction diagram C25/30 H = 2500 - 3500

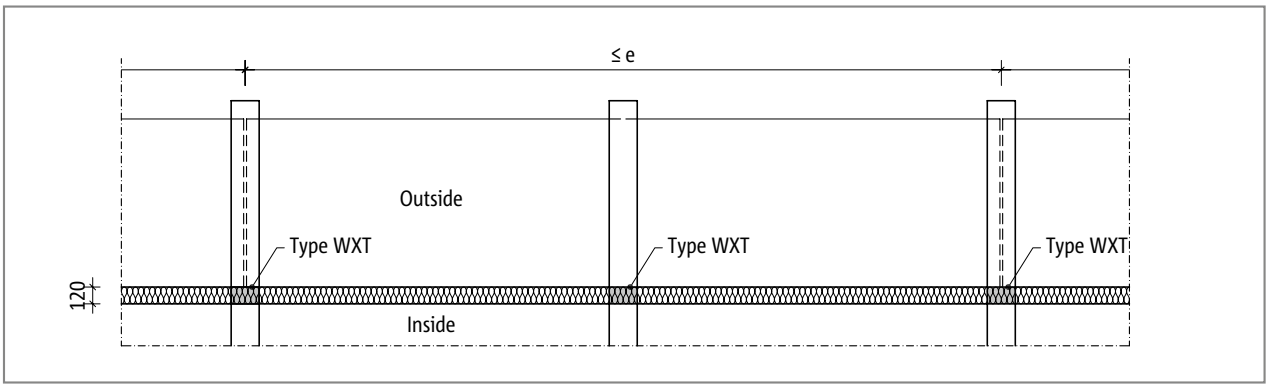
Notes on design

- Moments from wind loading are to be taken up by the stiffening effect of the balcony slabs. If this is not possible, then M_{Edz} can be transmitted through the additional arrangement of a Schöck Isokorb® type DXT. In this case the type DXT is installed in the vertical poistion in place of the insulation intermediate part.
- Poor bonding conditions (bonding range II) are the basis for the determination of the tension bar anchoring lengths.
- The indicative minimum concrete strength class of the external structural component is C32/40.

Expansion joint spacing

Maximum expansion joint spacing

If the structural component length exceeds the maximum expansion joint spacing e, expansion joints must be installed in the exterior concrete structural components at right angles to the insulation plane, in order to limit the effect as a result of temperature changes.



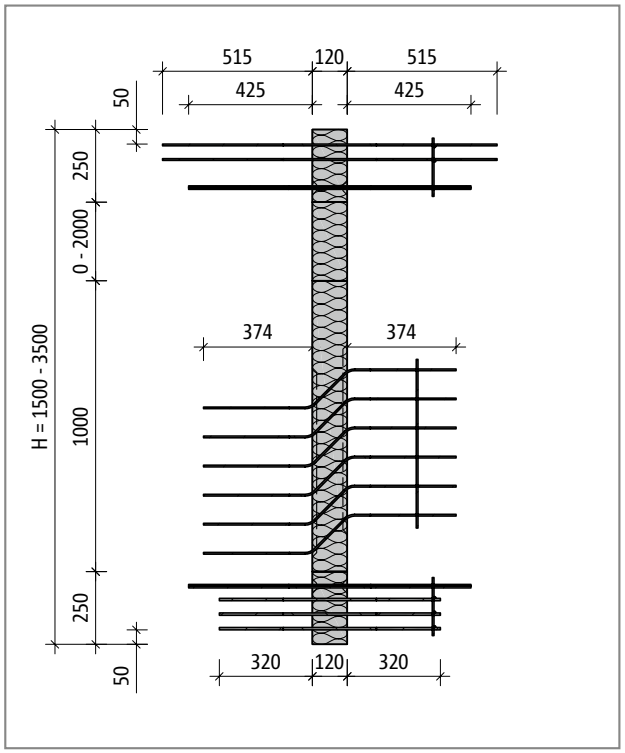
Schöck Isokorb® type WXT: Expansion joint arrangement

Schöck Isokorb® type		WXT1	WXT2	WXT3	WXT4
Maximum expansion joint spacing e		e [m]			
Insulating element thickness [mm]	120	23.0	21.7	19.8	17.0

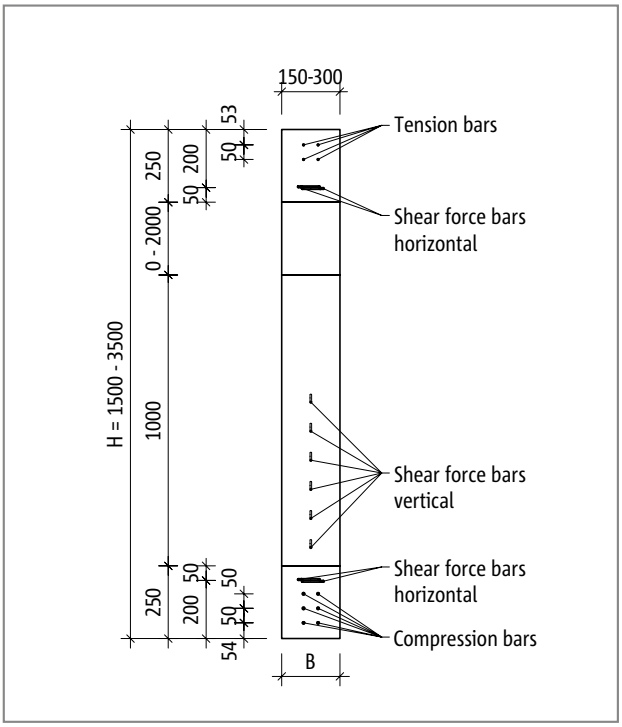
Expansion joints

- The expansion joint spacings can be enlarged, if there is no fixed connection between balcony slabs and shear walls, e. g. through laying of a sliding foil.

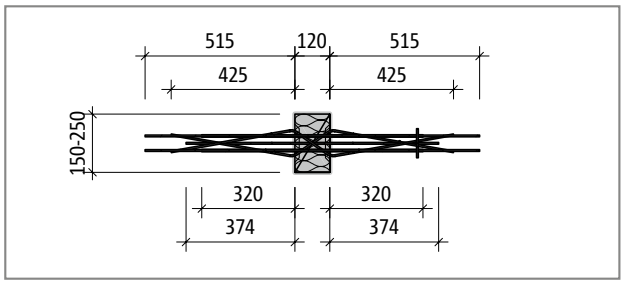
Product description



Schöck Isokorb® type WXT1: Product section



Schöck Isokorb® type WXT1: Product view

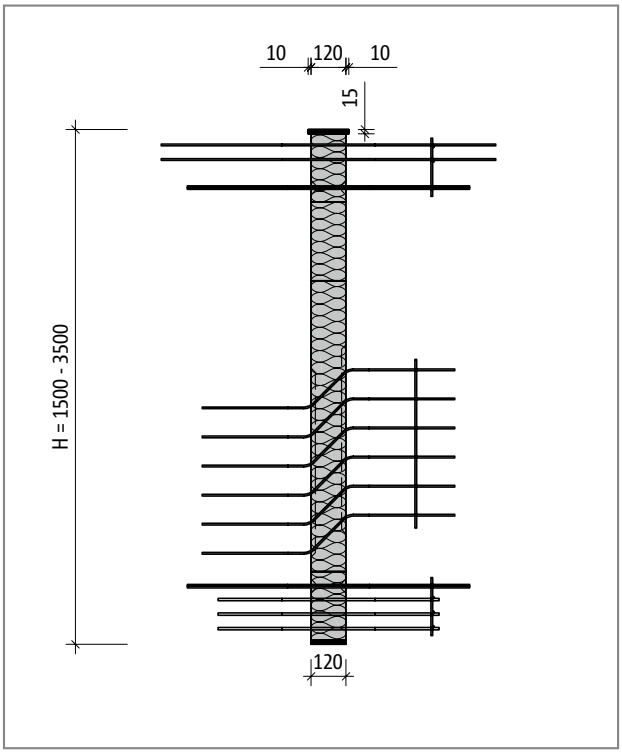


Schöck Isokorb® type WXT1: Product plan view

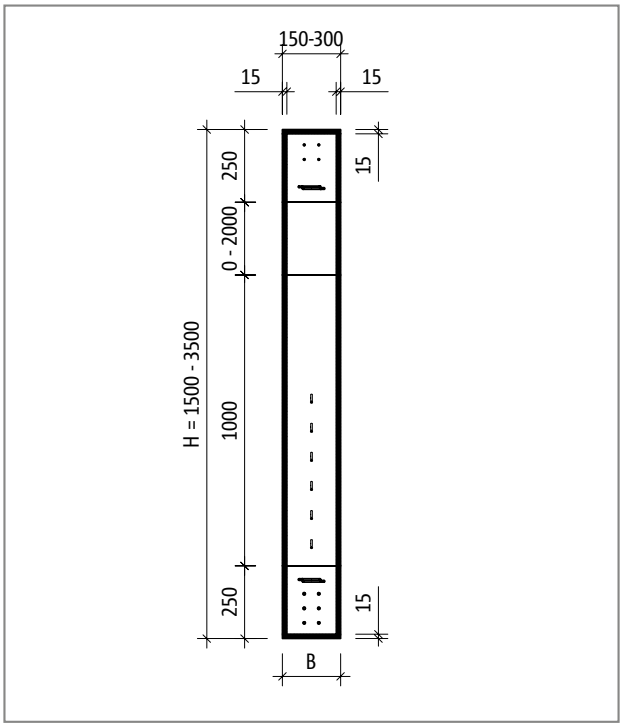
Product information

- Download further product plan views and cross-sections at www.schoeck.co.uk/download

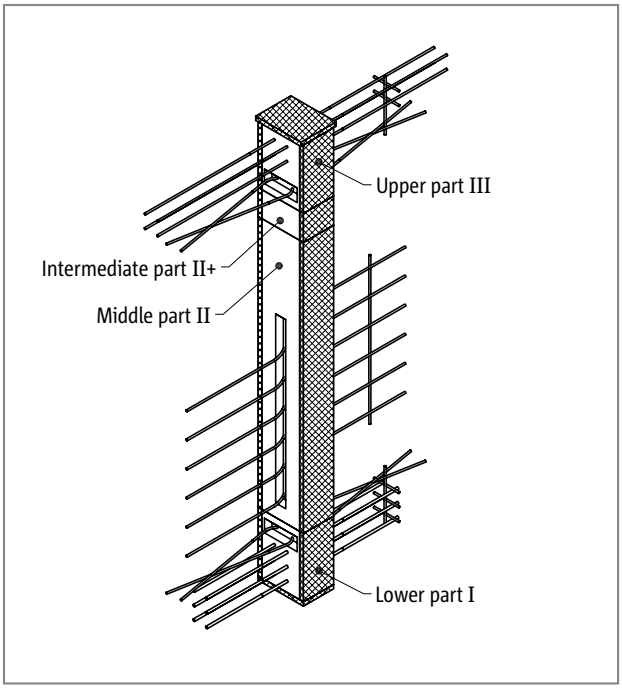
Fire protection configuration



Schöck Isokorb® type WXT1 with R90: Product section; fire protection slab top and bottom

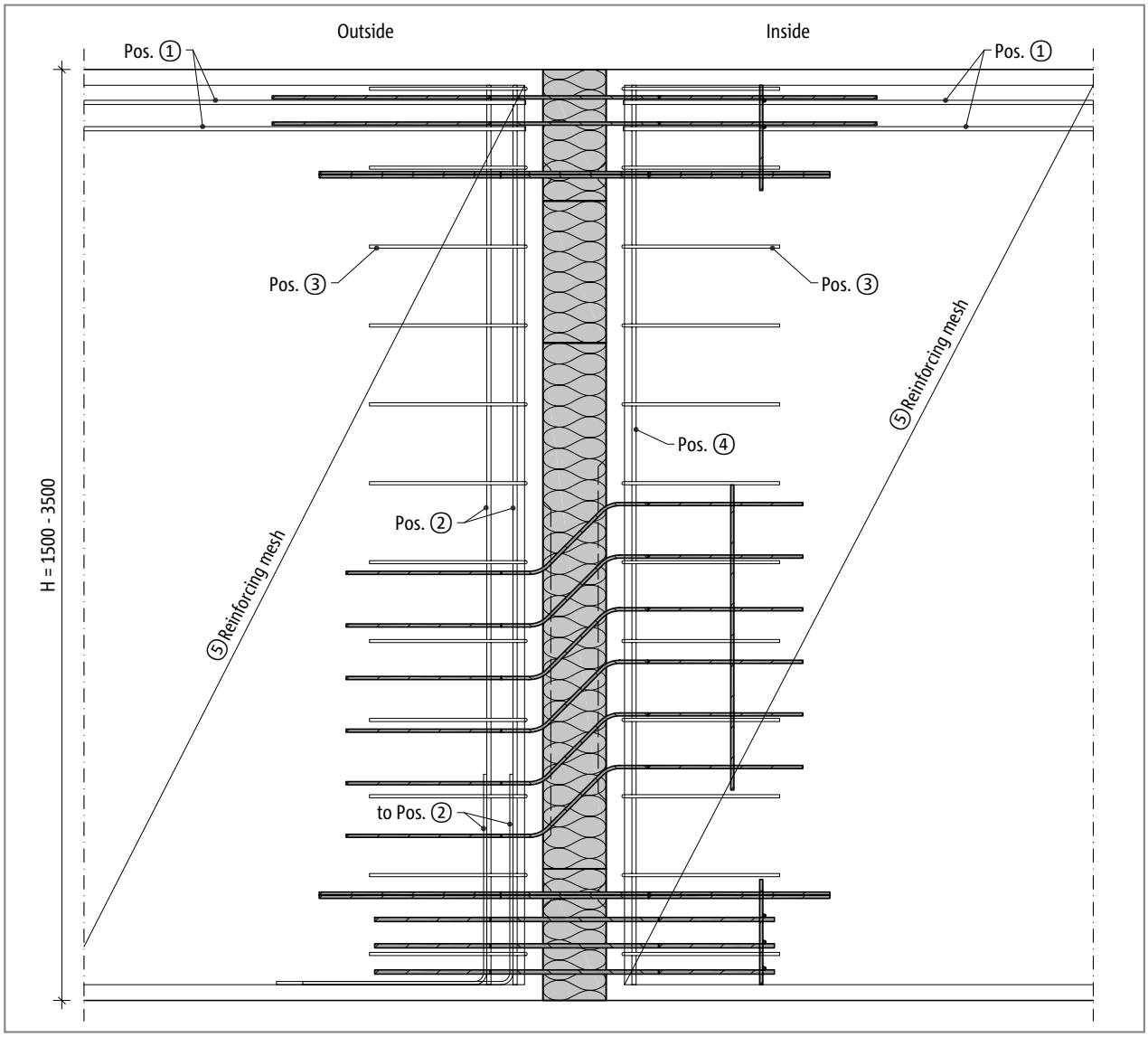


Schöck Isokorb® type WXT1 with R90: Product view; fire protection slab circumferential

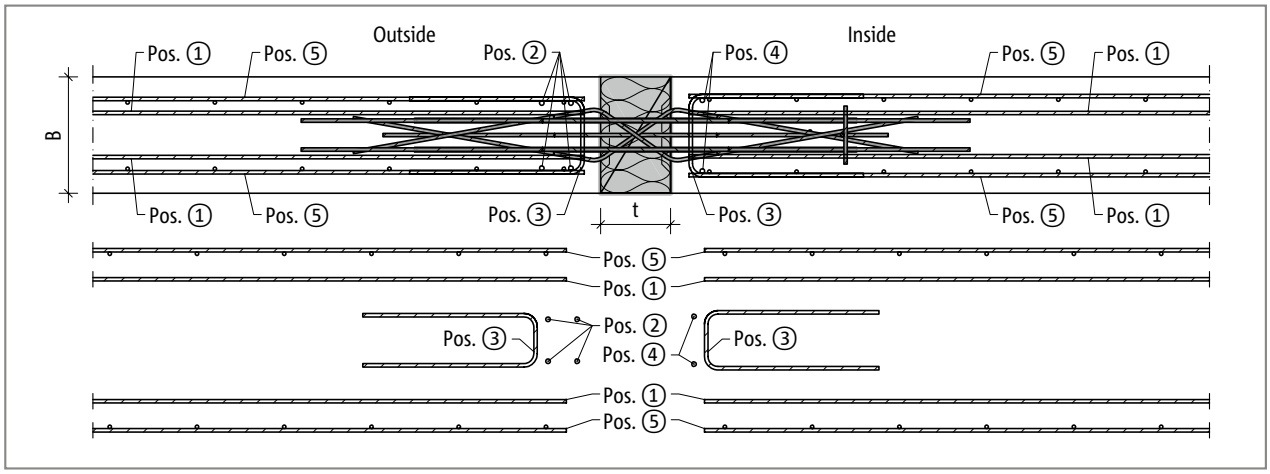


Schöck Isokorb® type WXT1 with R90: Fire protection slabs circumferential

On-site reinforcement



Schöck Isokorb® type WXT: On-site reinforcement; section



Schöck Isokorb® type WXT: On-site reinforcement; plan view

On-site reinforcement

Recommendation for the on-site connection reinforcement

Details of the lapping reinforcement for Schöck Isokorb® with a loading of 100 % of the maximum design moment with C25/30; positively selected: a_s lapping reinforcement ≥ a_s Isokorb® tension bars/compression members.

Schöck Isokorb® type	WXT1	WXT2	WXT3	WXT4
On-site reinforcement	Concrete strength class ≥ C25/30			
Pos. 1 Lapping reinforcement				
Pos. 1	4 • H8	4 • H8	4 • H10	4 • H12
Lap length l0 [mm]	483	644	805	966
Pos. 2 Suspension reinforcement (anchoring with stirrup or L)				
Pos. 2	4 • H8	4 • H10	4 • H12	4 H16
Pos. 3 and Pos. 4 Structural edging				
Pos. 3 and 4	acc. to the specifications of the structural engineer			
Pos. 5 Wall reinforement and lapping reinforcement shear force bar				
Pos. 5	acc. to the specifications of the structural engineer			

Information about on-site reinforcement

- Alternative connection reinforcement is possible. For the determination of the lap length the rules acc. to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply. A reduction of the required lap length using m_{Ed}/m_{Rd} is permitted.
- The indicative minimum concrete strength class of the external structural component is C32/40.

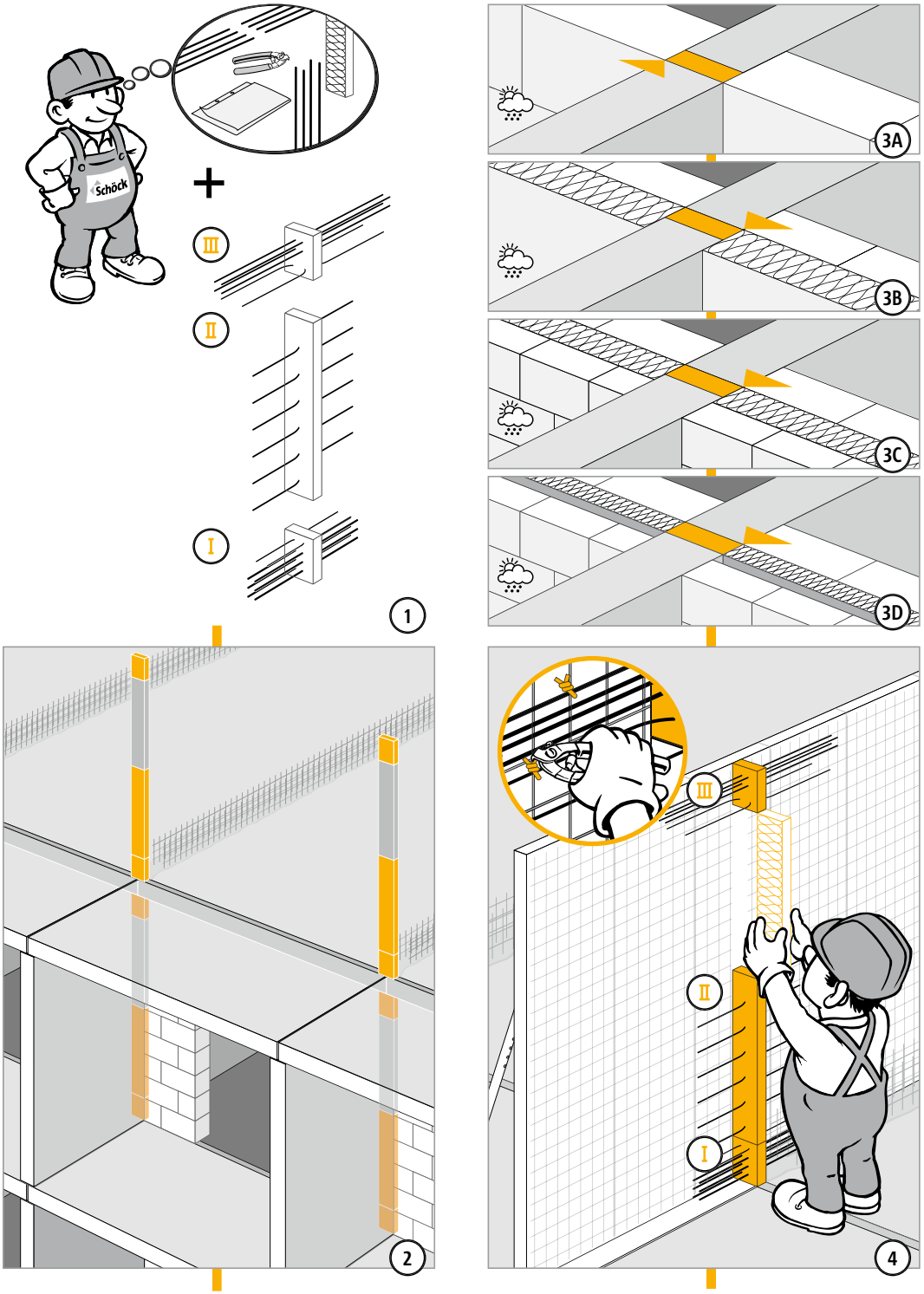
Installation

Installation

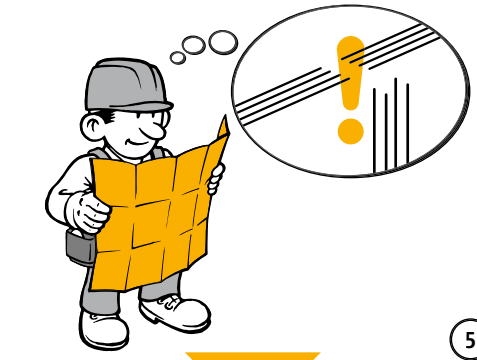
The Schöck Isokorb® type WXT is supplied in different components (bottom part, middle part, intermediate part, top part).

- Depending on the number ordered, identical components on one pallet, for transport security.
- The assignment of the components takes place on the construction site acc. to the installation instructions see page 261.

Installation instructions



Installation instructions



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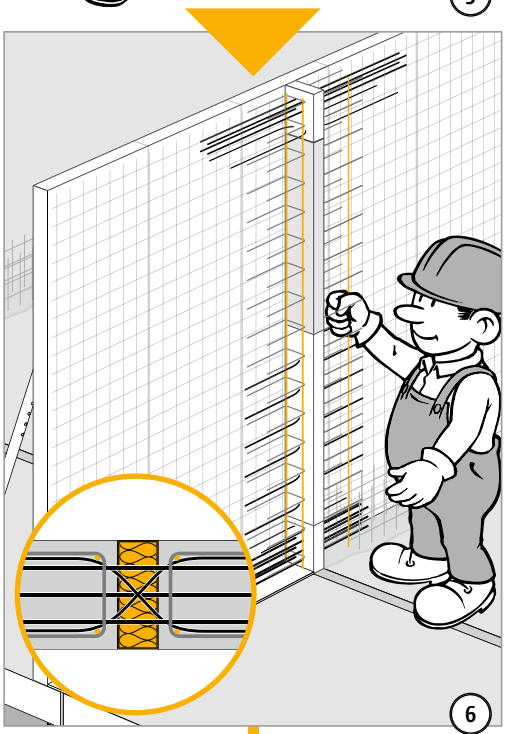

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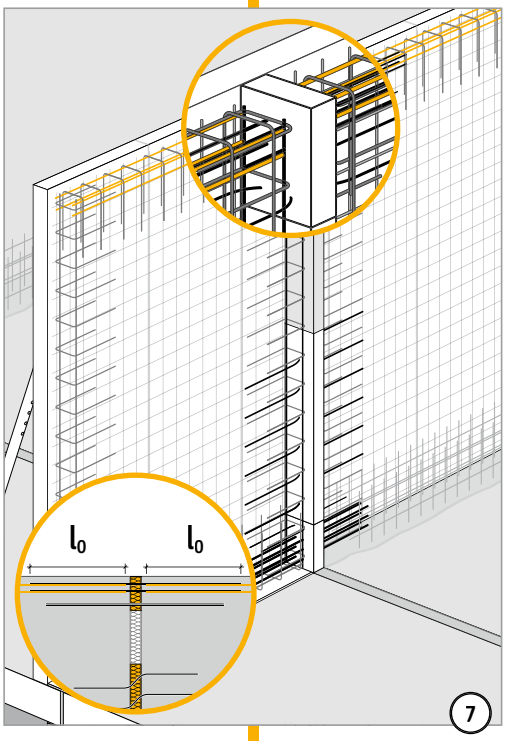

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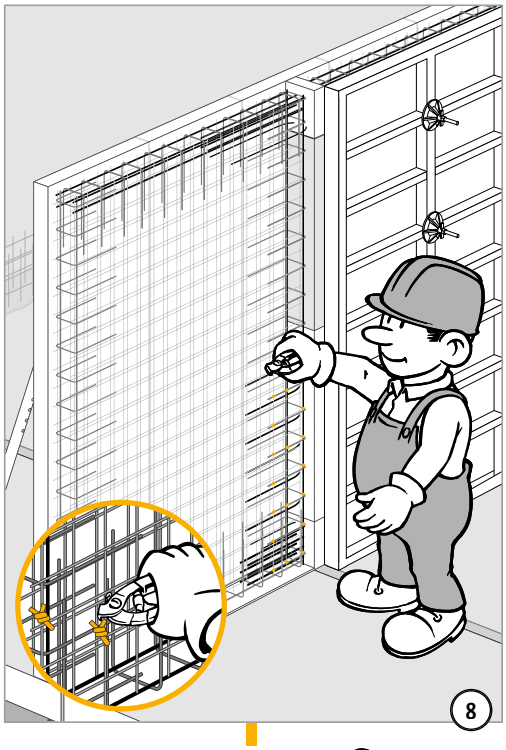

8

Check list

- ☐ Have the loads on the Schöck Isokorb® connection been specified at design level?
- ☐ Has the cantilevered system length or the system support width been taken as a basis?
- ☐ Are the maximum allowable expansion joint specings taken into account?
- ☐ Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- ☐ Have the requirements for on-site reinforcement of connections been defined in each case?

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