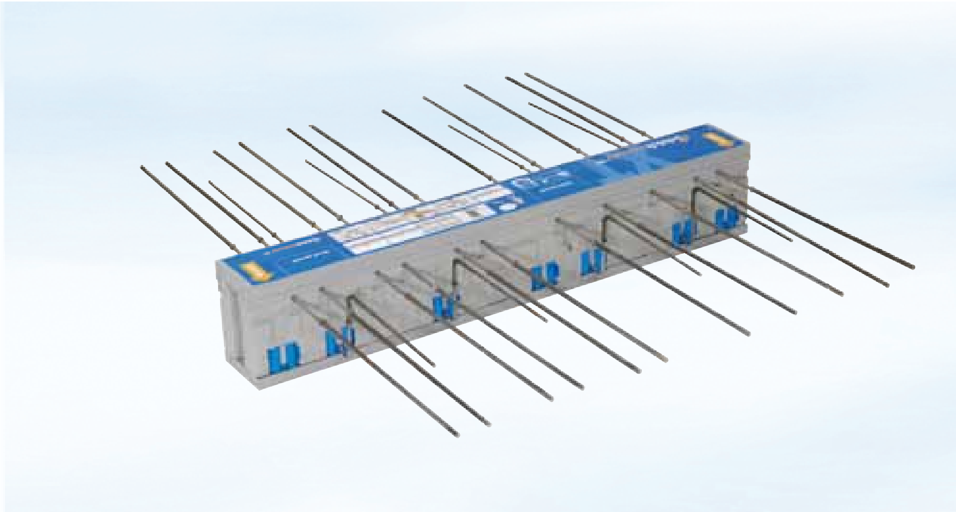
Schöck Isokorb®



Technical Information
Schöck Isokorb® XT with 120 mm insulation

July 2014

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

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

Schöck Isokorb®
Certificates

The Schöck Isokorb® range of load-bearing thermal insulation components, if used in accordance with the provisions of the BBA Approval, Agreement Certificate No 05/4277, will meet the relevant requirements.

The static calculations to Eurocode 2 for the Schöck Isokorb®, when used in conjunction with BS EN 1992-1-1:2004 and its UK National Annex, have been approved by Mr. Rod Webster, of Concrete & Design Ltd, West Sussex.

These documents can be downloaded from www.schoeck.co.uk.

Schöck Bauteile GmbH

Agrément Certificate
05/4277
Product Sheet 1

SCHÖCK ISOKORB RANGE OF THERMAL INSULATION COMPONENTS

SCHÖCK ISOKORB LOADBEARING THERMAL INSULATION FOR CONCRETE FLOORS

This Agrément Certificate Product Sheet[1] relates to Schöck Isokorb Loadbearing Thermal Insulation for Concrete Floors, a thermal break units comprising polystyrene insulated concrete blocks between reinforcing steel bars with plastic sleeves and fire resistant top and bottom pads to form a thermal break between a balcony and an internal floor, whilst transferring load and maintaining full structural integrity.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Structural aspects — the products have adequate strength to resist the loads associated with permanent loading (see section 6).

Thermal performance — the products contribute towards the overall thermal insulation of the building envelope by reducing cold bridging between internal and external elements (see section 7).

Behaviour in relation to fire — testing indicates that the fire protection plates incorporated in the products will provide up to 120 minutes resistance (see section 9).

Durability — under normal service conditions, the products will have a service life of at least 60 years (see section 11).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 26 June 2014

Brian Chamberlain
Head of Approvals — Engineering

Claire Curtis-Thomas
Chief Executive

British Board of Agrément
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website: www.bbacerts.co.uk

The Schöck Isokorb® XT
Contents

The Schöck Isokorb® XT
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/m²K per °C to the entire dwelling, rather than calculating for each individual junction or 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 insulation countermeasure is installed wherever cantilever balcony and other similar construction connectivity points break the insulation layer and in the process create the risk of a thermal bridge.

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

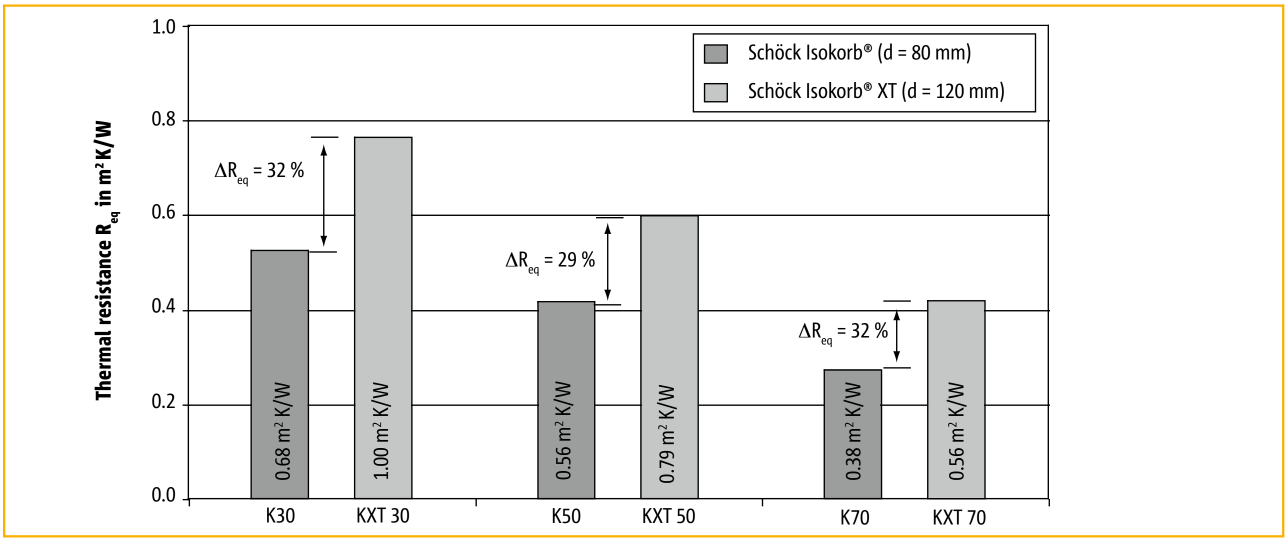
The equivalent thermal conductivity λ_{eq} is the overall thermal conductivity of the Schöck Isokorb® averaged over the various different surface areas. Given the same insulating element thickness, it is an indicator of the thermal insulation efficiency of the connection. The smaller the λ_{eq}, value 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:

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

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 Req 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 30% on that of the Schöck Isokorb® type K where d = 80 mm.



Comparison of thermal resistance R_{eq} of Schöck Isokorb® XT (d = 120 mm) and Schöck Isokorb® (d = 80 mm) with an element height of 180 mm

The Schöck Isokorb® XT
Thermal protection

Thermal characteristic values shown by 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, in other words the greater the thermal resistance R_{eq} of the element, the lower the thermal outflow 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:

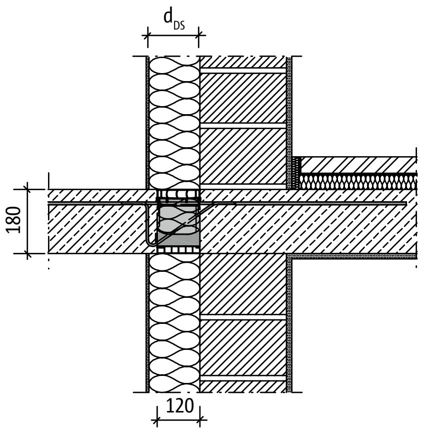
Schöck Isokorb® type	Equivalent thermal conductivity in W/(m · K)		Equivalent thermal resistance in m² · K/W		Thermal transmission coefficient ψ (in relation to external dimensions) in W/(m · K) – Thickness of insulating material in the thermal insulation bonded system d_{DS}		
	$\lambda_{eq,1dim}$ *)	$\lambda_{eq,3dim}$ *)	$R_{eq,1dim}$ *)	$R_{eq,3dim}$ *)	140 mm	220 mm	300 mm
KXT 30-V6-H180-F0	0.120	0.114	1.00	1.053	0.10	0.12	0.17
KXT 50-V6-H180-F0	0.151	0.142	0.79	0.845	0.14	0.15	0.18
KXT 70-V8-H180-F0	0.214	0.206	0.56	0.583	0.20	0.21	0.20
QXT 10-H180-F0	0.063	0.060	1.90	2.000	0.05	0.06	0.08
QXT 30-H180-F0	0.070	0.067	1.71	1.791	0.06	0.08	0.09
QXT 60-H180-F0	0.081	0.076	1.48	1.579	0.07	0.09	0.13

In the least favourable construction shown in the table (Schöck Isokorb® type KXT 70 and 140 mm insulating material thickness of the thermal insulation bonded system), the temperature factor f_{Rsi} = 0.88

*) The equivalent thermal conductivity (and thus also R_{eq}) can be calculated both one-dimensionally "by hand" and three-dimensionally with the aid of an FE program. The three-dimensional calculation is more complex but also more precise. The thermal conductivity calculated one-dimensionally leads to higher values, i.e. $\lambda_{eq,1dim} \geq \lambda_{eq,3dim}$. In other words, $\lambda_{eq,1dim}$ leaves you "on the safe side".

Thermal insulating material in the thermal insulation bonded system: Thermal conductivity λ = 0.040 W/(m · K)
Thermal transfer resistance external: R_{se} = 0.04 m²K/W
Thermal transfer resistance internal: R_{si} = 0.13 m²K/W

Table 1: Thermal transmission coefficient ψ with a slab thickness of 180 mm



Passive house certification:

On account of the excellent thermal insulation performance of the Schöck Isokorb® XT, the passive house balcony connected using the Schöck Isokorb® XT has been certified as a "Low Thermal Bridge Construction" by the Passive House Institute in Darmstadt/Germany.

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

The Schöck Isokorb® XT

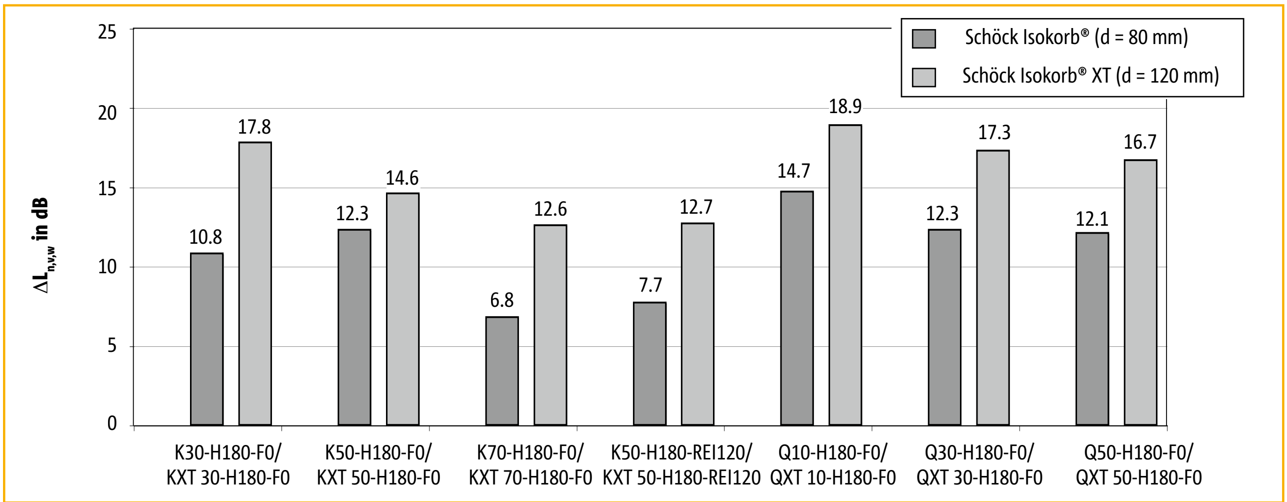
Impact sound insulation

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® XT type	Rated difference in impact sound level $\Delta L_{n,v,w}$ in dB[1]	
	Fire resistance class F 0	Fire resistance class F 90
KXT 10-H180	18.1	–[2]
KXT 30-H180	17.8	17.6
KXT 30-V8-H180	14.9	–[2]
KXT 50-H180	14.6	12.7
KXT 50-V8-H180	14.0	–[2]
KXT 70-V8-H180	12.6	9.3
KXT 90-V8-H180	11.8	–[2]
QXT 10-H180	18.9	15.8
QXT 30-H180	17.3	13.3
QXT 60-H180	16.7	13.8
QXT 70-H180	15.0	14.0

Table 5: Rated difference in impact sound level $\Delta L_{n,v,w}$ Schöck Isokorb® XT[1]



Schöck Isokorb® XT and the future impact sound regulations

The Schöck Isokorb® XT significantly reduces impact sound being transmitted from loggias and balconies into the building; and provides a simple solution for anticipated future impact sound insulation regulatory changes for balconies. With rated differences in impact sound levels from 9.3 dB to 18.9 dB, it enables the required standard impact sound level of $L'_{n,w} \leq 53$ dB to be met in many cases without any additional measures such as floating flooring.

[1] Measurements carried out by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. Test report nos. FEB/FS52-01/08 and FEB/FS52-02/08
[2] There are no test results available in this case.

The Schöck Isokorb® XT
Fire protection

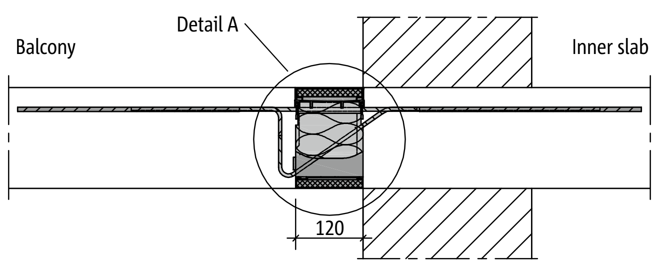
All Schöck Isokorb® types for concrete connections (reinforced concrete-to-reinforced concrete) are available as REI120-compliant versions.

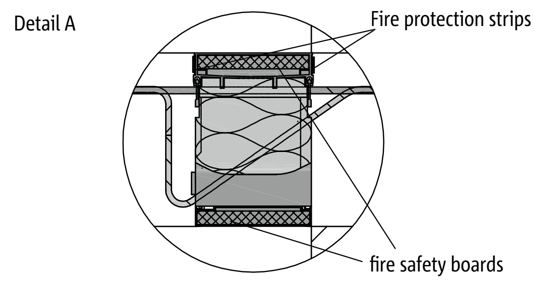
Fire resistance class REI120

For cases where there are special fire safety requirements involving the fire resistance class of balconies, the Schöck Isokorb® XT can be supplied to meet fire resistance class REI120 (designation: e.g. Schock Isokorb® type K50-CV35-H180-REI120). Here, fire protection strips and / or fire safety boards are factory built into the units to the upper side and the underside (see illustration). However, in order for the balcony connection area to be classified as REI120 compliant, it is a further requirement that the balcony slab and the inner slab of the intermediate floor also satisfy the requirements in terms of fire resistance class REI120 according to the local building regulations.

Integrated fire protection strips, or the fire safety boards on the upper side of the Schöck Isokorb® (which protrude by 10 mm), guarantee that connections which could expand due to the effects of a fire, are effectively sealed. So potentially damaging hot gases cannot reach the reinforcing rods of the Schöck Isokorb® (see illustration). This arrangement is essential if the design is to be classified as compliant with fire resistance class REI120 and does not require additional onsite fire safety measures, such as a mineral-based coating or finish.

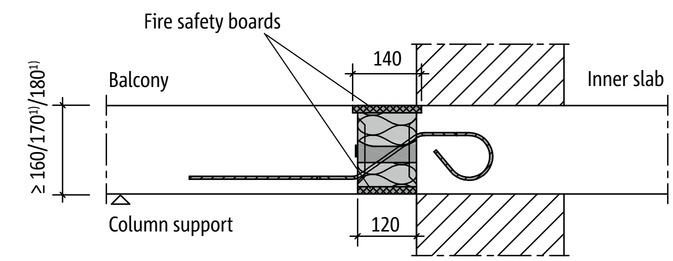
Types with flush-integrated fire protection strips: KXT, KFXT



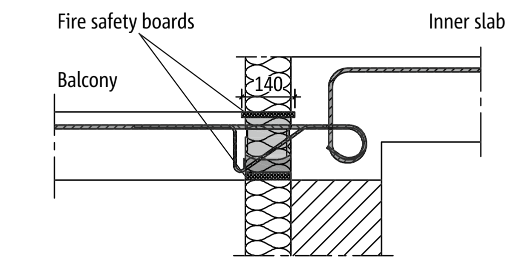


e.g.: Schöck Isokorb® type KXT 50-CV35-H180-REI120

Types with projecting fire safety boards: KXT-HV, KXT-BH, KXT-WO, KXT-WU, QXT, QXT+QXT, QPXT, QPXT+QPXT



e.g.: Schöck Isokorb® type QXT 10-H180-REI120

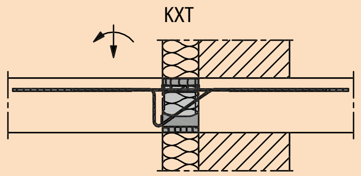
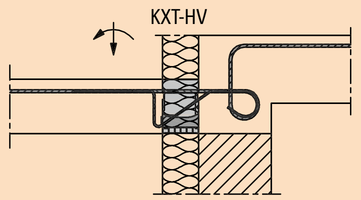
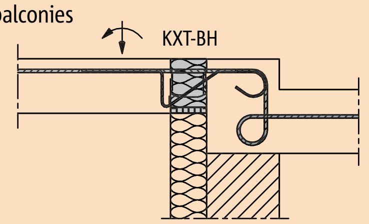
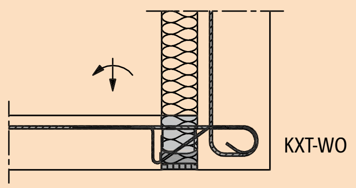
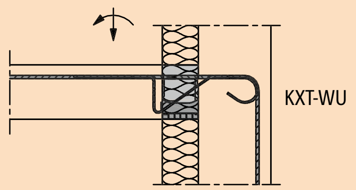


e.g.: Schöck Isokorb® type KXT 30-HV10-CV35-H160-REI120

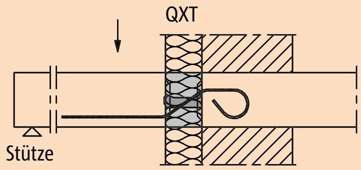
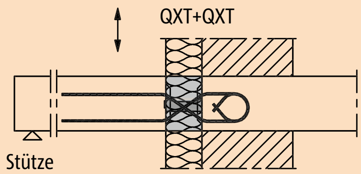
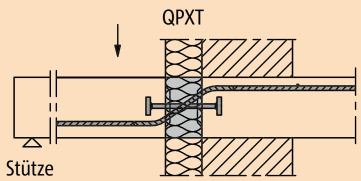
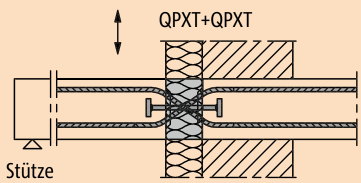
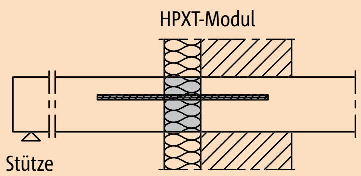
Notes

- Components which are adjacent to the Schöck Isokorb® element must not be connected to the lower Isokorb® fire protection plate by using bolts, screws, nails or similar.
- If the F 90 version of the Schöck Isokorb® is partially installed in space-enclosing walls (e.g. of type W) or inner slabs (e.g. of type K), the insulation which is to be added must be provided on-site using mineral wool with a melting point > 1000 °C (e.g. Rockwool).

The Schöck Isokorb® XT
Type overview

Application	Balcony production type	Schöck Isokorb® type	Page
for the insulation of cantilever balconies 	**Construction site**		
	On-site concrete balconies	**KXT** HTE MODUL	11 - 26
	Precast plank		
	Completely pre-fabricated balconies	**KXT** HTE MODUL	11 - 26
	Element balconies	**KXT** HTE MODUL	11 - 26
for the insulation of step down cantilever balconies 	**Construction site**		
	On-site concrete balconies	**KXT-HV** HTE MODUL	27 - 40
	Precast plank		
	Completely pre-fabricated balconies	**KXT-HV** HTE MODUL	27 - 40
for the insulation of step up cantilever balconies 	**Construction site**		
	On-site concrete balconies	**KXT-BH** HTE MODUL	27 - 40
	Precast plank		
	Completely pre-fabricated balconies	**KXT-BH** HTE MODUL	27 - 40
for the insulation of cantilever balconies connected to a wall (rebars bent upwards) 	**Construction site**		
	On-site concrete balconies	**KXT-WO** HTE MODUL	27 - 40
	Precast plank		
	Completely pre-fabricated balconies	**KXT-WO** HTE MODUL	27 - 40
for the insulation of cantilever balconies connected to a wall (rebars bent downwards) 	**Construction site**		
	On-site concrete balconies	**KXT-WU** HTE MODUL	27 - 40
	Precast plank		
	Completely pre-fabricated balconies	**KXT-WU** HTE MODUL	27 - 40

The new Schöck Isokorb® XT
Type overview

Application	Balcony production type	Schöck Isokorb® type	Page
for the connection of supported balconies	**Construction site**		Page
	On-site concrete balconies	**QXT**	41 - 56
	Precast plank		
	Completely pre-fabricated balconies	**QXT**	41 - 56
	Element balconies	**QXT**	41 - 56
transfer of positive and negative shear forces	**Construction site**		Page
	On-site concrete balconies	**QXT+QXT**	41 - 56
	Precast plank		
	Completely pre-fabricated balconies	**QXT+QXT**	41 - 56
	Element balconies	**QXT+QXT**	41 - 56
positive shear forces for pointwise bearing and restraint-free connections	**Construction site**		Page
	On-site concrete balconies	**QPXT**	41 - 56
	Precast plank		
	Completely pre-fabricated balconies	**QPXT**	41 - 56
	Element balconies	**QPXT**	41 - 56
positive and negative shear forces for pointwise bearing	**Construction site**		Page
	On-site concrete balconies	**QPXT+QPXT**	41 - 56
	Precast plank		
	Completely pre-fabricated balconies	**QPXT+QPXT**	41 - 56
	Element balconies	**QPXT+QPXT**	41 - 56
H-forces parallel and/or perpendicular to the insulating plane	**Construction site**		Page
	On-site concrete balconies	**HPXT module**	57 - 62
	Precast plank		
	Completely pre-fabricated balconies	**HPXT module**	57 - 62
	Element balconies	**HPXT module**	57 - 62

Schöck Isokorb®

Materials for concrete-to-concrete applications

Schöck Isokorb®

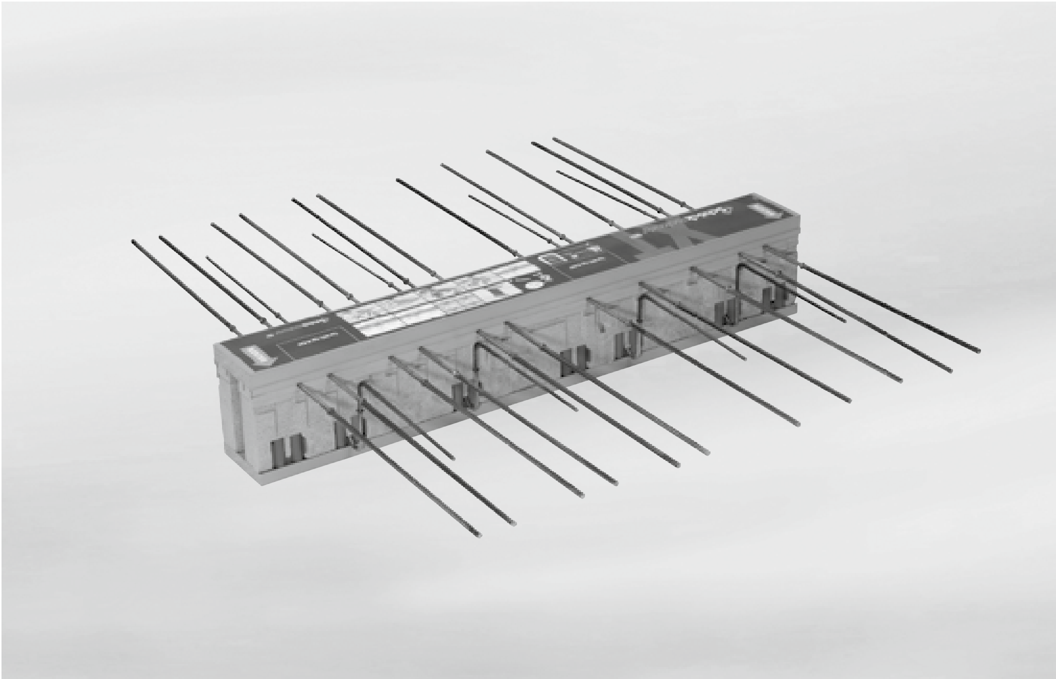
Reinforcing steel	BSt 500 S acc. to EC 2 National Annex
Structural steel	S 235 JRG1
Stainless steel	Material no. 1.4571, hardening level S 460, ribbed reinforcing steel BSt 500 NR, material no. 1.4362 or no. 1.4571
Pressure bearings	HTE module (pressure bearings made of microfibre-reinforced high-performance fine concrete) PE-HD plastic jackets
Insulating material	Neopor®[1)] (λ = 0.031 W/(m·K)), Polystyrene hard foam, λ = 0.035 W/(m × K)
Fire protection boards	Lightweight building boards, materials class A1, cement-bound fire safety boards, mineral wool: $\rho \geq 150$ kg/m³, Melting point T ≥ 1000 °C with integrated fire protection strips

Connecting components

Reinforcing steel	B500A, B500B or B500C acc. to BS 4449 or BS 4483
Concrete	Standard concrete acc. to BS EN 206-1 with a dry apparent density of 2000 kg/m³ to 2600 kg/m³ (lightweight concrete is not permissible) Concrete strength class for outside components: At least C32/40, plus according to the environmental classification acc. to BS 8500 or acc. to EC 2 National Annex Concrete strength class for inside components: At least C25/30, plus according to the environmental classification acc. to BS 8500 or acc. to EC 2 National Annex

[1)] Neopor is a registered brand name of BASF

Schöck Isokorb® type KXT



Schöck Isokorb® type KXT

The new Schöck Isokorb® XT **Page**

Schöck Isokorb® type KXT

Examples of element arrangements/Cross-sections

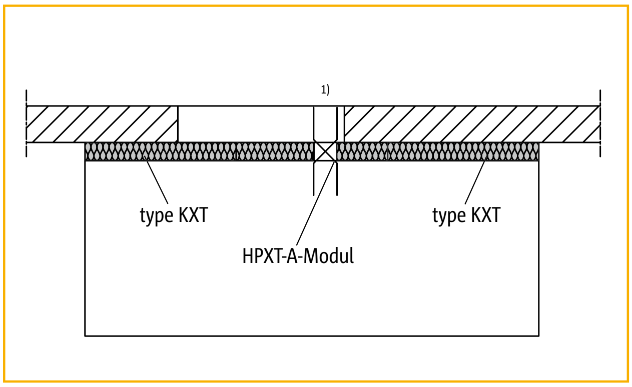


Figure 1: Free cantilever balcony

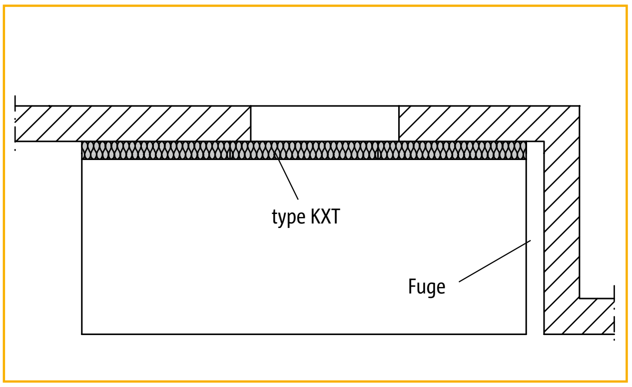


Figure 2: Balcony with façade projection

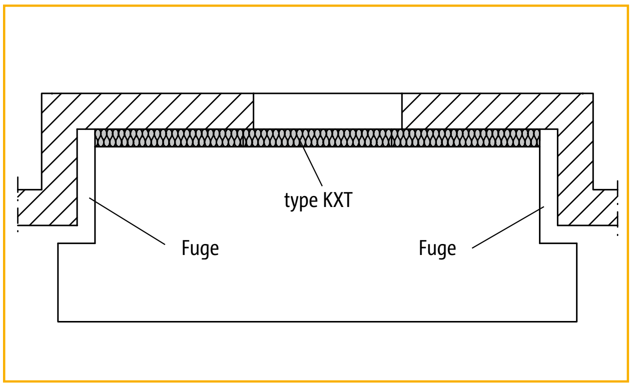


Figure 3: Balcony with façade offset

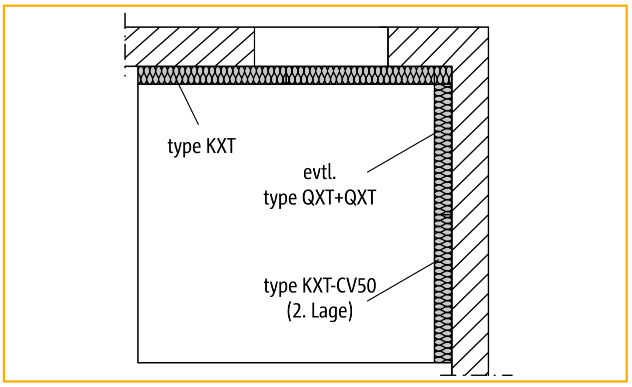


Figure 4: Balcony supported on two sides

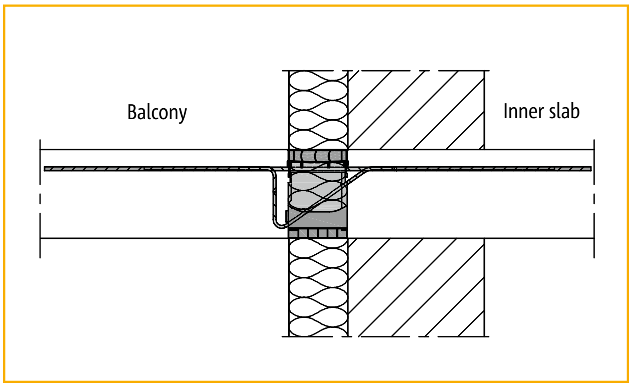


Figure 5: Brickwork with external insulation and a balcony at inner slab level

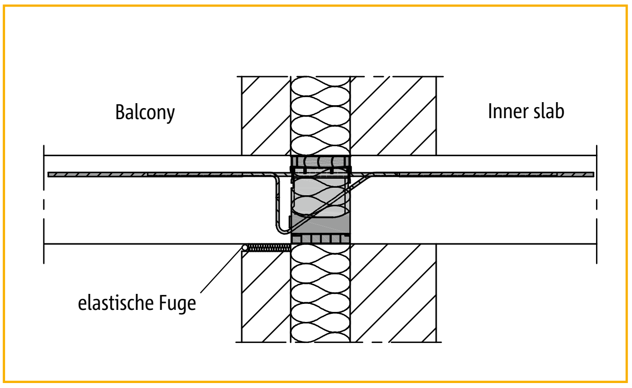


Figure 6: Cavity wall with a balcony at inner slab level

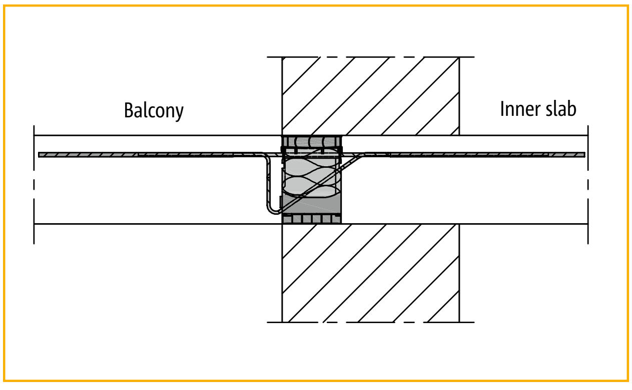


Figure 7: Single-leaf brickwork with a balcony at inner slab level

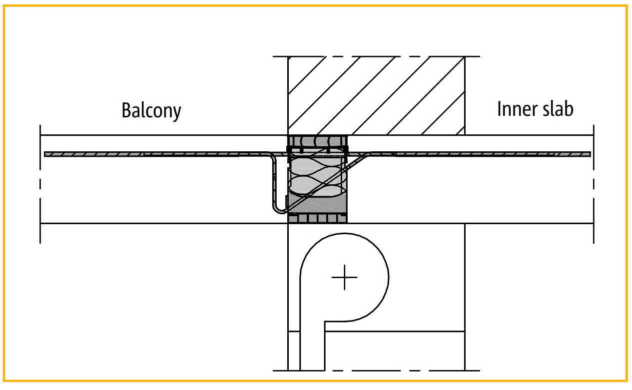


Figure 8: Single-leaf brickwork with blind box and a balcony at inner slab level

[1] optional use in conjunction with H-forces parallel and/or perpendicular to the insulating plane

Schöck Isokorb® type KXT
Product variants/Designations

Basic type
Moment load ranges KXT 10 to KXT 100 (in steps of 10)
e.g.: KXT50-CV35-... available for a balcony slab thickness of h = 160 - 250 mm

Variants

Concrete cover
e.g.: KXT 50-**CV35...** (= installation dimensions for the tension rods CV = 35 mm)
e.g.: KXT 50-**CV50...** (= installation dimensions for the tension rods CV = 50 mm) , for min H = 180 mm

Shear force load range
e.g.: KXT 50-CV35-**V8...** = Shear force reinforced
e.g.: KXT 50-CV35-**VV...** = Shear force rods for positive and negative shear forces

Fire protection
e.g.: KXT 50-CV35...-**F90** = Fire protection class

Designations used in planning documents
(structural calculations, specification documents, implementation plans, orders), e.g. for h = 180 mm

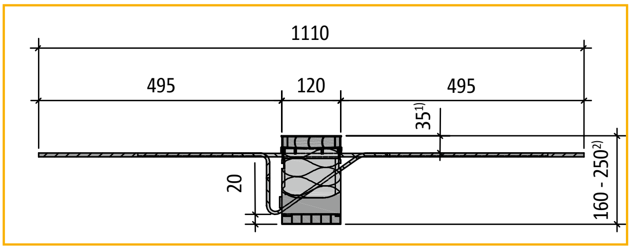
KXT 50-CV35-V6-H180

Type+load range
Concrete cover
Height of Isokorb®

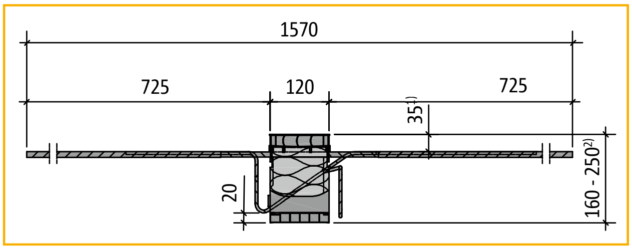
with V8, 2nd layer and fire protection

KXT 70-CV50-V8-H180-REI120

Type+load range
Concrete cover
Shear force variant
Height of Isokorb®
Fire protection class



Schöck Isokorb® type KXT 10 to KXT 50



Schöck Isokorb® type KXT 60 to KXT 100

Special designs – Bending reinforcing steels
Some connection layouts cannot be implemented with the standard product options shown in this information document. In such cases, special designs can be requested from the Design Support Department. This also applies e.g. to additional requirements due to prefabricated constructions (restrictions due to manufacturing or transport constraints) which may be met using coupler bars.

Individual reinforcing steel bars are bent in the precast plant as required. The Schöck Isokorb components are then assembled. This ensures compliance with regulations of the technical approval.

If Isokorb reinforcing steel is later bent or bent and straightened again on site in contravention of this, then compliance and monitoring of the relevant conditions lies outside the responsibility of Schöck and the product warranty expires.

[1)] 50 mm for CV50 [2)] 180 - 250 mm for CV50

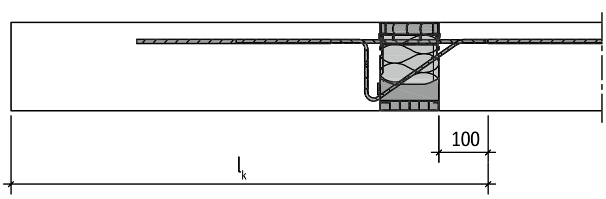
Schöck Isokorb® type KXT

Capacity table for C25/30

Schöck Isokorb® type			KXT 10	KXT 20	KXT 30	KXT 40	KXT 50
Design values for	Concrete cover CV [mm]		Concrete strength ≥ C25/30				
	CV35	CV50[1]	Rated moment m_{Rd} [kNm/m]				
Height of Schöck Isokorb® H [mm]	160		−7.3	−14.3	−20.0	−22.8	−28.6
		180	−7.7	−15.1	−21.2	−24.2	−30.3
	170		−8.1	−16.0	−22.4	−25.6	−32.0
		190	−8.6	−16.9	−23.6	−27.0	−33.7
	180		−9.0	−17.7	−24.8	−28.4	−35.4
		200	−9.4	−18.6	−26.0	−29.7	−37.2
	190		−9.9	−19.4	−27.2	−31.1	−38.9
		210	−10.3	−20.3	−28.4	−32.5	−40.6
	200		−10.8	−21.2	−29.6	−33.9	−42.3
		220	−11.2	−22.0	−30.8	−35.2	−44.0
	210		−11.6	−22.9	−32.0	−36.6	−45.8
		230	−12.1	−23.7	−33.2	−38.0	−47.5
	220		−12.5	−24.6	−34.4	−39.4	−49.2
		240	−12.9	−25.5	−35.6	−40.7	−50.9
	230		−13.4	−26.3	−36.8	−42.1	−52.6
		250	−13.8	−27.2	−38.0	−43.5	−54.4
	240		−14.3	−28.0	−39.2	−44.9	−56.1
	250		−15.1	−29.8	−41.6	−47.6	−59.5
Lateral force level			Design shear force v_{Rd} [kN/m]				
	V6 (standard equipment)[2]		+28.2	+28.2	+28.2	+35.3	+35.3
	V8		+50.1	+50.1	+62.7	+62.7	+62.7
	V10		–	–	–	–	–
	VV		–	–	±50.1	±50.1	±50.1

Schöck Isokorb® type		KXT 10	KXT 20	KXT 30	KXT 40	KXT 50
Product description	Element length [m]	1.00	1.00	1.00	1.00	1.00
	Tension rods	4 Ø 8	8 Ø 8	11 Ø 8	13 Ø 8	16 Ø 8
	Shear force rod (V6)	4 Ø 6	4 Ø 6	4 Ø 6	5 Ø 6	5 Ø 6
	Shear force rod (V8)	4 Ø 8	4 Ø 8	5 Ø 8	5 Ø 8	5 Ø 8
	Shear force rod (V10)	–	–	–	–	–
	Shear force rod (VV)	–	–	4 Ø 8 + 4 Ø 8	4 Ø 8 + 4 Ø 8	4 Ø 8 + 4 Ø 8
	Pressure bearings	4	5	7 (8 bei VV)	8	10 (12 bei VV)
	Special hoops (qty)	–	–	–	–	–

Member forces to be taken 100 mm off the slab edge.



[1] min. H = 180 mm for CV50.
[2] lateral force level V6 = standard equipment, does not need to be listed in the type designation.

Schöck Isokorb® type KXT

Capacity table for C25/30

Schöck Isokorb® type			KXT 60	KXT 70	KXT 80	KXT 90	KXT 100
Design values for	Concrete cover CV [mm]		Concrete strength ≥ C25/30				≥ C30/37[2]
	CV35	CV50[1]	Rated moment m_{Rd} [kNm/m]				
Height of Schöck Isokorb® H [mm]	160		−34.9	−38.6	−42.6	−46.4	−50.2
		180	−37.0	−41.0	−45.2	−49.2	−53.3
	170		−39.2	−43.4	−47.9	−52.1	−56.4
		190	−41.3	−45.8	−50.5	−55.0	−59.4
	180		−43.5	−48.2	−53.1	−57.8	−62.5
		200	−45.6	−50.6	−55.7	−60.7	−65.6
	190		−47.8	−53.0	−58.4	−63.5	−68.7
		210	−49.9	−55.3	−61.0	−66.4	−71.8
	200		−52.1	−57.7	−63.6	−69.3	−74.9
		220	−54.2	−60.1	−66.3	−72.1	−78.0
	210		−56.4	−62.5	−68.9	−75.0	−81.1
		230	−58.5	−64.9	−71.5	−77.9	−84.2
	220		−60.7	−67.3	−74.2	−80.7	−87.3
		240	−62.8	−69.6	−76.8	−83.6	−90.4
	230		−65.0	−72.0	−79.4	−86.4	−93.5
		250	−67.1	−74.4	−82.0	−89.3	−96.6
	240		−69.3	−76.8	−84.7	−92.2	−99.7
	250		−73.6	−81.6	−89.9	−97.9	−105.9
Lateral force level			Design shear force v_{Rd} [kN/m]				
	V6		–	–	–	–	–
	V8		+87.7	+87.7	+100.3	+112.8	+112.8
	V10		+112.8	+112.8	+112.8	+125.4	+125.4
	VV		+87.7/−50.1	–	–	–	–

Schöck Isokorb® type		KXT 60	KXT 70	KXT 80	KXT 90	KXT 100
Product description	Element length [m]	1.00	1.00	1.00	1.00	1.00
	Tension rods	9 ∅ 12	10 ∅ 12	11 ∅ 12	12 ∅ 12	13 ∅ 12
	Shear force rod (V6)	–	–	–	–	–
	Shear force rod (V8)	7 ∅ 8	7 ∅ 8	8 ∅ 8	9 ∅ 8	9 ∅ 8
	Shear force rod (V10)	9 ∅ 8	9 ∅ 8	9 ∅ 8	10 ∅ 8	10 ∅ 8
	Shear force rod (VV)	7 ∅ 8 + 4 ∅ 8	–	–	–	–
	Pressure bearings	14 (15 bei VV)	15	17	18	18
	Special hoops (qty)	4 ∅ 6	4 ∅ 6	4 ∅ 6	4 ∅ 6	4 ∅ 6

Notes:

- Concrete strength class for outside components at least C32/40.
- The verification of the shear force in slabs has to be provided by the structural designer according to EC2 clause 6.9..

[1] min. H = 180 mm for CV50.
[2] The design values specified only apply to concrete ≥ C30/37, otherwise the design values of type KXT 90 apply.

Schöck Isokorb® type KXT
Thermal characteristics

Fire resistance class F 0

type	KXT 10			KXT 20			KXT 30			KXT 40			KXT 50		
H mm	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$
160	1.32	0.091		1.09	0.110		0.92	0.131		0.83	0.145		0.72	0.166	
170	1.38	0.087	18.1[1)2)]	1.13	0.106	17.8[1)2)]	0.96	0.125	17.8[1)2)]	0.86	0.139	14.6[1)2)]	0.76	0.158	14.6[1)2)]
180	1.43	0.084		1.18	0.102		1.00	0.120		0.90	0.133		0.79	0.151	
190	1.46	0.082		1.22	0.098		1.04	0.115		0.94	0.128		0.83	0.145	
200	1.52	0.079		1.26	0.095		1.08	0.111		0.98	0.123		0.86	0.139	
210	1.56	0.077		1.30	0.092		1.11	0.108		1.01	0.119		0.90	0.134	
220	1.60	0.075	–[3)]	1.35	0.089	–[3)]	1.15	0.104	–[3)]	1.04	0.115	–[3)]	0.92	0.130	–[3)]
230	1.62	0.074		1.38	0.087		1.19	0.101		1.08	0.111		0.95	0.126	
240	1.67	0.072		1.41	0.085		1.22	0.098		1.11	0.108		0.98	0.122	
250	1.71	0.070		1.45	0.083		1.25	0.096		1.14	0.105		1.02	0.118	

Fire resistance class F 120

type	KXT 10			KXT 20			KXT 30			KXT 40			KXT 50		
H mm	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$
160	1.17	0.103		0.98	0.122		0.84	0.143		0.76	0.158		0.67	0.178	
170	1.21	0.099	17.6[1)2)]	1.03	0.117	17.6[1)2)]	0.88	0.137	17.6[1)2)]	0.80	0.150	12.7[1)2)]	0.71	0.170	12.7[1)2)]
180	1.25	0.096		1.06	0.113		0.92	0.131		0.83	0.144		0.74	0.162	
190	1.30	0.092		1.11	0.108		0.95	0.126		0.87	0.138		0.77	0.155	
200	1.35	0.089		1.14	0.105		0.99	0.121		0.90	0.133		0.81	0.149	
210	1.38	0.087		1.19	0.101		1.03	0.117		0.94	0.128		0.83	0.144	
220	1.43	0.084	–[3)]	1.22	0.098	–[3)]	1.06	0.113	–[3)]	0.97	0.124	–[3)]	0.86	0.139	–[3)]
230	1.46	0.082		1.25	0.096		1.09	0.110		1.00	0.120		0.90	0.134	
240	1.50	0.080		1.29	0.093		1.12	0.107		1.03	0.116		0.92	0.130	
250	1.54	0.078		1.32	0.091		1.15	0.104		1.06	0.113		0.95	0.126	

R_{eq}: Equivalent thermal resistance in $m^2 \cdot K/W$
λ_{eq}: Equivalent thermal conductivity in $W/(m \cdot K)$
$\Delta L_{n,v,w}$: Rated difference in impact sound level in dB

1) Following Measurements carried out by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. Test report nos. FEB/FS52-01/08 and FEB/FS52-02/08.
2) The difference in impact sound level depends on the cross-sectional area of rebar/reinforcement and the element height. The smaller the cross-sectional area of rebar/reinforcement and the smaller the slab height, the greater the difference in sound impact level. For Schöck Isokorb® types that were not tested, the measured values of the Schöck Isokorb®-type with greater cross-sectional area of rebar/reinforcement or greater slab thickness (on the safe side) is given.
3) There are no test results available in this case.

Schöck Isokorb® type KXT
Thermal characteristics

Fire resistance class F 0

type	KXT 60-V8			KXT 70-V8			KXT 80-V8			KXT 90-V8			KXT 100-V8		
H mm	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$
160	0.54	0.224		0.51	0.236		0.47	0.258		0.44	0.275		0.44	0.275	
170	0.56	0.213	12.6[1)2)]	0.54	0.224	12.6[1)2)]	0.49	0.245	11.8[1)2)]	0.46	0.261	11.8[1)2)]	0.46	0.261	
180	0.59	0.203		0.56	0.214		0.52	0.233		0.48	0.248		0.48	0.248	
190	0.62	0.194		0.59	0.204		0.54	0.223		0.51	0.237		0.51	0.237	
200	0.65	0.186		0.61	0.196		0.56	0.213		0.53	0.227		0.53	0.227	–[3)]
210	0.67	0.179		0.64	0.188		0.59	0.205		0.55	0.218		0.55	0.218	
220	0.70	0.172	–[3)]	0.66	0.181	–[3)]	0.61	0.197	–[3)]	0.57	0.209	–[3)]	0.57	0.209	
230	0.72	0.166		0.69	0.175		0.63	0.190		0.59	0.202		0.59	0.202	
240	0.75	0.161		0.71	0.169		0.66	0.183		0.62	0.195		0.62	0.195	
250	0.77	0.156		0.74	0.163		0.68	0.177		0.64	0.188		0.64	0.188	

Fire resistance class F 120

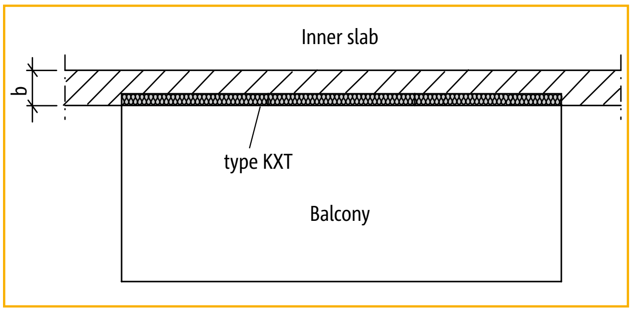
type	KXT 60-V8			KXT 70-V8			KXT 80-V8			KXT 90-V8			KXT 100-V8		
H mm	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$
160	0.51	0.236		0.48	0.249		0.44	0.270		0.42	0.287		0.41	0.295	
170	0.53	0.225	9.3[1)2)]	0.51	0.236	9.3[1)2)]	0.47	0.257		0.44	0.272		0.43	0.279	
180	0.56	0.214		0.53	0.225		0.49	0.244		0.46	0.259		0.45	0.266	
190	0.59	0.204		0.56	0.215		0.52	0.233		0.49	0.247		0.47	0.254	
200	0.61	0.196		0.58	0.206		0.54	0.223	–[3)]	0.51	0.237	–[3)]	0.49	0.243	–[3)]
210	0.64	0.188		0.61	0.198		0.56	0.214		0.53	0.227		0.52	0.233	
220	0.66	0.181	–[3)]	0.63	0.190	–[3)]	0.58	0.206		0.55	0.218		0.54	0.224	
230	0.69	0.175		0.66	0.183		0.61	0.198		0.57	0.210		0.56	0.215	
240	0.71	0.169		0.68	0.177		0.63	0.192		0.59	0.203		0.58	0.208	
250	0.73	0.164		0.70	0.171		0.65	0.185		0.61	0.196		0.60	0.201	

R_{eq}: Equivalent thermal resistance in $m^2 \cdot K/W$
λ_{eq}: Equivalent thermal conductivity in $W/(m \cdot K)$
$\Delta L_{n,v,w}$: Rated difference in impact sound level in dB

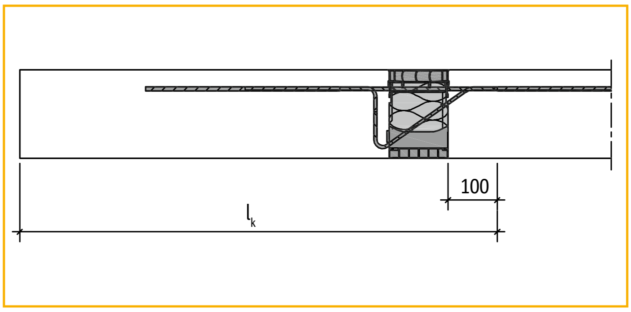
[1)] Following Measurements carried out by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. Test report nos. FEB/FS52-01/08 and FEB/FS52-02/08.
[2)] The difference in impact sound level depends on the cross-sectional area of rebar/reinforcement and the element height. The smaller the cross-sectional area of rebar/reinforcement and the smaller the slab height, the greater the difference in sound impact level. For Schöck Isokorb® types that were not tested, the measured values of the Schöck Isokorb®-type with greater cross-sectional area of rebar/reinforcement or greater slab thickness (on the safe side) is given.
[3)] There are no test results available in this case.

Schöck Isokorb® type KXT

Example calculation



Plan view



Cross-section

preset: Cantilever balcony

Geometry:	Length of projection	l_k	= 1.90 m
	Balcony slab thickness	H	= 180 mm
Load assumptions:	Balcony slab and coating	g	= 5.7 kN/m²
	Live load	q	= 4.0 kN/m²
	Edge load (balustrade)	g_R	= 1.5 kN/m
Exposure grade:	outside XC 4		
	inside XC 1		

Choice: Concrete grade C25/30 for balcony, C32/40 for inner slab
Concrete cover CV = 35 mm for Isokorb®-tensile bars[1)]

Member forces:

$m_{Ed} = -[(\gamma_G \times g + \gamma_q \times q) \times l_k^2/2 + \gamma_G \times g_R \times l_k)]$

$m_{Ed} = -[(1.35 \times 5.7 + 1.5 \times 4.0) \times 1.9^2/2 + 1.35 \times 1.5 \times 1.9)]$ $= -28.6$ kNm/m

$v_{Ed} = +(\gamma_G \times g + \gamma_q \times q) \times l_k + \gamma_G \times g_R$

$v_{Ed} = +(1.35 \times 5.7 + 1.5 \times 4.0) \times 1.9 + 1.35 \times 1.5$ $= +28.1$ kNm/m

Choice: Schöck Isokorb® type KXT 50-CV35-H180

m_{Rd} = −35.4 kNm/m

v_{Rd} = +35.3 kN/m

Notes

- In the case of a combination of different concrete qualities (e.g. balcony C32/40, inner slab C25/30), the weaker concrete is critical in terms of the Isokorb® calculations.
- The verification of the shear force in slabs has to be provided by the structural designer according to EC2 clause 6.9.
- Concrete strength class for outside components at least C32/40.
- For notes on FEM calculation see the section on FEM guidelines in Schöck Isokorb® Technical Information.

[1)] inc. reduction Δc by 5 mm according to DIN 1045-1, Sect. 6.3 (9), on account of suitable quality measures with Schöck Isokorb® production

Schöck Isokorb® type KXT
Deflection/Flexible slenderness

The deflection values shown in the Capacity tables below result solely from the deformation of the Schöck Isokorb® element under 100 % exploitation of the steel stress of fyd = 609 N/mm^2. The final precamber of the balcony slab formwork results from the calculation according to BS 8500, or according to EC 2, plus the precamber due to the Schöck Isokorb®.
The precamber of the balcony formwork to be specified by the engineer in charge. Note that deflection calculations, or precamber design respectively, should be taken inot account while designing the drainage of the balcony.

Deflection (p) due to Schöck Isokorb®

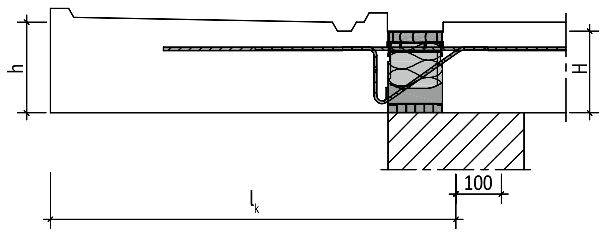
$p = [\tan\alpha \text{ Table value} \times lk \times (m_{pd}/m_{Rd})] \times 10$ [mm]

l_k Length of projection [m]

m_{pd} Critical bending moment for calculation of the deflection p due to Schöck Isokorb®. The load combination to be applied here can be determined by the structural analysis engineer.

m_{Rd} Maximum rated moment of the Schöck Isokorb® type KXT.

Member forces to be taken 100 mm off the slab edge.



Schöck Isokorb® type		Precamber factors tan α [%] for Isokorb height H [mm]									
		160	170	180	190	200	210	220	230	240	250
KXT 10 - KXT 50	CV35	1.1	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.5
	CV50	–	–	1.1	1.0	0.9	0.8	0.7	0.7	0.6	0.6
KXT 60 - KXT 100	CV35	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.7	0.6
	CV50	–	–	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7

Example calculation

Given: Balcony example

Choice: **Schöck Isokorb® type KXT 50-CV35-H180**

m_{Rd} = –35.4 kNm/m

v_{Rd} = +35.3 kN/m

tan α = 0.9 (table value)

Selected load combination for precamber: DL+LL/2 + q/2

m_{pd} determine at the limit state of load capacity

$m_{pd} = -[(\gamma_G \cdot g + \gamma_q \cdot q/2) \cdot l_k^2/2 + \gamma_G \cdot g_R \cdot l_k]$

$m_{pd} = -[(1.35 \cdot 5.7 + 1.5 \cdot 4/2) \cdot 1.9^2/2 + 1.35 \cdot 1.5 \cdot 1.9] = -23.2$ kNm/m

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

$p = [0.9 \cdot 1.9 \cdot (23.2/35.4)] \cdot 10 = 11$ mm

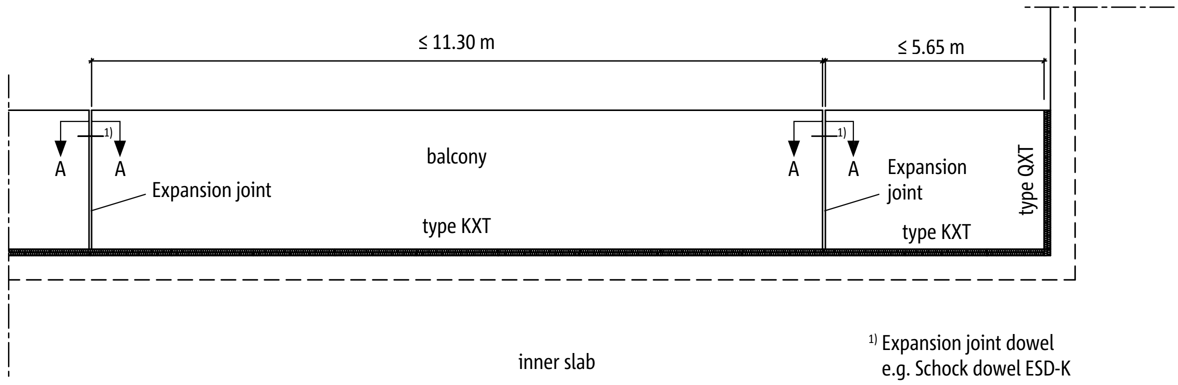
Flexible slenderness

For the limitation of flexible slenderness, we advise the following maximum cantilivered lengths max l_k [m]:

Concrete cover	Height of Schöck Isokorb® H [mm]				
	160	180	200	220	240
CV = 35 mm	1.65	1.90	2.10	2.40	2.60
CV = 50 mm	–	1.70	1.90	2.10	2.40

Schöck Isokorb® type KXT
Expansion joint/Example showing joint detail

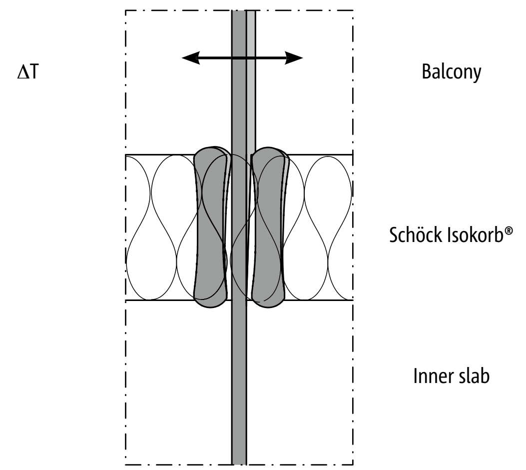
The gaps between the expansion joints must be restricted according to approval



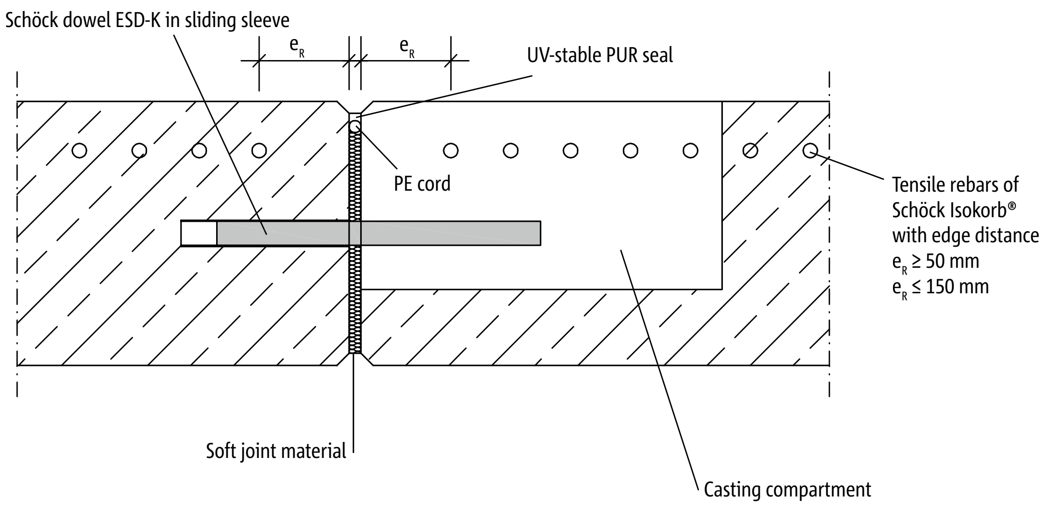
Plan view: Expansion joint spacing

If the length of the component exceeds 11.30 m, the outer concrete components must have expansion joints fitted at right angles to the insulating plane in order to restrict strain caused by changes in temperature.

In the case of balcony slabs supported on two sides (e.g. inner corner balcony), half the maximum expansion joint gap applies, i.e. 5.65 m.

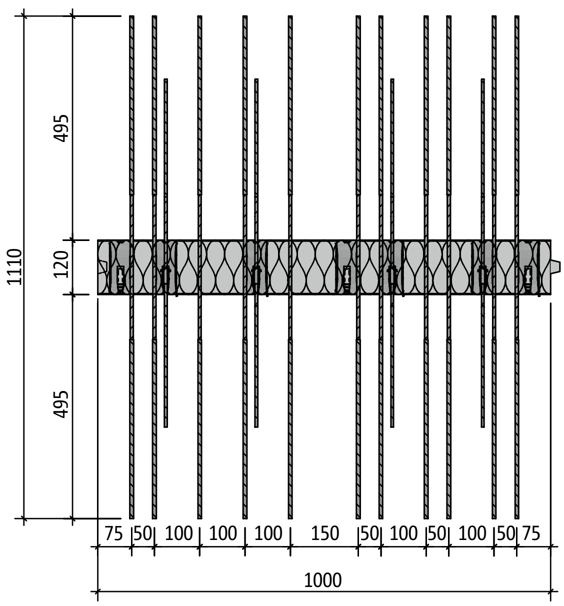


Deflection due to temperature difference

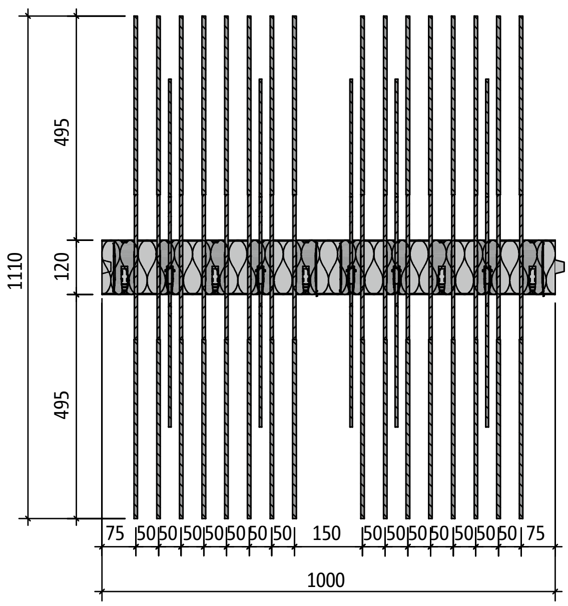


Section A-A Example showing joint detail

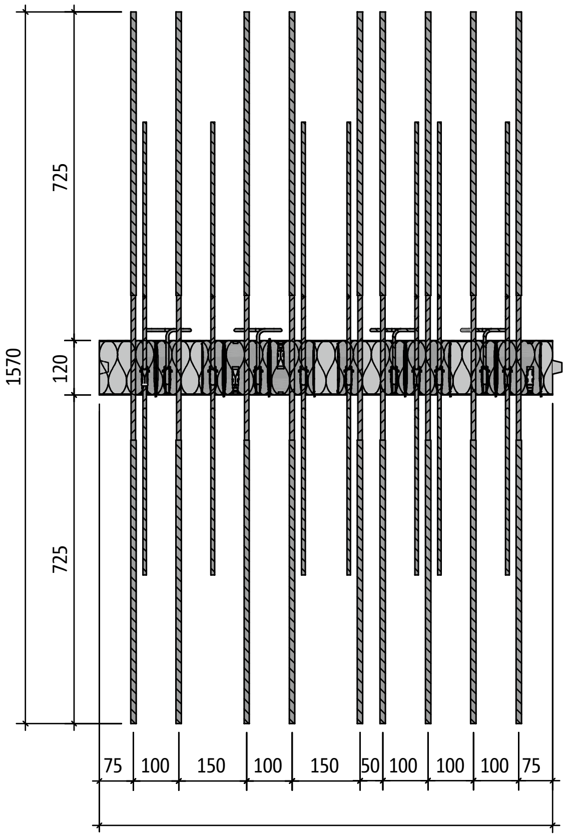
Schöck Isokorb® type KXT
Plan views



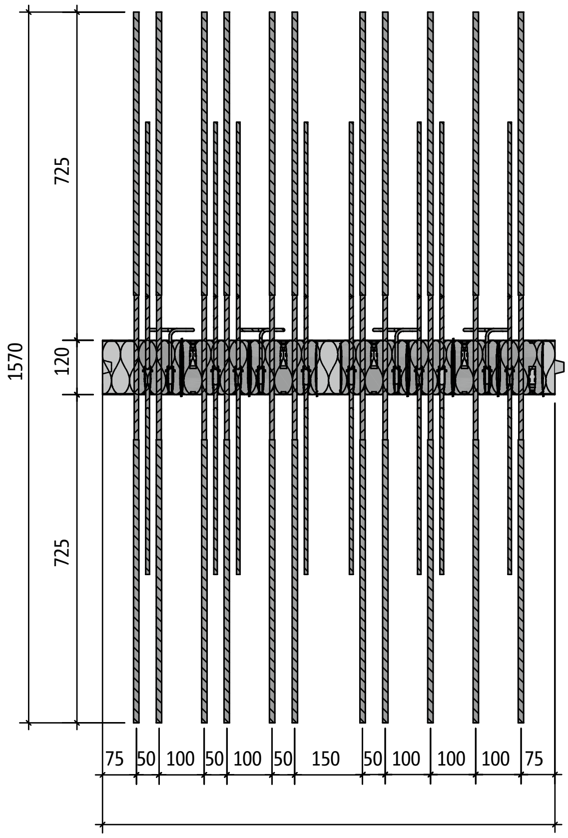
Plan view of Schöck Isokorb® type KXT 30-CV35[1)]



Plan view of Schöck Isokorb® type KXT 50-CV35[1)]



Plan view of Schöck Isokorb® type KXT 60-CV35-V8[1)]



Plan view of Schöck Isokorb® type KXT 80-CV35-V8[1)]

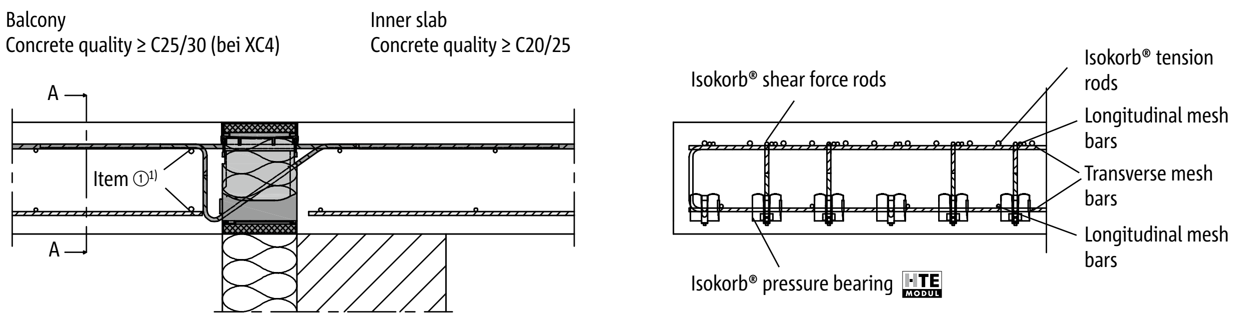
[1)] Download further plan views and cross-sections from www.schoeck.de

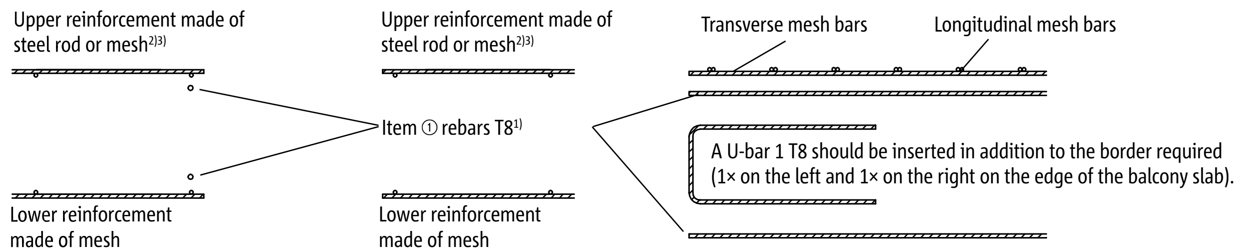
Schöck Isokorb® type KXT

Lap splice design

Direct mounting

Cross-section | **Section A-A**





[1)] 1 steel bar ≥ ⌀ 8 mm is required on the balcony side at both top and bottom, in the case of indirect mounting also on the slab side (see page 29).

[2)] The dimensioning of the upper reinforcement layer is carried out according to the usual calculating methods for reinforced concrete construction (e.g. k_d-method).

On-site reinforcement with direct mounting of the slab border

Recommendations for lap splice design

Option A: Connections with reinforcing steel mesh to BS 4483
Option B: Connections with steel rod to BS 4449
Option C: Combined reinforcement of connections with reinforcing steel mesh to BS 4483 and steel rod to BS 4449.
The transverse reinforcement of the chosen reinforcing steel mesh covers 1/5 of the longitudinal reinforcement.

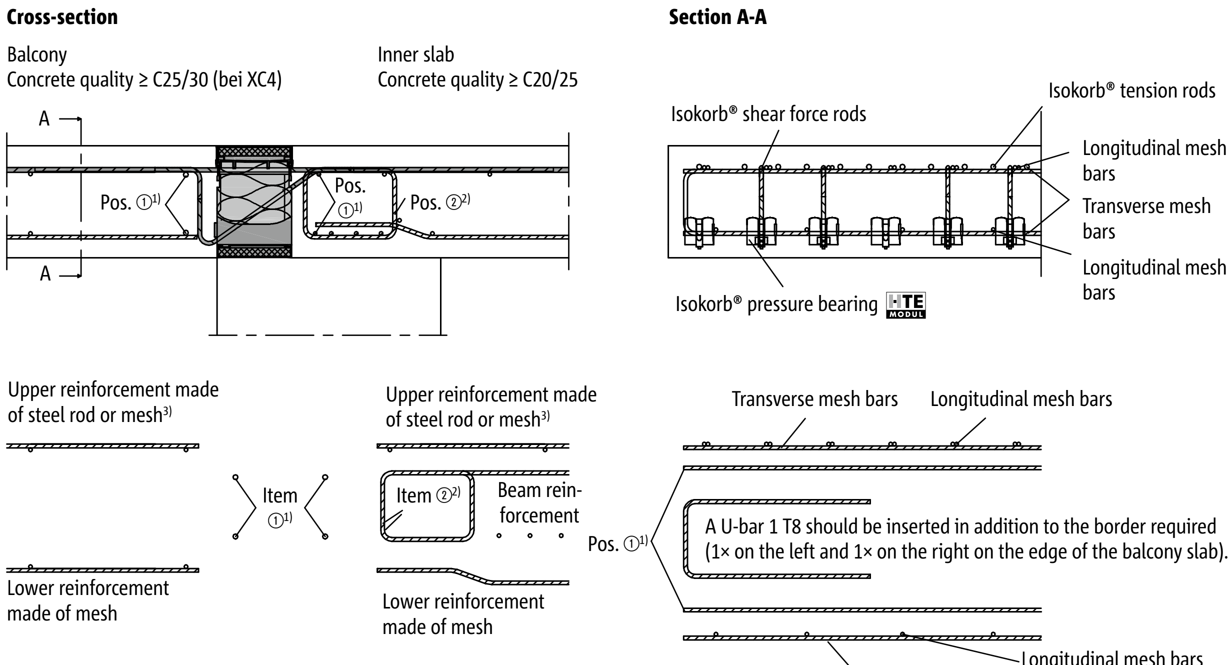
Recommendations for the reinforcement of connections with Schöck Isokorb® at a load of 100 % of the maximum rated moment with C25/30, CV = 35 mm or CV = 50 mm.

Schöck Isokorb® type	Reinforcement options for design of tension laps[3)]		
	Option A	Option B	Option C
KXT 10	A193	T8@150 mm c/c	–
KXT 20	B385	T10@150 mm c/c	A193 + T8@150 mm c/c
KXT 30	B503	T10@125 mm c/c	A193 + T8@125 mm c/c
KXT 40	B785	T10@100 mm c/c	A193 + T8@100 mm c/c
KXT 50	B785	T10@90 mm c/c	A193 + T10@100 mm c/c
KXT 60-V8	–	T12@110 mm c/c	A252 + T10@90 mm c/c
KXT 70-V8	–	T12@100 mm c/c	A252 + T10@90 mm c/c
KXT 80-V8	–	T12@90 mm c/c	A252 + T12@100 mm c/c
KXT 90-V8	–	T12@80 mm c/c	A252 + T12@100 mm c/c
KXT 100-V8	–	T12@75 mm c/c	A385 + T12@100 mm c/c

[3)] Alternative tension laps are also possible. The rules according to EC 2 apply to the determination of the lap length. It is permissible to reduce the required lap length with $A_{s,req}/A_{s/prov}$. For lapping (ls) with the Schöck Isokorb®, a tension rod length of 465 mm can be used in the calculations for the types KXT10 to KXT50 and a tension rod length of 695 mm for the types KXT60 to KXT100.

Schöck Isokorb® type KXT
Lap splice design

Indirect mounting



[1] 1 steel bar ⌀ ≥ 8 mm is required at the top and bottom on the balcony and slab side respectively.
[2] Stirrup pos. ② as edge reinforcement and reinforcement against splitting required at least according to table (see below).
[3] The dimensioning of the upper reinforcement layer is carried out according to the usual calculating methods for reinforced concrete construction (e.g. k_d-method).

On-site reinforcement with indirect mounting of the slab border

Recommendations for lap splice design

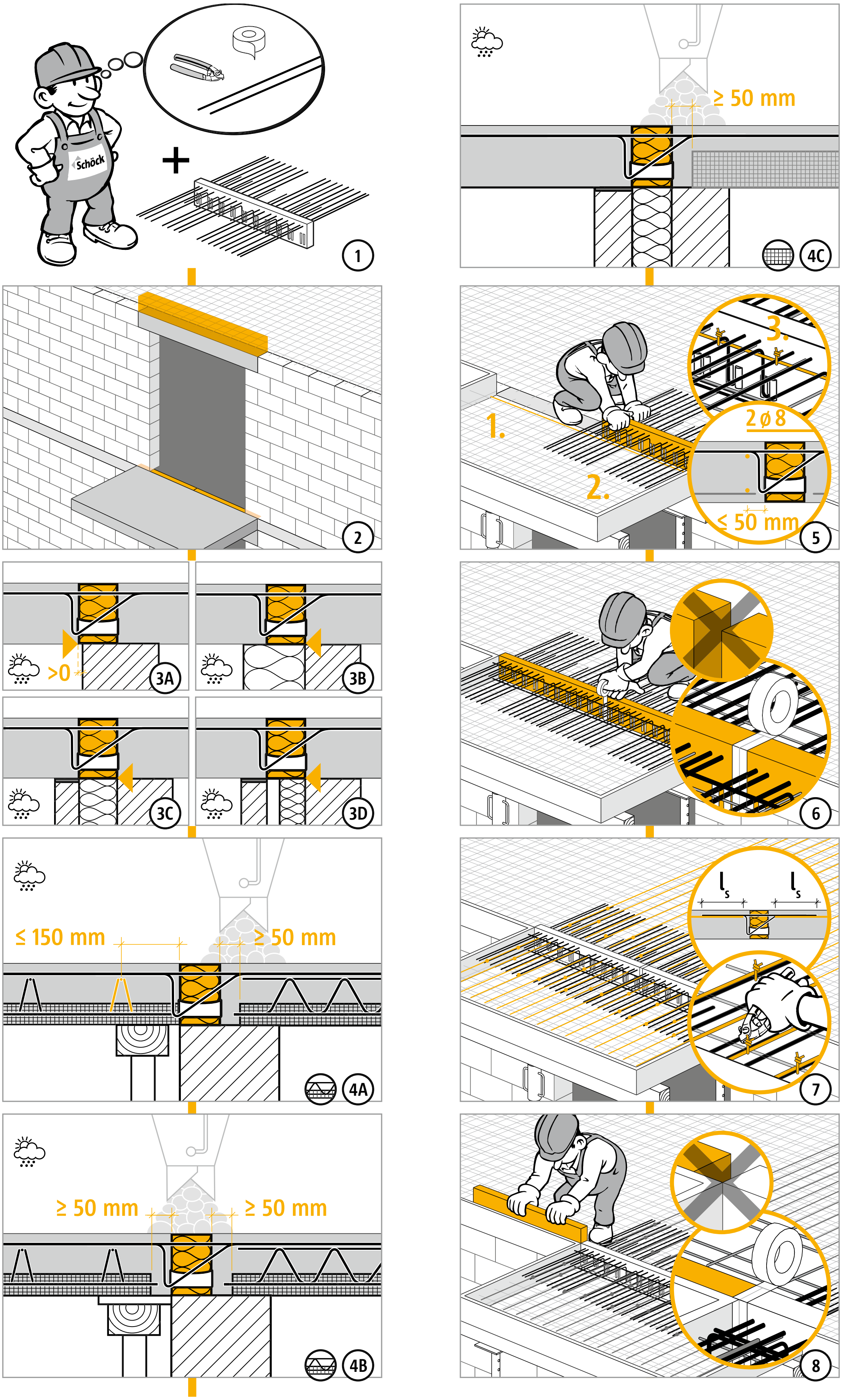
Option A: Connections with reinforcing steel mesh to BS 4483
Option B: Connections with steel rod to BS 4449
Option C: Combined reinforcement of connections with reinforcing steel mesh to BS 4483 and steel rod to BS 4449. The transverse reinforcement of the chosen reinforcing steel mesh covers 1/5 of the longitudinal reinforcement

Recommendations for the reinforcement of connections with Schöck Isokorb® at a load of 100 % of the maximum rated moment with C25/30, CV = 35 mm or CV = 50 mm.

Schöck Isokorb® type	Required hanger-reinforcement (Item. 2) [mm²/m]									
	Height of Schöck Isokorb®									
	160	170	180	190	200	210	220	230	240	250
KXT 10	113									
KXT 20	113									
KXT 30	113									
KXT 40	115									
KXT 50	143									
KXT 60-V8	329									
KXT 70-V8	350								358	365
KXT 80-V8	299	316	331	344	356	367	377	386	394	402
KXT 90-V8	325	344	360	375	388	400	410	420	429	438
KXT 100-V8	352	372	389	405	419	432	444	455	464	474

Schöck Isokorb® type KXT

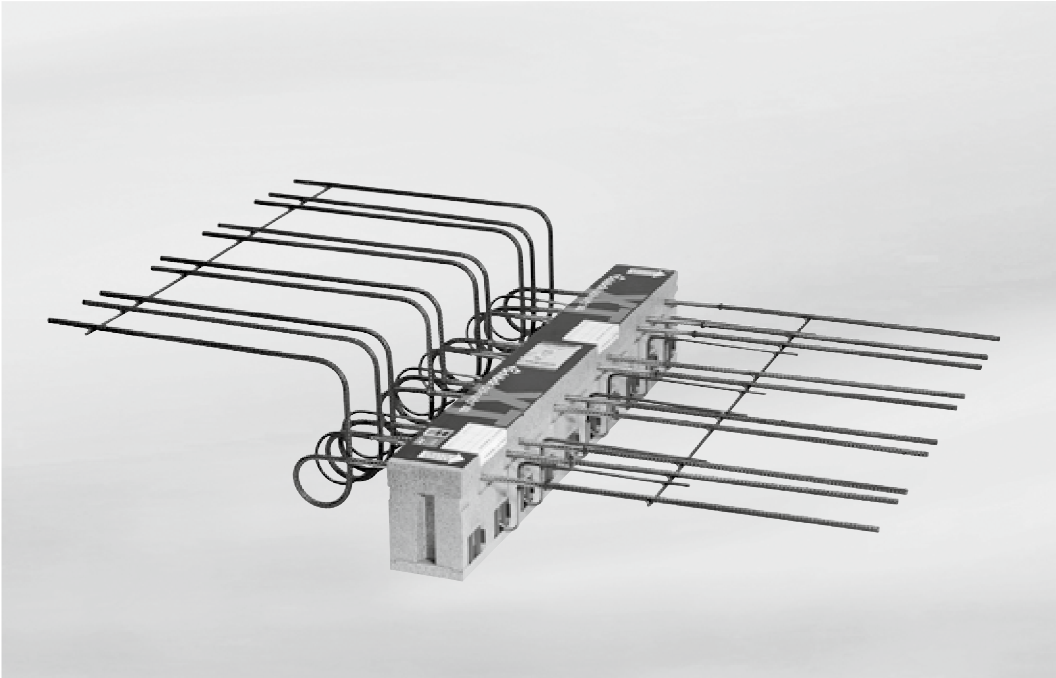
Method statement



Schöck Isokorb® type KXT
Check list

- ☐ Have the member forces on the Isokorb® connection been determined at the design level?
- ☐ Was the cantilevered system length used in the process?
- ☐ Has the relevant bearing limit of the slab been checked for Shear forces according to EC2 clause 6.9..?
- ☐ Have the maximum permitted distances between expansion joints (= expansion joint spacing) been taken into account?
- ☐ Do the calculations of the deformation of the overall structure take into account the additional deformation due to the Schöck Isokorb®?
- ☐ Has the drainage direction been taken into account in the resulting precamber specification for the balcony formwork?
- ☐ Has the site concrete strip (width at least 50 mm from pressure bearing elements) necessary on account of the pressure joint for type KXT and type KFXT been included in the construction drawings in connection with element slabs?
- ☐ Have the recommendations for restricting flexible slenderness been taken into account?
- ☐ Has the required lap splice reinforcement been designed for balcony side and for inner slab side?
- ☐ In the case of F90 elements, has the increased minimum slab thickness been taken into account (type Q, type V)?

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



Schöck Isokorb® type KXT-HV

Contents **Page**

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

Product variants/Designations

Basic type:

Moment load ranges KXT 20, KXT 30, KXT 50 and KXT 60
Concrete cover of Isokorb tension rods CV = 35 mm

Height of Isokorb 160 mm to 220 mm (in steps of 10 mm)
Height of Isokorb 230 mm to 250 mm on request

Variants:

connection geometry

e.g. KXT30-**HV10**-CV35...	= Vertical offset by 100 mm downwards
e.g. KXT30-**HV15**-CV35...	= Vertical offset by 150 mm downwards
e.g. KXT30-**HV20**-CV35...	= Vertical offset by 200 mm downwards
e.g. KXT30-**BH10**-CV35...	= Vertical offset by 100 mm upwards
e.g. KXT30-**BH15**-CV35...	= Vertical offset by 150 mm upwards
e.g. KXT30-**BH20**-CV35...	= Vertical offset by 200 mm upwards
e.g. KXT30-**WO**-CV35...	= Connection on one wall upwards
e.g. KXT30-**WU**-CV35...	= Connection on one wall downwards

Concrete cover

e.g. KXT30-WO-**CV35**...	= Installation dimension for tension rods CV = 35 mm
e.g. KXT30-WO-**CV50**...	= Installation dimension for tension rods CV = 50 mm (2nd layer) possible from H = 180 mm

Shear force load range

e.g. KXT60-WU-CV35-**V8**...	= Increased shear force absorption only available for KXT60-...

Fire protection

e.g. KXT60-WO-CV35...-**REI120**	= Fire resistance class F 90

Designation in planning documents

(static calculations, tender, construction drawings, order)

e.g.: KXT 50-HV15-CV35-H180

- Type/load range
- Connection geometry
- Concrete cover
- Height of Isokorb

with 2nd layer and fire protection KXT 50-HV15-CV50-H180-REI120

- Type/load range
- Connection geometry
- Concrete cover
- Height of Isokorb
- Fire protection

Special constructions - bending reinforcing steels

Some connection situations cannot be implemented using the standard product variants shown in this brochure. In this case, a request for special constructions can be made to our application engineers. This also applies to additional requirements on account of pre-fabricated design (restriction through production-related general conditions or transport width) which may be able to be met using screw-socket rods.

Schöck Isokorb® type KXT-HV

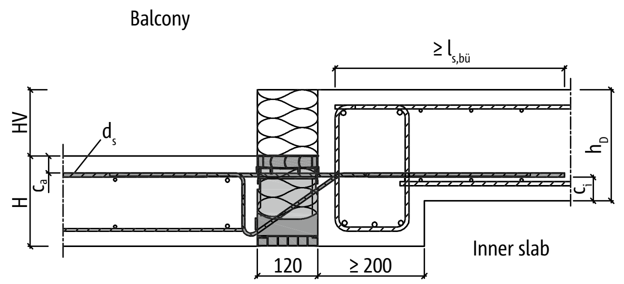
Connection to a step down balcony

Standard element Schöck Isokorb® type KXT-CV35

Condition: $HV \leq h_D - c_a - d_s - c_i$

with:	HV	= vertical offset
	h_D	= inner slab thickness
	c_a	= external concrete cover
	d_s	= diameter of Isokorb tension rod
	c_i	= internal concrete cover
	H	= height of Isokorb
	$l_{s,bü}$	= hoop lap length

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



If precast planks are installed on the inner slab side then the precast plank thickness + d_s should be used for c_i.

Schöck Isokorb® type KXT-CV35 (standard element)

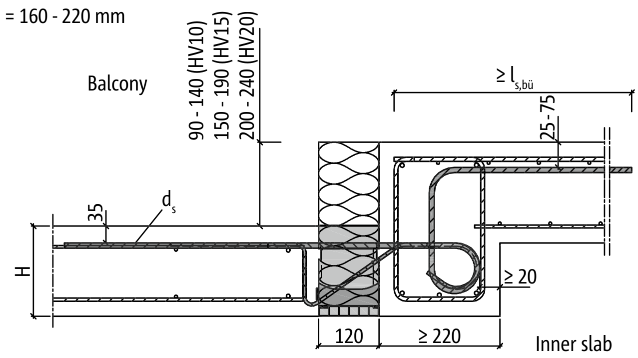
- Link reinforcement required for deflection of the tensile force (upper leg length $l_{s,bü}$). Calculation of the link reinforcement for cantilever moment and shear force of the balcony slab and the Inner slab (in the case of indirect mounting).
- Recommendation: Inner slab joist width ≥ 200 mm
- Lap splice design on the balcony side to be implemented in accordance with page 22.
- See page 19 information about deflection.
- See pages 14-15 for the capacity table.

Downstand element Schöck Isokorb® type KXT-HV-CV35

If the condition $HV \leq h_D - c_a - d_s - c_i$ is not met, the connection can be carried out using the

Schöck Isokorb® types **KXT-HV10-CV35 for vertical offset of 90 mm to 140 mm**
KXT-HV15-CV35 for vertical offset of 150 mm to 190 mm
KXT-HV20-CV35 for vertical offset of 200 mm to 240 mm

Downstand beam width at least 220 mm



Schöck Isokorb® type KXT-HV-CV35

- Calculation of the link reinforcement for cantilever moment and shear force of the balcony slab and the Inner slab (in the case of indirect mounting).
- The lengths of the Schöck Isokorb® tension rods correspond to the required lap length ls (acc. to DIN 1045-1).
- Reinforcement of the connections to comply with pages 22 and 36.
- The required transverse reinforcement in the overlapping area is to be verified in accordance with DIN 1045-1, 12.6.3.

Schöck Isokorb® type KXT-BH

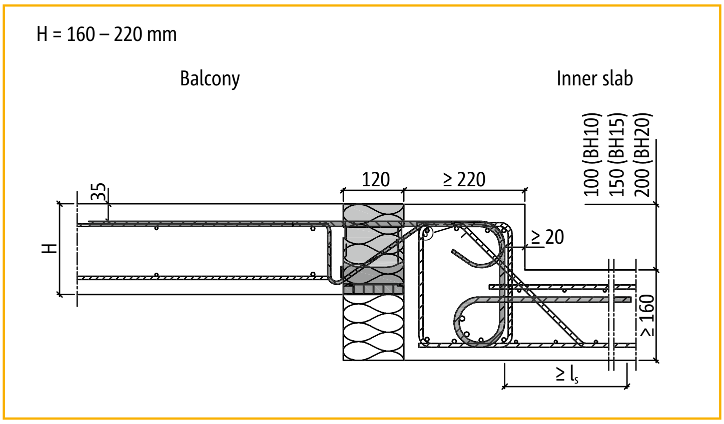
Connection to a step up balcony/Notes

Upstand element Schöck Isokorb® type KXT-BV-CV35

Schöck Isokorb® variants

KXT-BH10-CV35 for vertical offset of 100 mm
KXT-BH15-CV35 for vertical offset of 150 mm
KXT-BH20-CV35 for vertical offset of 200 mm

Upstand beam width at least 220 mm



Schöck Isokorb® type KXT-BH-CV35

- Calculation of the hoop reinforcement for cantilever moment and shear force of the balcony slab and the inner slab (in the case of indirect mounting).
- The lengths of the Schöck Isokorb® tension rods correspond to the required lap length l_s (acc. to DIN 1045-1).
- Reinforcement of the connections to comply with pages 22 and 36.
- The required transverse reinforcement in the overlapping area is to be verified in accordance with DIN 1045-1, 12.6.3.
- Non-structural inclined reinforcement A_{ss} (Pos. ③), e.g. ø 10 every 200 mm, see page 36.
- See page 19 for information about deflection

Notes

- In the case of component geometries according to pages 29-31, it may be necessary to install the Schöck Isokorb® prior to installation of the inner slab joist reinforcement or the suspended beam reinforcement.

- Where different concrete grades are used (e.g. balcony C25/30, inner slab C20/25), the lower grade is always decisive for the Isokorb calculation.

- The shear force load of the slabs near the expansion joint must be limited to 0.3 • $V_{Rd, max,}$ whereby $V_{Rd, max}$ must be determined in accordance with
DIN 1045-1, Gl. (76) for $\theta = 45°$ and $\alpha = 90°$.

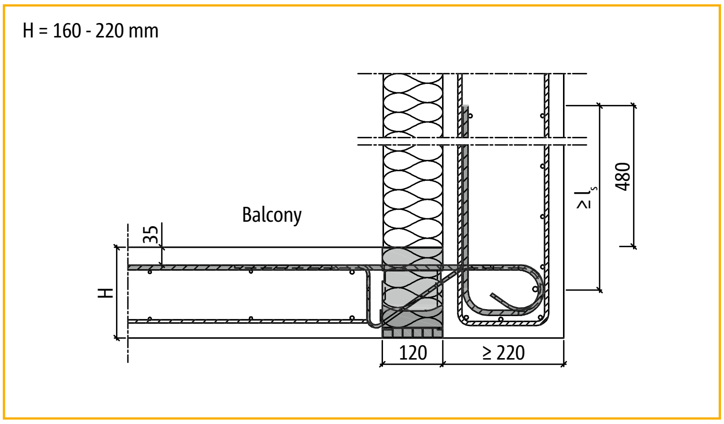
For the limitation of flexible slenderness, we advise the following maximum cantilivered lengths max lk [m]:

Concrete cover of the tension rods	max l_k [m] with height of Isokorb H [mm]				
	160	180	200	220	240
CV = 35 mm	1.65	1.90	2.10	2.40	2.60
CV = 50 mm	–	1.70	1.90	2.10	2.40

Schöck Isokorb® type KXT-WO, KXT-WU
Connection to reinforced concrete walls

Wall connection with Schöck Isokorb® type KXT-WO-CV35 (rebars bent upwards)

Wall thickness at least 220 mm

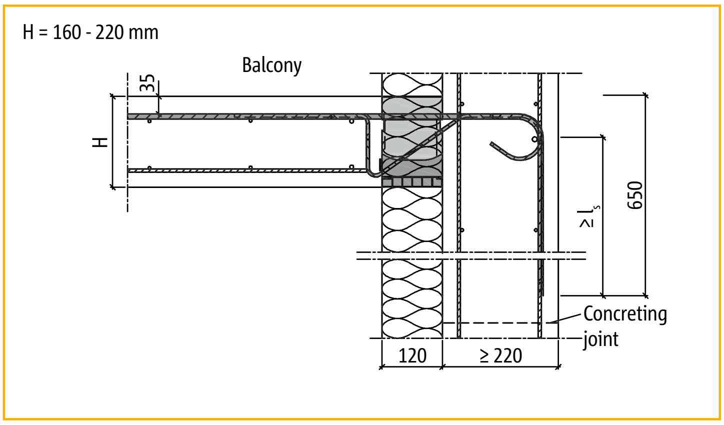


Schöck Isokorb® type KXT-WO-CV35

- The lengths of the Schöck Isokorb® tension rods correspond to the required lap length l_s (acc. to DIN 1045-1).
- Lap splice design to comply with pages 22 and 36.
- The required transverse reinforcement in the overlapping area is to be verified in accordance with DIN 1045-1, 12.6.3.
- Elements for wall thicknesses < 220 mm on request.
- See page 32 for the capacity table.

Wall connection with Schöck Isokorb® type KXT-WU-CV35 (rebars bent downwards)

Wall thickness at least 220 mm



Schöck Isokorb® type KXT-WU-CV35

- The lengths of the Schöck Isokorb® tension rods correspond to the required lap length l_s (acc. to DIN 1045-1).
- Reinforcement of the connections to comply with pages 22 and 37.
- The required transverse reinforcement in the overlapping area is to be verified in accordance with DIN 1045-1, 12.6.3.
- Elements for wall thicknesses < 220 mm on request.

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

Capacity table for C25/30

KXT-HV
KXT-BH
KXT-WO
KXT-WU

Reinforced concrete-to-reinforced concrete

Schöck Isokorb® type			KXT20-HV10/15/20 KXT20-BH10/15/20 KXT20-WO KXT20-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	KXT60-HV10/15/20 KXT60-BH10/15/20 KXT60-WO KXT60-WU
Design values for	Concrete cover CV [mm]		Concrete strength ≥ C25/30			
	CV35	CV50	Rated moment m_{Rd} [kNm/m]			
Height of Isokorb® H [mm]	160		−14.0	−19.6	−28.0	−36.4
		180	−14.9	−20.8	−29.7	−38.6
	170		−15.7	−22.0	−31.4	−40.8
		190	−16.6	−23.2	−33.1	−43.1
	180		−17.4	−24.4	−34.8	−45.3
		200	−18.3	−25.6	−36.5	−47.5
	190		−19.1	−26.8	−38.3	−49.7
		210	−20.0	−28.0	−40.0	−51.9
	200		−20.8	−29.2	−41.7	−54.2
		220	−21.7	−30.4	−43.4	−56.4
	210		−22.5	−31.6	−45.1	−58.6
	220		−24.2	−33.9	−48.5	−63.0
Lateral force level			Design shear force v_{Rd} [kN/m]			
	V6 (standard equipment)		+28.2	+42.3	+42.3	+56.8
	V8		–	–	–	+66.3

Product description	Element length [m]	1.00	1.00	1.00	1.00
	Tension rods	5 ø 10	7 ø 10	10 ø 10	13 ø 10
	Shear force rod (V6)	4 ø 6	6 ø 6	6 ø 6	6 ø 8
	Shear force rod (V8)	–	–	–	7 ø 8
	Pressure bearings	5	7	10	16
	Special hoops (qty)	–	–	–	4

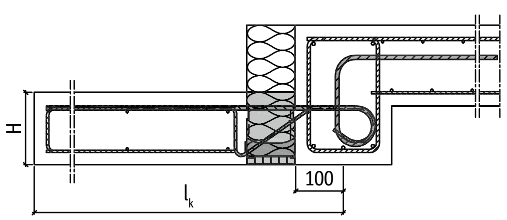
Limitation of the shear force load capacity near the expansion joint:

The verification of the shear force in slabs has to be provided by the structural designer according to EC2 clause 6.9..

Designations used in planning documents: e.g. **KXT50-WO-CV35-H180-REI120**

Type-Connection geometry-Concrete cover-Height of Isokorb-Fire protection

Member forces to be taken 100 mm off the slab edge.



Schöck Isokorb® type KXT-HV
Thermal characteristics

Fire resistance class F 0

Type	KXT 20-HV			KXT 30-HV			KXT 50-HV			KXT 60-HV			KXT 60-HV-V8		
H mm	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$
160	1.14	0.106		0.89	0.135		0.70	0.172		0.49	0.246		0.48	0.251	
170	1.18	0.101	12.6[1,2]	0.93	0.129	12.6[1,2]	0.73	0.164	12.6[1,2]	0.51	0.234	11.8[1,2]	0.50	0.238	11.8[1,2]
180	1.23	0.098		0.97	0.124		0.77	0.157		0.54	0.223		0.53	0.227	
190	1.27	0.094		1.01	0.119		0.80	0.150		0.56	0.213		0.55	0.217	
200	1.31	0.091		1.04	0.115		0.83	0.144		0.59	0.204		0.58	0.207	
210	1.35	0.089		1.08	0.111		0.86	0.139		0.61	0.196		0.60	0.199	
220	1.39	0.086	–[3]	1.11	0.108	–[3]	0.89	0.134	–[3]	0.64	0.188	–[3]	0.63	0.192	–[3]
230	1.43	0.084		1.15	0.104		0.92	0.130		0.66	0.182		0.65	0.185	
240	1.47	0.082		1.18	0.102		0.95	0.126		0.68	0.175		0.67	0.179	
250	1.50	0.080		1.21	0.099		0.98	0.122		0.71	0.170		0.69	0.173	

All values also apply for the respective types KXT-BH, KXT-WO, KXT-WU

Fire resistance class F 90

Type	KXT 20-HV			KXT 30-HV			KXT 50-HV			KXT 60-HV			KXT 60-HV-V8		
H mm	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$	R_{eq}	$\lambda_{eq,1dim}$	$\Delta L_{n,v,w}$
160	0.95	0.126		0.77	0.156		0.62	0.192		0.45	0.267		0.44	0.271	
170	0.99	0.121	9.3[1,2]	0.81	0.149	9.3[1,2]	0.66	0.183	9.3[1,2]	0.47	0.253	–[3]	0.47	0.257	–[3]
180	1.04	0.116		0.84	0.142		0.69	0.175		0.50	0.241		0.49	0.245	
190	1.08	0.112		0.88	0.137		0.72	0.167		0.52	0.230		0.51	0.234	
200	1.11	0.108		0.91	0.131		0.75	0.161		0.55	0.220		0.54	0.224	
210	1.15	0.104		0.95	0.127		0.78	0.155		0.57	0.211		0.56	0.215	
220	1.19	0.101	–[3]	0.98	0.123	–[3]	0.80	0.149	–[3]	0.59	0.203	–[3]	0.58	0.207	–[3]
230	1.22	0.098		1.01	0.119		0.83	0.144		0.61	0.196		0.60	0.199	
240	1.26	0.095		1.04	0.115		0.86	0.140		0.63	0.189		0.63	0.192	
250	1.29	0.093		1.07	0.112		0.89	0.135		0.66	0.183		0.65	0.186	

All values also apply for the respective types KXT-BH, KXT-WO, KXT-WU

R_{eq}: Equivalent thermal resistance in $m^2 \cdot K/W$
λ_{eq}: Equivalent thermal conductivity in $W/(m \cdot K)$
$\Delta L_{n,v,w}$: Rated difference in impact sound level in dB

[1] Following measurements carried out by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. Test report nos. FEB/FS52-01/08 and FEB/FS52-02/08.
[2] The difference in impact sound level depends on the cross-sectional area of rebar/reinforcement and the element height. The smaller the cross-sectional area of rebar/reinforcement and the smaller the slab height, the greater the difference in sound impact level. For Schöck Isokorb® types that were not tested, the measured values of the Schöck Isokorb®-type with greater cross-sectional area of rebar/reinforcement or greater slab thickness (on the safe side) is given.
[3] There are no test results available in this case.

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

Deflection/Example calculation

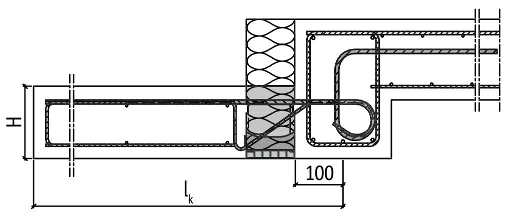
pre-camber

The precamber values indicated in the table (tan α) result solely from the deformation of the Schöck Isokorb® in the serviceability limit state (under the quasi permanent effect combination g = 2/3 · p, q = 1/3 · p, ψ_2 = 0.3). They are used to estimate the additional precamber. The calculated precamber of the balcony formwork results from the calculation in accordance with DIN 1045-1 plus the precamber resulting from Schöck Isokorb®. The precamber of the balcony formwork to be specified by the structural engineer/ designer in the construction drawings (basis: calculated overall deformation from cantilevered slab + slab rotation angle + Schöck Isokorb®) should be rounded in such a way that the planned drainage direction can be met (rounded up: when draining towards the building façade, rounded down: when draining towards the end of the cantilevered slab).

Precamber (ü) resulting from Schöck Isokorb®

$$ü = [\tan\alpha \cdot l_k \cdot (m_{üd}/m_{Rd})] \cdot 10 \text{ [mm]}$$

Member forces to be taken 100 mm off the slab edge.



- tan α — Table value from Capacity tables, has already been determined in the limit state of serviceability. [%]
- l_k — Cantilevered length [m]
- $m_{üd}$ — Decisive bending moment for determining the precamber ü resulting from Schöck Isokorb® [kNm/m]. The load combination to be used can be chosen by the structural designer.
- m_{Rd} — Maximum rated moment of the Schöck Isokorb® type KXT-HV.

Schöck Isokorb® type		Precamber factors tan α [%] for Isokorb height H [mm]						
		160	170	180	190	200	210	220
KXT-HV, -BH, -WO, -WU	CV35	1.1	1.0	0.9	0.8	0.8	0.7	0.7
KXT-HV, -BH, -WO, -WU	CV50	–	–	1.1	1.0	0.9	0.8	0.8

In order to ensure serviceability, the maximum cantilevered lengths max. l_k in accordance with the table on page 26 should not be exceeded.

Example calculation

Chosen: Concrete grade balcony slab: C25/30 (from exposure grade XC4)
Concrete grade inner slab: C20/25 (acc. to approval)
Concrete cover CV = 35 mm (installation dimension for Isokorb® tension rods)

Cantilever length		l_k	= 1.90 m
Balcony slab thickness		h	= 180 mm
Load assumptions	Balcony slab and coating	g	= 5.7 kN/m²
	Live load	q	= 4.0 kN/m²
	Edge load (balustrade)	g_R	= 1.5 kN/m

Internal forces

$m_{Ed} = -[(\gamma_G \cdot g + \gamma_Q \cdot q) \cdot l_k^2/2 + \gamma_G \cdot g_R \cdot l_k]$
$m_{Ed} = -[(1.35 \cdot 5.7 + 1.5 \cdot 4.0) \cdot 1.9^2/2 + 1.35 \cdot 1.5 \cdot 1.9]$
$= -28.6$ kNm/m

$v_{Ed} = (\gamma_G \cdot g + \gamma_Q \cdot q) \cdot l_k + \gamma_G \cdot g_R$
$v_{Ed} = (1.35 \cdot 5.7 + 1.5 \cdot 4.0) \cdot 1.9 + 1.35 \cdot 1.5$
$= +28.1$ kN/m

Chosen: Schöck Isokorb® type KXT50-HV10-CV35-H180

m_{Rd}	= –29.7 kNm/m	(see page 48) > m_d
v_{Rd}	= +36.0 kN/m	(see page 48) > v_d
tan α	= 0.9	(see above)

Load combination chosen for precamber resulting from Schöck Isokorb®: g + q/2

$m_{üd}$ define at the limit state of load capacity
$m_{üd} = -[(\gamma_G \cdot g + \gamma_Q \cdot q/2) \cdot l_k^2/2 + \gamma_G \cdot g_R \cdot l_k]$
$m_{üd} = -[(1.35 \cdot 5.7 + 1.5 \cdot 4.0/2) \cdot 1.9^2/2 + 1.35 \cdot 1.5 \cdot 1.9]$
$= -23.2$ kNm/m

$$ü = [\tan\alpha \cdot l_k \cdot (m_{üd}/m_{Rd})] \cdot 10$$

$ü = [0.9 \cdot 1.9 \cdot (-23.2/-29.7)] \cdot 10 = 13$ mm

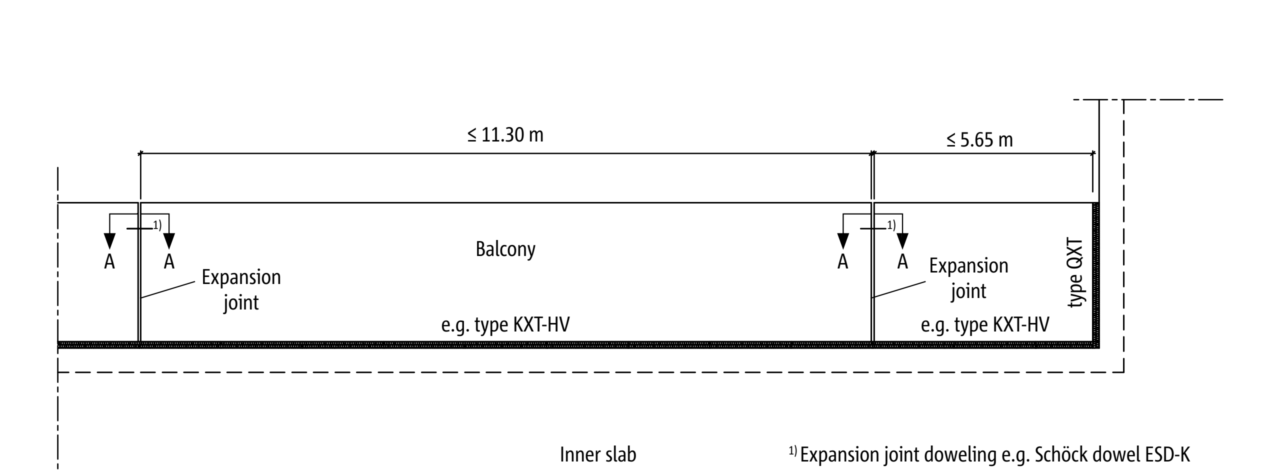
Schöck Isokorb® type KXT-HV, KXT-BH, KXT-WO, KXT-WU

Expansion joint spacing/example showing joint detail

KXT-HV
KXT-BH
KXT-WO
KXT-WU

Reinforced concrete-to-reinforced concrete

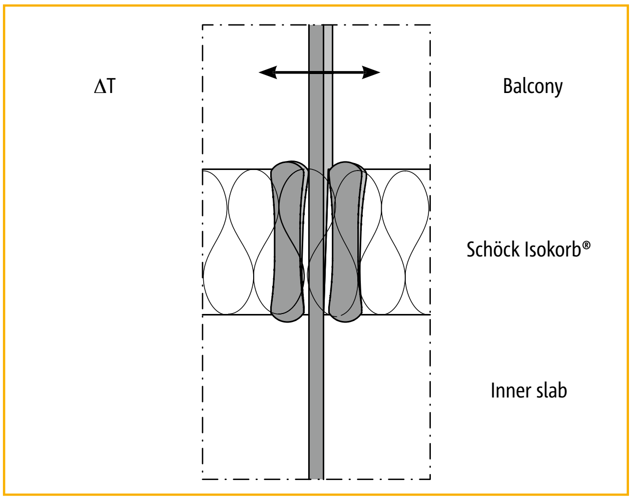
The gaps between the expansion joints must be restricted according to approval



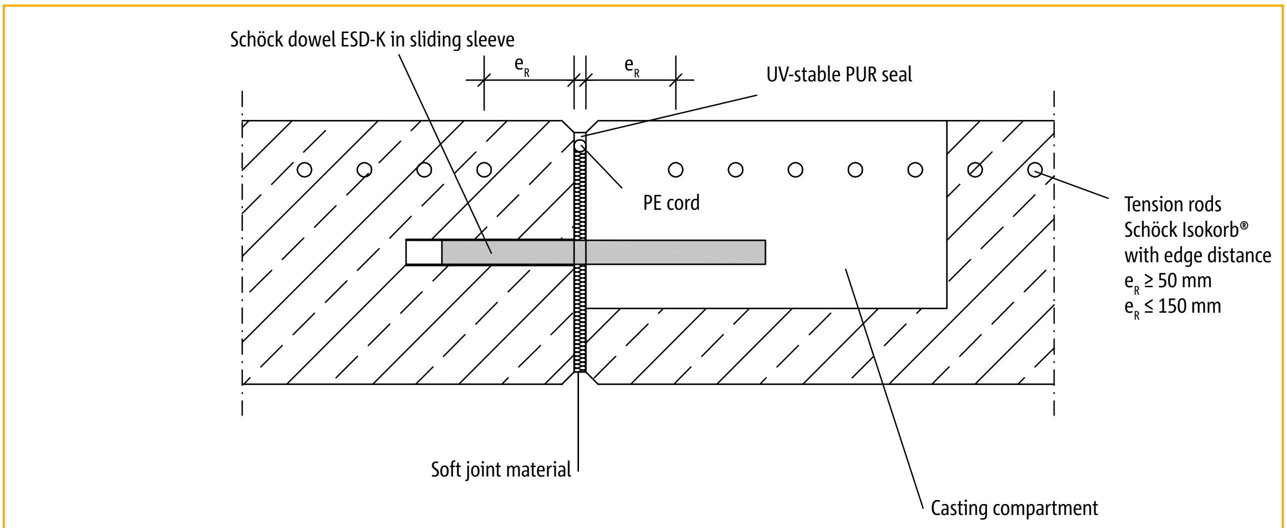
Plan view: Maximum expansion joint spacing

If the length of the component exceeds 11.30 m, the outer concrete components must have expansion joints fitted at right angles to the insulating plane in order to restrict strain caused by changes in temperature.

In the case of balcony slabs supported on two sides (e.g. inner corner balcony), half the maximum expansion joint gap applies, i.e. 5.65 m.



Top view: Deflection as a result of change in temperature

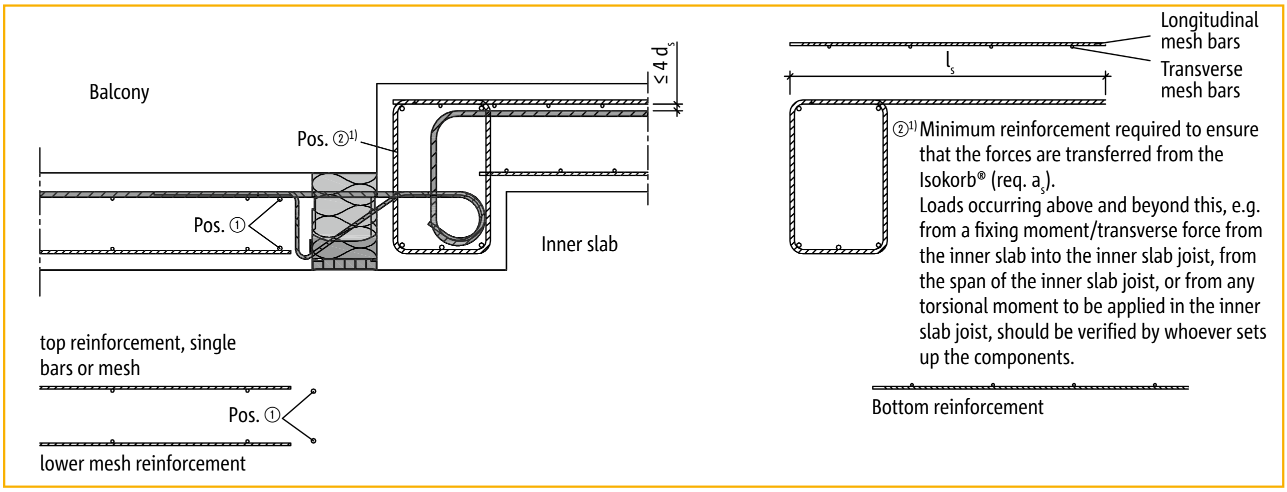


Section A-A: Example showing expansion joint detail

Schöck Isokorb® type KXT-HV, KXT-BH

Lap splice design

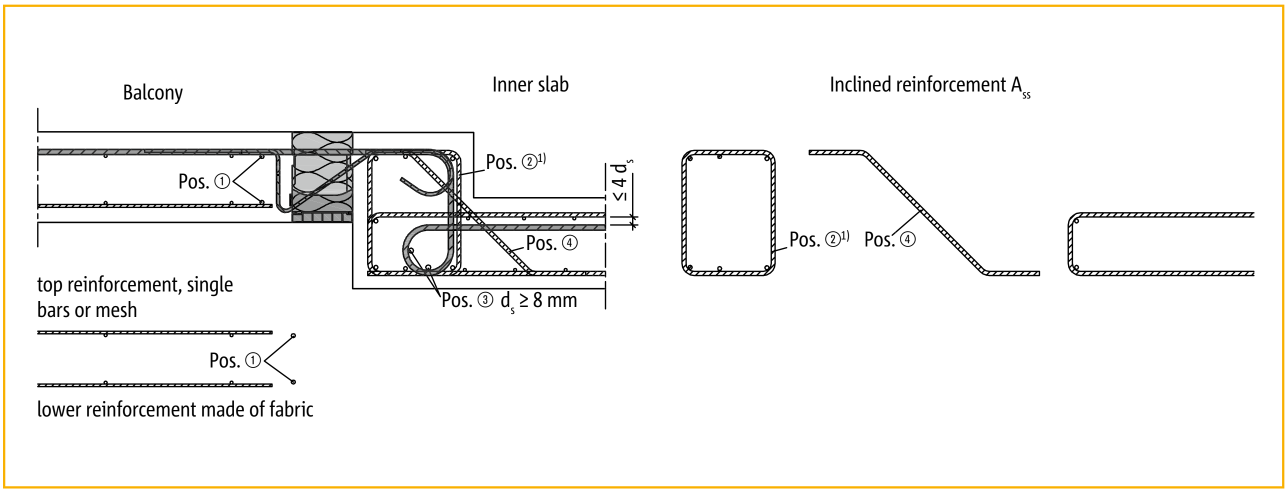
On-site lap splice reinforcement for Schöck Isokorb® type KXT-HV



Cross-section

Schöck Isokorb® type		KXT20-HV	KXT30-HV	KXT50-HV	KXT60-HV
Balcony side	Tension bars	Lap splice reinforcement according to page 28 or according to structural engineer			
	Item ① Straight bar	2 no. H8	2 no. H8	2 ø 8	2 no. H8
In the downstand beam	Item ② Link[1]	min.req. H10 ø 100 c/c	min.req. H12 ø 100 c/c	min.req. H12 ø 80 c/c	min.req. H12 ø 60 c/c
	lap length	$l_s \geq 570$ mm	$l_s \geq 680$ mm	$l_s \geq 790$ mm	$l_s \geq 790$ mm

On-site lap splice reinforcement for Schöck Isokorb® type KXT-BH



Cross-section

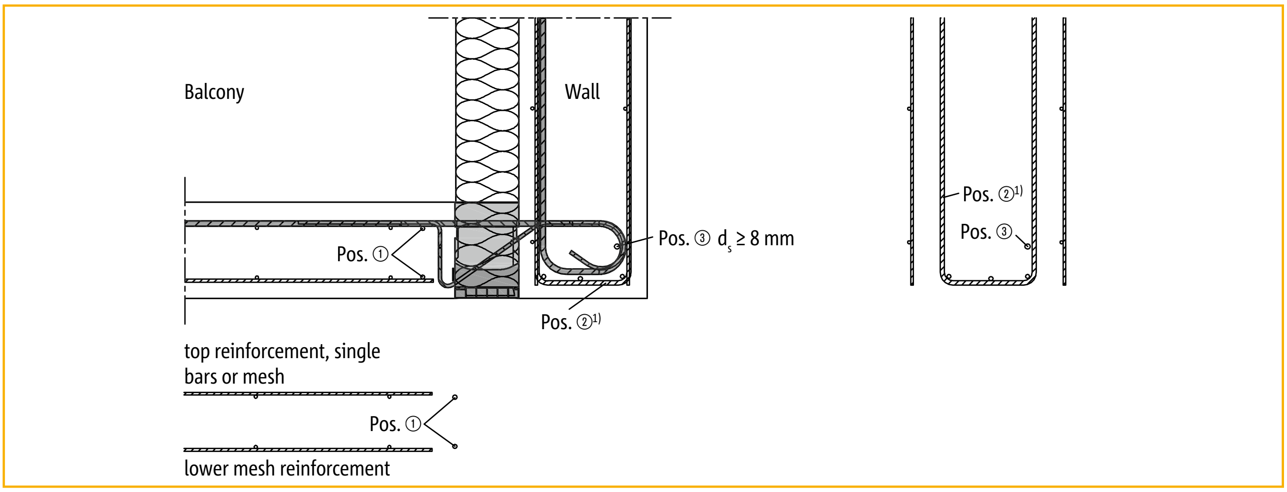
Schöck Isokorb® type		KXT20-BH	KXT30-BH	KXT50-BH	KXT60-BH
Balcony side	Tension bars	Lap splice reinforcement according to page 28 or according to structural engineer			
	Item ① Straight bar	2 no. H8	2 no. H8	2 no. H8	2 no. H8
In the upstand beam	Item ② Link[1]	min.req. H10 ø 100 c/c	min.req. H12 ø 100 c/c	min.req. H12 ø 80 c/c	min.req. H12 ø 60 c/c
	Item ③ Straight bar	2 no. H8	2 no. H8	2 no. H8	2 no. H8
	Item ④ Inclined reinforcement	H8 ø 200 c/c	H8 ø 200 c/c	H8 ø 160 c/c	H10 ø 120 c/c

[1] Req. vertical reinforcement for transfer of force from Schöck Isokorb® to the inner slab joist or upstand beam under 100 % exploitation of the bending moment; a reduction of m_{Ed}/m_{Rd} is permissible.

Schöck Isokorb® type KXT-WO, KXT-WU

Lap splice design

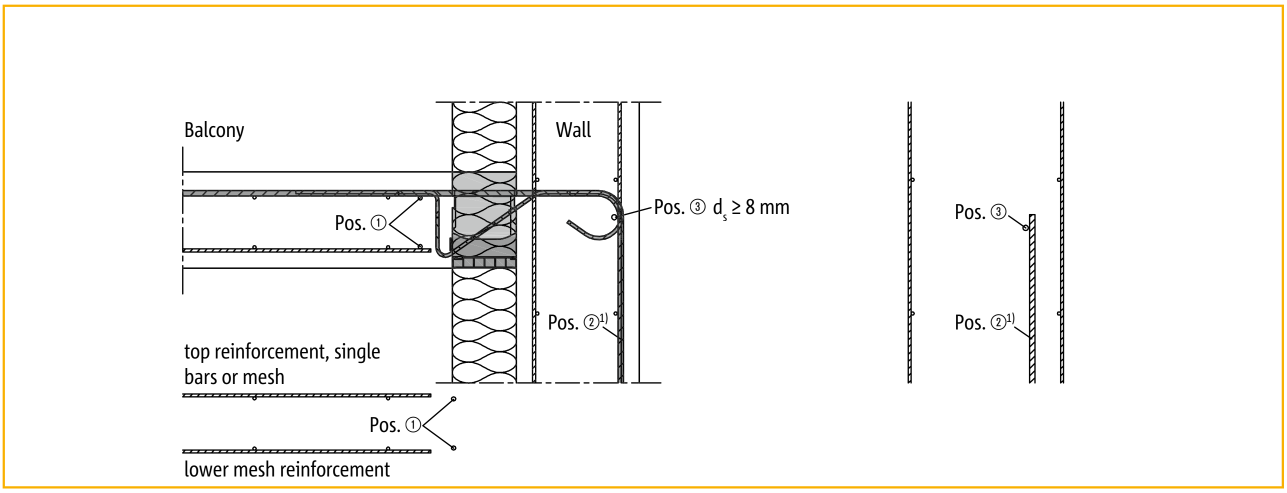
Reinforcement of connection for Schöck Isokorb® type KXT-WO



Cross-section

Schöck Isokorb® type		KXT20-WO	KXT30-WO	KXT50-WO	KXT60-WO
Balcony side	Tension bars	Lap splice reinforcement according to page 28 or according to structural engineer			
	Item ① Straight bar	2 no. H8	2 no. H8	2 no. H8	2 no. H8
In the wall	Item ② U-bar[1)]	min.req. H8 ø 100 c/c	min.req. H10 ø 100 c/c	min.req. H12 ø 100 c/c	min.req. H12 ø 70 c/c
	Item ③ Straight bar	1 no. H8	1 no. H8	1 no. H8	1 no. H8

Reinforcement of connection for Schöck Isokorb® type KXT-WU



Cross-section

Schöck Isokorb® type		KXT20-WU	KXT30-WU	KXT50-WU	KXT60-WU
Balcony side	Tension bars	Lap splice reinforcement according to page 28 or according to structural engineer			
	Item ① Straight bar	2 no. H8	2 no. H8	2 no. H8	2 no. H8
At inner face of wall	Item ② Straight bar[1)]	min.req. H8 ø 100 c/c	min.req. H10 ø 100 c/c	min.req. H12 ø 100 c/c	min.req. H12 ø 70 c/c
	Item ③ Straight bar	1 no. H8	1 no. H8	1 no. H8	1 no. H8

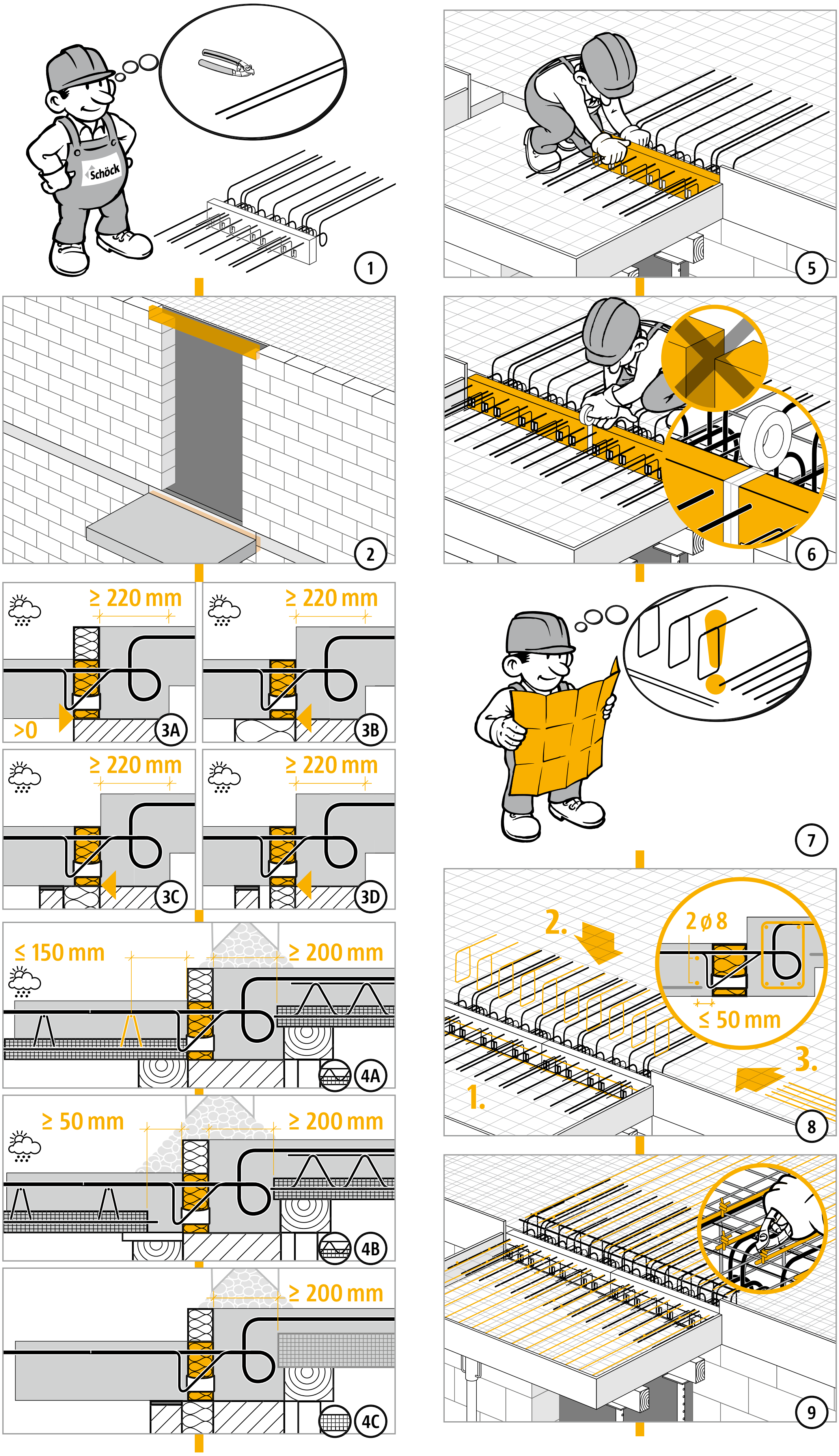
1) Req. vertical reinforcement for transfer of force from Schöck Isokorb® to the wall under 100% exploitation of the bending moment; a reduction of m_{Ed}/m_{Rd} is permissible.

Schöck Isokorb® type KXT-HV

Method statement

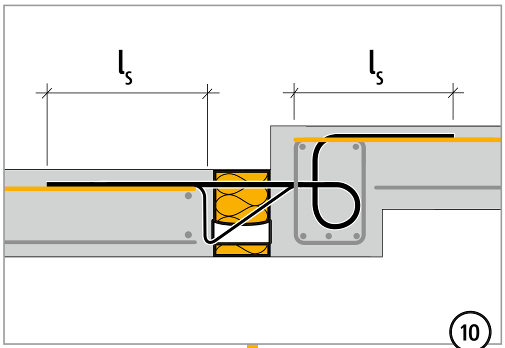
KXT-HV
KXT-BH
KXT-WO
KXT-WU

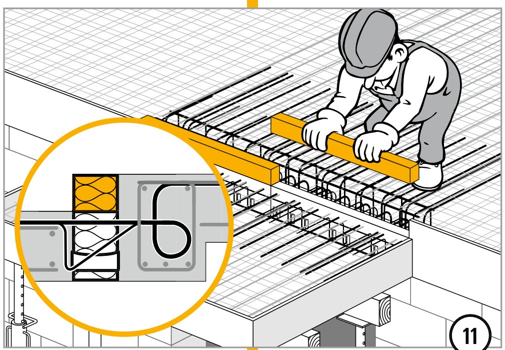
Reinforced concrete-to-reinforced concrete

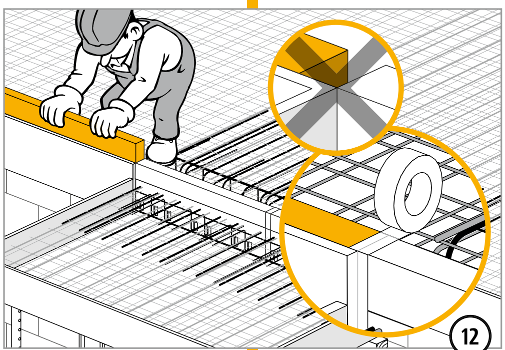


Schöck Isokorb® type KXT-HV

Method statement



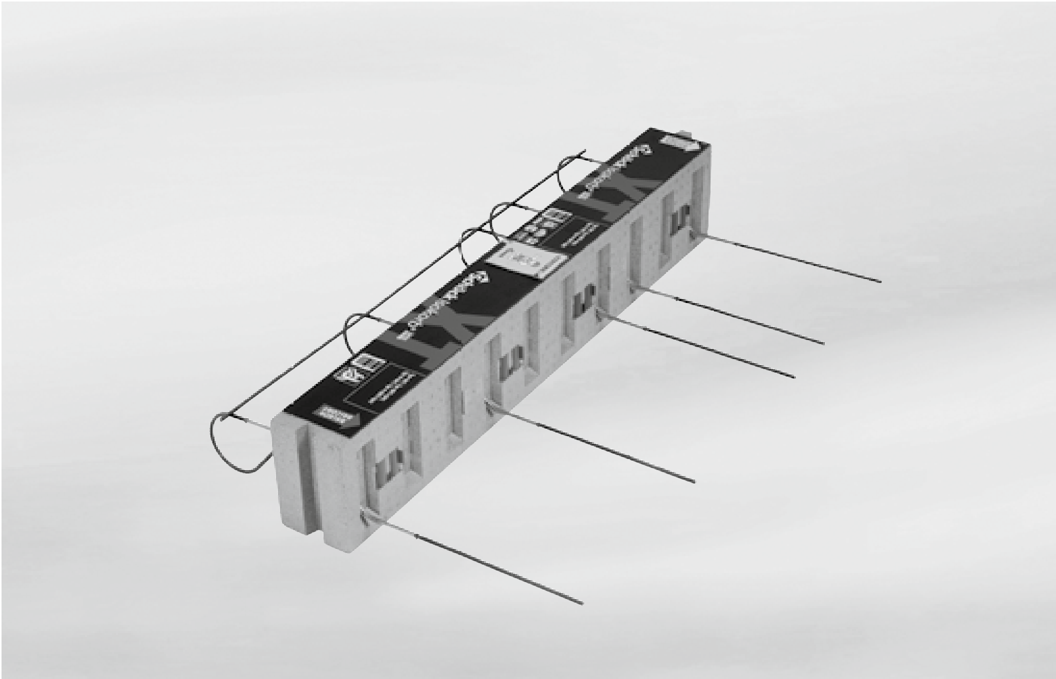




Schöck Isokorb® type KXT-HV, KXT-BH, KXT-WO, KXT-WU
Check list

- ☐ Have the member forces on the Schöck Isokorb® connection been determined at the design level?
- ☐ Was the cantilevered system length used in the process?
- ☐ Has the appropriate concrete grade been taken into consideration in the choice of Capacity table?
- ☐ Have the maximum permitted distances between expansion joints been taken into account?
- ☐ Have the recommendations for restricting flexible slenderness been taken into account?
- ☐ In the case of type KXT-HV, KXT-BH, KXT-WO and KXT-WU in connection with element slabs - has the site concrete strip (width ≥ 50 mm from pressure bearing elements) necessary on account of the pressure joint been included in the construction drawings?
- ☐ Do the calculations of the deformation of the overall structure take into account the additional deflection due to the Schöck Isokorb®?
- ☐ Has the drainage direction been taken into account in the resulting precamber specification?
- ☐ Has the relevant bearing limit of the slab been checked for V_{Ed}?
- ☐ Has the respective connective reinforcement required on site been defined?
- ☐ In the case of connection to an upstand or downstand beam, or a connection to a wall, is the required component geometry present or might a special construction be necessary?
- ☐ Have the fire safety requirements been clarified and are they reflected in the Schöck Isokorb® type designation (REI120) shown on the construction drawings?

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



Schöck Isokorb® type QXT

Contents **Page**

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

Examples of element arrangement and cross-sections

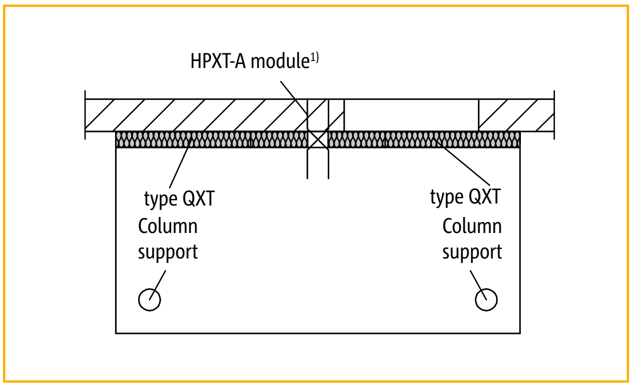


Figure 1: Balcony with column support

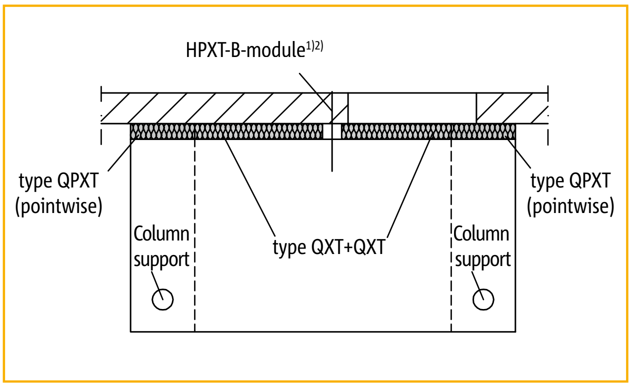


Figure 2: Balcony with column support, intermittently connected

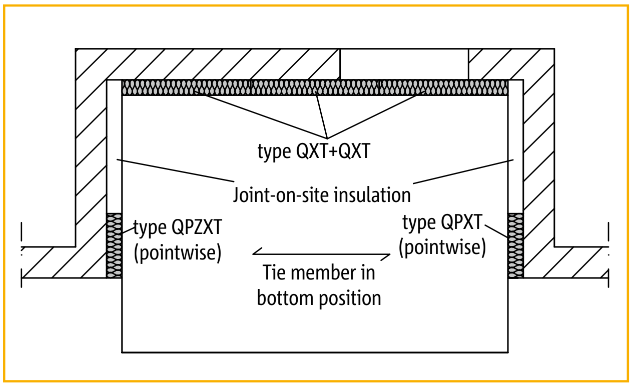


Figure 3: Loggia, mounted on three sides, with tie member[3] and shear forces causing lift-up

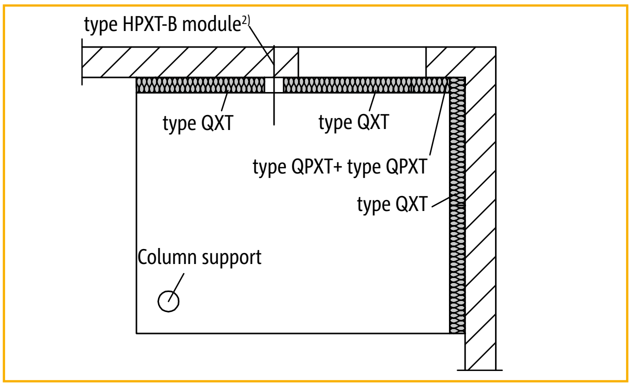


Figure 4: Balcony supported on two sides, with column support, shear forces causing lift-up

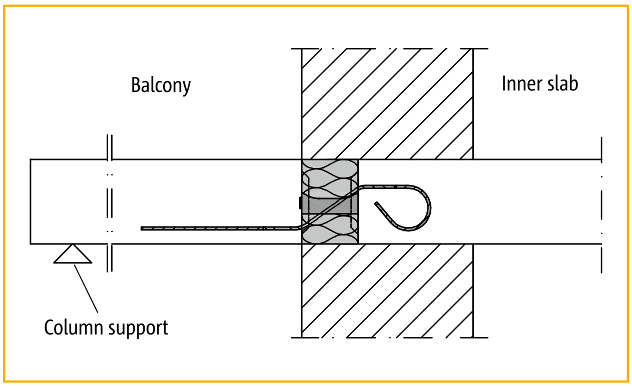


Figure 5: Cavity wall with a balcony at inner slab level

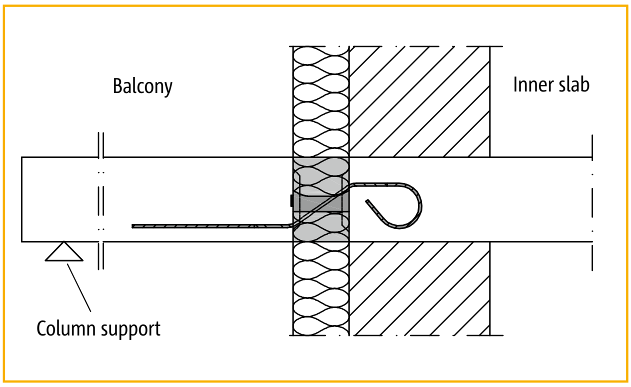


Figure 6: Brickwork with external insulation and a balcony at inner slab level

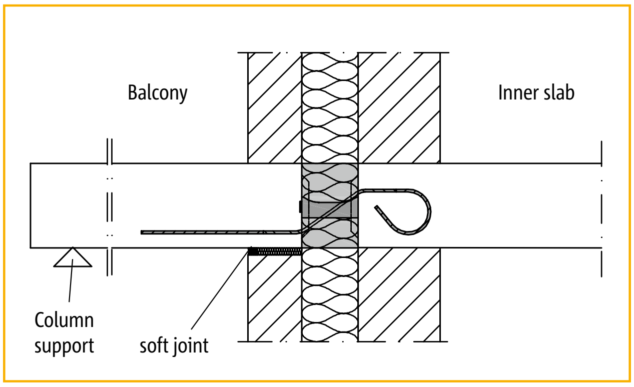


Figure 7: Single-leaf brickwork with a balcony at inner slab level

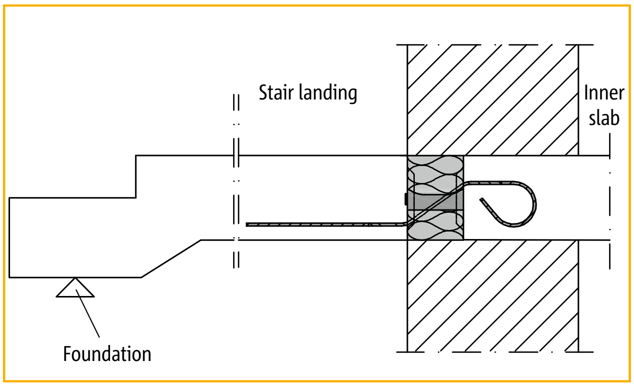


Figure 8: Single-leaf brickwork with stair landing

[1] If horizontal forces occur parallel to the external wall, additional Schöck HPXT modules should be installed.
[2] In the case of horizontal tensile forces perpendicular to the external wall which are greater than the shear forces present, additional Schöck HPXT modules should be installed.

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

Product variants/Designations

Basic type QXT

(straight line connection)

Shear force load ranges QXT 10 to QXT 90	(for positive shear forces)
Concrete cover of Isokorb shear force rods (external):	top CV ≥ 35 mm
	bottom CV = 30 mm

Basic type QXT+QXT

(straight line connection)

Shear force load ranges QXT10+QXT10 to QXT40+QXT40	(for positive and negative shear forces)
Concrete cover of Isokorb shear force rods (external):	top CV ≥ 35 mm
	bottom CV = 30 mm

Basic type QPXT

(pointwise connection)

Shear force load ranges QPXT 10 to QPXT 100	(for positive shear forces)
Concrete cover of Isokorb shear force rods (external):	top CV ≥ 35 mm
	bottom CV = 40 mm

Basic type QPXT+QPXT

(pointwise connection)

Shear force load ranges QPXT10+QPXT10 to QPXT70+QPXT70	(for positive and negative shear forces)
Concrete cover of Isokorb shear force rods (external):	top CV ≥ 35 mm
	bottom CV = 40 mm

Basic type QPZXT

(pointwise connection)

Shear force load ranges QPZXT 10 to QPZXT 75	(for positive shear forces and restraint-free connection)
Concrete cover of Isokorb shear force rods (external):	top CV ≥ 35 mm
	bottom CV = 40 mm

Variants

Fire protection

e.g. QXT 20-H...-**REI120** = fire protection class **F 90**

In the case of **F 90** different construction-related minimum heights must be taken into account.

Designation in planning documents

(structural calculations, specification documents, implementation plans, order)

e.g.: QXT 30-H180

Type/load range
Height of Isokorb

with fire protection QXT 30-H180-REI120

Type/load range
Height of Isokorb
Fire protection

Special designs

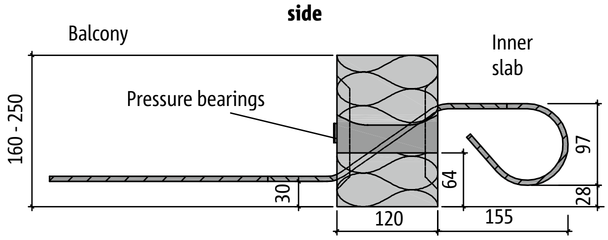
Some connection situations cannot be implemented using the standard product variants shown in this brochure. In such cases, a request for special constructions can be made to our application engineers. This also applies to additional requirements on account of pre-fabricated design (restriction through production-related general conditions or transport width) which may be able to be met using screw-socket rods.

Schöck Isokorb® type QXT, QPXT

Capacity tables for C25/30

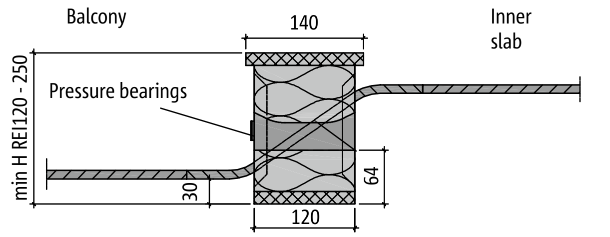
Schöck Isokorb® type QXT for the transfer of positive shear forces for continuous bearing

Shear force rod ∅ 6 mm: end of rod bent back on itself on inner slab side



Cross-section: Schöck Isokorb® type QXT 10 to type QXT 40

Shear force rod ∅ 8, 10 mm: straight rod end on the inner slab side

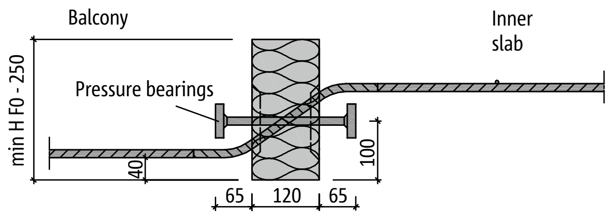


Cross-section: Schöck Isokorb® type QXT 60 to QXT 90 with REI120

Schöck Isokorb® type	QXT 10	QXT 20	QXT 30	QXT 40	QXT 60	QXT 70	QXT 80	QXT 90
Design values for	rated shear forces v_{Rd} [kN/m]							
Concrete C25/30	+35.3	+42.3	+56.4	+70.5	+87.7	+96.3	+117.5	+137.1
Isokorb length [m]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
shear force rods	5 ∅ 6	6 ∅ 6	8 ∅ 6	10 ∅ 6	7 ∅ 8	5 ∅ 10	6 ∅ 10	7 ∅ 10
Pressure bearing (qty)	4	4	4	4	4	4	5	6
min H with F 0 [mm]	160	160	160	160	160	170	170	170
min H with F 90 [mm]	160	160	160	160	170	180	180	180

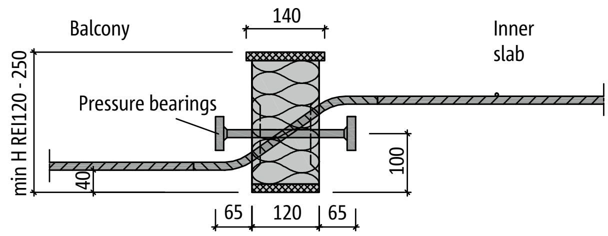
Schöck Isokorb® type QPXT for the transfer of positive shear forces for pointwise bearing

Shear force rod ∅ 10...∅ 14 mm: straight rod ends on the inner slab side



Cross-section: Schöck Isokorb® type QPXT 10 to QPXT 100

Shear force rod ∅ 10...∅ 14 mm: straight rod ends on the inner slab side



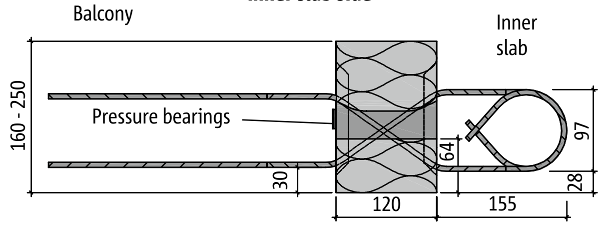
Cross-section: Schöck Isokorb® type QPXT 10 to QPXT 100 with REI120

Schöck Isokorb® type	QPXT 10	QPXT 20	QPXT 30	QPXT 40	QPXT 50	QPXT 60	QPXT 70	QPXT 75	QPXT 100
Design values for	Rated shear forces V_{Rd} [kN]								
Concrete C25/30	+35.1	+58.8	+70.2	+56.4	+70.2	+70.2	+105.2	+115.2	+140.3
Isokorb length [mm]	300	400	500	300	400	300	400	400	500
Shear force rods	2 ∅ 10	3 ∅ 10	4 ∅ 10	2 ∅ 12	3 ∅ 12	2 ∅ 14	3 ∅ 14	3 ∅ 14	4 ∅ 14
Pressure bearing (qty)	1 ∅ 14	2 ∅ 12	2 ∅ 14	2 ∅ 12	2 ∅ 14	2 ∅ 14	3 ∅ 12	4 ∅ 12	4 ∅ 14
min H with F 0 [mm]	180	180	180	190	190	200	200	200	200
min H with F 90 [mm]	190	190	190	200	200	210	210	210	210

Schöck Isokorb® type QXT+QXT, QPXT+QPXT
Capacity tables for C25/30

Schöck Isokorb® type QXT+QXT for the transfer of positive and negative shear forces for continuous bearing

Shear force rod ⌀ 6 mm: rod ends bent back on themselves on the inner slab side

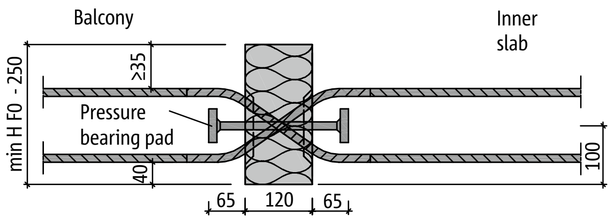


Cross-section: Schöck Isokorb® type QXT 10+QXT 10 to QXT 40+QXT 40

Schöck Isokorb® type	QXT 10 + QXT 10	QXT 20 + QXT 20	QXT 30 + QXT 30	QXT 40 + QXT 40
Design values for	v_{Rd} [kN/m]			
Concrete C25/30	±35.3	±42.3	±56.4	±70.5
Isokorb length [m]	1.00	1.00	1.00	1.00
Shear force rods	2 x 5 ⌀ 6	2 x 6 ⌀ 6	2 x 8 ⌀ 6	2 x 10 ⌀ 6
Pressure bearing (qty)	4	4	4	4
min H with F 0 [mm]	160	160	160	160
min H with F 90 [mm]	160	160	160	160

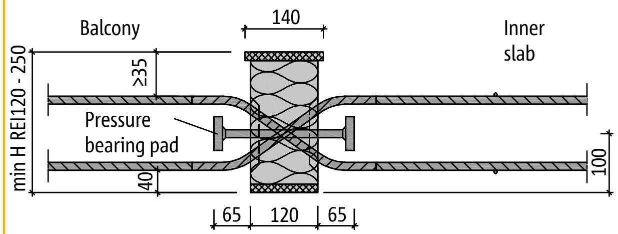
Schöck Isokorb® type QPXT+QPXT for the transfer of positive and negative shear forces for pointwise bearing

Shear force rod ⌀ 10...⌀ 14 mm: straight rod ends on the inner slab side



Cross-section: Schöck Isokorb® type QPXT 10 + QPXT 10 to QPXT 70 + QPXT 70

Shear force rod ⌀ 10...⌀ 14 mm: straight rod ends on the inner slab side



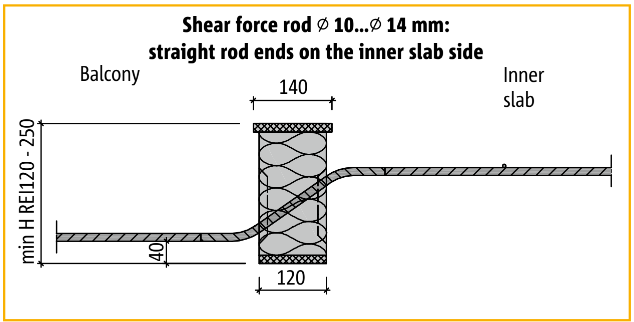
Cross-section: Schöck Isokorb® type QPXT 10 + QPXT 10 to QPXT 70 + QPXT 70 with REI120

Schöck Isokorb® type	QPXT 10 + QPXT 10	QPXT 40 + QPXT 40	QPXT 60 + QPXT 60	QPXT 70 + QPXT 70
Design values for	V_{Rd} [kN]			
Concrete C25/30	±35.1	±56.4	±70.2	±105.2
Isokorb length [mm]	300	300	300	400
Shear force rods	2x2 ⌀ 10	2x2 ⌀ 12	2x2 ⌀ 14	2x3 ⌀ 14
Pressure bearing (qty)	1 ⌀ 14	2 ⌀ 12	2 ⌀ 14	3 ⌀ 12
min H with F 0 [mm]	180	190	200	200
min H with F 90 [mm]	200	200	210	210

Schöck Isokorb® type QPZXT

Capacity tables for C25/30

Schöck Isokorb® type QPZXT for the transfer of positive shear forces for pointwise bearing and restraint-free connection



Cross-section: Schöck Isokorb® type QPZXT 10 to QPZXT 75 with REI120

Schöck Isokorb® type	QPZXT 10	QPZXT 40	QPZXT 60	QPZXT 75
Design values for	V_{Rd} [kN]			
Concrete C25/30	+35.1	+56.4	+70.2	+115.2
Isokorb length [mm]	300	300	300	400
Shear force rods	2 ∅ 10	2 ∅ 12	2 ∅ 14	3 ∅ 14
Pressure bearing (qty)	–	–	–	–
min H with F 0 [mm]	180	190	200	200
min H with F 90 [mm]	190	200	210	210

Application example for Schöck Isokorb® type QPZXT
Loggia mounted on three sides, with tie member (see Fig. 3 on page 42)

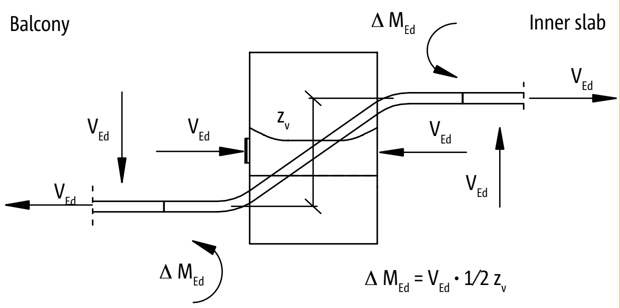
The following fixed point distances must be heeded for this application case:
QPZXT 10: a and b ≤ 5.20 m
QPZXT 40: a and b ≤ 4.55 m
QPZXT 60: a and b ≤ 4.10 m
QPZXT 75: a and b ≤ 4.10 m

Required cross-sections for the tie member and link reinforcement:

Schöck Isokorb® type	Tie member req. A_s ①	Stirrup / bent bar req. A_s ②
QPXT10 and QPZXT10	2 T10	1 T10
QPXT40 and QPZXT40	2 T12	2 T10
QPXT60 and QPZXT60	2 T14	2 T10
QPXT75 and QPZXT75	3 T14	3 T10

Moments resulting from excentric connections

When calculating the connection reinforcement on both sides of the Schöck Isokorb® type QXT, moments arising from excentric connections also need to be taken into account. These moments should be added to the moments resulting from the planned load if both values have the same sign.



Schöck Isokorb® type	ΔM_{Ed} [1) [kNm/element]	
	C20/25	C25/30
QXT 10. QXT+QXT 10	2.10	2.47
QXT 20, QXT+QXT 20	2.82	2.96
QXT 30, QXT+QXT 30	3.37	3.95
QXT 40, QXT+QXT 40	4.21	4.94
QXT 60	5.23	6.14
QXT 70	5.84	6.74
QXT 80	7.00	8.23
QXT 90	8.18	9.60
QPXT 10, QPXT 10 + QPXT 10, QPZXT 10	1.70	1.79
QPXT 20	2.55	2.99
QPXT 30	3.40	3.57
QPXT40, QPXT 40 + QPXT 40, QPZXT 40	2.64	3.09
QPXT 50	3.84	3.84
QPXT 60, QPXT 60 + QPXT 60, QPZXT 60	3.83	4.12
QPXT 70, QPXT 70 + QPXT 70	5.40	5.40
QPXT 75, QPZXT 75	5.74	6.76
QPXT 100	7.65	8.21

1) with max z_v = 140 mm

Schöck Isokorb® type QXT
Thermal characteristics

Fire resistance class F 0

Type	QXT 10			QXT 20			QXT 30			QXT 40			QXT 60		
H mm	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$
160	1.79	0.067		1.74	0.069		1.60	0.075		1.50	0.080		1.40	0.086	
170	1.85	0.065	18.9[1,2]	1.79	0.067	17.3[1,2]	1.67	0.072	17.3[1,2]	1.56	0.077	16.7[1,2]	1.45	0.083	16.7[1,2]
180	1.90	0.063		1.85	0.065		1.71	0.070		1.60	0.075		1.48	0.081	
190	1.94	0.062		1.88	0.064		1.76	0.068		1.64	0.073		1.54	0.078	
200	2.00	0.060		1.94	0.062		1.82	0.066		1.69	0.071		1.58	0.076	
210	2.03	0.059		1.97	0.061		1.85	0.065		1.74	0.069		1.62	0.074	
220	2.07	0.058	–[3]	2.00	0.060	–[3]	1.88	0.064	–[3]	1.79	0.067	–[3]	1.67	0.072	–[3]
230	2.11	0.057		2.03	0.059		1.94	0.062		1.82	0.066		1.71	0.070	
240	2.14	0.056		2.07	0.058		1.97	0.061		1.85	0.065		1.74	0.069	
250	2.18	0.055		2.11	0.057		2.00	0.060		1.90	0.063		1.76	0.068	

Fire resistance class REI120

Type	QXT 10			QXT 20			QXT 30			QXT 40			QXT 60		
H mm	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$
160	1.38	0.087		1.33	0.090		1.26	0.095		1.20	0.100		1.12	0.107	
170	1.43	0.084	15.8[1,2]	1.40	0.086	13.3[1,2]	1.32	0.091	13.3[1,2]	1.25	0.096	13.8[1,2]	1.17	0.103	13.8[1,2]
180	1.48	0.081		1.43	0.084		1.36	0.088		1.29	0.093		1.21	0.099	
190	1.52	0.079		1.48	0.081		1.41	0.085		1.33	0.090		1.26	0.095	
200	1.58	0.076		1.52	0.079		1.45	0.083		1.38	0.087		1.30	0.092	
210	1.62	0.074		1.58	0.076		1.48	0.081		1.41	0.085		1.35	0.089	
220	1.64	0.073	–[3]	1.60	0.075	–[3]	1.54	0.078	–[3]	1.46	0.082	–[3]	1.38	0.087	–[3]
230	1.69	0.071		1.64	0.073		1.58	0.076		1.50	0.080		1.41	0.085	
240	1.74	0.069		1.69	0.071		1.60	0.075		1.54	0.078		1.45	0.083	
250	1.76	0.068		1.71	0.070		1.64	0.073		1.58	0.076		1.48	0.081	

R_{eq}: Equivalent thermal resistance in $m^2 \cdot K/W$
λ_{eq}: Equivalent thermal conductivity in $W/(m \cdot K)$
$\Delta L_{n,v,w}$: Rated difference in impact sound level in dB

[1] Following Measurements carried out by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. Test report nos. FEB/FS52-01/08 and FEB/FS52-02/08.
[2] The difference in impact sound level depends on the cross-sectional area of rebar/reinforcement and the element height. The smaller the cross-sectional area of rebar/reinforcement and the smaller the slab height, the greater the difference in sound impact level. For Schöck Isokorb® types that were not tested, the measured values of the Schöck Isokorb®-type with greater cross-sectional area of rebar/reinforcement or greater slab thickness (on the safe side) is given.
[3] There are no test results available in this case.

Schöck Isokorb® type QXT
Thermal characteristics

Fire resistance class F 0

Type	QXT 70			QXT 80			QXT 90		
H mm	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$
160	1.33	0.090		1.18	0.102		1.04	0.115	
170	1.38	0.087	15.0[1)2)]	1.22	0.098		1.09	0.110	
180	1.43	0.084		1.26	0.095		1.13	0.106	
190	1.48	0.081		1.30	0.092		1.18	0.102	
200	1.52	0.079		1.35	0.089	–[3)]	1.22	0.098	–[3)]
210	1.56	0.077		1.40	0.086		1.26	0.095	
220	1.60	0.075	–[3)]	1.43	0.084		1.29	0.093	
230	1.64	0.073		1.46	0.082		1.33	0.090	
240	1.69	0.071		1.50	0.080		1.36	0.088	
250	1.71	0.070		1.54	0.078		1.40	0.086	

Fire resistance class REI120

Type	QXT 70			QXT 80			QXT 90		
H mm	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$	R_{eq}	$\lambda_{eq.1dim}$	$\Delta L_{n.v.w}$
160	1.08	0.111		0.98	0.123		0.89	0.135	
170	1.13	0.106	14.0[1)2)]	1.02	0.118		0.93	0.129	
180	1.18	0.102		1.06	0.113		0.97	0.124	
190	1.21	0.099		1.10	0.109		1.01	0.119	
200	1.26	0.095		1.14	0.105	–[3)]	1.04	0.115	–[3)]
210	1.30	0.092		1.18	0.102		1.08	0.111	
220	1.33	0.090	–[3)]	1.21	0.099		1.12	0.107	
230	1.38	0.087		1.25	0.096		1.15	0.104	
240	1.41	0.085		1.29	0.093		1.19	0.101	
250	1.45	0.083		1.32	0.091		1.21	0.099	

R_{eq}: Equivalent thermal resistance in $m^2 \cdot K/W$
λ_{eq}: Equivalent thermal conductivity in $W/(m \cdot K)$
$\Delta L_{n,v,w}$: Rated difference in impact sound level in dB

[1)] Following Measurements carried out by the Fraunhofer Institute for Building Physics (IBP) in Stuttgart. Test report nos. FEB/FS52-01/08 and FEB/FS52-02/08.
[2)] The difference in impact sound level depends on the cross-sectional area of rebar/reinforcement and the element height. The smaller the cross-sectional area of rebar/reinforcement and the smaller the slab height, the greater the difference in sound impact level. For Schöck Isokorb® types that were not tested, the measured values of the Schöck Isokorb®-type with greater cross-sectional area of rebar/reinforcement or greater slab thickness (on the safe side) is given.
[3)] There are no test results available in this case.

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

Expansion joint spacing/notes

The gaps between the expansion joints must be restricted according to approval

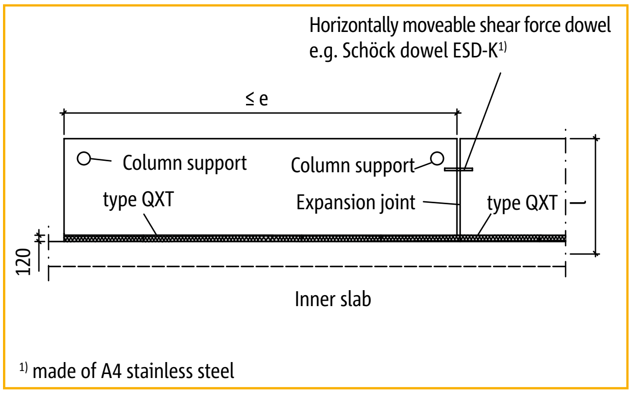


Figure 1: Layout of the expansion joints for balcony slabs with a straight-edged connection

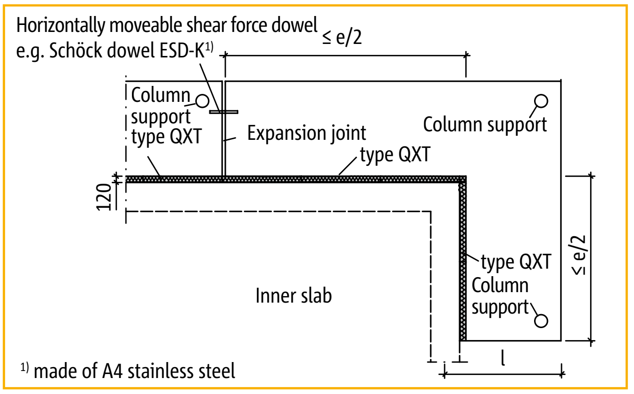


Figure 2: Layout of the expansion joints for balcony slabs which goes around a corner

Maximum expansion joint spacing [m]

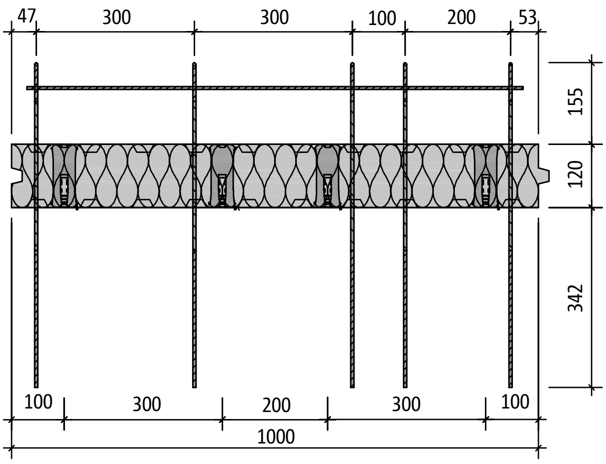
Insulation material thickness [mm]	Isokorb types (type of pressure bearing)	
	QXT, QXT+QXT (HTE concrete pressure bearing)	QPXT, QPXT+QPXT, QPZXT (stainless steel pressure bearing)
120	11.30	10.10

Notes

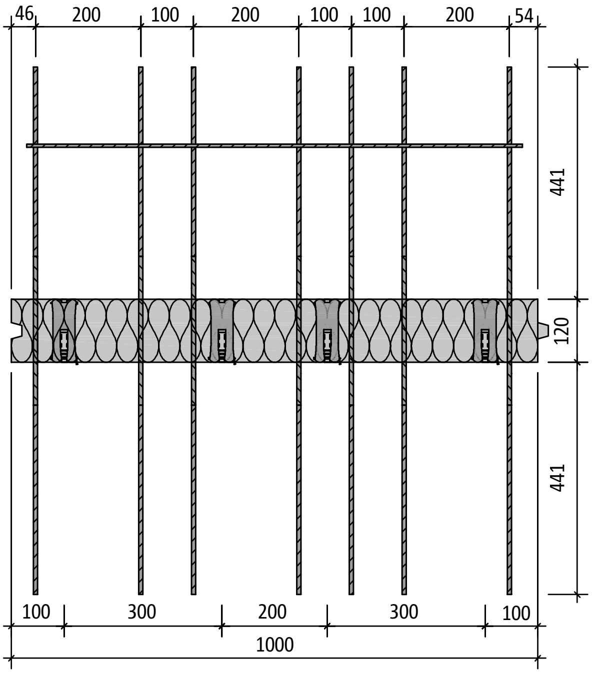
- The axis-centre of the pressure bearings to the free edge of the balcony slab or to the expansion joint has to be at least 50 mm, the axis-centre of the shear force rebars has to be at least 100 mm, the maximum 150 mm.
- The verification of the shear force in slabs has to be provided by the structural designer according to EC2 clause 6.2..
- Static proof must be presented for the adjacent slabs on both sides of the Schöck Isokorb®. Here, when calculating the reinforcement for the inner slab and balcony slabs which are adjacent to the Schöck Isokorb® element, it should be assumed that the bearing is free, as the Schöck Isokorb® type QXT can only transmit shear forces.
- The excentric connection results in an offset moment at the free edges of the Schock Isokorb® type QXT. It must be verified in each case that this moment is transmitted into the two adjacent slabs.
- The upper and lower reinforcement of the adjacent slabs should be located as close as possible to the thermal insulation layer on both sides of the Schock IsokorbR, with appropriate allowances for the required concrete cover.

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

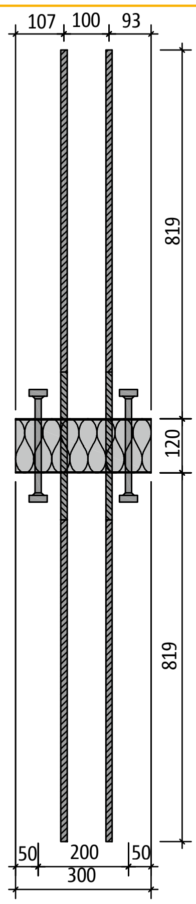
Plan views



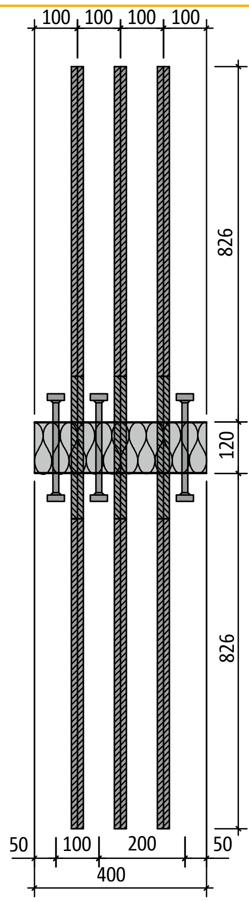
Plan view: Schöck Isokorb® type QXT 10[1)]



Plan view: Schöck Isokorb® type QXT 60[1)]



Plan view: Schöck Isokorb® type QPXT 60[1)]



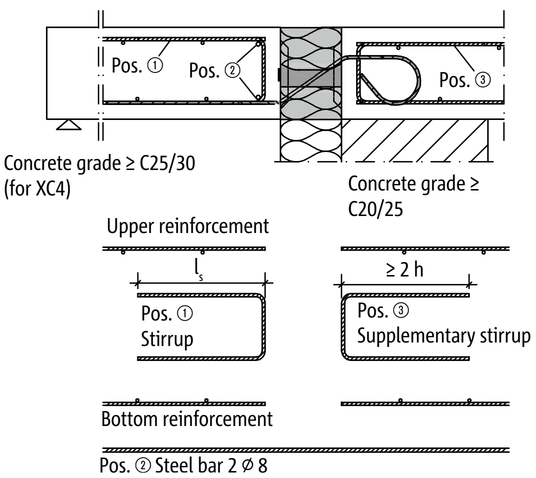
Plan view: Schöck Isokorb® type QPXT 70 + QPXT 70[1)]

[1)] Download further plan views and cross-sections from www.schoeck.de

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

On-site additional reinforcement

Connection with U-bars

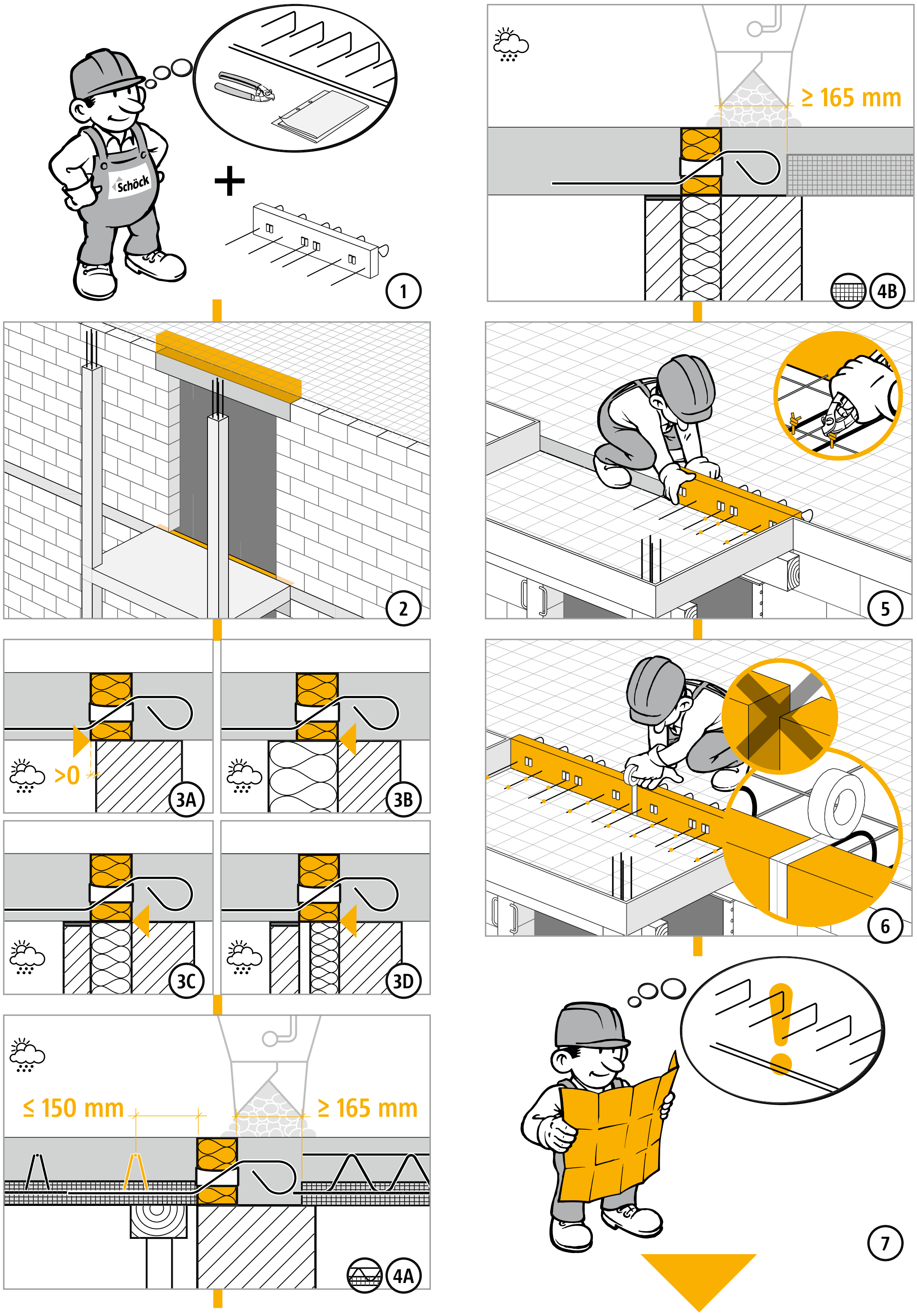


Schöck Isokorb® type	C20/25	C25/30
	Stirrup (Pos. ①) req a_s [mm²/element]	
QXT 10, QXT 10 + QXT 10[1]	69	81
QXT 20, QXT 20 + QXT 20[1]	83	97
QXT 30, QXT 30 + QXT 30[1]	111	130
QXT 40, QXT 40 + QXT 40[1]	138	162
QXT 60	172	202
QXT 70	192	225
QXT 80	230	270
QXT 90	269	315
QPXT 10, QPXT 10 + QPXT 10,[1] QPZXT 10[2]	77	81
QPXT 20	115	135
QPXT 30	153	161
QPXT40, QPXT 40 + QPXT 40, [1] QPZXT 40[2]	110	130
QPXT 50	166	161
QPXT 60, QPXT 60 + QPXT 60,[1] QPZXT 60[2]	150	161
QPXT 70, QPXT 70 + QPXT 70 [1]	226	212
QPXT 75, QPZXT 75[2]	226	265
QPXT 100	301	323

[1] Types QXT+QXT and QPXT+QPXT also have to be connected with pos. ① and pos.② instead of pos. ③.
[2] Types QPZXT (see page 60) for restraint-free connection require a reinforced tie member in the bottom layer. Req $A_{s,tensile}$ according to page 46.

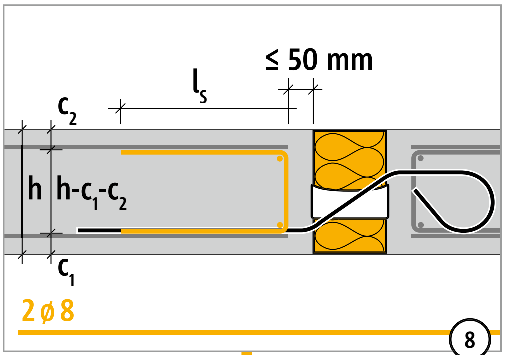
Schöck Isokorb® type QXT

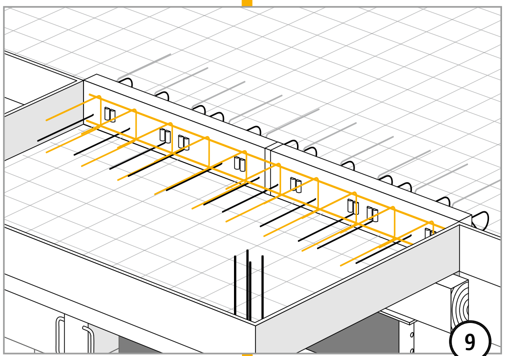
Method statement

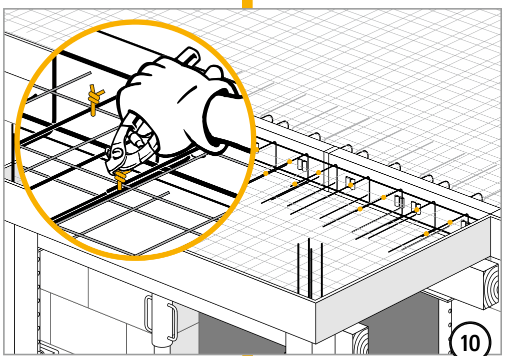


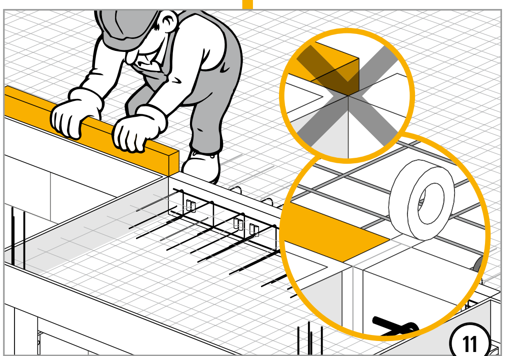
Schöck Isokorb® type QXT

Method statement





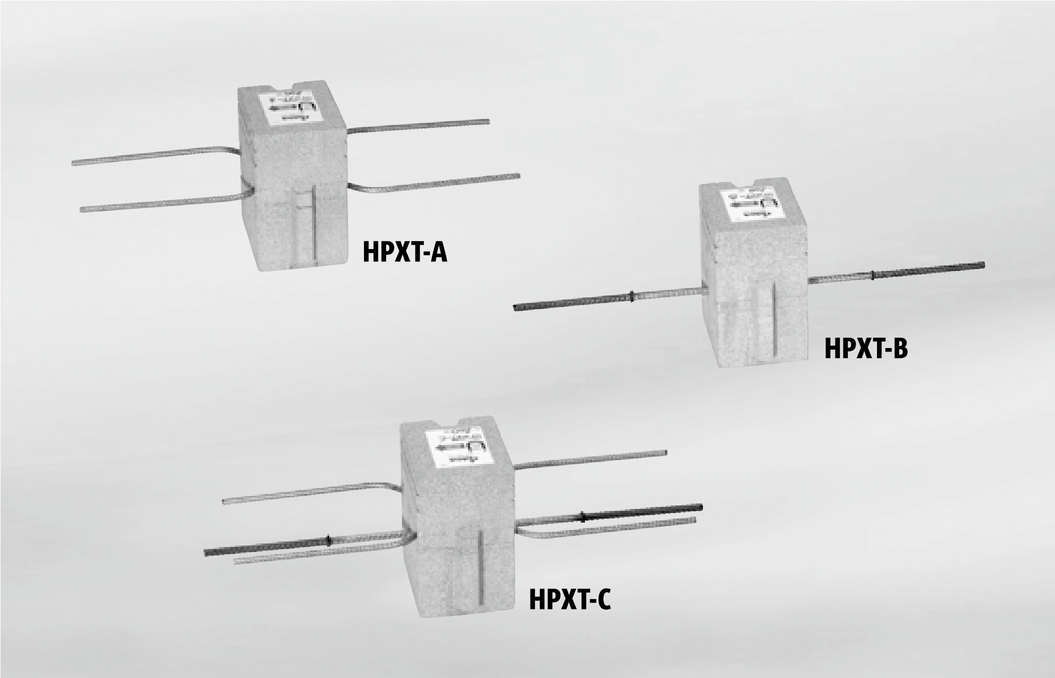




Schöck Isokorb® type QXT, QXT+QXT, QPXT, QPXT+QPXT, QPZXT
Check list

- ☐ Was the right Schöck Isokorb® type for the static system chosen? Type QXT is considered a pure shear force connection (moment joint).
- ☐ Have the member forces on the Schöck Isokorb® connection been determined at the design level?
- ☐ Was the cantilevered system length used in the process?
- ☐ Have the concrete cover and the appropriate concrete grade been taken into consideration according to the building regulations?
- ☐ Have the maximum permitted distances between expansion joints (= expansion joint spacing) been taken into account?
- ☐ Has the relevant bearing limit of the slab been checked for shear forces according to EC2 clause 6.9..?
- ☐ Has the required on-site connection reinforcement been defined?
- ☐ In the case of a connection to an upstand or downstand beam, or a connection to a wall, is the required component geometry present?
- ☐ Have the fire safety requirements been clarified, and are they reflected in the chosen type designation (REI120)?
- ☐ In the case of REI120 elements, has the increased minimum slab thickness been taken into account (type Q, type V)?

Schöck Isokorb® type HPXT module



Schöck Isokorb® type HPXT-Modul

Contents | **Page**

HPXT Module

Reinforced concrete-to-reinforced concrete

Schöck Isokorb® type HPXT module

Examples of element arrangements/Cross-sections

Only required in load cases with the H-forces parallel and/or perpendicular to the insulating layer.

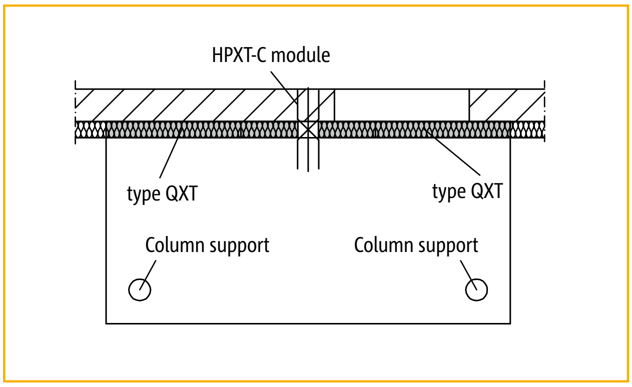


Figure 1: Balcony with column support

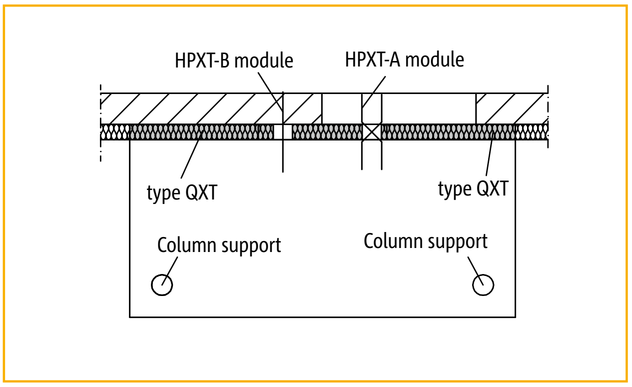


Figure 2: Balcony with column support

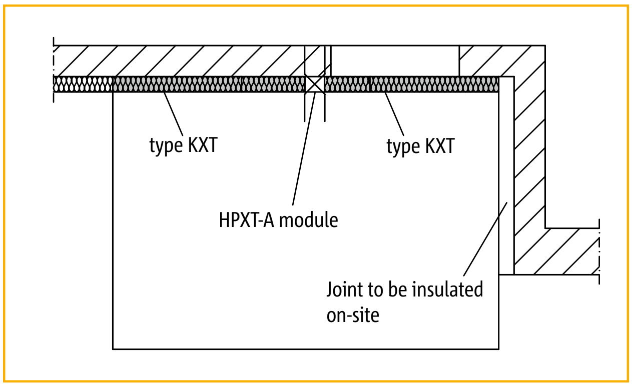


Figure 3: Free cantilever balcony

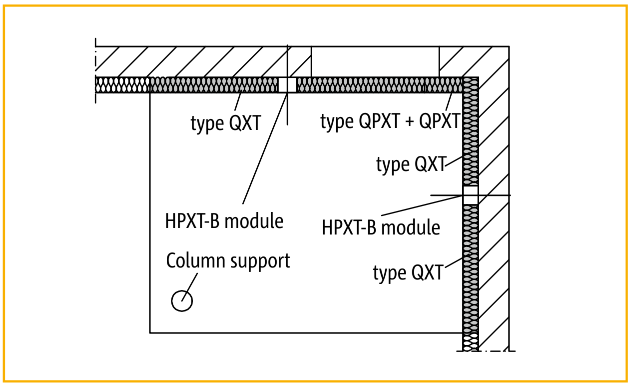


Figure 4: Balcony supported on two sides with column support

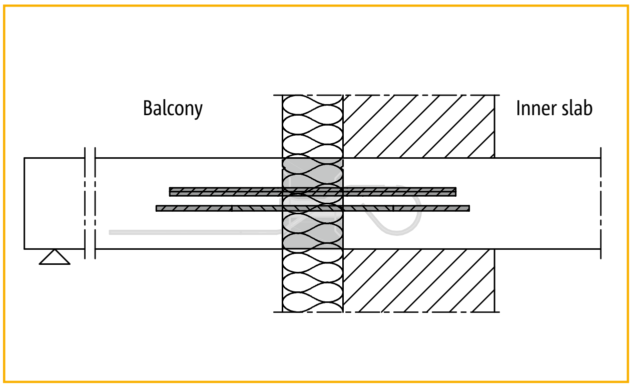


Figure 5: Brickwork with external insulation and a balcony at inner slab level + type QXT + HPXT-C module

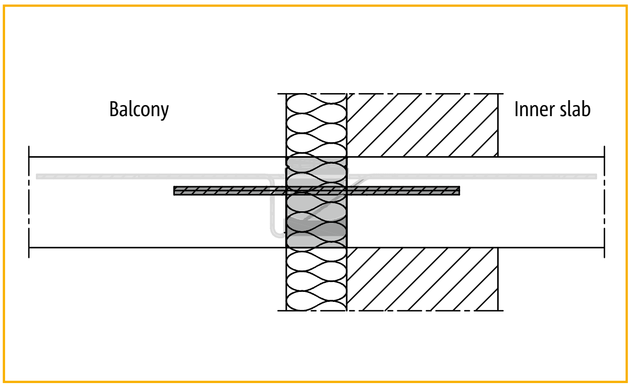
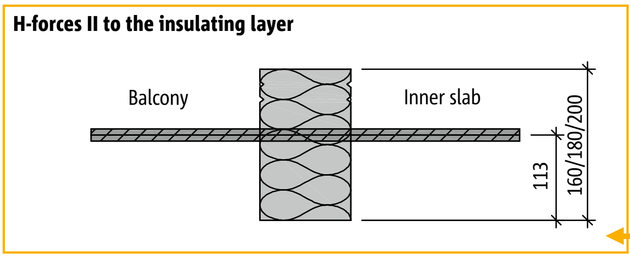


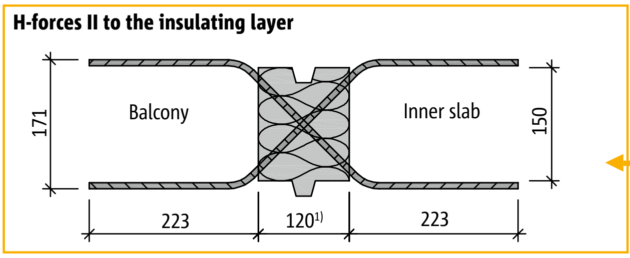
Figure 6: Brickwork with external insulation and a balcony at inner slab level + type KXT + HPXT-A module

Schöck Isokorb® type HPXT module

Capacity tables/cross-sections and plan views



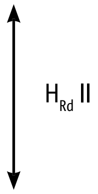
*Cross-section: Schöck Isokorb® type **HPXT-A module***



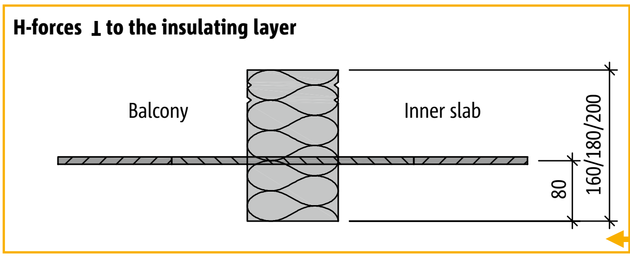
*Plan view: Schöck Isokorb® type **HPXT-A module***

Member forces per element, taken parallel to the insulating layer

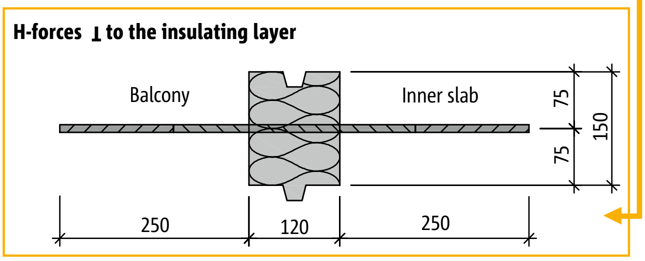
Schöck Isokorb® type	Reinforcement		Isokorb length [mm]	C25/30	
	Shear (force)	H-anchor		H_{Rd} II [kN]	H_{Rd} ⊥ [kN]
HPXT-A module	2 x 1 ø 8	–	150	±8.6	0



Resistances with regard to plan view



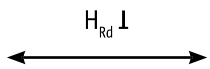
*Cross-section: Schöck Isokorb® type **HPXT-B module***



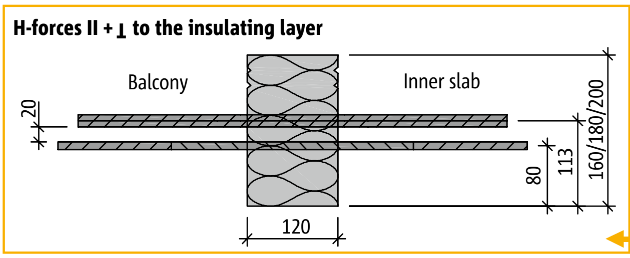
*Plan view: Schöck Isokorb® type **HPXT-B module***

Member forces per element, taken perpendicular to the insulating layer

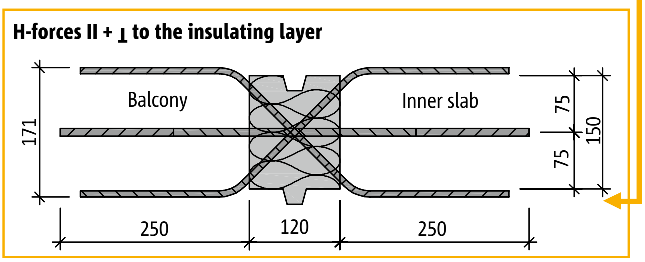
Schöck Isokorb® type	Reinforcement		Isokorb length [mm]	C25/30	
	Shear (force)	H-anchor		H_{Rd} II [kN]	H_{Rd} ⊥ [kN]
HPXT-B-module	–	1 ø 10	150	0	±20.9



Resistances with regard to plan view



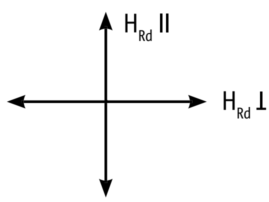
*Cross-section: Schöck Isokorb® type **HPXT-C module***



*Plan view: Schöck Isokorb® type **HPXT-C module***

Member forces per element, taken parallel or perpendicular to the insulating layer

Schöck Isokorb® type	Reinforcement		Isokorb length [mm]	C25/30	
	Shear (force)	H-anchor		H_{Rd} II [kN]	H_{Rd} ⊥ [kN]
HPXT-C-module	2 x 1 ø 8	1 ø 10	150	±8.6	±20.9



Resistances with regard to plan view

Schöck Isokorb® type HPXT module
Notes

HPXT Module

Reinforced concrete-to-reinforced concrete

Notes

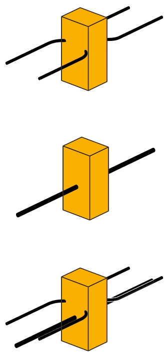
- The type HPXT module is to be incorporated in your plans only if horizontal forces are present in the design, and then only in conjunction with a Schöck Isokorb® basic type for straight line or pointwise connections (e.g. type KXT, type QXT, type QPXT).
- When choosing the correct type (type HPXT-A module, HPXT-B module or HPXT-C module) and its arrangement, care must be taken to ensure that no unnecessary fixed points are created and that the maximum expansion joint spacings (for e.g. type KXT, type QXT) are satisfied in the process.
- The required quantity of HPXT modules is determined by the engineer in charge of the planning of the structure in accordance with the static requirements.
- When calculating the straight line connection, it should be noted that the use of a module of type HPXT can lead to a reduction of the resistance member forces of the straight line connection (e.g. the use of a type QXT with L = 1.0 m and a type HPXT module with L = 0.15 m (alternating regularly) means a reducion of v_{Rd} of the straight line connection with type QXT by around 13 %).

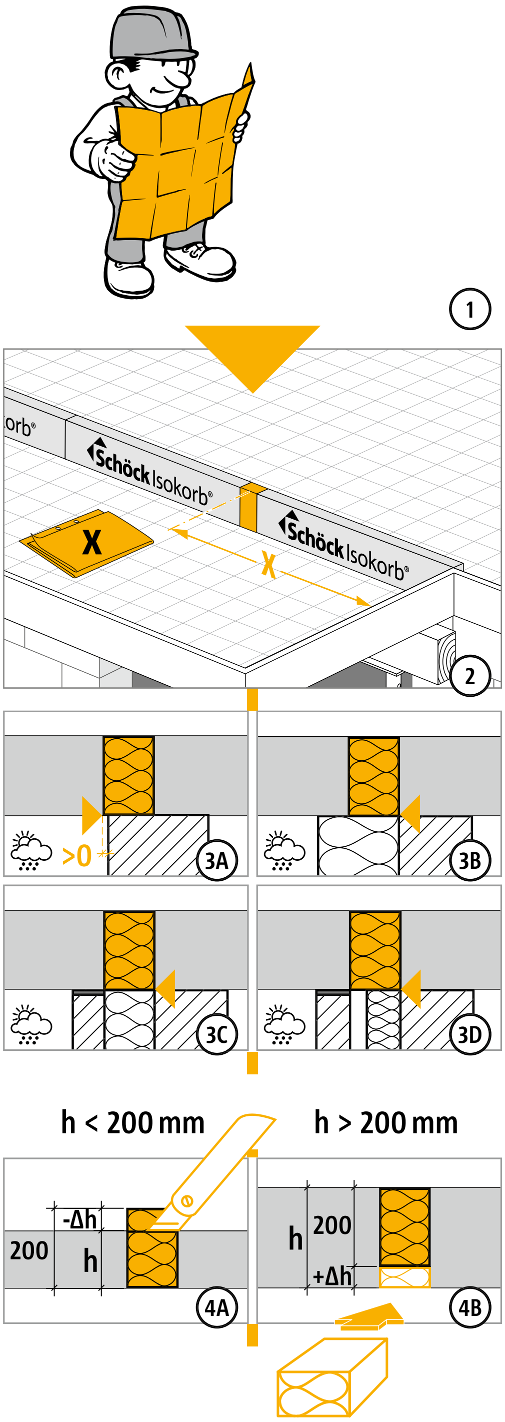
Schöck Isokorb® type HPXT module
Method statement

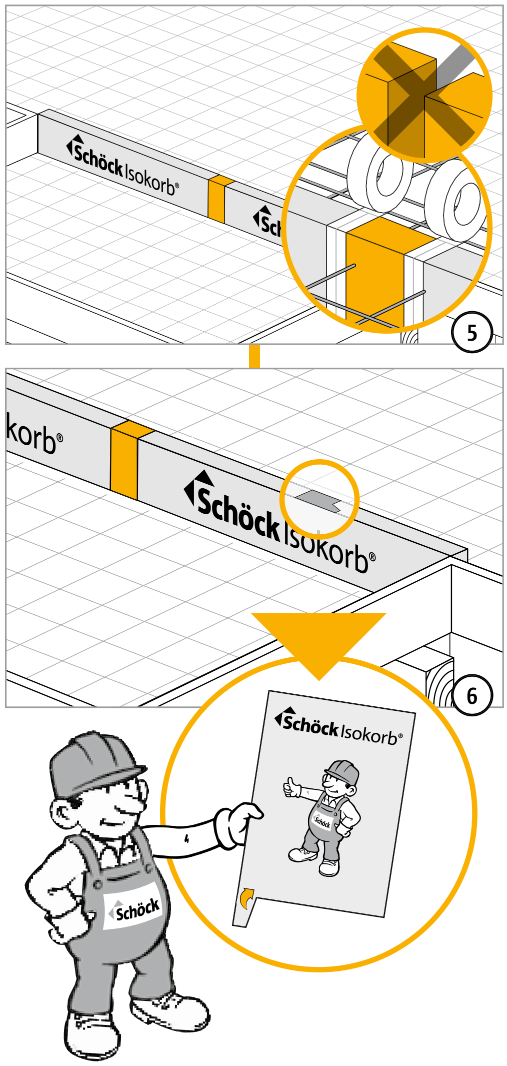
type HP-A module
type HPXT-A module

type HP-B module
type HPXT-B module

type HP-C module
type HPXT-C module







Schöck Isokorb® type HPXT module

Check list

- ☐ Have the member forces on the Schöck Isokorb® connection been determined at the design level?
- ☐ Has the reduction of calculation values been taken into account in the case of a straight line connection with basic types?
- ☐ Has the appropriate concrete grade been taken into consideration in the choice of Capacity table?
- ☐ Have the maximum permitted expansion joint spacings e/2 from the fixed point been taken into account?
- ☐ In the case of connection to an upstand or downstand beam, or a connection to a wall, is the required component geometry present?
- ☐ Have the fire safety requirements been clarified and are they reflected in the Schöck Isokorb® type designation (REI120) shown on the construction drawings?

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