



## Schöck Isokorb® type KST User Selection Guide



**Schöck Ltd**

2-4 High Street  
Kidlington, Oxfordshire

OX5 2DH

Tel: 01865 290 890

Fax: 01865 290 899

E-mail: [design@schoeck.co.uk](mailto:design@schoeck.co.uk)

Web: [www.schoeck.co.uk](http://www.schoeck.co.uk)

# Schöck Isokorb® type KST Certificates

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 and No 10/4801, will meet the relevant requirements.

The static calculations to Eurocode 3 for Schöck Isokorb® type KST, when used in conjunction with BS 5950-1:2000 and Steel Construction Institute Publication P291, have been approved by Mr. David MacKenzie, the Flint & Neill Partnership, London.

These documents can be downloaded from [www.schoeck.co.uk](http://www.schoeck.co.uk).

**Schöck Bauverle GmbH**  
 Produktion Straße 2  
 D-72634 Isenhardt  
 Germany  
 Tel: 00 49 72 23 967-0 Fax: 00 49 72 23 967-430  
 email: [info@schock.de](mailto:info@schock.de)  
 website: [www.schoeck.de](http://www.schoeck.de)



**BBA**  
 APPROVAL  
 AGREEMENT  
 CERTIFICATE  
 No 10/4801  
 Product Sheet 1

**SCHÖCK ISOKORB RANGE OF THERMAL INSULATION COMPONENTS**  
**SCHÖCK ISOKORB CONNECTORS – TYPE KST MODULES**

**SCOPE AND SUMMARY OF CERTIFICATE**  
 The Certificate relates to Schöck Isokorb Connectors – Type KST Modules, for connecting steel to steel or to concrete structures, where it is necessary to reduce load transfer.

**AGREEMENT CERTIFICATION INCLUDES**

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specifications
- assessment (static) and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-party review

**KEY FACTORS ASSESSED**

**Mechanical resistance and stability** – the modules have been designed to transfer the loads from steel beams to the steel or concrete structure (see section 3).

**Behaviour in relation to fire** – the modules will require the same fire resistance as the main structure (see section 6).

**Hygrometrical performance** – the modules can contribute to limiting surface condensation risk and excessive cold thermal heat loss (see section 7).

**Durability** – the modules are made from stainless steel giving adequate protection against corrosion (see section 9).



The BBA has awarded this Agreement 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

  
 Brian Chamberlain  
 Head of Approvals – Engineering

  
 Greg Cooper  
 Chief Executive

Date of first issue: 9 December 2010

The BBA is a UKAS accredited certification body – Number 112. The details of the current scope of accreditation for product certification is available in pdf format on the UKAS site or the BBA website or [www.bba.org.uk](http://www.bba.org.uk).

Products are subject to third party audits and must use a number of the Agreement Certificate in order when using in the BBA website or otherwise.

British Board of Agrément  
 100 Brooklands Avenue  
 Weybridge, Surrey  
 Middlesex TW20 2EX, UK

0181 606 6000  
 Fax: 0181 606 6001  
 email: [mail@bba.org.uk](mailto:mail@bba.org.uk)  
 website: [www.bba.org.uk](http://www.bba.org.uk)

Page 1 of 8



this is to certify that

**Schöck Ltd**

is registered with LABC for

**Schöck Isokorb\***

valid until: 19th December 2014

  
**Paul Everall** (20)  
 LABC Chief Executive

15th November 2013

date

\*With limitation

LABC is a trading name of District Surveyors Association Ltd. Company No. 5631888

# Schöck Isokorb® type KST

## Contents

	<b>Page</b>
<b>Steel-to-Steel</b>	<b>4 - 6</b>
User Instructions	4
Design Principles	5
Materials/Anti-corrosion Protection/Fire Protection	6
<b>Cantilever Connections</b>	<b>7 - 11</b>
Universal Beam Connections	7
Universal Column Connections	8
Parallel Flange Channel Connections	9
Square Hollow Section Connections	10
Rectangular Hollow Section Connections	11
<b>Enquiry Form</b>	<b>12</b>
Enquiry Form	12



Schöck Isokorb® type KST

# Schöck Isokorb® type KST

## User Instructions

To determine the correct KST modules for your beam please follow the instructions below:

1. Determine the size of the external member that requires the thermal break connection.
2. Determine the Ultimate design reactions (Moment & Shear) at the thermal break location.
3. Use the above information to select the required KST modules from the corresponding table in the booklet and complete the attached Enquiry Form (Page 12).
4. Email the completed information to [design@schoeck.co.uk](mailto:design@schoeck.co.uk) to receive the required calculation and price for the project.

Note: For further technical information and guidance please refer to the Schöck Technical information, page 165-199.  
Downloadable at [www.schoeck.co.uk/en-gb/downloads](http://www.schoeck.co.uk/en-gb/downloads)

# Schöck Isokorb® type KST

## Design Principles

1. All ZST & QST 16 modules are set 25mm from internal flange edge of the UB, UC & PFC steels
2. All ZST & QST 22 modules are set 30mm from internal flange edge of the UB, UC & PFC steels
3. All ZST & QST 16 modules are set 25mm from external faces of the SHS & RHS steels
4. All ZST & QST 22 modules are set 30mm from external faces of the SHS & RHS steels
5. Spacer modules are provided between the ZST & QST modules as required. The quantities shown on the provided calculation sheets are suitable for all varies sizes of the steel family indicated.
6. End plate heights designated in the provided calculation are shown for the smallest beam member of that particular beam family. End plate dimensions are to the Structural Engineers design and specification.

# Schöck Isokorb® type KST

## Materials/Anti-corrosion protection/Fire protection

### Schöck Isokorb® type KST - materials

#### Plates and sections

**Chemical composition** Mo-Cr-Ni-austenitic stainless steel compliant with any of BS EN 10088 grades 1.4401, 1.4404 and 1.4571 (Choice of Grade at Manufacturer's Discretion).

#### Mechanical properties

In accordance with BS EN 10088 – except for the following components where Schöck only accept material with mechanical properties in excess of those required for compliance with BS EN 10088.

Component	Required minimum 0.2 % proof stress (N/mm <sup>2</sup> )	Required ultimate tensile stress (N/mm <sup>2</sup> )	Required minimum elongation after fracture (%)
Rectangular hollow section	355	600	30
12 mm pressure plate (QST module)	275	550	40

#### Threaded fasteners

**Grade A4-70 to BS EN ISO 3506** (corrosion resistance equivalent to BS EN 10088 Grade 1.4401)

**Grade A5-70 to BS EN ISO 3506** (corrosion resistance equivalent to BS EN 10088 Grade 1.4571)

#### Insulation material

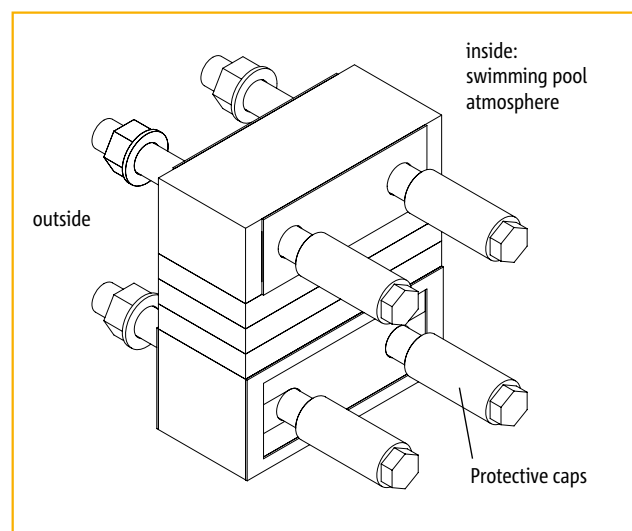
Polystyrene hard foam (Neopor®)  $\lambda = 0.031 \text{ W}/(\text{m} \times \text{K})$

#### Anti-corrosion protection

- ▶ The stainless steel used for Schöck Isokorb® type KST corresponds to the material no.: 1.4401, 1.4404 or 1.4571. So the KST unit components will have a typical corrosion resistance expected for Mo-Cr-Ni austenitic stainless steels. This can be more accurately quantified by reference to specialist literature such as SCI Publication P291 – Structural Design of Stainless Steel.
- ▶ Bimetallic corrosion  
Using Schöck Isokorb® type KST in conjunction with a galvanised or paint treated front plate there is no concern regarding bimetallic corrosion. Since in this application the area of the galvanised steel is greater than the area of the stainless steel (bolts, washer and butt stop) bimetallic corrosion that could lead to failure can be excluded as far as Schöck products are concerned.
- ▶ Stress corrosion cracking  
An appropriate Schöck protection system needs to be provided in environments with a high chlorine content (e.g. inside indoor swimming pools, ...). For further information about atmospheric application see Steel Construction Institute Publication P291 – Structural design of stainless steel, table 2.6. For more information please contact our design department telephone 0845 241 3390.

#### Fire protection

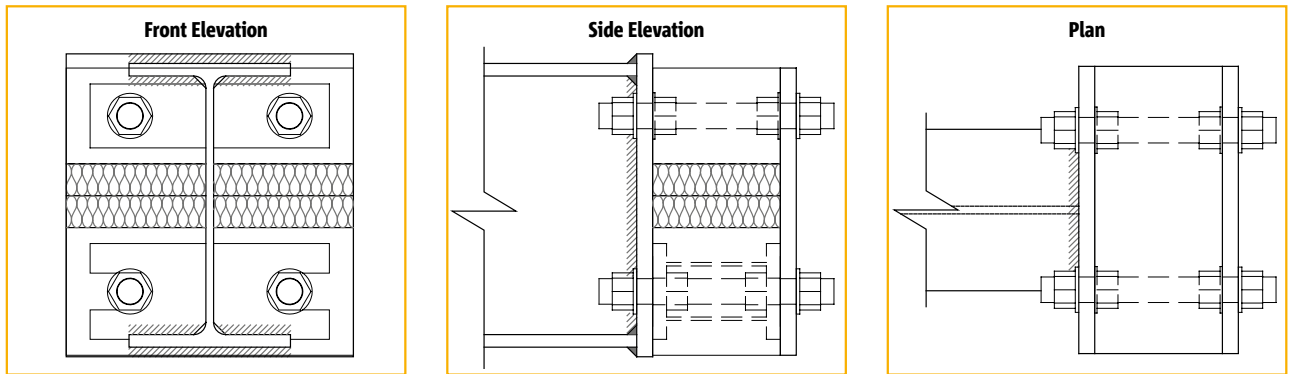
The same on-site fire safety measures that apply to the overall load-bearing structure also apply to any freely accessible components of the Schöck Isokorb® type KST or to any components situated inside the insulating layer. For more information please contact our design department telephone 0845 241 3390.



Schöck system-solution for protection in high chlorine environments

# Schöck Isokorb® type KST

## Universal Beam Connections



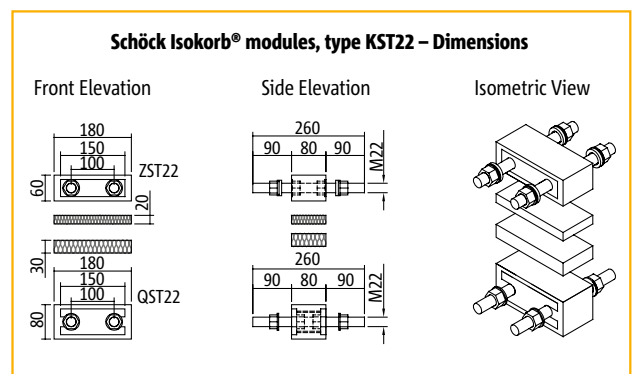
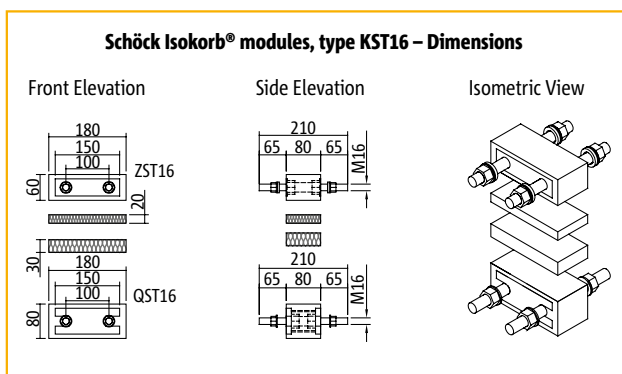
**Schöck Isokorb® type KST Selection Table for Universal Beam Sections**

Con. No.	KST Modules	152 UB (B1)		178 UB (B2)		203 UB (B3)		254 UB (B4)		305 UB (B5)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-10kNm	+30kN	-13kNm	+30kN	-15.5kNm	+30kN	-22kNm	+30kN	-28kNm	+30kN
C2	ZST+QST 22	-17.5kNm	+36kN	-23kNm	+36kN	-28kNm	+36kN	-40.5kNm	+36kN	-52kNm	+36kN
C3	ZST+QST+QST 16	-	-	-	-	-	-	-21kNm	+60kN	-26kNm	+60kN
C4	ZST+QST+QST 22	-	-	-	-	-	-	-39.5kNm	+72kN	-48.5kNm	+72kN
C5	ZST+ZST+QST+QST 16	-	-	-	-	-	-	-	-	-31kNm	+60kN
C6	ZST+ZST+QST+QST 22	-	-	-	-	-	-	-	-	-57kNm	+72kN

**Schöck Isokorb® type KST Selection Table for Universal Beam Sections**

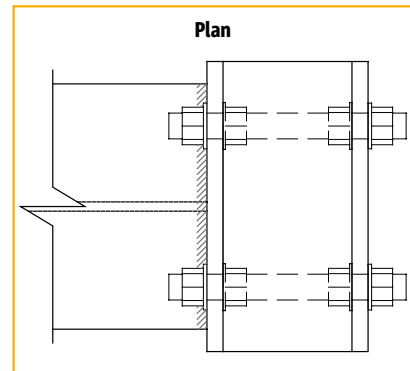
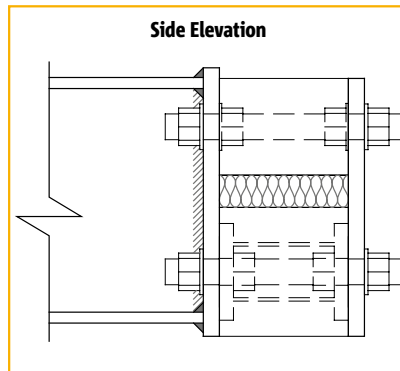
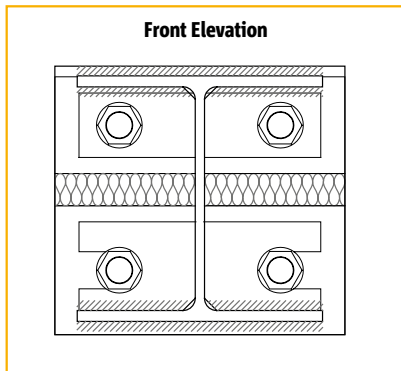
Con. No.	KST Modules	356 UB (B6)		406 UB (B7)		457 UB (B8)		533 UB (B9)		610 UB (B10)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-32.5kNm	+30kN	-38.5kNm	+30kN	-44kNm	+30kN	-52kNm	+30kN	-61kNm	+30kN
C2	ZST+QST 22	-61kNm	+36kN	-72kNm	+36kN	-83kNm	+36kN	-99kNm	+36kN	-115kNm	+36kN
C3	ZST+QST+QST 16	-30.5kNm	+60kN	-35.5kNm	+60kN	-41kNm	+60kN	-49kNm	+60kN	-57kNm	+60kN
C4	ZST+QST+QST 22	-57kNm	+72kN	-67kNm	+72kN	-77kNm	+72kN	-93kNm	+72kN	-109kNm	+72kN
C5	ZST+ZST+QST+QST 16	-39.5kNm	+60kN	-49kNm	+60kN	-60kNm	+60kN	-75kNm	+60kN	-92kNm	+60kN
C6	ZST+ZST+QST+QST 22	-72kNm	+72kN	-92kNm	+72kN	-110kNm	+72kN	-142kNm	+72kN	-173kNm	+72kN

Note: The loads shown above are the ultimate load capacity of the combined modules. We have assumed that all modules are placed within the depth of the beam. Should you require greater load capacities than shown then please contact our technical department to discuss your requirements further.



# Schöck Isokorb® type KST

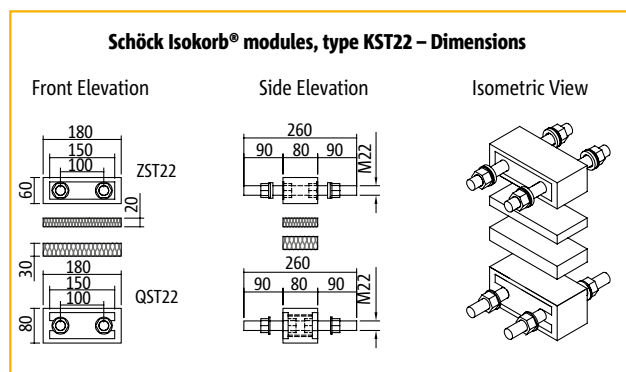
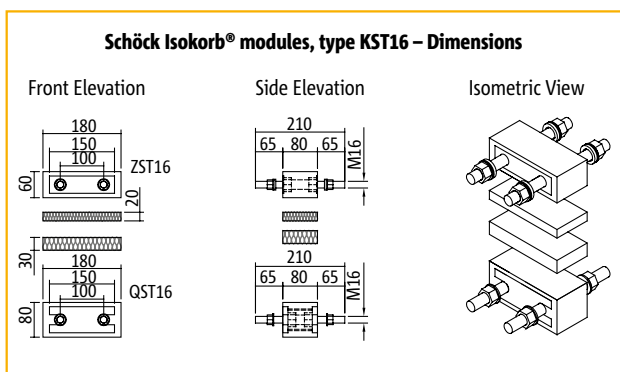
## Universal Column Connections



### Schöck Isokorb® type KST Selection Table for Universal Column Sections

Con. No.	KST Modules	152 UC (B11)		203 UC (B12)		254 UC (B13)		305 UC (B14)		356 UC (B15)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-10kNm	+30kN	-15kNm	+30kN	-20kNm	+30kN	-26kNm	+30kN	-31kNm	+30kN
C2	ZST+QST 22	-18kNm	+36kN	-27kNm	+36kN	-37kNm	+36kN	-49kNm	+36kN	-58kNm	+36kN
C3	ZST+QST+QST 16	-	-	-	-	-20kNm	+60kN	-24kNm	+60kN	-29kNm	+60kN
C4	ZST+QST+QST 22	-	-	-	-	-37kNm	+72kN	-46kNm	+72kN	-54kNm	+72kN
C5	ZST+ZST+QST+QST 16	-	-	-	-	-	-	-29kNm	+60kN	-37kNm	+60kN
C6	ZST+ZST+QST+QST 22	-	-	-	-	-	-	-52kNm	+72kN	-69kNm	+72kN

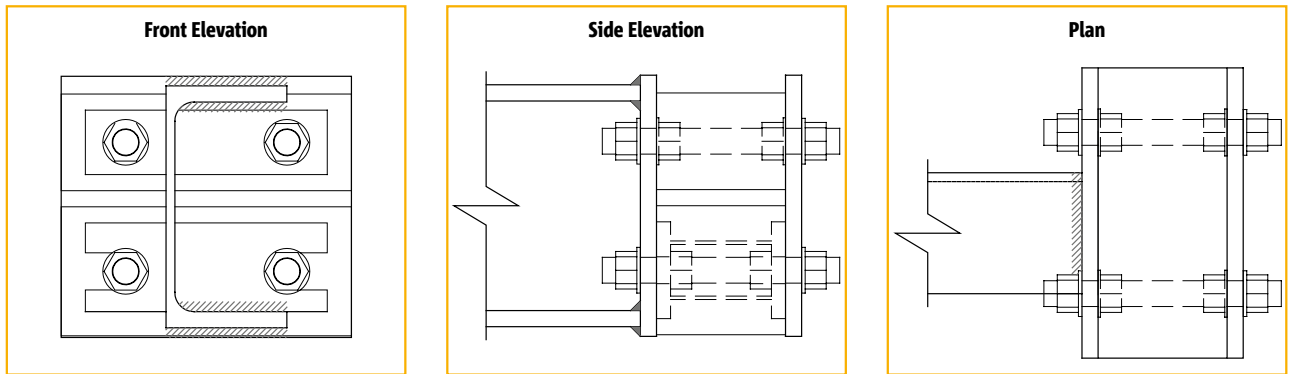
Note: The loads shown above are the ultimate load capacity of the combined modules. We have assumed that all modules are placed within the depth of the beam. Should you require greater load capacities than shown then please contact our technical department to discuss your requirements further.





# Schöck Isokorb® type KST

## Parallel Flange Channel Connections



**Schöck Isokorb® type KST Selection Table for Parallel Flange Channel**

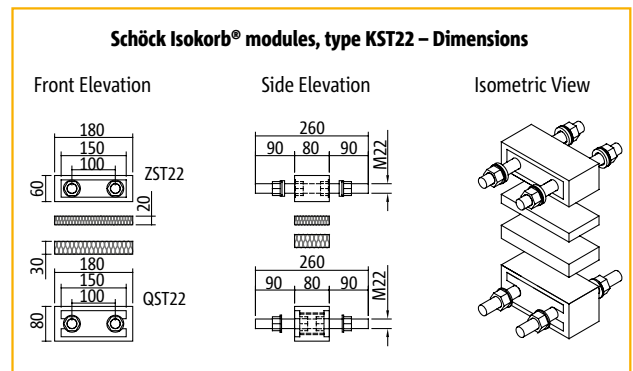
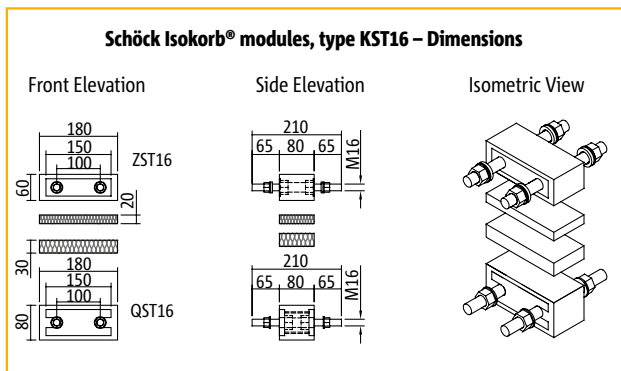
Con. No.	KST Modules	150 PFC (B16)		180 PFC (B17)		200 PFC (B18)		230 PFC (B19)		260 PFC (B20)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-10kNm	30kN	-13kNm	+30kN	-15.5kNm	+30kN	-18kNm	+30kN	-22kNm	+30kN
C2	ZST+QST 22	-17.5kNm	+36kN	-23kNm	+36kN	-27kNm	+36kN	-34kNm	+36kN	-40kNm	+36kN
C7*	QST+QST 16	-24.5kNm	23kN	-28kNm	+28kN	-30kNm	+30kN	-33.5kNm	+30kN	-36kNm	+30kN
C8*	QST+QST 22	-47kNm	+23kN	-54kNm	+28kN	-58kNm	+30kN	-65kNm	+36kN	-72kNm	+36kN

**Schöck Isokorb® type KST Selection Table for Parallel Flange Channel**

Con. No.	KST Modules	300 PFC (B21)		380 PFC (B22)		430 PFC (B23)	
		Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-26kNm	+30kN	-35kNm	+30kN	-40kNm	+30kN
C2	ZST+QST 22	-49kNm	+36kN	-66kNm	+36kN	-76kNm	+36kN
C7*	QST+QST 16	-42kNm	+30kN	-51kNm	+30kN	-57kNm	+30kN
C8*	QST+QST 22	-81kNm	+36kN	-98kNm	+36kN	-110kNm	+36kN

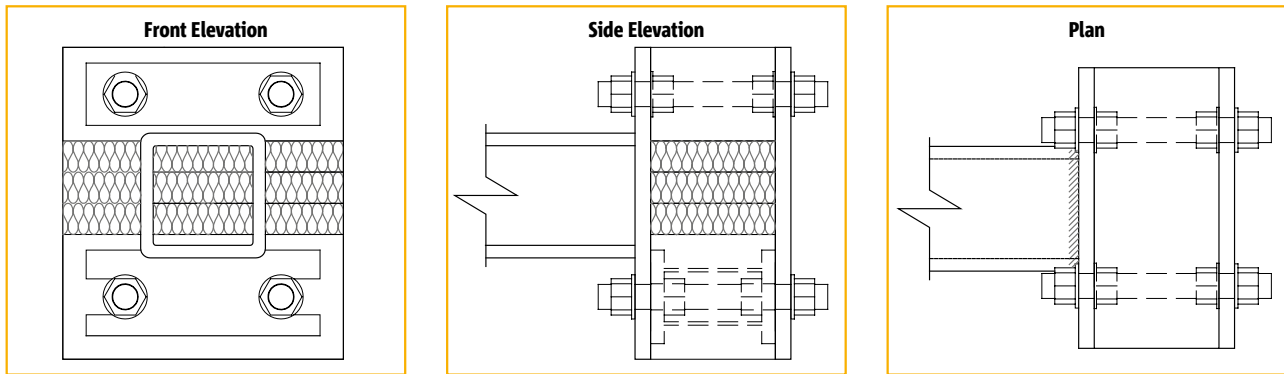
Note: The loads shown above are the ultimate load capacity of the combined modules. We have assumed that all modules are placed within the depth of the beam. Should you require greater load capacities than shown then please contact our technical department to discuss your requirements further.

\*Note: The loads shown above are the ultimate load capacity of the combined modules. In this instance we have assumed that modules are placed above and below the beam with NO tie beam. This is due to the beam member being asymmetric in design the requirement is for 2 No. QST modules to stop any torsional rotation. Should you require greater load capacities than shown then please contact our technical department to discuss your requirements further.



# Schöck Isokorb® type KST

## Square Hollow Section Connections



### Schöck Isokorb® type KST Selection Table for Square Hollow Sections

Con. No.	KST Modules	50x50 SHS (B24)		60x60 SHS (B25)		70x70 SHS (B26)		80x80 (B27)		90x90 SHS (B28)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-11kNm	30kN	-12kNm	+30kN	-14kNm	+30kN	-15kNm	+30kN	-16kNm	+30kN
C2	ZST+QST 22	-24kNm	+36kN	-26kNm	+36kN	-29kNm	+36kN	-31kNm	+36kN	-33kNm	+36kN

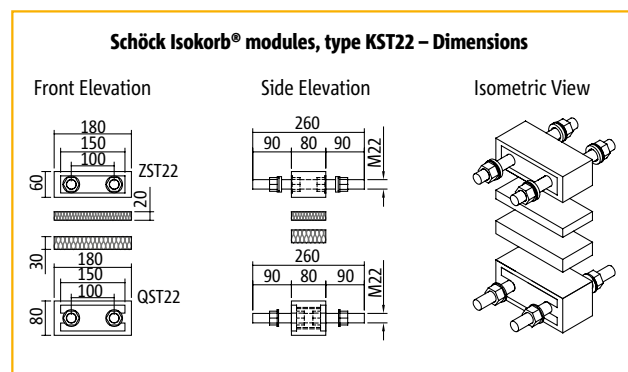
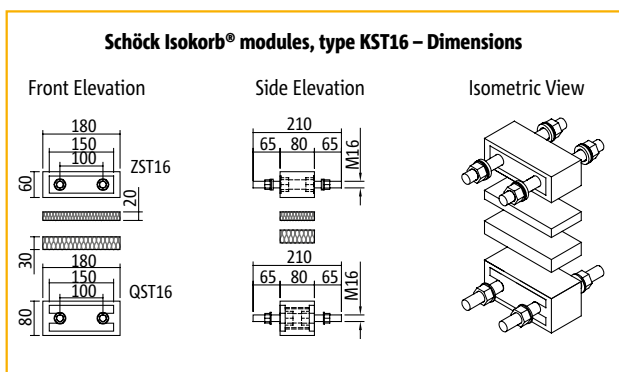
### Schöck Isokorb® type KST Selection Table for Square Hollow Sections

Con. No.	KST Modules	100x100 SHS (B29)		120x120 SHS (B30)		140x140 SHS (B31)		150x150 SHS (B32)		160x160 SHS (B33)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-17kNm	+30kN	-19kNm	+30kN	-22kNm	+30kN	-23kNm	+30kN	-24kNm	+30kN
C2	ZST+QST 22	-36kNm	+36kN	-40kNm	+36kN	-44kNm	+36kN	-47kNm	+36kN	-49kNm	+36kN

### Schöck Isokorb® type KST Selection Table for Square Hollow Sections

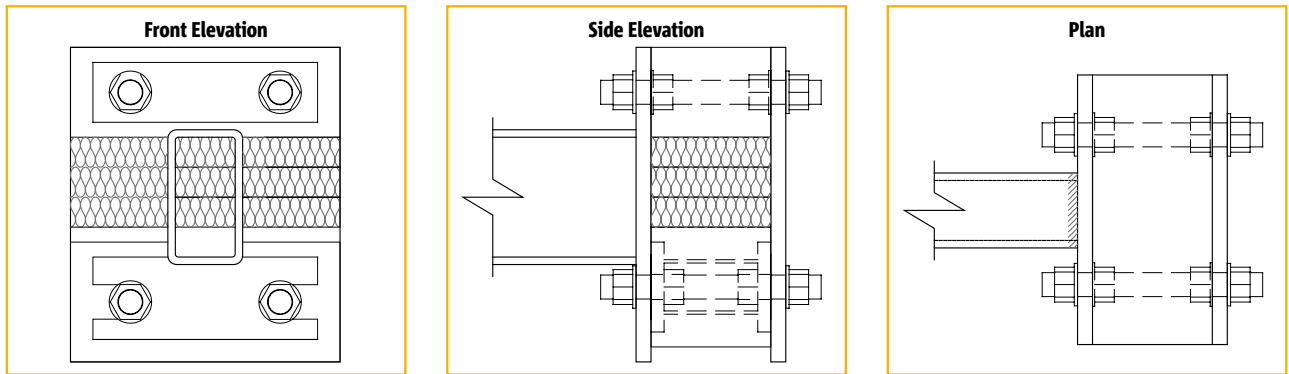
Con. No.	KST Modules	180x180 SHS (B34)		200x200 SHS (B35)		250x250 SHS (B36)		260x260 SHS (B37)		300x300 SHS (B38)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-26kNm	+30kN	-29kNm	+30kN	-35kNm	+30kN	-36kNm	+30kN	-40kNm	+30kN
C2	ZST+QST 22	-54kNm	+36kN	-58kNm	+36kN	-69kNm	+36kN	-71kNm	+36kN	-81kNm	+36kN

Note: The loads shown above are the ultimate load capacity of the combined modules. We have assumed that all modules are placed within the depth of the beam. Should you require greater load capacities than shown then please contact our technical department to discuss your requirements further.



# Schöck Isokorb® type KST

## Rectangular Hollow Section Connections



**Schöck Isokorb® type KST Selection Table for Rectangular Hollow Sections**

Con. No.	KST Modules	60x40 RHS (B39)		80x40 RHS (B40)		90x50 RHS (B41)		100x50 RHS (B42)		120x60 RHS (B43)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-12kNm	30kN	-15kNm	+30kN	-15.5kNm	+30kN	-17kNm	+30kN	-19kNm	+30kN
C2	ZST+QST 22	-27kNm	+36kN	-31kNm	+36kN	-33kNm	+36kN	-36kNm	+36kN	-40kNm	+36kN

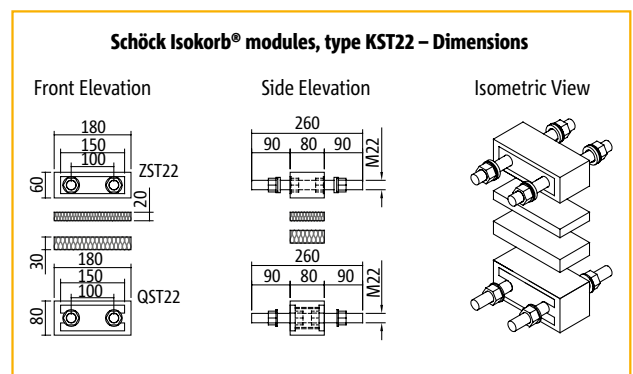
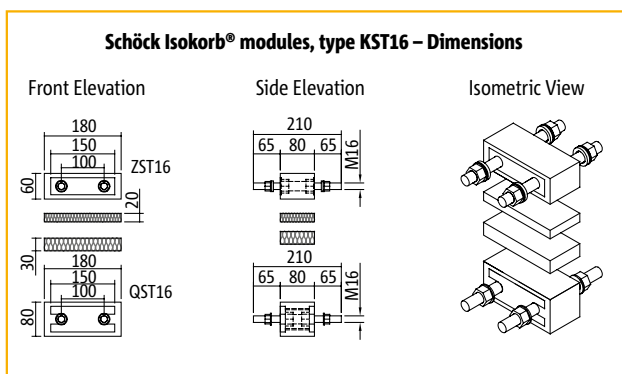
**Schöck Isokorb® type KST Selection Table for Rectangular Hollow Sections**

Con. No.	KST Modules	150x100 RHS (B44)		160x80 RHS (B45)		180x160 RHS (B46)		200x150 RHS (B47)		220x120 RHS (B48)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-23kNm	+30kN	-24kNm	+30kN	-26kNm	+30kN	-28kNm	+30kN	-30kNm	+30kN
C2	ZST+QST 22	-47kNm	+36kN	-49kNm	+36kN	-54kNm	+36kN	-56kNm	+36kN	-62kNm	+36kN

**Schöck Isokorb® type KST Selection Table for Rectangular Hollow Sections**

Con. No.	KST Modules	250x100 RHS (B49)		260x140 RHS (B50)		300x100 RHS (B51)		340x100 RHS (B52)		350x150 RHS (B53)	
		Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear	Moment	Shear
C1	ZST+QST 16	-35kNm	+30kN	-36kNm	+30kN	-40kNm	+30kN	-45kNm	+30kN	-46kNm	+30kN
C2	ZST+QST 22	-69kNm	+36kN	-72kNm	+36kN	-81kNm	+36kN	-90kNm	+36kN	-92kNm	+36kN

Note: The loads shown above are the ultimate load capacity of the combined modules. We have assumed that all modules are placed above and below the beam. Should you require greater load capacities than shown then please contact our technical department to discuss your requirements further.



# Schöck Isokorb® type KST

## Enquiry Form

Please complete the information below to enable Schöck to create a project file and provide an accurate quotation.

### Please Note

- The end plate design and details are completed by others
- We require plans, sections & connection calculations from the Structural Engineer to complete an internal design check before products can be ordered

### 1. Contact Details

Contact Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel. \_\_\_\_\_

E-mail \_\_\_\_\_

### 2. Project Details

Project Name \_\_\_\_\_

Address \_\_\_\_\_

Connection Reference	Connection Quantity	Rates (to be completed internally)

Enquiry Form







#### Imprint

Published by: Schöck Ltd  
The Clock Tower  
2 - 4 High Street  
Kidlington  
Oxford  
OX5 2DH  
Telephone: 0845 241 3390

Date of publication: April 2014

Copyright: © 2014, Schöck Ltd  
The contents of this publication must not be passed on to third parties, neither in full nor in part, without the written authorisation of Schöck Ltd. All technical details, drawings etc. are protected by copyright laws.

Schöck Ltd  
The Clock Tower  
2 - 4 High Street  
Kidlington  
Oxford  
OX5 2DH  
Telephone: 01865 290 890  
Fax: 0845 241 3391  
design@schoeck.co.uk  
www.schoeck.co.uk

