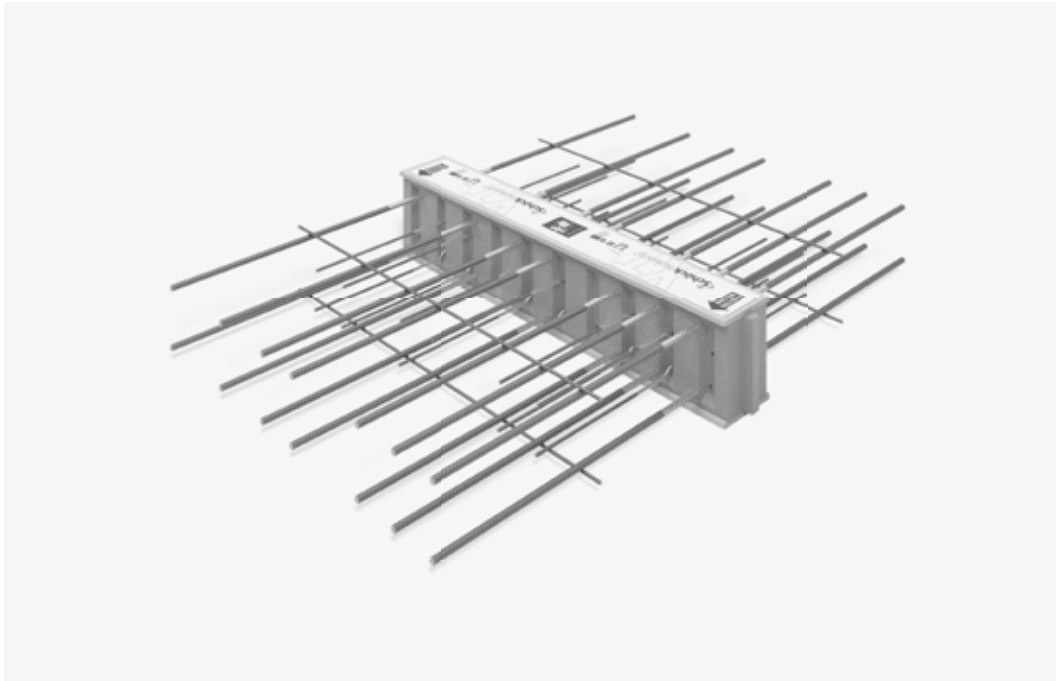


Schöck Isokorb® XT type D



Schöck Isokorb® XT type D

Suitable for continuous floors. It transmits negative moment and positive shear forces with cantilevered balconies or positive moments with shear forces.

XT
type D

Reinforced concrete – reinforced concrete

Element arrangement | Installation cross sections

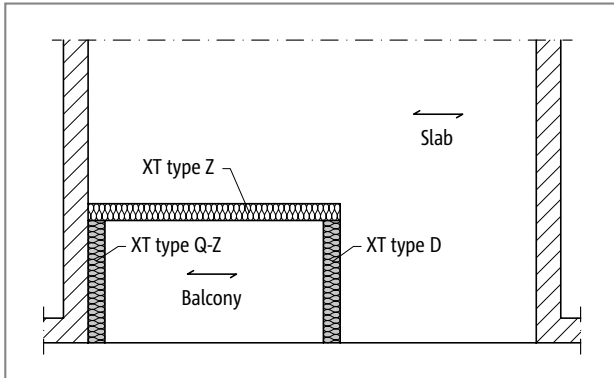


Fig. 204: Schöck Isokorb® XT type D, Q-Z: One-way spanning

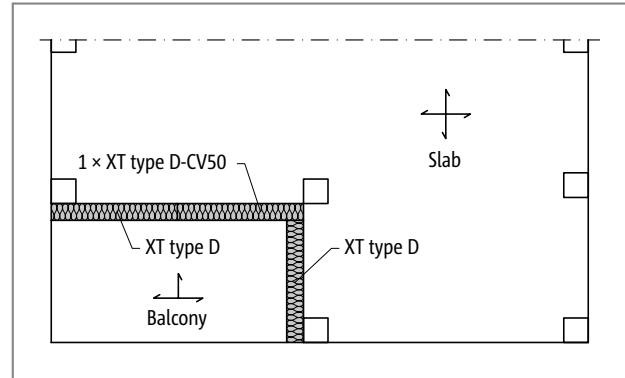


Fig. 205: Schöck Isokorb® XT type D: Two-way spanning

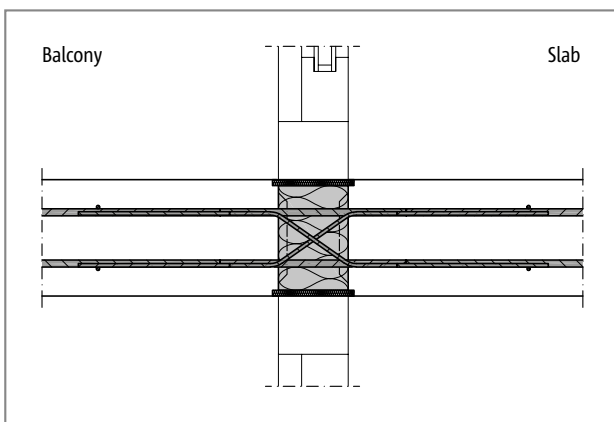


Fig. 206: Schöck Isokorb® XT type D: One-way spanning

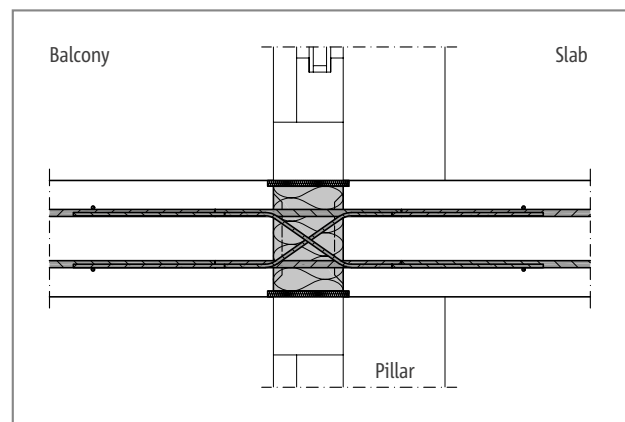


Fig. 207: Schöck Isokorb® XT type D: Two-way spanning

i Element arrangement

- ▶ With connection across the corner with Schöck Isokorb® XT type D, a type D-CV50 (2nd position) is required in one axial direction. Therefore a minimum slab thickness of 200 mm.
- ▶ The Schöck Isokorb® transmits moments vertically to the insulation joint, it transmits no moments parallel to the insulation joint. Therefore it is not suitable for employment within point supported floor bays or in balconies with 4 columns.

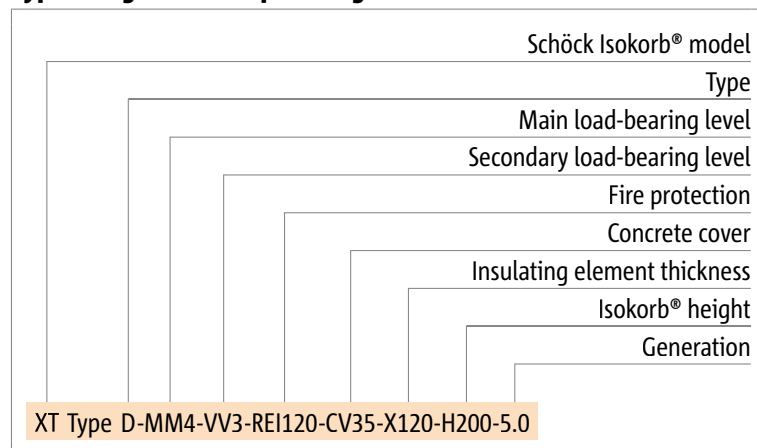
Product selection | Type designations | Special designs

Schöck Isokorb® XT type D variants

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

- ▶ Main load-bearing level:
MM2 to MM5
MM1 is available on request
- ▶ Secondary load-bearing level:
VV1 to VV3
- ▶ Fire resistance class:
REI120 (standard): Top and bottom fire protection projecting by 10mm on both sides
- ▶ Concrete cover of the tension bars:
CV35: Top CV = 35 mm, bottom CV = 30 mm
CV50: Top CV = 50 mm, bottom CV = 50 mm
- ▶ Insulating element thickness:
X120 = 120 mm
- ▶ Isokorb® height:
 $H = H_{\min}$ to 250 mm (H_{\min} i dependent on concrete cover and shear force load-bearing level see p.144)
- ▶ Generation:
5.0

Type designations in planning documents



i Special designs

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

In accordance with approval heights up to 500 mm are possible.

C25/30 design

Schöck Isokorb® XT type D			MM2-VV1	MM2-VV2	MM2-VV3	MM3-VV1	MM3-VV2	MM3-VV3
Design values with	Concrete cover CV [mm]		Concrete strength class \geq C25/30					
	CV35	CV50	$m_{rd,y}$ [kNm/m]					
Isokorb® height H [mm]	160		± 15.7	-	-	± 22.9	-	-
		200	± 16.6	-	-	± 24.3	-	-
	170		± 17.6	± 15.4	-	± 25.7	± 23.5	-
		210	± 18.5	± 16.2	-	± 27.1	± 24.8	-
	180		± 19.5	± 17.0	± 13.9	± 28.5	± 26.1	± 22.9
		220	± 20.4	± 17.9	± 14.6	± 29.9	± 27.3	± 24.1
	190		± 21.3	± 18.7	± 15.3	± 31.2	± 28.6	± 25.2
		230	± 22.3	± 19.5	± 15.9	± 32.6	± 29.8	± 26.3
	200		± 23.2	± 20.3	± 16.6	± 34.0	± 31.1	± 27.4
		240	± 24.2	± 21.2	± 17.3	± 35.4	± 32.4	± 28.5
	210		± 25.1	± 22.0	± 18.0	± 36.8	± 33.6	± 29.6
		250	± 26.1	± 22.8	± 18.6	± 38.1	± 34.9	± 30.7
	220		± 27.0	± 23.6	± 19.3	± 39.5	± 36.2	± 31.8
	230		± 28.9	± 25.3	± 20.7	± 42.3	± 38.7	± 34.1
240		± 30.8	± 26.9	± 22.0	± 45.1	± 41.2	± 36.3	
250		± 32.7	± 28.6	± 23.4	± 47.8	± 43.8	± 38.5	
Secondary load-bearing level			$v_{rd,z}$ [kN/m]					
	VV1/VV2/VV3		± 42.3	± 75.2	± 117.5	± 42.3	± 75.2	± 117.5

Schöck Isokorb® XT type D	MM2-VV1	MM2-VV2	MM2-VV3	MM3-VV1	MM3-VV2	MM3-VV3
Isokorb® length [mm]	1000			1000		
Tension bars/compression members	2 \times 5 \varnothing 12			2 \times 7 \varnothing 12		
Shear force bars	2 \times 6 \varnothing 6	2 \times 6 \varnothing 8	2 \times 6 \varnothing 10	2 \times 6 \varnothing 6	2 \times 6 \varnothing 8	2 \times 6 \varnothing 10
H_{min} with CV35 [mm]	160	170	180	160	170	180
H_{min} with CV50 [mm]	200	210	220	200	210	220

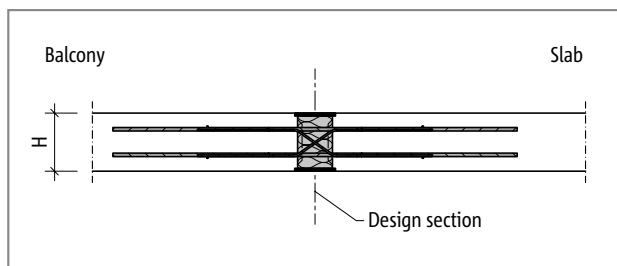


Fig. 208: Schöck Isokorb® XT type D: Static system

C25/30 design

Schöck Isokorb® XT type D		MM4-VV1	MM4-VV2	MM4-VV3	MM5-VV1	MM5-VV2	MM5-VV3	
Design values with	Concrete cover CV [mm]		Concrete strength class \geq C25/30					
	CV35	CV50	$m_{Rd,y}$ [kNm/m]					
Isokorb® height H [mm]	160		±33.9	-	-	±41.1	-	-
		200	±35.9	-	-	±43.6	-	-
	170		±37.9	±35.7	-	±46.1	±43.9	-
		210	±40.0	±37.7	-	±48.6	±46.3	-
	180		±42.0	±39.6	±36.5	±51.0	±48.6	±45.5
		220	±44.0	±41.5	±38.2	±53.5	±51.0	±47.7
	190		±46.1	±43.4	±40.0	±56.0	±53.3	±49.9
		230	±48.1	±45.4	±41.8	±58.5	±55.7	±52.1
	200		±50.2	±47.3	±43.6	±60.9	±58.0	±54.3
		240	±52.2	±49.2	±45.3	±63.4	±60.4	±56.5
	210		±54.2	±51.1	±47.1	±65.9	±62.8	±58.7
		250	±56.3	±53.0	±48.9	±68.4	±65.1	±61.0
	220		±58.3	±55.0	±50.6	±70.8	±67.5	±63.2
	230		±62.4	±58.8	±54.2	±75.8	±72.2	±67.6
240		±66.5	±62.6	±57.7	±80.8	±76.9	±72.0	
250		±70.6	±66.5	±61.3	±85.7	±81.6	±76.4	
Secondary load-bearing level			$v_{Rd,z}$ [kN/m]					
	VV1/VV2/VV3		±42.3	±75.2	±117.5	±42.3	±75.2	±117.5

Schöck Isokorb® XT type D	MM4-VV1	MM4-VV2	MM4-VV3	MM5-VV1	MM5-VV2	MM5-VV3
Isokorb® length [mm]	1000			1000		
Tension bars/compression members	2 × 10 \varnothing 12			2 × 12 \varnothing 12		
Shear force bars	2 × 6 \varnothing 6	2 × 6 \varnothing 8	2 × 6 \varnothing 10	2 × 6 \varnothing 6	2 × 6 \varnothing 8	2 × 6 \varnothing 10
H _{min} with CV35 [mm]	160	170	180	160	170	180
H _{min} with CV50 [mm]	200	210	220	200	210	220

i Notes on design

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

Expansion joint spacing

Maximum expansion joint spacing

If the length of the structural component exceeds the maximum expansion joint spacing e , then the expansion joints must be integrated into the external concrete components at right angles to the insulating layer in order to limit the effect as a result of temperature changes. With fixed points such as, for example, balcony corners or with the employment of the Schöck Isokorb® XT types H, half the maximum expansion joint spacing $e/2$ applies.

Schöck Isokorb® XT type D		MM2	MM3	MM4	MM5
Maximum expansion joint spacing e		e [m]			
Insulating element thickness [mm]	120	19.8			

i Edge distances

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

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

Product description

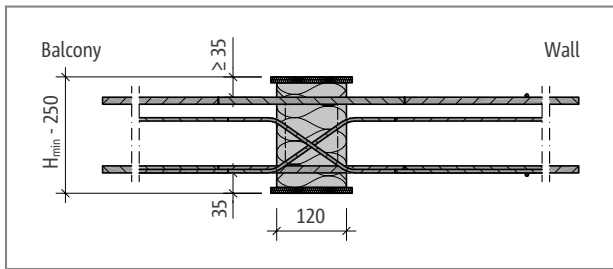


Fig. 209: Schöck Isokorb® XT type D with CV35: Product section

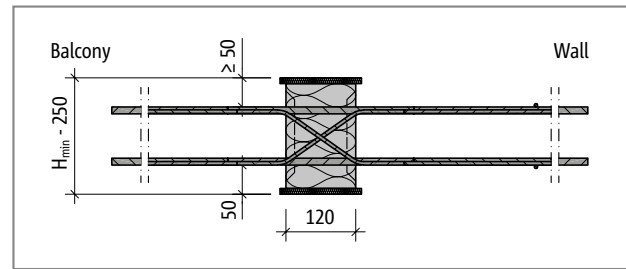


Fig. 210: Schöck Isokorb® XT type D with CV50: Product section

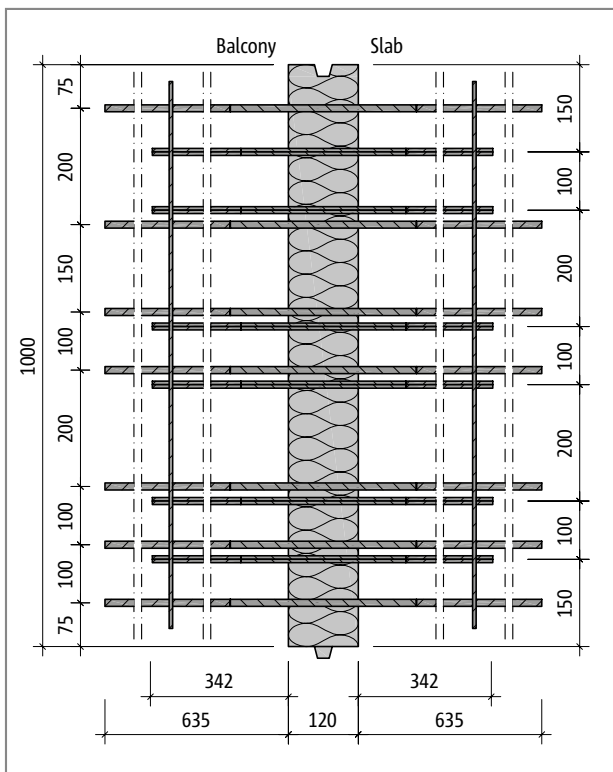


Fig. 211: Schöck Isokorb® XT type D-MM3-VV1: Plan view

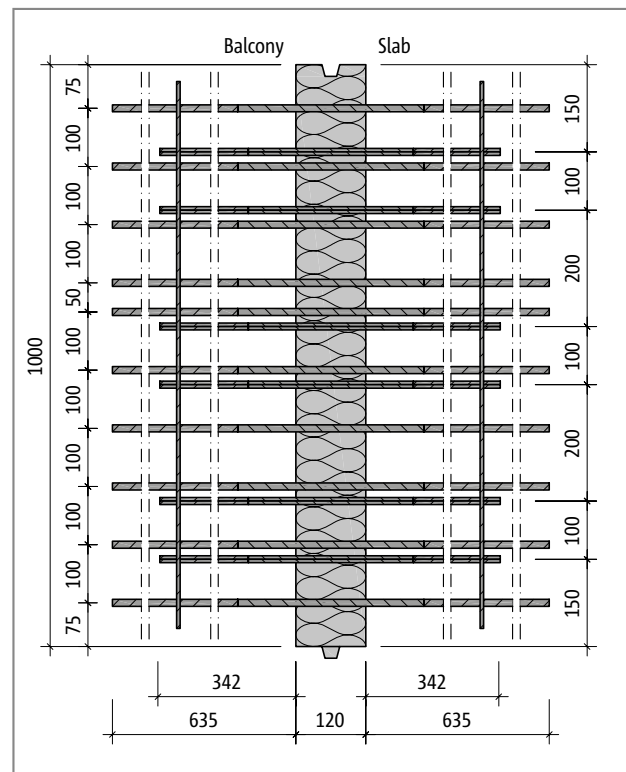


Fig. 212: Schöck Isokorb® XT type D-MM4-VV1: Plan view

i Product information

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

On-site reinforcement

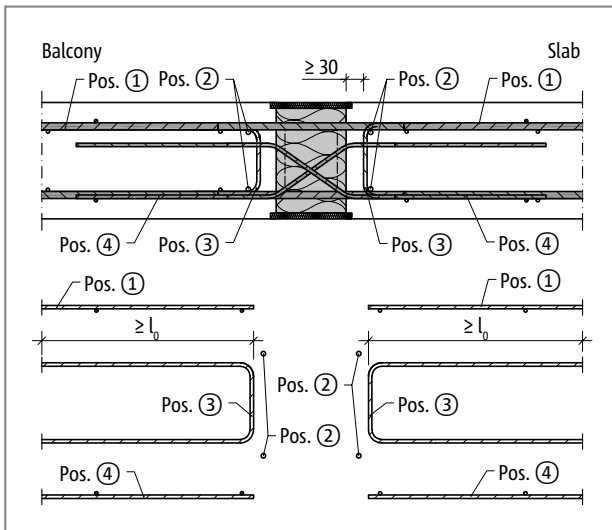


Fig. 213: Schöck Isokorb® XT type D: On-site reinforcement

i Information about on-site reinforcement

- ▶ The rules according to BS EN 1992-1-1 (EC2) and BS EN 1992-1-1/NA apply for the determination of the overlap length. A reduction of the required overlap length with m_{Ed}/m_{Rd} is permitted. For the overlap (l) with the Schöck Isokorb® for the XT type D a length of the tension bars of 605 can be brought to account.
- ▶ An edge and suspension reinforcement (Pos. 3) is to be arranged on both sides of the Schöck Isokorb® XT type D. Details in the table apply for Schöck Isokorb® with a loading of 100% of the maximum design internal forces with 25/30.

On-site reinforcement

The reinforcement in the reinforced concrete slab is determined from the structural engineer's design. With this both the effective moment and the effective shear force should be taken into account.

In addition, it is to be ensured that the tension bars of the Schöck Isokorb® are 100% lapped. The existing inner slab reinforcement can be taken into account as long as the maximum separation to the tension bars of the Schöck Isokorb® of 4ϕ is maintained. Additional reinforcement may be required.

Schöck Isokorb® XT type D	MM2-VV1	MM2-VV2	MM2-VV3	MM3-VV1	MM3-VV2	MM3-VV3
On-site reinforcement	Concrete strength class \geq C25/30					
Pos. 1 Lapping reinforcement (required with negative moment))						
Pos. 1 [mm ² /m]	565	565	565	791	791	791
Pos. 2 Steel bars along the insulation joint						
Pos. 2	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8
Pos. 3 Edge and suspension reinforcement						
Pos. 3	H8@250	H8@150	H8@100	H8@250	H8@150	H8@100
Pos. 4 Lapping reinforcement (required with positive moment)						
Pos. 4 [mm ² /m]	565	565	565	791	791	791

Schöck Isokorb® XT type D	MM4-VV1	MM4-VV2	MM4-VV3	MM5-VV1	MM5-VV2	MM5-VV3
On-site reinforcement	Concrete strength class \geq C25/30					
Pos. 1 Lapping reinforcement (required with negative moment))						
Pos. 1 [mm ² /m]	1130	1130	1130	1357	1357	1357
Pos. 2 Steel bars along the insulation joint						
Pos. 2	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8	2 · 2 · H8
Pos. 3 Edge and suspension reinforcement						
Pos. 3	H8@250	H8@150	H8@100	H8@250	H8@150	H8@100
Pos. 4 Lapping reinforcement (required with positive moment)						
Pos. 4 [mm ² /m]	1130	1130	1130	1357	1357	1357

✓ Check list

- Have the loads on the Schöck Isokorb® connection been specified at design level?
- Has the cantilevered system length or the system support width been taken as a basis?
- Are the maximum allowable expansion joint spacings taken into account?
- With the selection of the design table is the relevant concrete cover taken into account?
- Are the requirements with regard to fire protection explained and is the appropriate addendum entered in the Isokorb® type description in the implementation plans?
- Is the minimum slab thickness (≥ 200 mm) and the required concrete cover (-CV50) taken into account with connection over a corner using Schöck Isokorb® XT type D?
- With XT type D in conjunction with prefabricated floors is the required block-out (width ≥ 650 mm from insulating element) drawn into the implementation plans and is the on-site reinforcement adjusted?
- With 2- or 3-sided support is a Schöck Isokorb® selected for a connection free of constraint selected (possibly XT type Q-Z, XT type Q-PZ)?
- Have the requirements for on-site reinforcement of connections been defined in each case?