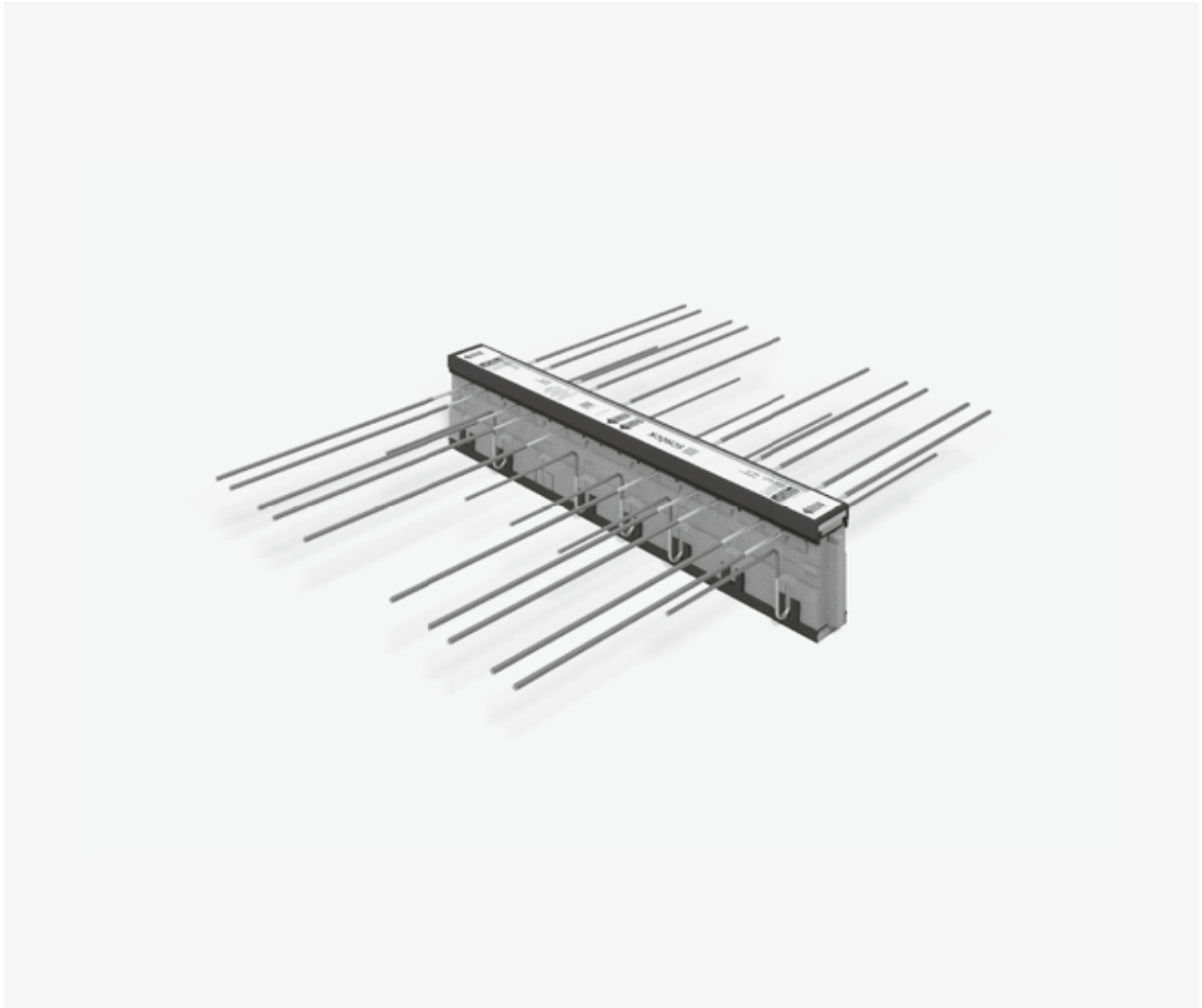


Schöck Isokorb® T Type CK



CK

Products

Schöck Isokorb® T Type CK

Load-bearing thermal insulation element for freely cantilevered balconies. The element transfers negative moments and positive shear forces. An element with the load-bearing level VV additionally transfers negative shear forces.

Assembly Section Details | Element Arrangement

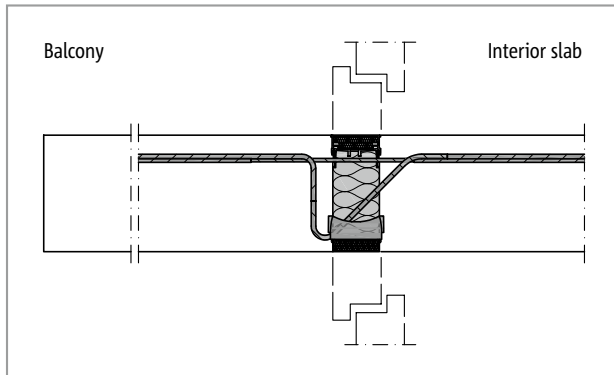


Fig. 1: Schöck Isokorb® T Type CK: Balcony with window wall system

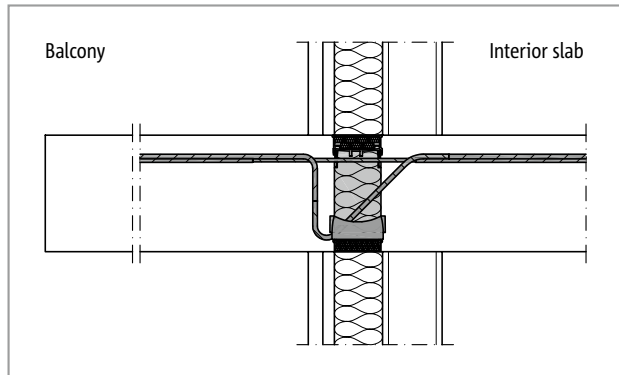


Fig. 2: Schöck Isokorb® T Type CK: Balcony with steel stud wall, cavity insulation and facade cladding

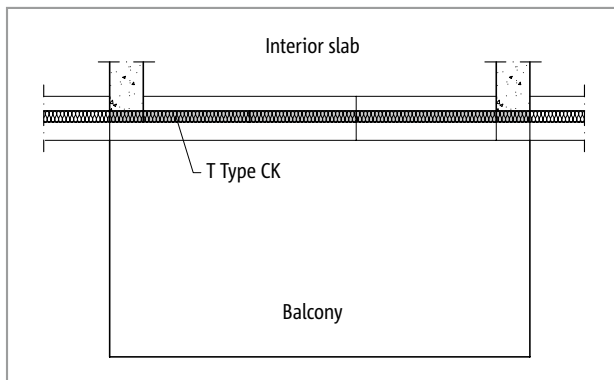


Fig. 3: Schöck Isokorb® T Type CK: Cantilever balcony

Position of Schöck Isokorb®

For optimal thermal performance the Schöck Isokorb® should be aligned with the insulation layer.

Orientation of Schöck Isokorb®

- The Schöck Isokorb® does not have a symmetrical design in all cases.
- Ensure proper installation orientation as shown in the cross-section view on the design drawings and product labels.

Notes

- In the presence of horizontal loads, e.g. from earthquakes, Schöck Isokorb® Type CH must be added.
- If the Schöck Isokorb® is used in precast concrete construction, a cast-in-place strip of concrete (width = bar length from insulating element) must be allowed for sufficient connection bar anchorage.

Concrete Cover

Concrete cover (CV)

The concrete cover of the Schöck Isokorb® is set to 35 mm [1 3/8"] (CV35), 40 mm [1.5"] (CV40) or 50 mm [2"] (CV50). Concrete cover of CV50 is recommended for balcony slabs that are sloped for drainage.

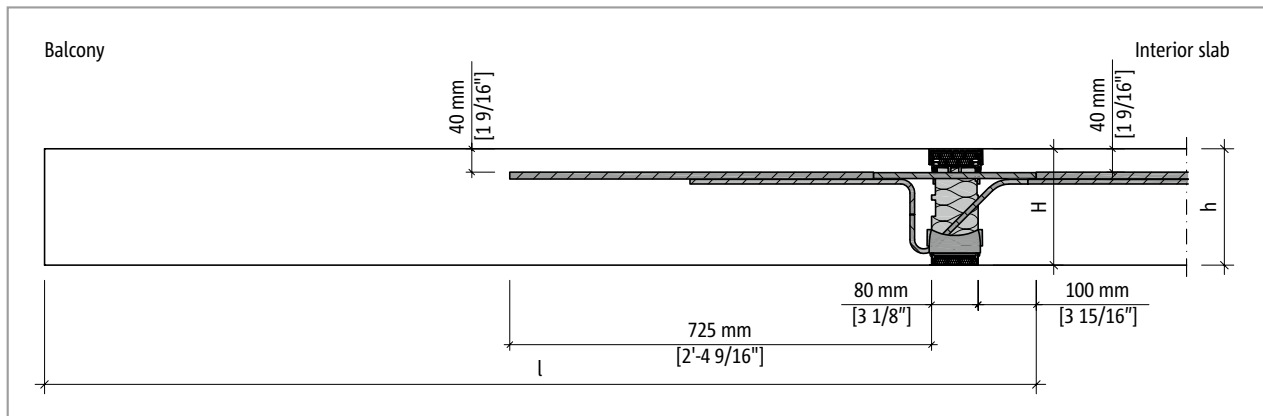


Fig. 4: Schöck Isokorb® T Type CK: Concrete cover CV40 [1.5"] with flat balcony slab

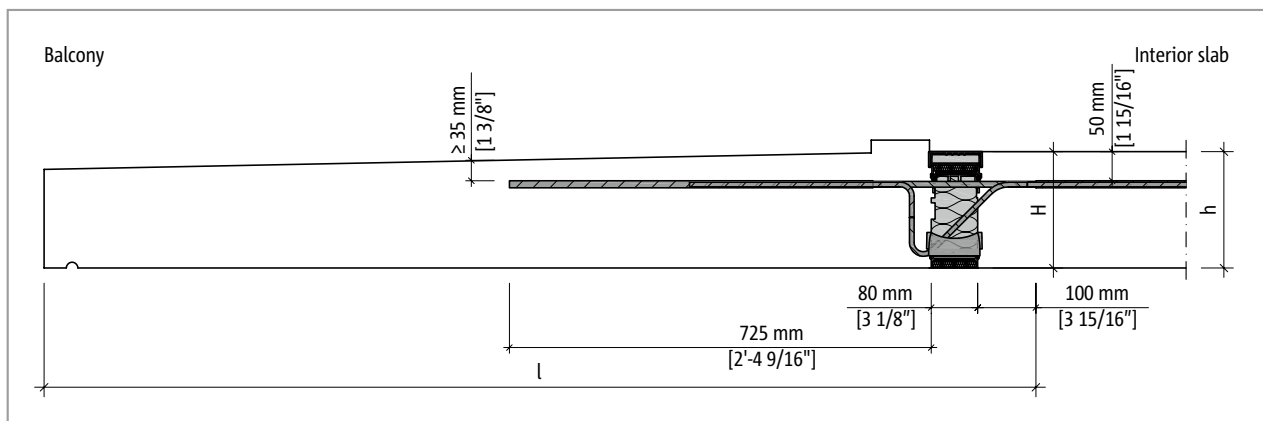


Fig. 5: Schöck Isokorb® T Type CK: Concrete cover CV50 [2"] with sloped balcony slab

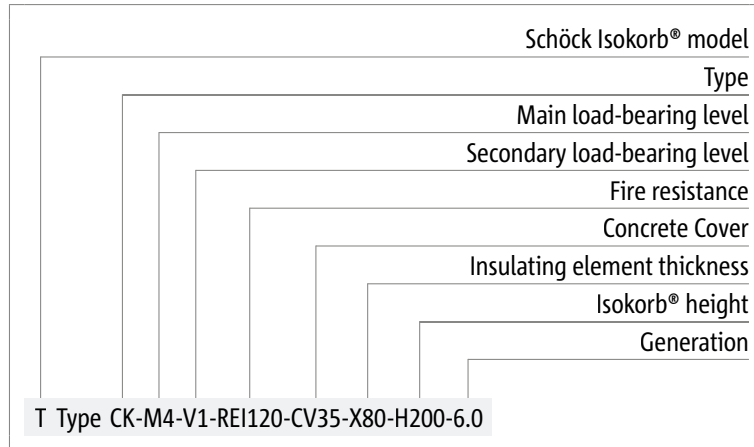
CK

Products

Type Designation

Type designation

The following product naming system is used to specify the attributes of the Schöck Isokorb® product as required in the structural design. This naming system ensures that the product is manufactured in accordance with the required specification. There is also a short-form of each product name to facilitate recognition of the product on the construction site during installation. Every Schöck Isokorb® product comes with both its full production designation and short-form name printed on the label on each unit to ensure the product type is clearly represented.



CK

Products

Product Description

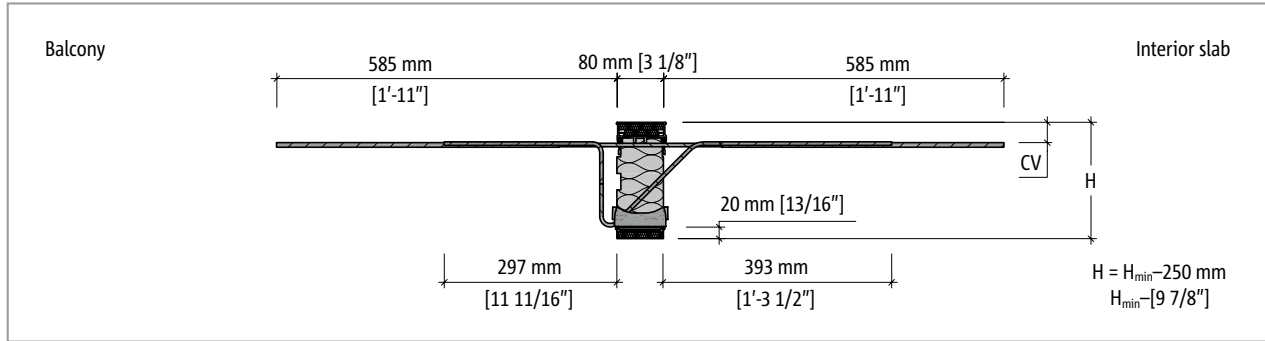


Fig. 6: Schöck Isokorb® T Type CK-M1-V1 to M6-V1: Product cross-section

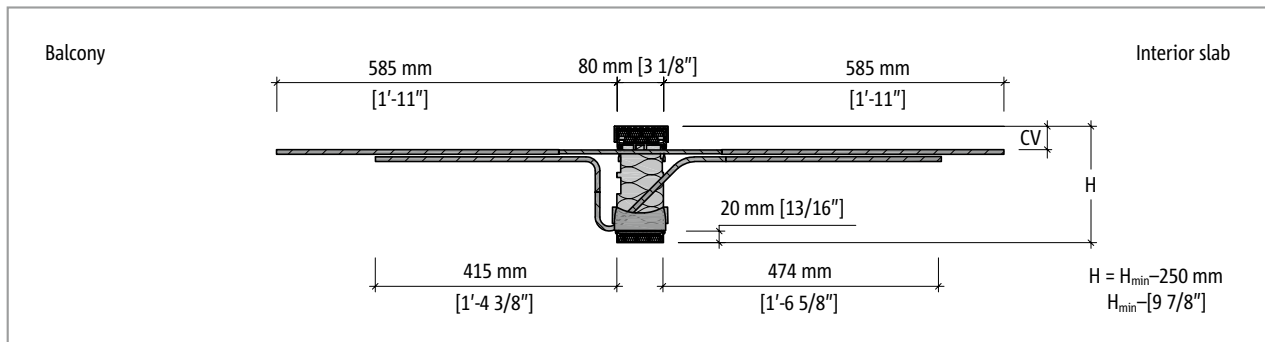


Fig. 7: Schöck Isokorb® T Type CK-M1-V2 to M6-V2: Product cross-section

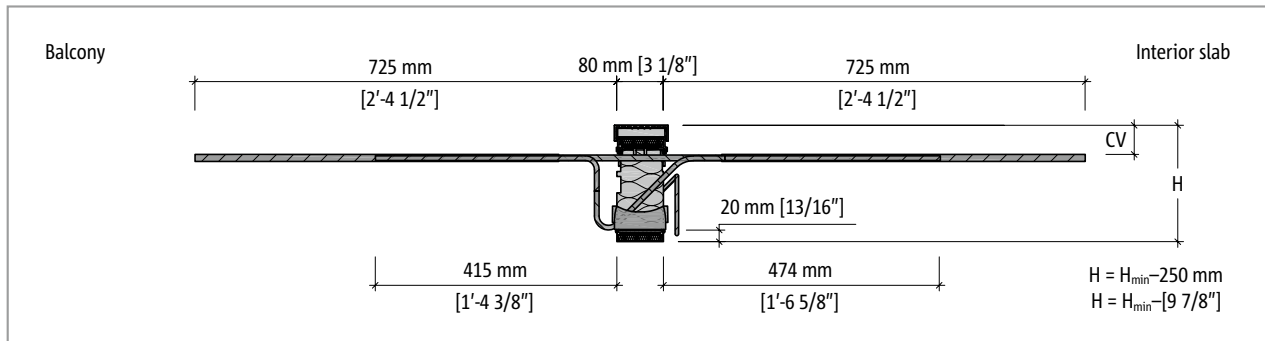


Fig. 8: Schöck Isokorb® T Type CK-M6-V3 to M11-V1: Product cross-section

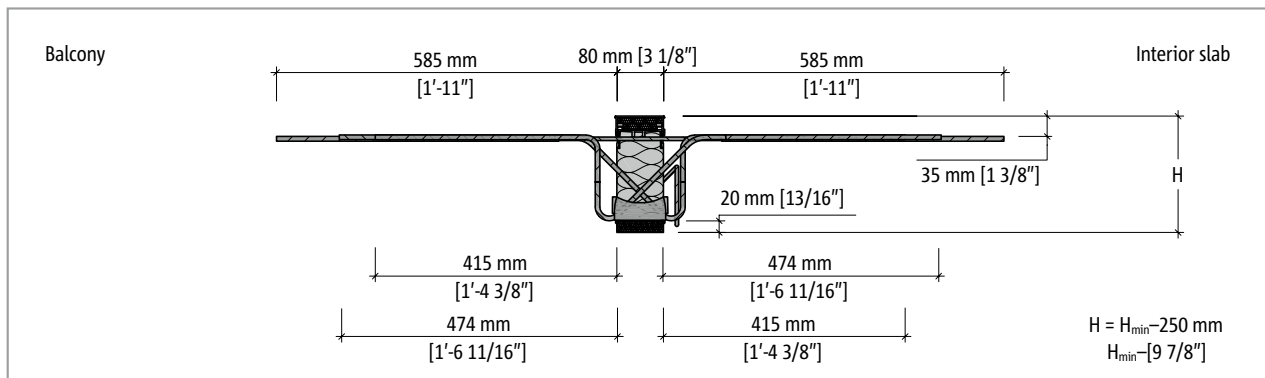


Fig. 9: Schöck Isokorb® T Type CK-M4-VV1 to M5-VV1: Product cross-section

Product Description

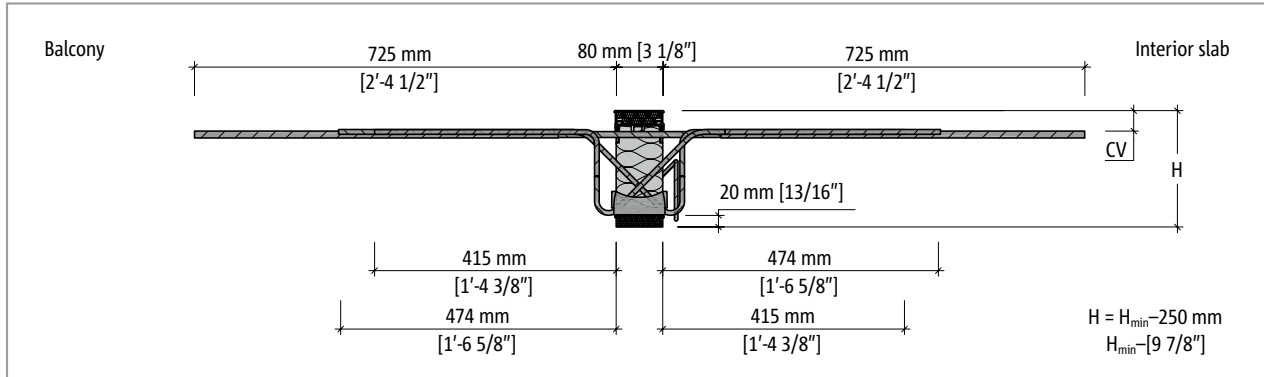


Fig. 10: Schöck Isokorb® T Type CK-M6-VV1 to M11-VV1: Product cross-section

CK

Products

Product Description

Schöck Isokorb® length and configuration

Schöck Isokorb® T Type CK 6.0	M1	M2	M3	M4	M5	M6
Placement with	Isokorb® length [mm]					
	1000	1000	1000	1000	1000	1000
Length [ft in]	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"
Tension bars V1	4 ∅ 8	8 ∅ 8	10 ∅ 8	12 ∅ 8	14 ∅ 8	15 ∅ 8
Tension bars V2	4 ∅ 8	8 ∅ 8	10 ∅ 8	12 ∅ 8	14 ∅ 8	15 ∅ 8
Tension bars V3	-	-	10 ∅ 8	12 ∅ 8	14 ∅ 8	7 ∅ 12
Tension bars VV1	-	-	-	14 ∅ 8	15 ∅ 8	8 ∅ 12
Shear bars V1	4 ∅ 6	4 ∅ 6	5 ∅ 6	5 ∅ 6	5 ∅ 6	5 ∅ 6
Shear bars V2	4 ∅ 8	4 ∅ 8	5 ∅ 8	5 ∅ 8	5 ∅ 8	5 ∅ 8
Shear bars V3	-	-	8 ∅ 8	8 ∅ 8	8 ∅ 8	8 ∅ 8
Shear bars VV1	-	-	-	4 ∅ 8 + 4 ∅ 8	4 ∅ 8 + 4 ∅ 8	4 ∅ 8 + 4 ∅ 8
Concrete comp. bearing modules V1	4	6	7	8	7	8
Concrete comp. bearing modules V2	4	6	7	8	7	8
Concrete comp. bearing modules V3	-	-	8	8	8	10
Concrete comp. bearing modules VV1	-	-	-	11	12	13
Special stirrup reinforcement VV1	-	-	-	-	-	4
H _{min} with CV35 [mm]	160	160	160	160	160	160
H _{min} with CV40 [mm]	170	170	170	170	170	170
H _{min} with CV50 [mm]	180	180	180	180	180	180
H _{min} with CV 1 3/8 [in]	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"
H _{min} with CV 1 9/16 [in]	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"
H _{min} with CV 1 15/16 [in]	7"	7"	7"	7"	7"	7"

Notes

- The product cross-sections of the 11 load capacities (M1 - M11) of the Schöck Isokorb® T Type CK are identical for the respective concrete cover. The load capacities vary in the number of tension bars, compression bars, shear force bars and HTE pressure bearing modules.
- The Schöck Isokorb® may be cut at locations of free insulation where no structural components conflict with the line of cut. The pressure bearing modules require at least 50 mm [2"] of concrete cover to ensure adequate spacing from the edge of the concrete slab. The edge spacing of the shear force bars shall be at least 100 mm [4"] and no more than 150 mm [6"].
- The shear force bar lengths vary as shown in the following plan details.
- The Schöck Isokorb® consists of metric components.
- Reinforcement bars ∅6 correspond to 1/4" diameter, approximately
- Reinforcement bars ∅8 correspond to 5/16" diameter, approximately
- Reinforcement bars ∅12 correspond to 1/2" diameter, approximately

Product Description

Schöck Isokorb® T Type CK 6.0	M7	M8	M9	M10	M11
Placement with	Isokorb® length [mm]				
	1000	1000	1000	1000	1000
Length [ft in]	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"	3'-3 3/8"
Tension bars V1	8 ∅ 12	9 ∅ 12	10 ∅ 12	12 ∅ 12	13 ∅ 12
Tension bars V2	8 ∅ 12	9 ∅ 12	10 ∅ 12	12 ∅ 12	-
Tension bars VV1	9 ∅ 12	10 ∅ 12	11 ∅ 12	12 ∅ 12	13 ∅ 12
Shear bars V1	6 ∅ 8	7 ∅ 8	7 ∅ 8	8 ∅ 8	9 ∅ 8
Shear bars V2	8 ∅ 8	8 ∅ 8	8 ∅ 8	9 ∅ 8	-
Shear bars VV1	7 ∅ 8 + 4 ∅ 8	7 ∅ 8 + 4 ∅ 8	7 ∅ 8 + 4 ∅ 8	8 ∅ 8 + 4 ∅ 8	8 ∅ 8 + 4 ∅ 8
Concrete comp. bearing modules V1	11	12	16	18	18
Concrete comp. bearing modules V2	11	12	16	18	-
Concrete comp. bearing modules VV1	16	17	16	18	18
Special stirrup reinforcement	4	4	4	4	4
H _{min} with CV35 [mm]	160	160	160	160	160
H _{min} with CV40 [mm]	170	170	170	170	170
H _{min} with CV50 [mm]	180	180	180	180	180
H _{min} with CV 1 3/8 [in]	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"
H _{min} with CV 1 9/16 [in]	6 3/4"	6 3/4"	6 3/4"	6 3/4"	6 3/4"
H _{min} with CV 1 15/16 [in]	7"	7"	7"	7"	7"

Notes

- The product cross-sections of the 11 load capacities (M1 - M11) of the Schöck Isokorb® T Type CK are identical for the respective concrete cover. The load capacities vary in the number of tension bars, compression bars, shear force bars and HTE pressure bearing modules.
- The Schöck Isokorb® may be cut at locations of free insulation where no structural components conflict with the line of cut. The pressure bearing modules require at least 50 mm [2"] of concrete cover to ensure adequate spacing from the edge of the concrete slab. The edge spacing of the shear force bars shall be at least 100 mm [4"] and no more than 150 mm [6"].
- The shear force bar lengths vary as shown in the following plan details.
- The Schöck Isokorb® consists of metric components.
- Reinforcement bars ∅6 correspond to 1/4" diameter, approximately
- Reinforcement bars ∅8 correspond to 5/16" diameter, approximately
- Reinforcement bars ∅12 correspond to 1/2" diameter, approximately

Product Description

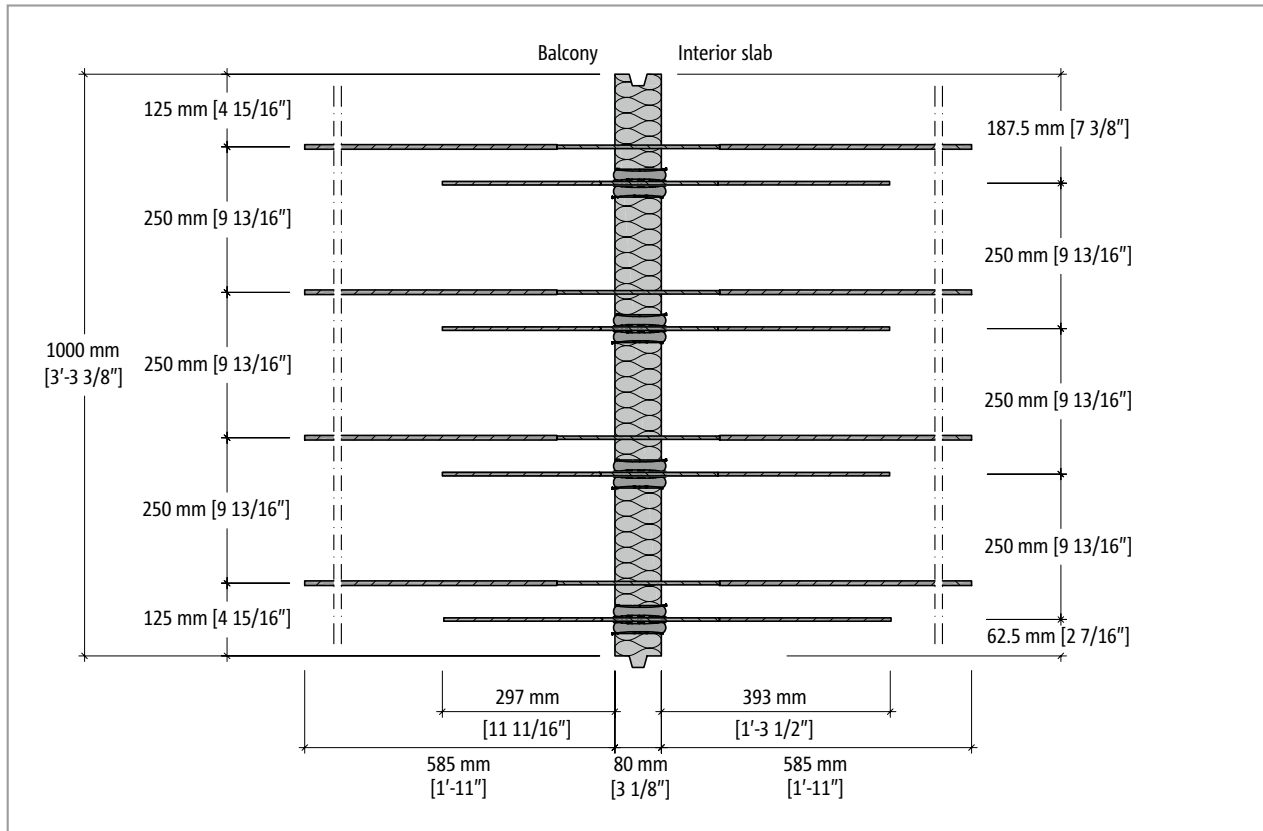


Fig. 11: Schöck Isokorb® T Type CK-M1-V1: Top view of the product

CK

Products

Product Description

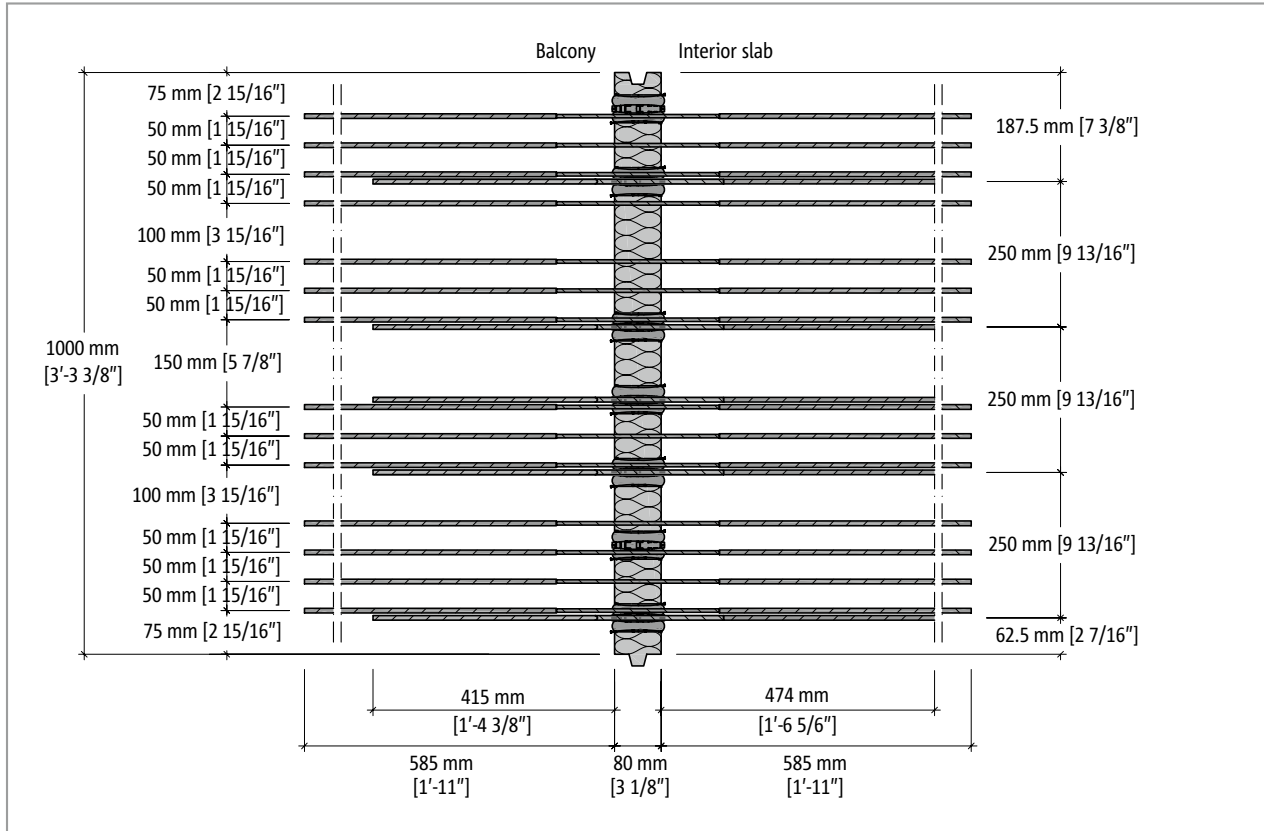


Fig. 12: Schöck Isokorb® T Type CK-M5-V2: Top view of the product

Product Description

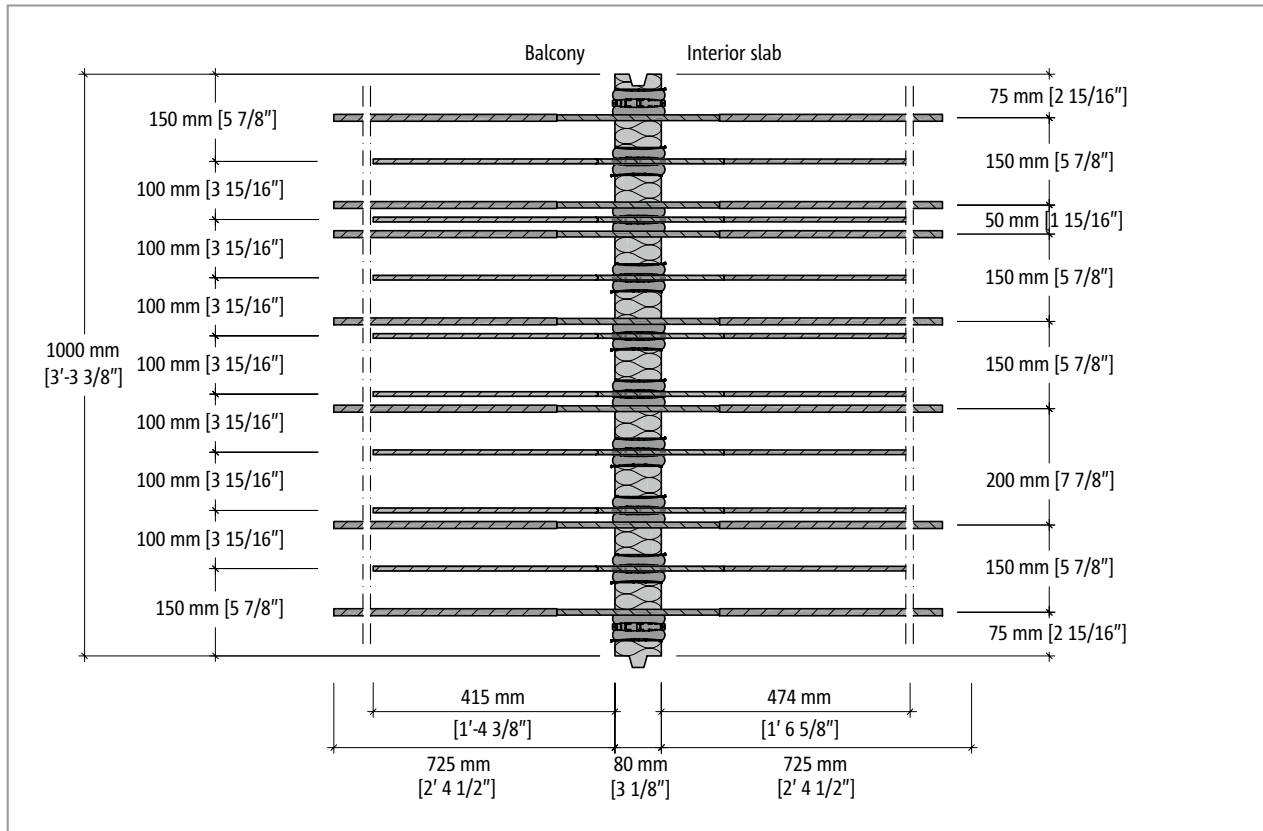


Fig. 13: Schöck Isokorb® T Type CK-M6-V3: Top view of the product

CK

Products

Product Description

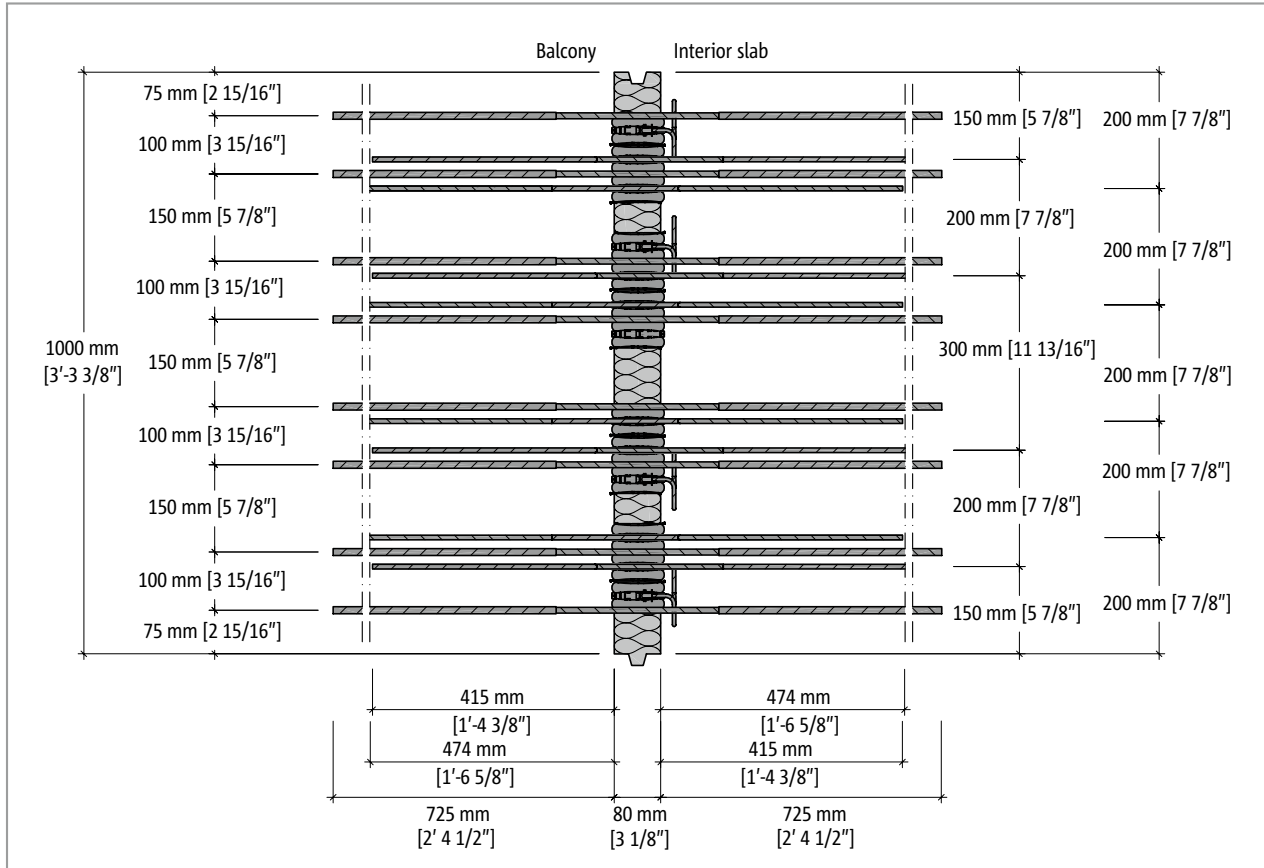


Fig. 14: Schöck Isokorb® T Type CK-M6-VV1: Top view of the product

Strength Capacity

Notes

- If any concrete on the interior or exterior of the Schöck Isokorb® is less than 27.5 MPa [4,000 psi], contact the Schöck Design Department.
- The Engineer of Record (EOR) must confirm strength of the slabs attached at either side to the Schöck Isokorb®.
- In the presence of horizontal loads, e.g. from earthquakes, Schöck Isokorb® Type CH must be added.
- The Schöck Isokorb® capacities consider a maximum permitted bar separation for lap splices according to Building Code. This has to be taken into account by the Engineer of Record (EOR).
- The values shown in the design capacity tables are ultimate (factored) values.
- The support is assumed to be 100 mm [4"] from the Schöck Isokorb® insulation body on the interior slab side.
- For SI: 1 inch = 25.4 mm, 1 lbf = 4.448 N, 1 psi = 0.006897 MPa.
US customary units: 1 mm = 0.03937 inches, 1 N = 0.2248 lbf, 1 MPa = 145.0 psi.

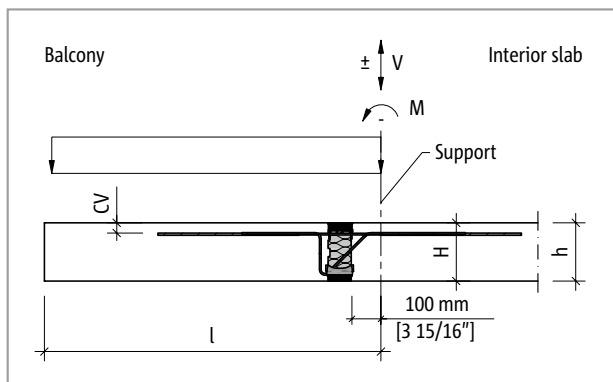


Fig. 15: Schöck Isokorb® T Type CK: Structural system

Strength Capacity

Strength Capacity (Imperial)

Schöck Isokorb® T type CK				M1	M2	M3	M4	M5	M6
Design Values with	Isokorb® height H [mm]	Isokorb® height H [in]	Minimum slab height [in]	Concrete Strength $\geq 4,000$ psi					
				ϕM_n [kip-ft/ft]					
Concrete cover CV 1 3/8 [in]	160	6 5/16"	6 1/4"	-1.8	-3.5	-4.6	-5.4	-5.9	-6.4
	170	6 11/16"	6 3/4"	-2.0	-3.9	-5.2	-6.0	-6.6	-7.2
	180	7"	7"	-2.2	-4.3	-5.7	-6.6	-7.3	-8.1
	190	7 1/2"	7 1/2"	-2.4	-4.8	-6.3	-7.2	-8.0	-8.9
	200	7 7/8"	7 7/8"	-2.6	-5.2	-6.8	-7.8	-8.7	-9.7
	210	8 1/4"	8 1/2"	-2.9	-5.6	-7.3	-8.4	-9.4	-10.6
	220	8 5/8"	8 3/4"	-3.1	-6.0	-7.9	-9.0	-10.1	-11.4
	230	9"	9"	-3.3	-6.4	-8.4	-9.6	-10.8	-12.3
	240	9 1/2"	9 1/2"	-3.5	-6.8	-8.9	-10.2	-11.5	-13.1
	250	9 7/8"	10"	-3.7	-7.2	-9.5	-10.8	-12.2	-14.0
Concrete cover CV 1 9/16 [in]	170	6 11/16"	6 3/4"	-1.9	-3.7	-4.9	-5.7	-6.2	-6.8
	180	7"	7"	-2.1	-4.1	-5.5	-6.3	-6.9	-7.7
	190	7 1/2"	7 1/2"	-2.3	-4.6	-6.0	-6.9	-7.6	-8.5
	200	7 7/8"	7 7/8"	-2.5	-5.0	-6.5	-7.5	-8.3	-9.3
	210	8 1/4"	8 1/2"	-2.8	-5.4	-7.1	-8.1	-9.1	-10.1
	220	8 5/8"	8 3/4"	-3.0	-5.8	-7.6	-8.7	-9.8	-11.0
	230	9"	9"	-3.2	-6.2	-8.1	-9.3	-10.5	-11.8
	240	9 1/2"	9 1/2"	-3.4	-6.6	-8.7	-9.9	-11.2	-12.7
Concrete cover CV 1 15/16 [in]	180	7"	7"	-1.9	-3.7	-4.9	-5.7	-6.2	-6.9
	190	7 1/2"	7 1/2"	-2.1	-4.1	-5.5	-6.3	-6.9	-7.7
	200	7 7/8"	7 7/8"	-2.3	-4.6	-6.0	-6.9	-7.6	-8.5
	210	8 1/4"	8 1/2"	-2.6	-5.0	-6.5	-7.5	-8.3	-9.3
	220	8 5/8"	8 3/4"	-2.8	-5.4	-7.1	-8.1	-9.1	-10.2
	230	9"	9"	-3.0	-5.8	-7.6	-8.7	-9.8	-11.0
	240	9 1/2"	9 1/2"	-3.2	-6.2	-8.1	-9.3	-10.5	-11.9
	250	9 7/8"	10"	-3.4	-6.6	-8.7	-9.9	-11.2	-12.7
ϕV_n [kips/ft]									
Secondary load-bearing level	V1			2.4	2.4	3.0	3.0	3.0	3.0
	V2			4.2	4.2	5.3	5.3	5.3	5.3
	V3			-	-	8.5	8.5	8.5	8.5
	VV1			-	-	-	±4.2	±4.2	±4.2

i Notes

- Static system and information on the design see page 13.

Strength Capacity

Strength Capacity (Imperial)

Schöck Isokorb® T type CK				M7	M8	M9	M10	M11
Design Values with	Isokorb® height H [mm]	Isokorb® height H [in]	Minimum slab height [in]	Concrete Strength $\geq 4,000$ psi				
				ϕM_n [kip-ft/ft]				
Concrete cover CV 1 3/8 [in]	160	6 5/16"	6 1/4"	-7.3	-8.2	-9.1	-10.4	-11.3
	170	6 11/16"	6 3/4"	-8.2	-9.2	-10.2	-11.7	-12.7
	180	7"	7"	-9.2	-10.3	-11.4	-13.0	-14.1
	190	7 1/2"	7 1/2"	-10.1	-11.4	-12.6	-14.3	-15.5
	200	7 7/8"	7 7/8"	-11.1	-12.4	-13.8	-15.6	-16.8
	210	8 1/4"	8 1/2"	-12.1	-13.5	-15.0	-16.9	-18.2
	220	8 5/8"	8 3/4"	-13.0	-14.6	-16.1	-18.1	-19.6
	230	9"	9"	-14.0	-15.7	-17.3	-19.4	-21.0
	240	9 1/2"	9 1/2"	-15.0	-16.8	-18.4	-20.7	-22.4
	250	9 7/8"	10"	-16.0	-17.8	-19.6	-22.0	-23.8
Concrete cover CV 1 9/16 [in]	170	6 11/16"	6 3/4"	-7.8	-8.7	-9.7	-11.1	-12.0
	180	7"	7"	-8.7	-9.8	-10.8	-12.4	-13.4
	190	7 1/2"	7 1/2"	-9.7	-10.8	-12.0	-13.6	-14.8
	200	7 7/8"	7 7/8"	-10.6	-11.9	-13.2	-14.9	-16.1
	210	8 1/4"	8 1/2"	-11.6	-13.0	-14.4	-16.2	-17.5
	220	8 5/8"	8 3/4"	-12.6	-14.1	-15.6	-17.5	-18.9
	230	9"	9"	-13.5	-15.2	-16.7	-18.8	-20.3
	240	9 1/2"	9 1/2"	-14.5	-16.3	-17.8	-20.1	-21.7
	250	9 7/8"	10"	-15.5	-17.3	-19.0	-21.4	-23.1
Concrete cover CV 1 15/16 [in]	180	7"	7"	-7.8	-8.7	-9.7	-11.1	-12.0
	190	7 1/2"	7 1/2"	-8.7	-9.8	-10.9	-12.4	-13.4
	200	7 7/8"	7 7/8"	-9.7	-10.9	-12.0	-13.6	-14.8
	210	8 1/4"	8 1/2"	-10.6	-11.9	-13.2	-14.9	-16.1
	220	8 5/8"	8 3/4"	-11.6	-13.0	-14.4	-16.2	-17.5
	230	9"	9"	-12.6	-14.1	-15.6	-17.5	-18.9
	240	9 1/2"	9 1/2"	-13.6	-15.2	-16.7	-18.8	-20.3
	250	9 7/8"	10"	-14.6	-16.3	-17.8	-20.1	-21.7
ϕV_n [kips/ft]								
Secondary load- bearing level	V1			6.4	7.4	7.4	8.5	9.5
	V2			8.5	8.5	8.5	9.5	-
	VV1			7.4/-4.2	7.4/-4.2	7.4/-4.2	8.5/-4.2	8.5/-4.2

Notes

- Static system and information on the design see page 13.

Strength Capacity

Strength Capacity (SI)

Schöck Isokorb® T type CK			M1	M2	M3	M4	M5	M6
Design Values with	Isokorb® height H [mm]	Minimum slab height [mm]	Concrete Strength ≥ 27.5 MPa					
			ϕM_n [kNm/m]					
Concrete cover CV35 [mm]	160	160	-8.0	-15.7	-20.5	-23.8	-26.1	-28.5
	170	170	-8.9	-17.5	-23.0	-26.5	-29.3	-32.2
	180	180	-9.9	-19.3	-25.5	-29.2	-32.4	-35.9
	190	190	-10.8	-21.1	-27.9	-31.9	-35.6	-39.6
	200	200	-11.8	-23.0	-30.3	-34.6	-38.7	-43.2
	210	210	-12.7	-24.8	-32.7	-37.3	-41.9	-47.0
	220	220	-13.7	-26.6	-35.0	-40.0	-45.0	-50.7
	230	230	-14.7	-28.5	-37.4	-42.7	-48.2	-54.5
	240	240	-15.6	-30.3	-39.8	-45.4	-51.3	-58.3
	250	250	-16.6	-32.2	-42.1	-48.1	-54.4	-62.2
Concrete cover CV40 [mm]	170	170	-8.5	-16.6	-21.8	-25.2	-27.7	-30.5
	180	180	-9.4	-18.4	-24.3	-27.9	-30.8	-34.1
	190	190	-10.4	-20.3	-26.7	-30.6	-34.0	-37.7
	200	200	-11.3	-22.1	-29.1	-33.3	-37.1	-41.4
	210	210	-12.3	-23.9	-31.5	-36.0	-40.3	-45.1
	220	220	-13.2	-25.7	-33.8	-38.7	-43.4	-48.9
	230	230	-14.2	-27.6	-36.2	-41.4	-46.6	-52.7
	240	240	-15.2	-29.4	-38.6	-44.1	-49.7	-56.5
Concrete cover CV50 [mm]	180	180	-8.5	-16.6	-21.8	-25.2	-27.7	-30.5
	190	190	-9.5	-18.5	-24.3	-27.9	-30.8	-34.2
	200	200	-10.4	-20.3	-26.7	-30.6	-34.0	-37.8
	210	210	-11.4	-22.1	-29.1	-33.3	-37.1	-41.5
	220	220	-12.3	-23.9	-31.5	-36.0	-40.3	-45.2
	230	230	-13.3	-25.8	-33.8	-38.7	-43.4	-49.0
	240	240	-14.2	-27.6	-36.2	-41.4	-46.6	-52.8
	250	250	-15.2	-29.5	-38.6	-44.1	-49.7	-56.6
ϕV_n [kN/m]								
Secondary load-bearing level	V1		34.8	34.8	43.5	43.5	43.5	43.5
	V2		61.8	61.8	77.3	77.3	77.3	77.3
	V3		-	-	123.6	123.6	123.6	123.6
	VV1		-	-	-	±61.8	±61.8	±61.8

i Notes

- Static system and information on the design see page 13.

Strength Capacity

Strength Capacity (SI)

Schöck Isokorb® T type CK			M7	M8	M9	M10	M11
Design Values with	Isokorb® height H [mm]	Minimum slab height [mm]	Concrete Strength ≥ 27.5 MPa				
			ϕM_n [kNm/m]				
Concrete cover CV35 [mm]	160	160	-32.5	-36.5	-40.4	-46.4	-50.2
	170	170	-36.7	-41.1	-45.6	-52.1	-56.4
	180	180	-40.9	-45.8	-50.8	-57.8	-62.5
	190	190	-45.1	-50.6	-56.0	-63.5	-68.7
	200	200	-49.4	-55.4	-61.3	-69.3	-74.9
	210	210	-53.7	-60.2	-66.6	-75.0	-81.1
	220	220	-58.0	-65.0	-71.7	-80.7	-87.3
	230	230	-62.4	-69.9	-76.8	-86.4	-93.5
	240	240	-66.8	-74.7	-81.9	-92.2	-99.7
	250	250	-71.2	-79.4	-87.0	-97.9	-105.9
Concrete cover CV40 [mm]	170	170	-34.6	-38.8	-43.0	-49.2	-53.3
	180	180	-38.8	-43.5	-48.2	-55.0	-59.4
	190	190	-43.0	-48.2	-53.4	-60.7	-65.6
	200	200	-47.3	-53.0	-58.7	-66.4	-71.8
	210	210	-51.6	-57.8	-64.0	-72.1	-78.0
	220	220	-55.9	-62.6	-69.2	-77.9	-84.2
	230	230	-60.3	-67.5	-74.3	-83.6	-90.4
	240	240	-64.6	-72.4	-79.4	-89.3	-96.6
	250	250	-69.1	-77.1	-84.5	-95.0	-102.8
Concrete cover CV50 [mm]	180	180	-34.7	-38.9	-43.1	-49.2	-53.3
	190	190	-38.9	-43.6	-48.3	-55.0	-59.4
	200	200	-43.1	-48.3	-53.5	-60.7	-65.6
	210	210	-47.3	-53.1	-58.8	-66.4	-71.8
	220	220	-51.6	-57.9	-64.1	-72.1	-78.0
	230	230	-56.0	-62.7	-69.2	-77.9	-84.2
	240	240	-60.3	-67.6	-74.3	-83.6	-90.4
	250	250	-64.8	-72.4	-79.4	-89.3	-96.6
			ϕV_n [kN/m]				
Secondary load-bearing level	V1		92.7	108.2	108.2	123.6	139.1
	V2		123.6	123.6	123.6	139.1	-
	VV1		108.2/-61.8	108.2/-61.8	108.2/-61.8	123.6/-61.8	123.6/-61.8

Notes

- Static system and information on the design see page 13.

On Site Reinforcement

The cast-in-place floor and balcony slab reinforcement is to be defined by the Engineer of Record (EOR) of the building in accordance with structural requirements. The tension bars of the Schöck Isokorb® T Type CK must be overlapped with the tensile reinforcement noted below as Position 1. Position 2 (longitudinal edge reinforcement), Position 3 (U-Bars) and Position 4 (U-Bars at the free balcony edges) should also be provided as per the following recommended reinforcement layout.

Direct support

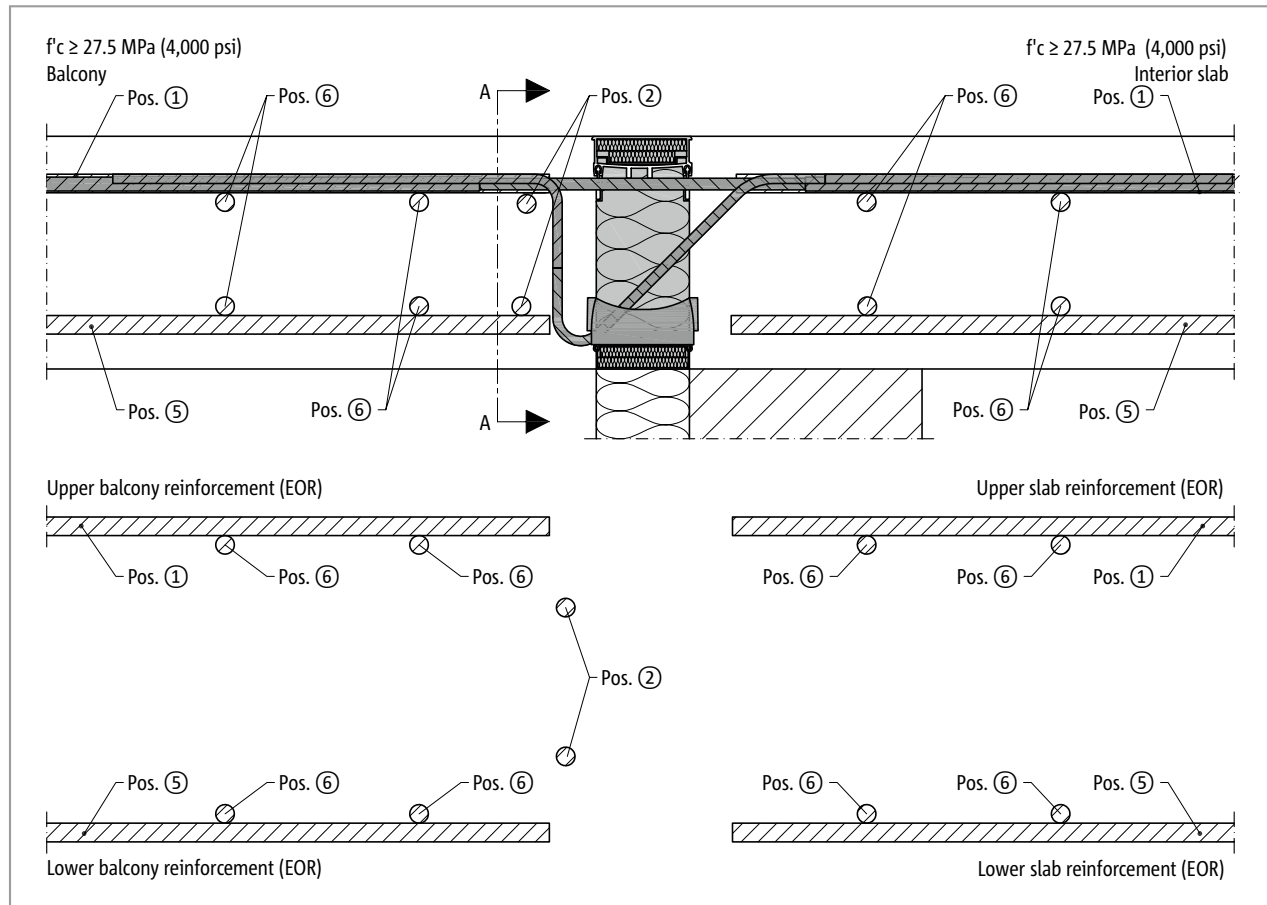


Fig. 16: Schöck Isokorb® T Type CK: Cross section of recommended cast-in-place reinforcement (supplied by others) - direct support

On Site Reinforcement

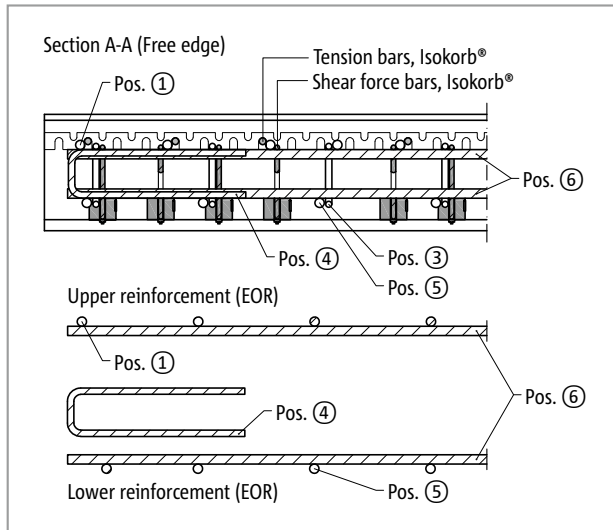


Fig. 17: Schöck Isokorb® T Type CK: Section A-A Depiction of free balcony edge

Indirect support

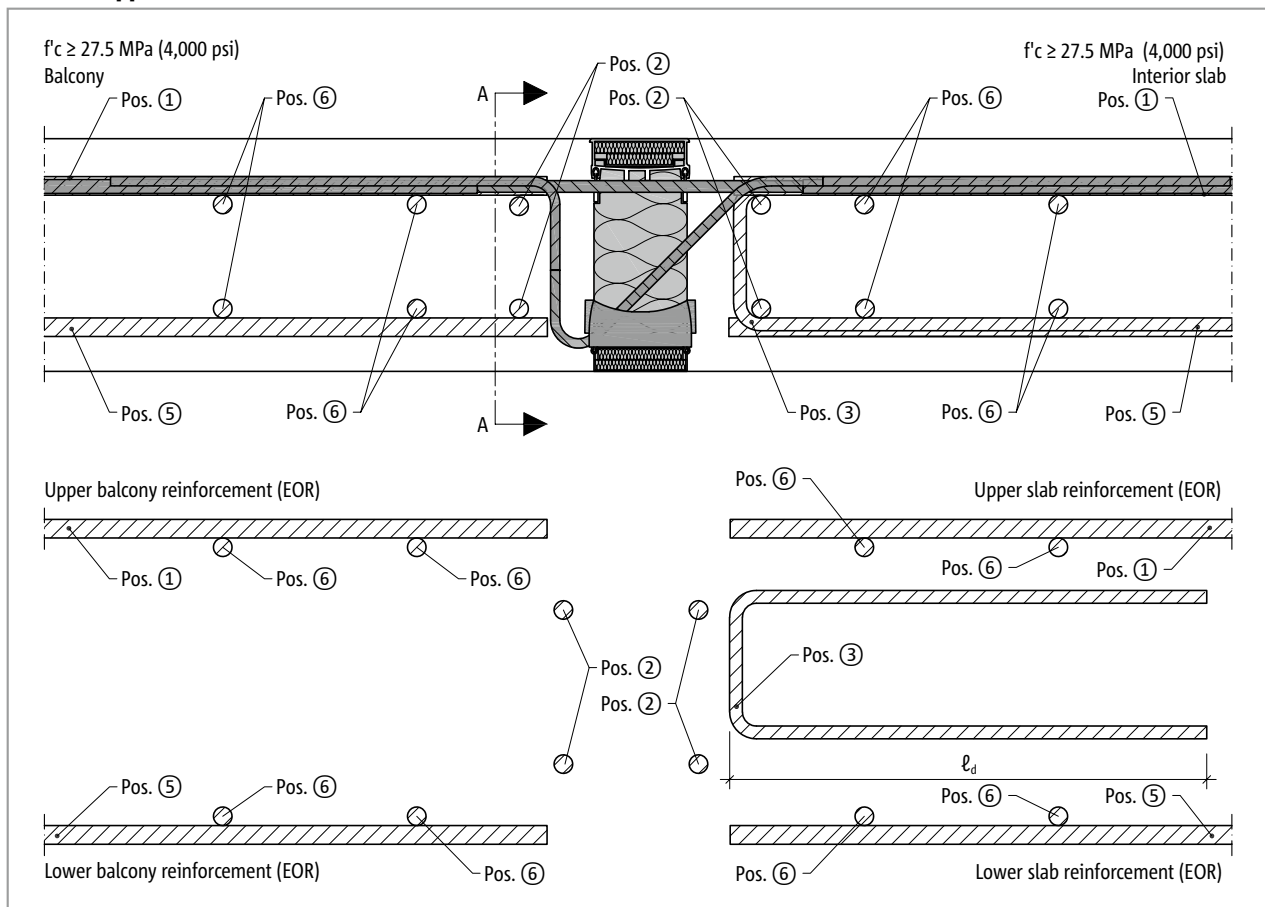


Fig. 19: Schöck Isokorb® T Type CK: Cross section of recommended cast-in-place reinforcement (supplied by others) - indirect support

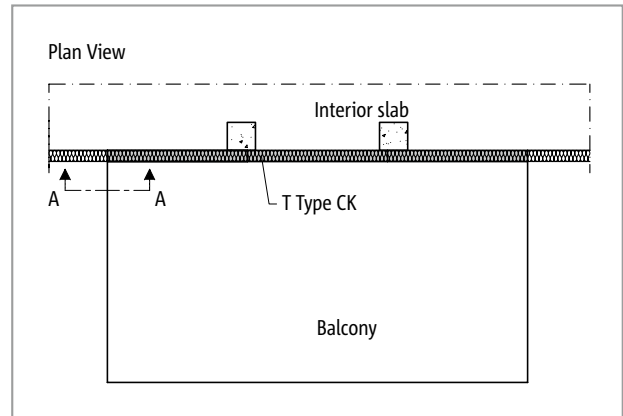


Fig. 18: Schöck Isokorb® T Type CK: Location of section A-A

On Site Reinforcement

The table below suggests cast-in-place connective reinforcement for 100% section strength considering a minimum concrete strength of 27.5 MPa [4,000 psi]. The existing slab reinforcement can be taken into account for the recommended reinforcement of connections with Schöck Isokorb®. The required reinforcement cross section area for Pos. 1 depends on the bar diameter of the reinforcement bar or mesh.

Schöck Isokorb® T Type CK		M1	M2	M3	M4	M5
On Site Reinforcement	Type of bearing	Concrete Strength \geq 27.5 MPa (4,000 psi)				
Pos. 1 Slab Reinforcement (at the thermal break locations only)						
Pos. 1 [mm ² /m] with #4		347	613	758	865	1017
Pos. 1 [mm ² /m] with #5		433	766	947	1081	1271
Pos. 1 [in ² /ft] with #4		0.16	0.29	0.36	0.41	0.48
Pos. 1 [in ² /ft] with #5		0.21	0.37	0.45	0.51	0.60
Pos. 1 Option with #4		#4 @ 12"	#4 @ 7"	#4 @ 6"	#4 @ 5"	#4 @ 4"
Pos. 1 Option with #5		#5 @ 12"	#5 @ 9"	#5 @ 7"	#5 @ 6"	#5 @ 5"
Required lap splice length						
l _o [mm]		547				
l _o [in]		[21 9/16"]				
Pos. 2 Longitudinal bars parallel to insulation						
Pos. 2	direct	2 × #3				
Pos. 2	indirect	4 × #3				
Pos. 3 Constructive edge reinforcement at Isokorb joint						
Pos. 3	direct	-				
Pos. 3	indirect	#3 @ 300 mm				
Pos. 3	indirect	[#3 @ 12"]				
Pos. 4 Constructive edge reinforcement at free slab edges						
Pos. 4 [mm ² /m] / [in ² /ft]		In accordance with EOR specifications				
Pos. 5 Bottom layer reinforcement						
Pos. 5 [mm ² /m] / [in ² /ft]		In accordance with EOR specifications				
Pos. 6 Longitudinal reinforcement						
Pos. 6 [mm ² /m] / [in ² /ft]		In accordance with EOR specifications				

CK

Products

On Site Reinforcement

Schöck Isokorb® T Type CK		M6	M7	M8	M9	M10	M11
On Site Reinforcement	Type of bearing	Concrete Strength ≥ 27.5 MPa (4,000 psi)					
Pos. 1 Slab Reinforcement (at the thermal break locations only)							
Pos. 1 [mm ² /m] with #4		1081	1114	1229	1337	1504	1639
Pos. 1 [mm ² /m] with #5		1351	1325	1458	1584	1781	2010
Pos. 1 [in ² /ft] with #4		0.51	0.53	0.58	0.63	0.71	0.77
Pos. 1 [in ² /ft] with #5		0.64	0.63	0.69	0.75	0.84	0.95
Pos. 1 Option with #4		#4 @ 4"	#4 @ 4"	#4 @ 3"	#4 @ 3"	#4 @ 3"	#4 @ 3"
Pos. 1 Option with #5		#5 @ 5"	#5 @ 5"	#5 @ 4"	#5 @ 4"	#5 @ 4"	#5 @ 3"
Required lap splice length							
l ₀ [mm]		547 / 689	689	689	689	689	620
l ₀ [in]		[21 9/16"] / [27 1/8"]	[27 1/8"]	[27 1/8"]	[27 1/8"]	[27 1/8"]	[24 7/16"]
Pos. 2 Longitudinal bars parallel to insulation							
Pos. 2	direct				2 × #3		
Pos. 2	indirect				4 × #3		
Pos. 3 Constructive edge reinforcement at Isokorb joint							
Pos. 3	direct				-		
Pos. 3	indirect				#3 @ 300 mm		
Pos. 3	indirect				[#3 @ 12"]		
Pos. 4 Constructive edge reinforcement at free slab edges							
Pos. 4 [mm ² /m] / [in ² /ft]					In accordance with EOR specifications		
Pos. 5 Bottom layer reinforcement							
Pos. 5 [mm ² /m] / [in ² /ft]					In accordance with EOR specifications		
Pos. 6 Longitudinal reinforcement							
Pos. 6 [mm ² /m] / [in ² /ft]					In accordance with EOR specifications		

Notes

- Pos. 1 must run as close as possible to the thermal insulation at both sides of Schöck Isokorb®, taking the required concrete cover into consideration.
- Pos. 4 should be chosen such that the U-bars can be arranged between the legs of Pos. 3.
- All free edges must be stiffened using structural U-bars as per Engineer of Record (EOR) specifications.
- The centerline distance of any pressure element from any free concrete edge, including expansion joints, must be at least 50 mm [2"].
- The centerline distance of any tension or shear bar from any free concrete edge, including expansion joints, must be at least 50 mm [2"].
- The lap splice length provided by Schöck Isokorb® = the length of the tension bar from the face of Schöck Isokorb® to the free end - concrete cover (CV).
- The usage of Schöck Isokorb® in balconies assumes stiff slab edges to ensure only shear forces affecting the connection and no field moment. The formation of stiff slab edges must be specified by EOR.

Deflection/Camber

As the Schöck Isokorb® undergoes service loading, an internal deformation is caused by the elongation of the tension bars and shortening of the compression modules of the product. The final slope of the balcony slab results from deflection as per Building Code (w_1) plus the internal deformation (w_2) from the Schöck Isokorb®.

To calculate w_2 , deformation constants ($\tan \alpha$) are provided in the table below as a worst case-scenario for loading the Schöck Isokorb® to maximum capacity. To determine w_2 , multiply the deformation constant ($\tan \alpha$) by the length of the cantilever and a work-ratio of the serviceability moment to the full-capacity moment resistance of the product. Any requirement to pre-camber the balcony formwork can be determined if the desired final slope of the balcony is not achieved for drainage purposes.

Deformation (w_2) as a result of Schöck Isokorb®

$$w_2[\text{in}] \text{ or } [\text{mm}] = \tan \alpha \times \ell \times M_a / \phi M_n \times 1/100$$

$\tan \alpha$ = Insert value from table below

ℓ = Cantilever length [in] or [mm]

M_a = Maximum moment at the stage at which deflection is being computed in [kip-ft/ft] or [kNm/m]
The load combination to be used here is defined by the Engineer of Record (EOR)

ϕM_n = Ultimate (factored) moment resistance [kip-ft/ft] or [kNm/m] of the Schöck Isokorb® T Type CK (see page 14).

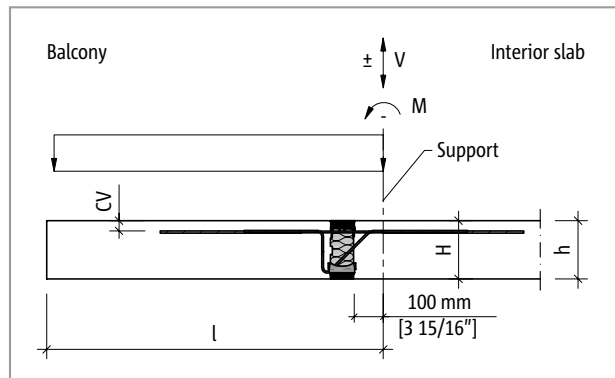


Fig. 20: Schöck Isokorb® T Type CK: Structural system

Schöck Isokorb® T Type CK			M1–M5, M6-V1/V2		
Deformation constants with:	[mm]	[in]	$\tan \alpha$ [%]		
			CV35	CV40	CV50
Isokorb® height H	160	6 5/16"	1.7	-	-
	170	6 11/16"	1.5	1.6	-
	180	7"	1.4	1.5	1.6
	190	7 1/2"	1.3	1.3	1.5
	200	7 7/8"	1.2	1.2	1.3
	210	8 1/4"	1.1	1.1	1.2
	220	8 5/8"	1.0	1.0	1.1
	230	9"	0.9	1.0	1.0
	240	9 1/2"	0.9	0.9	1.0
	250	9 7/8"	0.8	0.9	0.9

Deflection/Camber

Schöck Isokorb® T Type CK			M6-V3/VV1, M7-M11		
Deformation constants with:	[mm]	[in]	tan α [%]		
			CV35	CV40	CV50
Isokorb® height H	160	6 5/16"	2.1	-	-
	170	6 11/16"	1.9	2.0	-
	180	7"	1.7	1.8	2.0
	190	7 1/2"	1.5	1.6	1.8
	200	7 7/8"	1.4	1.5	1.6
	210	8 1/4"	1.3	1.4	1.5
	220	8 5/8"	1.2	1.3	1.4
	230	9"	1.1	1.2	1.3
	240	9 1/2"	1.1	1.1	1.2
	250	9 7/8"	1.0	1.0	1.1

CK

Products

Slab Geometry

Recommended maximum cantilever length

The following maximum cantilever lengths “l” are recommended in order to avoid excessive vibration response in the balcony slab.

Schöck Isokorb® T Type CK		M1–M11		
Maximum cantilever length with	[mm]	l_{max} [m]		
		CV35	CV40	CV50
Isokorb® height H	160	1.74	-	-
	170	1.88	1.81	-
	180	2.03	1.95	1.81
	190	2.17	2.10	1.95
	200	2.32	2.25	2.10
	210	2.46	2.39	2.25
	220	2.61	2.54	2.39
	230	2.76	2.68	2.54
	240	2.90	2.83	2.68
	250	3.05	2.98	2.83

Schöck Isokorb® T Type CK			M1–M11		
Maximum cantilever length with	[in]	[mm]	l_{max} [ft in]		
			CV 1 3/8"	CV 1 9/16"	CV 1 15/16"
Isokorb® height H	6 5/16"	160	5'-9"	-	-
	6 11/16"	170	6'-2"	5'-11"	-
	7"	180	6'-8"	6'-5"	5'-11"
	7 1/2"	190	7'-1"	6'-11"	6'-5"
	7 7/8"	200	7'-7"	7'-5"	6'-11"
	8 1/4"	210	8'-1"	7'-10"	7'-5"
	8 5/8"	220	8'-7"	8'-4"	7'-10"
	9"	230	9'-1"	8'-10"	8'-4"
	9 1/2"	240	9'-6"	9'-3"	8'-10"
	9 7/8"	250	10'	9'-9"	9'-3"

Cantilever length for the structural calculations

The balcony support is assumed to be 100 mm [4"] from the Schöck Isokorb® insulation body on the interior slab side.

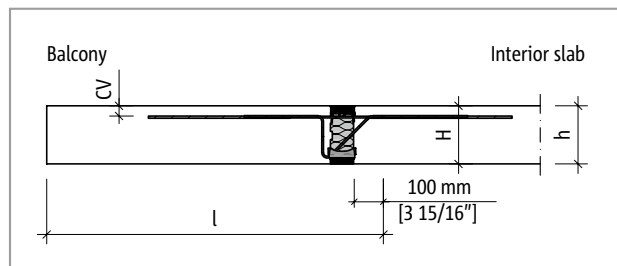


Fig. 21: Schöck Isokorb® T Type CK: Structural system

Expansion Joint Spacing

Expansion joints (recommended spacing)

Expansion joints are recommended to protect balcony slabs from temperature cracking when they are continuous for more than a critical length. The expansion joint spacing shown below corresponds to a temperature difference of $\Delta T = 70\text{ °C}$ [126 °F].

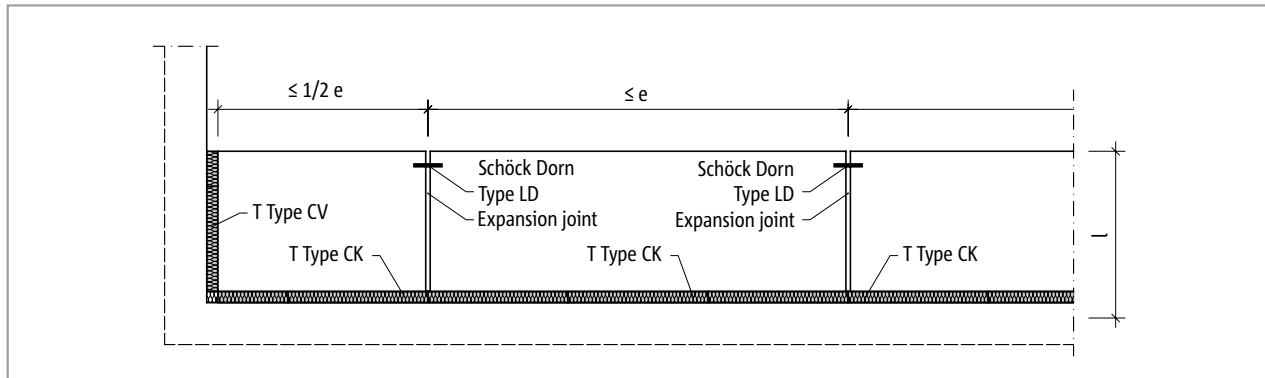


Fig. 22: Schöck Isokorb® Type CK: Maximum expansion joint spacing

Schöck Isokorb® T Type CK		M1–M6-V2	M6-V3 – M11
Maximum expansion joint spacing when		e [m]	
Insulation Thickness [mm]	80	13.5	13.0

Schöck Isokorb® T Type CK		M1–M6-V2	M6-V3 – M11
Maximum expansion joint spacing when		e [ft in]	
Insulation Thickness [mm]	3 1/8"	44'-3 1/2"	42'-7 13/16"

CK

Products

Expansion Joint Spacing | Installation Instructions

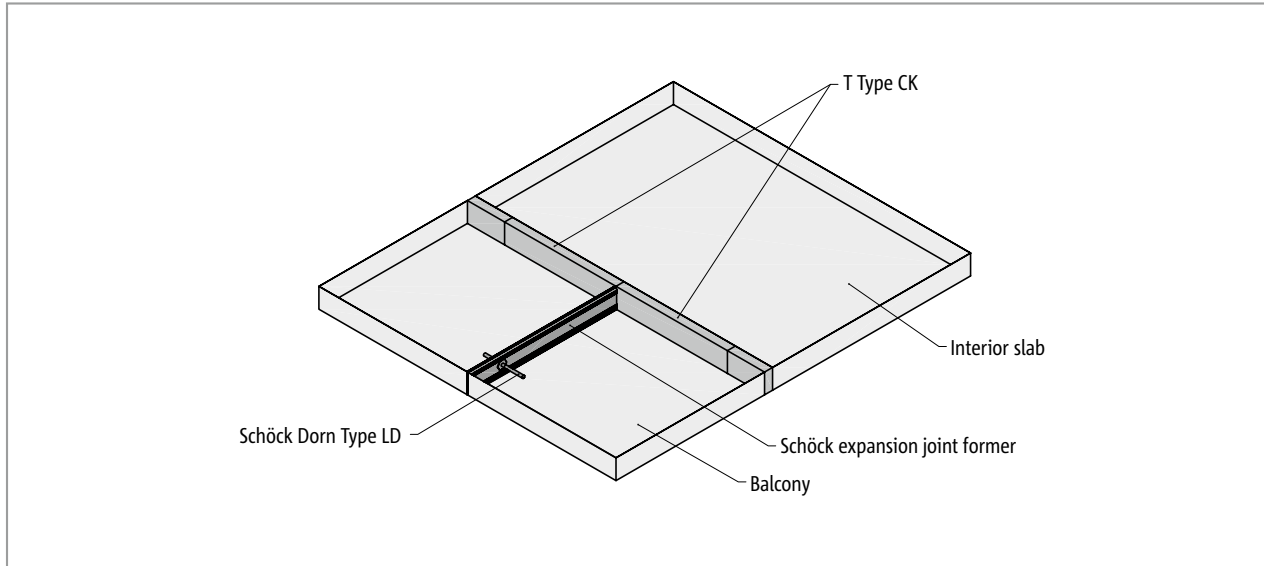


Fig. 23: Schöck Isokorb® Type CK: The expansion joint former

i Notes

- The maximum expansion joint spacing must be verified by the Engineer of Record (EOR).
- The joint must be free to contract or expand in the longitudinal direction. Schöck Dorn type LD in stainless steel A4 would be a suitable dowel connector for the expansion joint with the Schöck expansion joint former board or equivalent.
- The Schöck expansion joint former board is available from Schöck North America.

i Installation instructions

The current installation instruction can be found online under:
www.schoeck.com/view/13788

✓ Check List

- Has the recommended maximum cantilever length for the selected height of the Schöck Isokorb® been taken into consideration?
- Has the system length “l” been used for the design?
- Have the factored forces at the Schöck Isokorb® connection been determined at design level?
- Has the critical concrete strength been taken into consideration in the choice of design table?
- Has an appropriate concrete cover been selected and used with the calculation tables?
- Have both slabs adjacent to the Isokorb® been verified for bending and shear capacities by the Engineer of Record (EOR)?
- Has the additional deformation as a result of the Schöck Isokorb® been taken into consideration in the deflection calculations of the overall structure?
- Has the required camber been specified in the design drawings? Was the drainage direction taken into consideration in the camber specification?
- Have the outer corners been designed using Schöck Isokorb® T Type CK-CV35 and Schöck Isokorb® T Type CK-CV50 .
- Has the maximum permissible expansion gap spacing been taken into consideration for the specific slab configuration?
- Have the horizontal loads such as those from wind pressure or seismic loading been taken into consideration? Additional Schöck Isokorb® Type CEQ or CH may be required.
- Has the connecting reinforcement in the balcony and interior slabs been defined by the Engineer of Record (EOR)?
- When using Schöck Isokorb® in a pre-cast application, has a cast-in-place strip of concrete (width ≥ 50 mm [2"] from any compression modules) been specified in the design plans?