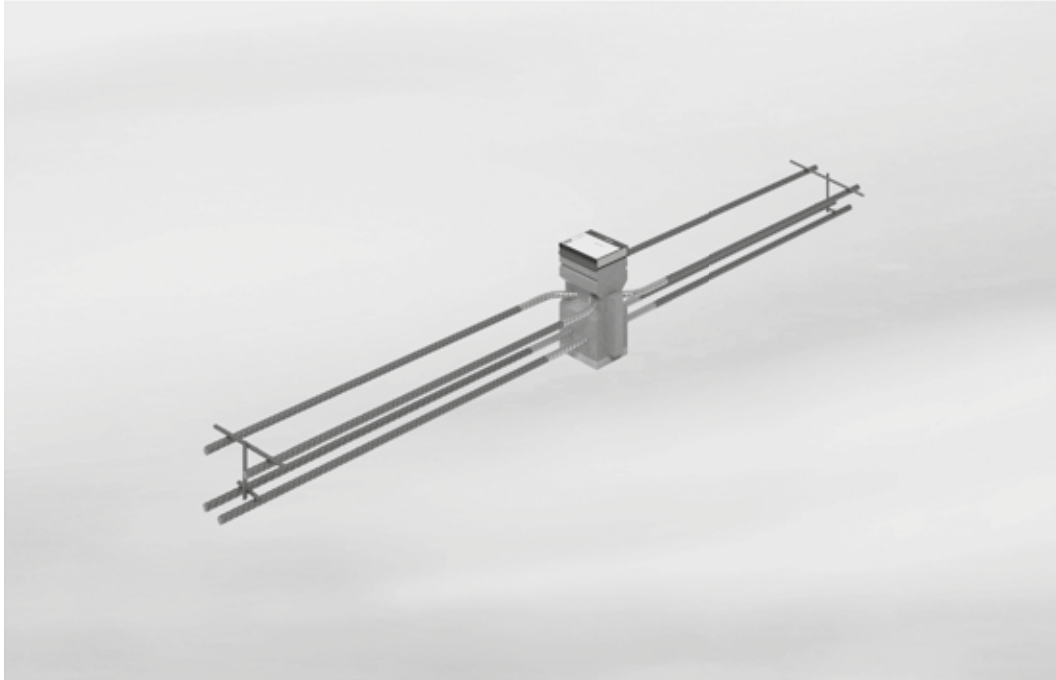


Schöck Isokorb® Type CEQ



The Schöck Isokorb® Type CEQ transmits loads from earthquakes from the balcony into the floor slab in interaction with the Schöck Isokorb® Type CM, the Schöck Isokorb® Type CMD or the Schöck Isokorb® Type CV. The Schöck Isokorb® Type CEQ1 absorbs shear force parallel to the insulating layer. The Schöck Isokorb® Type CEQ2 absorbs shear force parallel to the insulating layer, compression and tensile force normal to the insulating layer and positive moments.

CEQ

Products

Assembly Section Details | Element Arrangement

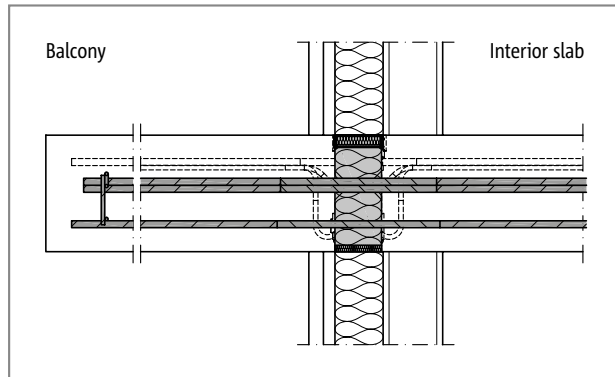


Fig. 1: Schöck Isokorb® Type CEQ with Type CM: Balcony with steel stud wall, cavity insulation and facade cladding

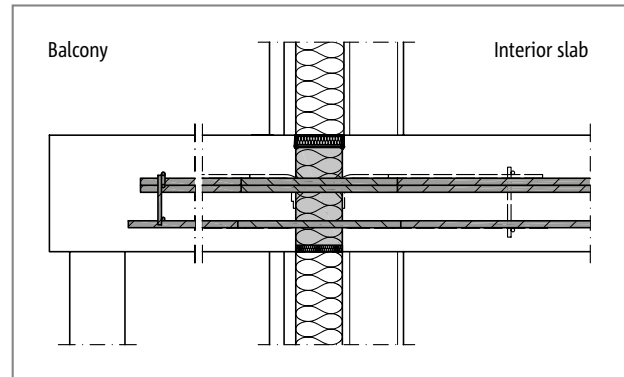


Fig. 2: Schöck Isokorb® Type CEQ with Type CV: Supported balcony with steel stud wall, cavity insulation and facade cladding

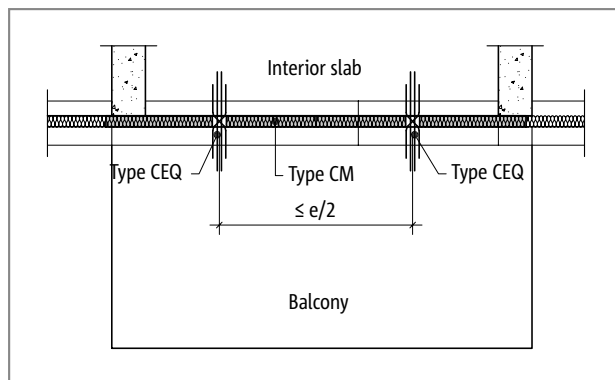


Fig. 3: Schöck Isokorb® Type CEQ with Type CM: Cantilever balcony

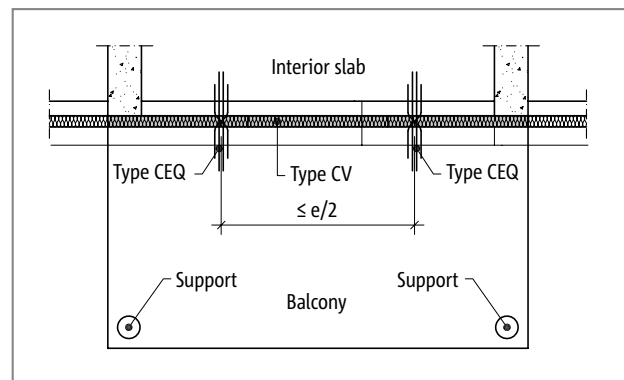


Fig. 4: Schöck Isokorb® Type CEQ with Type CV: Supported balcony

Position of Schöck Isokorb®

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

Orientation of Schöck Isokorb®

- ▶ The horizontal shear force bars are always 113 mm [4 7/16"] from the bottom edge of the Schöck Isokorb® Type CEQ and the underside of the slab.
- ▶ Ensure proper installation orientation as shown in the cross-section view on the design drawings.

Concrete Cover | Type Designation

Concrete cover CC

The concrete cover of the Schöck Isokorb® Type CEQ2 is set to 40 mm [1 9/16"] from the bottom of the slab to the bottom tension bar.

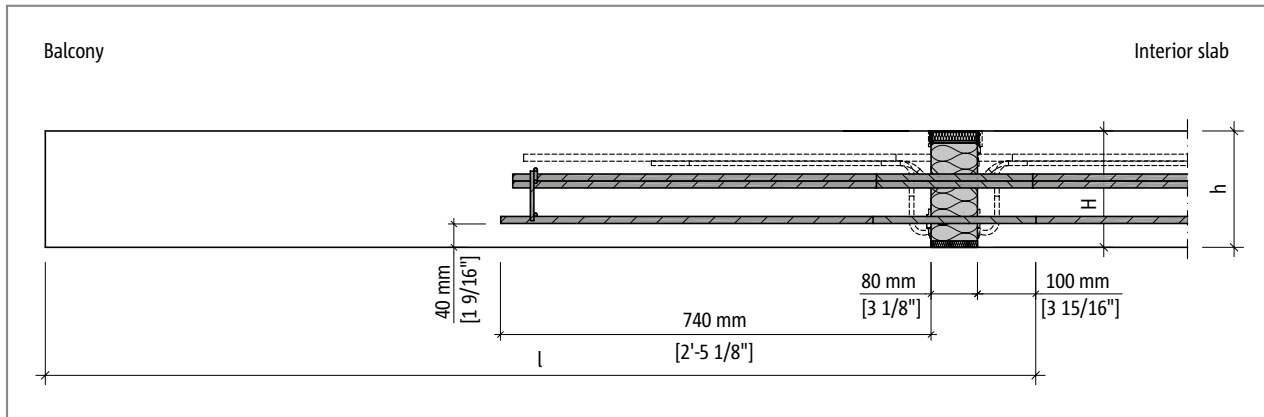
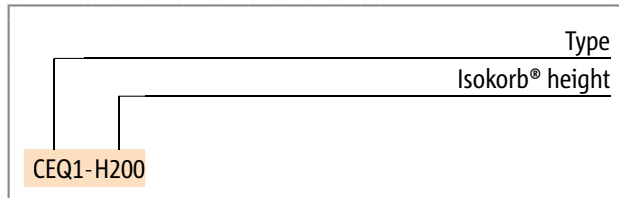
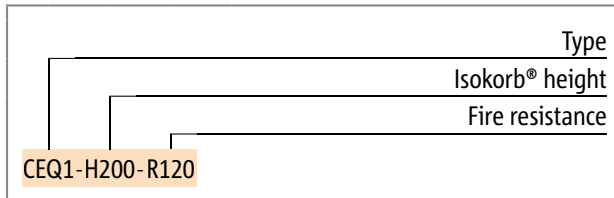


Fig. 5: Schöck Isokorb® Type CEQ2: Concrete cover

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. The design drawings will always show the full production name as well as the short-form installation name for cross referencing. Only the short-form product names are included on the installation drawings.



Expansion Joint Spacing

Expansion joints (recommended spacing)

The Schöck Isokorb® Type CEQ should be arranged at a spacing of 1/2 of the expansion joint distance of the Schöck Isokorb® type that is the primary balcony support. Expansion joint requirements for primary support elements are discussed in the respective product chapter. The illustration below shows an example of a combination with Schöck Isokorb® Type CM.

The expansion joint spacing shown in the illustration corresponds to a temperature difference of $\Delta T = 70\text{ °C}$ [126 °F].

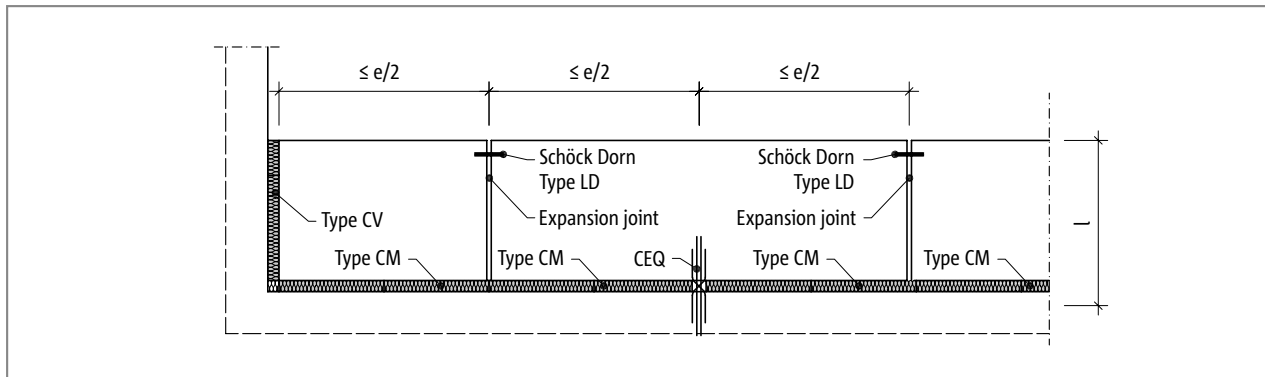


Fig. 6: Schöck Isokorb® Type CEQ: Maximum expansion joint spacing

i Note

- The maximum expansion joint spacing must be verified by the Engineer of Record (EOR).

Product Dimensioning

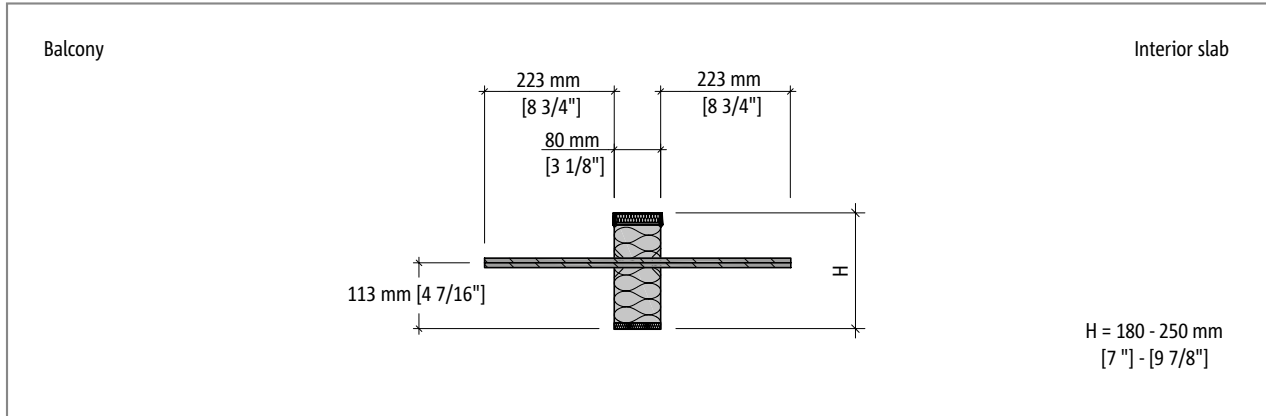


Fig. 7: Schöck Isokorb® Type CEQ1: Product cross-section

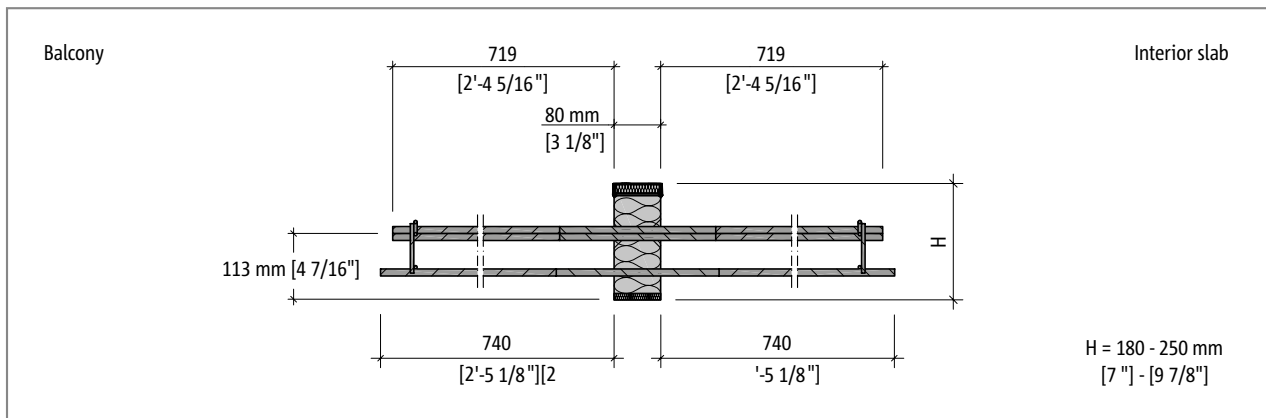


Fig. 8: Schöck Isokorb® Type CEQ2: Product cross-section

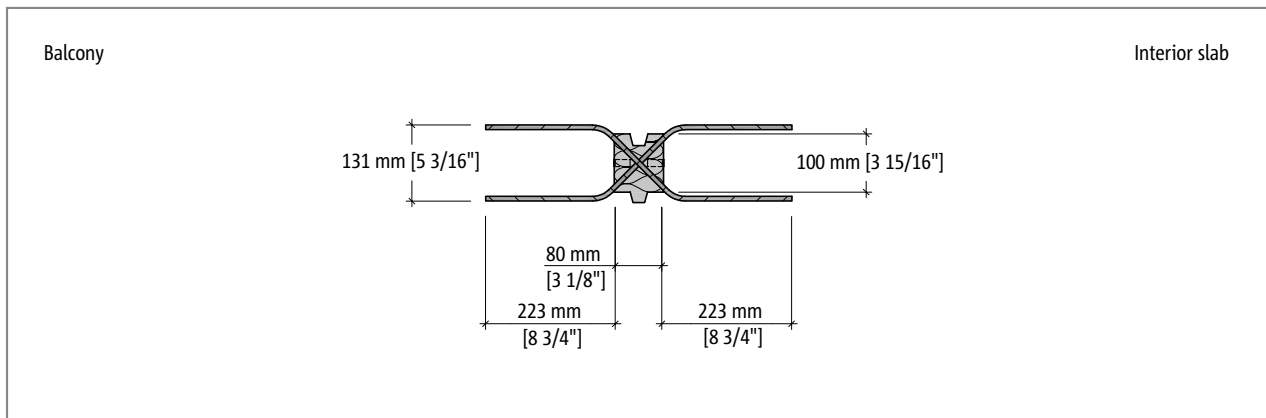


Fig. 9: Schöck Isokorb® Type CEQ1: Overhead view of the product

Product Dimensioning

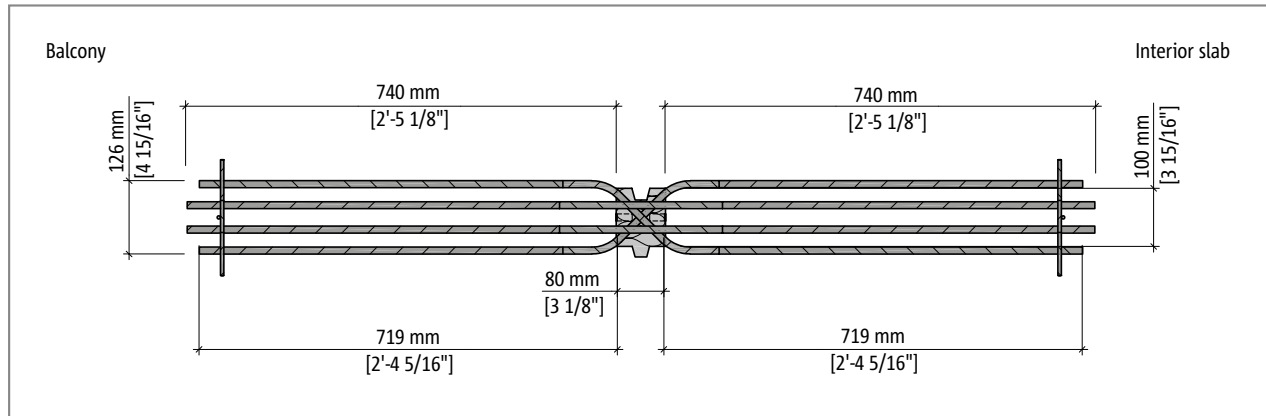


Fig. 10: Schöck Isokorb® Type CEQ2: Overhead view of the product

Schöck Isokorb® Type	CEQ1	CEQ2
Isokorb® length [mm]	100	100
Isokorb® length [in]	3 15/16"	3 15/16"
Tension bars	-	2 Ø 12
Horizontal shear bars	2 × 1 Ø 8	2 × 1 Ø 12

i Notes

- ▶ The Schöck Isokorb® consists of metric components.
- ▶ Reinforcement bars Ø8 correspond to 5/16" diameter
- ▶ Reinforcement bars Ø12 correspond to 1/2" diameter

CEQ

Products

Strength Capacity

Product selection table as per ACI 318-14

Schöck Isokorb® Type			CEQ1	CEQ2
Design Values with	Isokorb® height H [mm]	Minimum slab height [mm]	Concrete Strength $\geq 27,5$ MPa	
			$\phi M_{n,y}$ [kNm/Element]	
Concrete cover CC40 [mm]	180	180	-	7.2
	190	190	-	8.0
	200	200	-	8.9
	210	210	-	9.7
	220	220	-	10.5
	230	230	-	11.3
	240	240	-	12.1
	250	250	-	13.0
Axial force resistance			$\phi N_{n,x}$ [kN/Element]	
			-	82.0
Shear Resistance			$\phi V_{n,y}$ [kN/Element]	
			± 13.2	± 29.8

Schöck Isokorb® Type			CEQ1	CEQ2
Design Values with	Isokorb® height H [mm]	Minimum slab height [mm]	Concrete Strength $\geq 27,5$ MPa	
			$\phi M_{n,y}$ [kNm/Element]	
Concrete cover CC55 [mm]	180	180	-	6.0
	190	190	-	6.8
	200	200	-	7.6
	210	210	-	8.4
	220	220	-	9.3
	230	230	-	10.1
	240	240	-	10.9
	250	250	-	11.7
Axial force resistance			$\phi N_{n,x}$ [kN/Element]	
			-	82.0
Shear Resistance			$\phi V_{n,y}$ [kN/Element]	
			± 13.2	± 29.8

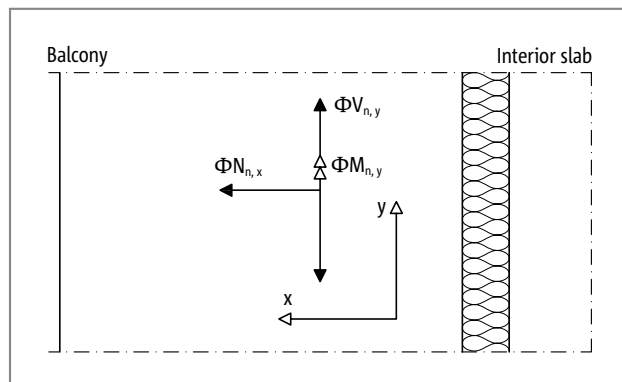


Fig. 11: Schöck Isokorb® Type CEQ: Structural system

Strength Capacity

Product selection table as per ACI 318-14

Schöck Isokorb® Type				CEQ1	CEQ2
Design Values with	Isokorb® height H [mm]	Isokorb® height H [in]	Minimum slab height [in]	Concrete Strength ≥ 4.000 psi	
				$\phi M_{n,y}$ [kip-ft/Element]	
Concrete cover CC 1 9/16" [in]	180	7"	7"	-	5.3
	190	7 1/2"	7 1/2"	-	5.9
	200	7 7/8"	7 7/8"	-	6.5
	210	8 1/4"	8 1/2"	-	7.1
	220	8 5/8"	8 3/4"	-	7.7
	230	9"	9"	-	8.3
	240	9 1/2"	9 1/2"	-	9.0
	250	9 7/8"	10"	-	9.6
Axial force resistance				$\phi N_{n,x}$ [kips/Element]	
				-	18.4
Shear Resistance				$\phi V_{n,y}$ [kips/Element]	
				± 3.0	± 6.7

Schöck Isokorb® Type				CEQ1	CEQ2
Design Values with	Isokorb® height H [mm]	Isokorb® height H [in]	Minimum slab height [in]	Concrete Strength ≥ 4.000 psi	
				$\phi M_{n,y}$ [kip-ft/Element]	
Concrete cover CC 2 3/16" [in]	180	7"	7"	-	4.4
	190	7 1/2"	7 1/2"	-	5.0
	200	7 7/8"	7 7/8"	-	5.6
	210	8 1/4"	8 1/2"	-	6.2
	220	8 5/8"	8 3/4"	-	6.9
	230	9"	9"	-	7.4
	240	9 1/2"	9 1/2"	-	8.0
	250	9 7/8"	10"	-	8.6
Axial force resistance				$\phi N_{n,x}$ [kips/Element]	
				-	18.4
Shear Resistance				$\phi V_{n,y}$ [kips/Element]	
				± 3.0	± 6.7

i Notes

- ▶ The design values relate to a single Schöck Isokorb® Type CEQ element.
- ▶ ϕM_n and ϕN_n do not occur simultaneously. The Engineer of Record (EOR) must consider the interaction between bending moment and axial force.
- ▶ The values shown in the design capacity tables are ultimate (factored) values.
- ▶ For SI: 1 inch = 25.4 mm, 1 lbf = 4.448 N, 1 psi = 0.006897 MPa. For pound-inch units: 1 mm = 0.03937 inches, 1 N = 0.2248 lbf, 1 MPa = 145.0 psi.

Check List

- 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?
- Have the maximum permissible expansion joint distances $e/2$ from the fixed point been taken into consideration?
- Has the moment resistance of the CM/CEQ assembly been reduced (by 1/1.1) to account for the installation of Schöck Isokorb® Type CEQ?

CEQ

Products