

Schöck Isokorb®

Basic information

With the publication of this new and comprehensive Technical Information all technical specifications, structural analysis and figures about the Schöck Isokorb® systems (except for type KSH and QSH) are based on British Standards, especially on Eurocode 2 with UK National Annex. On this basis a BBA Approval and several certificates established by United Kingdom experts have been obtained (see page 2).

The range of load-bearing thermal insulation components for Isokorb® units type K enables the structural engineer to choose amongst various dimensions of concrete cover. The tension rods of type K units and of type D units are available with $c_{nom} = 30$ mm, or 35 mm, or 50 mm. Therefore the selection of the concrete cover has to be considered as a basic part of the type designation (e.g. type K50-CV35 signifies a concrete cover $c_{nom} = 35$ mm for the Schöck Isokorb® tension rods).

To avoid confusion with the correct and complete designations for type K and type D the load range codes have been changed (see comparison of the previous designations to the new ones on page 26 and 27).

Concrete cover

Assuming exposure grades of XC3 and XC4 with XF1, the nominal cover to reinforcement called for by BS 8500 and UK National Annex to Eurocode 2 is $25 \text{ mm} + \Delta c_{dev}$, for a grade C32/40 concrete. Additionally assuming the standard value of 10 mm for Δc_{dev} , this corresponds to the 35 mm nominal cover to which the standard Isokorb units (CV35) are manufactured.

The range of units with 30 mm nominal cover (CV30) will be suitable where a grade C32/40 mix is used in conjunction with a Δc_{dev} of 5 mm, or C40/50 with a Δc_{dev} of 10 mm.

The range of units with 50 mm nominal cover (CV50) will be suitable e.g. where tension rods have to be in the second layer, because of a balcony with “inside corner layout” (see plan view at bottom of page 38).

Concrete grades

For the relevant exposure grades XC3 and XC4 with XF1, the minimum grade of concrete employed for compliance with BS 8500 and UK National Annex will normally be C32/40. Because of cover considerations (see above), the use of grade C25/30 would only be feasible where the appointment of an accredited frame contractor allows the use of a reduced Δc_{dev} of 5 mm.

For compliance with BBA Approval, Agreement Certificate No 05/4277, the minimum grade of concrete used in the supporting floor must be at least C25/30.

Therefore in the Isokorb® calculations, the assumed grade for concrete cast in areas adjoining the units is taken as C25/30, except for type K100. With this type the minimum concrete must be at least C32/40 for the balcony and for the inner slab.

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Concrete cover/Concrete grades

To meet durability requirements, depending on conditions of exposure, concrete cover and concrete grades should be chosen according to local regulations, such as BS 8500 or EC2 and its UK National Annex.

Most relevant exposure grades			part of type designation
XC3, XF1	- minimum concrete grade \geq C32/40	→ $c_{nom} = 35$ mm	→ CV35
XC4, XF1	- minimum concrete grade \geq C32/40	→ $c_{nom} = 35$ mm	→ CV35
	- when reduced Δc_{dev} of 5 mm allowed	→ $c_{nom} = 30$ mm	→ CV30
XD1, XS1	- minimum concrete grade \geq C32/40	→ $c_{nom} = 50$ mm	→ CV50

Example

- Choice:
- exposure grades XC4, XF for balcony
 - minimum concrete grade C32/40
 - concrete cover Schöck Isokorb® CV35
 - exposure grade XC1 for inner slab
 - minimum concrete grade C25/30 (acc. to approval) is critical in terms of Schöck Isokorb® calculation

Notes

- ▶ Type K, K-corner, K-HV, K-BH, K-WO and K-WU: CV30, CV35 and CV50 refers to the concrete cover of the tensile rebars.
- ▶ Type D: CV30 and CV35 refers to the concrete cover of the upper tensile rebars. The concrete cover of the lower tensile rebars is 30 mm in both cases (normally less exposure than the upper surface of balcony).
- ▶ Type D: CV50 refers to the concrete cover of the upper and the lower tensile rebars.
- ▶ Type Q and Q+Q: The concrete cover of the Isokorb-rebars at the lower balcony surface is 30 mm in general.
- ▶ Type QP, QP+QP and QPZ: The concrete cover of the Isokorb-rebars at the lower balcony surface is 40 mm in general.
- ▶ In case of special requests referring the concrete cover please ask our design support services.

Order reference example

(to be issued in structural design, construction drawings, submission, order), e.g. for H = 180 mm

Schöck Isokorb® type **K50-CV35-V8-H180-REI120**

