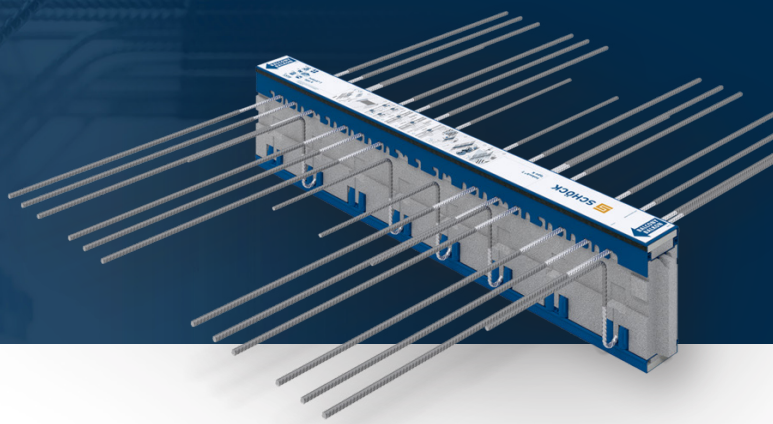
SCHÖCK

Schöck Isokorb® Modeling Guidelines



Case 1 – Cantilevered balconies

Isokorb® replaces a monolithic concrete connection providing the required strength and stiffness along and about the applicable axes considered in the design process.

Isokorb®, however, does not provide torsional resistance (moment about the x-axis in Fig. 1) and in-plane shear strength (shear along the y-axis in Fig. 1). Therefore, the cantilevered balconies should not be modelled as a shell, connected to the internal structure. When thermally broken, the outer balcony slab shall not affect the distribution of forces along the edge of the internal slab. The cantilevered slab may be structurally seen as a combination of disconnected infinitesimally narrow slab strips, which provide vertical shear and bending moment strength, without affecting the force distribution along the thermal break line.

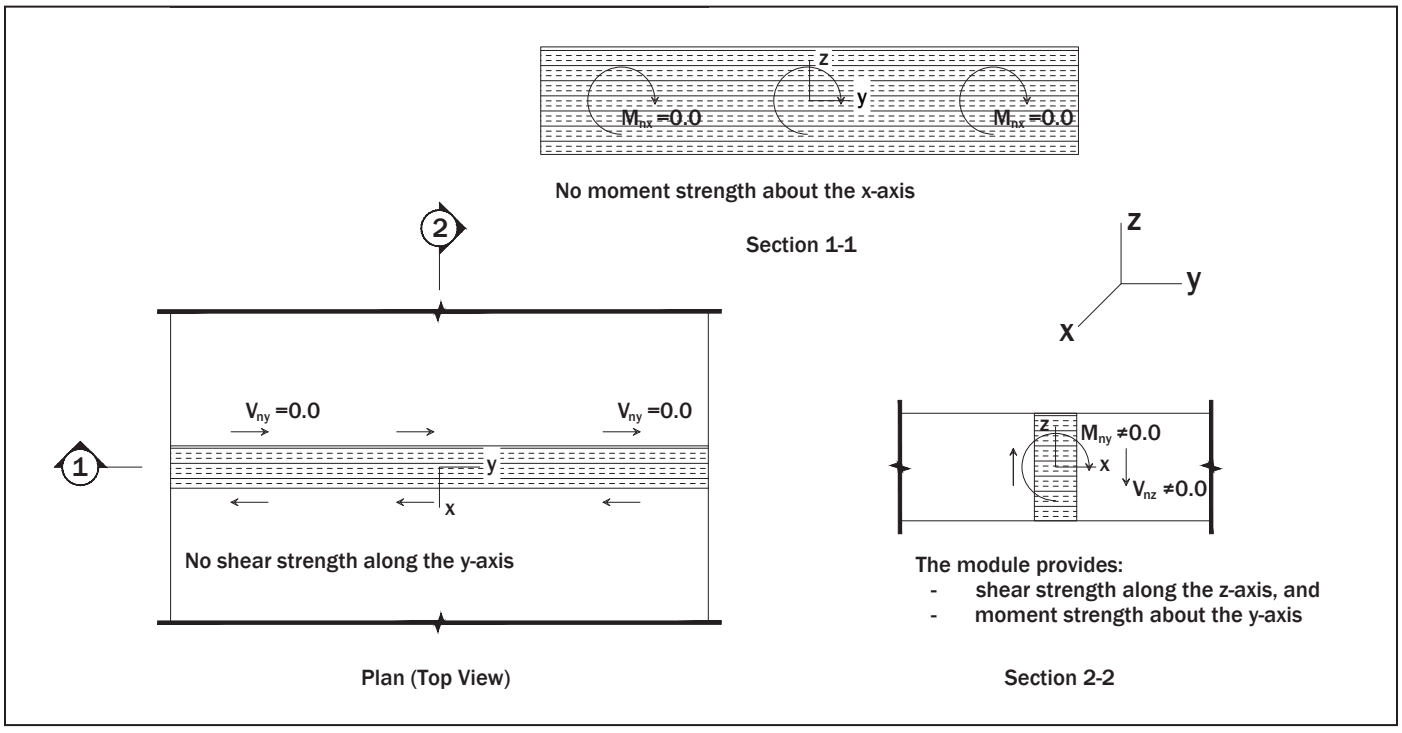


Figure 1 – Thermal Break

To get the most realistic results, Schöck recommends the following modelling steps:

- *Separate the balcony from the internal structure removing its effect on the internal structure*
- *Calculate the shear force and bending moment at the end of the cantilever, using simple statics (Fig. 2)*
- *Apply the calculated forces along the thermal break line (Fig. 3)*
- *Design the primary structure, considering only the loads from the balcony, excluding its other structural effects*

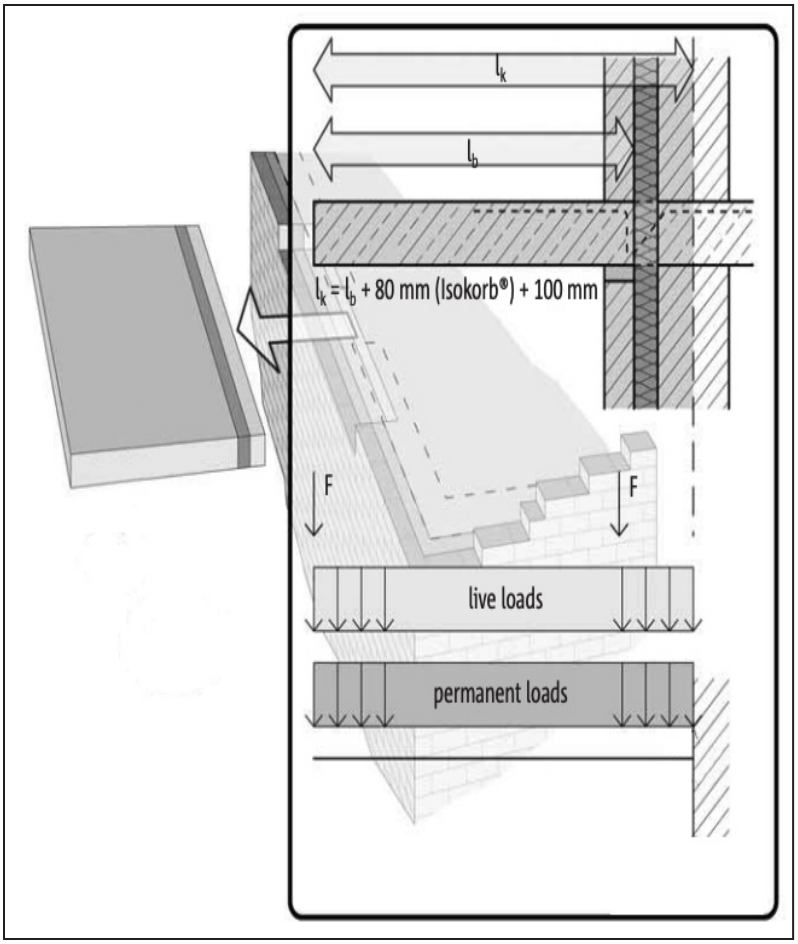


Figure 2 – Balcony structural model

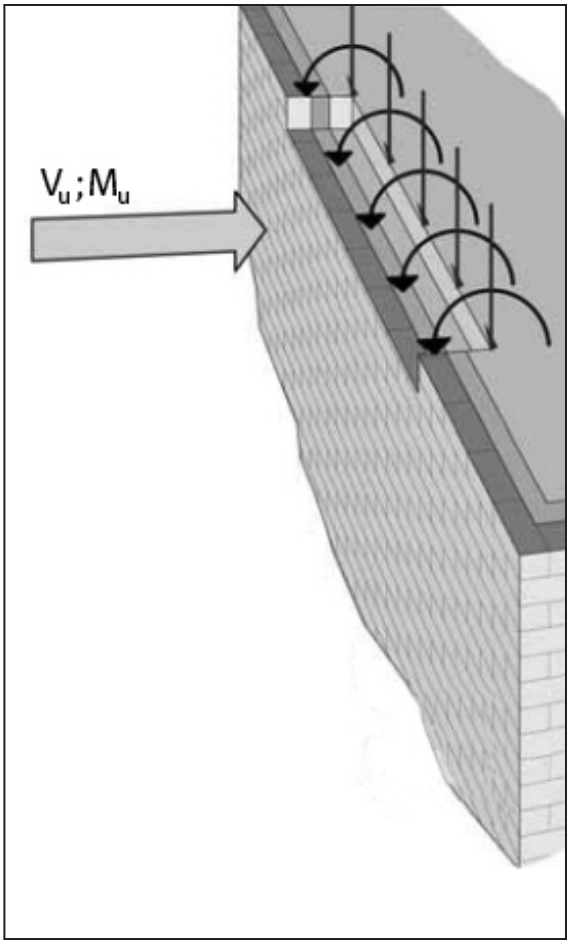


Figure 3 – Line loads from the balcony on the primary structure

Case 2 – Other indeterminate configurations

For indeterminate structures, the structural analysis is done considering the vertical and rotational springs at the connection. The stiffness values depend on the respective products being designed for that particular connection.

For such connections, please contact the Schöck design team at engineering-na@schoeck.com.

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