

B6+

Punching Shear Analysis

This software application allows you to verify the resistance to punching shear of slabs with point-type supports.

Unlike shear with beams and plates, the shear resistance behaviour under punching shear load is characterized by a three-dimensional stress state, which is caused by rotation-symmetric loading.

The software application performs the following separate calculations:

- Punching shear analysis as per EN 1992-1-1:2004/AC:2010 Para. 6.4 for columns with or without enlarged head.

The B6+ application allows the calculation of punching shear problems on plates, foundation slabs, compact foundations and enlarged column heads.

The shear force design resistances are calculated in the decisive critical perimeters in accordance with the applicable NA for the areas around ceiling threatened by punching shear. The problem types interior columns, edge columns and corner columns, wall end and interior wall corner are distinguished. The verification reveals either that the load-bearing capacity of the reinforced concrete is sufficiently high or that punching shear reinforcement must be installed. If the verification limits are exceeded, the verification result is marked as not permissible. In this case, the user must change the system parameters or select a suitable design alternative (e.g. shear rails).

If punching shear reinforcement should be dispensed with, the resistance values in the perimeters could be increased with the help of an enlarged column head.

Standards

- DIN EN 1992-1-1
- ÖNORM EN 1992-1-1
- BS EN 1992-1-1

The original version of Eurocode EN 1992-1-1:2010 is available as an additional option.

Shear rails

Design of shear rails according to ETA approval (DIN/ÖNORM/BS EN) of the manufacturers

- Schöck BOLE,
- Halfen HTA and
- Jordahl JDA is implemented.

