

## GBR+

### Bearing Resistance Failure

Square and rectangular foundations can be verified with the GBR+ program. The external loads can act centrally or with 1-axis or 2-axis eccentricity of the load.

The soil pressures are calculated under the 4 corner points and the position of the zero line in the case of a gaping joint.

For the foundation, the verifications for gaping joints, permissible base pressure, sliding, positional security and bearing failure are carried out.

The system consists of the foundation plate and optionally an attached support (or base) with possible eccentricity.

The following load types can be calculated:

- Normal force in the Z-direction at the location of the column

- Horizontal loads  $H_x$  and  $H_y$  either on the upper edge of the column or in the base of the foundation
- External moments  $M_x$  and  $M_y$
- Earth load and additional uniform load on the foundation surface without supports and other vertical concentrated loads at any point

#### Standards

- DIN EN 1992
- ÖNORM EN 1992
- BS EN 1992
- PN EN 1992
- EN 1992
- still available:
  - DIN 1045-1
  - ÖNORM B 4700

automatically sets the associated foundation and bearing capacity standard.

- DIN EN 1997-1
- ÖNORM EN 1997-1
- BS EN 1997-1
- PN EN 1997-1
- DIN 1054:1976/2005/2021

Support of all 3 verification methods according to Eurocode 7, adjustable for all national annexes.

The partial safety factors and combination equations for the geotechnical verifications can be edited. See Design - Parameters.

According to the selected reinforced concrete standard, the program

