**Program Details**

**Operating System**

Windows 7/8/10

---

**Description**

**GGU-FOOTING** – Analysis of bearing capacity according to DIN 4017 and of settlement according to DIN 4019.

**Capabilities:**
- Choice of analysis using either partial safety factors to DIN 1054:2010 or EC 7 or global safety factors (DIN 1054 old)
- Bearing capacity equations to DIN 4017 (2006/old), Terzaghi, Meyerhoff, Hansen or Vesic can be selected
- Analysis of multiple footings of a single type (variation of footing width)
- Analysis of single rectangular footings or single circular/annular footings
- System input and visualisation using absolute heights
- Soil properties can be selected from an expandable database of common soils
- Consideration of multiple horizons and determination of mean governing soil properties using a logarithmic spiral
- Tests the "5° condition", and corrects through iterative reduction of shear friction angles that are above the current mean
- Punching analysis for flexible and rigid footings (DIN 4017)
- Determination of torsional stiffnesses
- Settlement analysis at the characteristic point (DIN 4019)
- Sliding safety analysis adopting user-defined angles possible
- Consideration of berms and slope inclinations
- Consideration of footing base inclinations
- Consideration of pre-loading for settlement analysis
- Consideration of kappa correction coefficients (DIN 4019)
- Creation of a footing analysis diagram with (acceptable) bearing pressure or allowable soil pressure and a set of curves with the resulting settlements as wll as modulus of subgrade reaction contours
- Footing plan view (pad footing) with forces, kernel widths, settlements etc.
- Presentation of analysis results as tables
- Footing export to the GGU-STABILITY program (slope stability analyses)
- Presentation of system geometry
- Presentation of stress distribution
- Presentation of soil properties, general information on your analysis data, adopted

---

Standard, program name and version displayed in legends

- Freely definable positioning and sizing of graphical elements and legends
- Print or copy screen sections, e.g. for transfer to a word processor
- Integrated Mini-CAD system for additional annotation of graphics

---

**Civilserve GmbH** - Exclusive distribution GGU-Software

Phone: +49 (0) 5492 - 60 99 99 6 · E-Mail: info@ggu-software.com
Program GGU-FOOTING
Geotechnical Analysis

Civilserve GmbH
Exclusive distribution GGU-Software
Phone: +49 (0) 5492 - 60 99 99 6 · E-Mail: info@ggu-software.com

GGU-FOOTING
Circular footing analysis

Initial calculation data:
'Circular footing' worked example
Bearing cap. equation after DIN 4017:2006
Partial safety factor concept (EC 7)
\( \gamma_f = 1.40 \)
\( \gamma_m = 1.35 \)
\( \gamma_o = 1.50 \)

FOGU limit state:
\( \gamma_m = 1.10 \)
\( \gamma_f = 0.90 \)
\( \gamma_o = 1.60 \)

Footing base = 0.80 m
Groundwater = 2.00 m
Limiting depth with \( p = 20.0 \)%

1st core dim.
--- --- --- 2nd core dim.

Circular footing results

Leads = Permanent / Changeable

Vertical load \( F_V = 1250.00 \) kN/m
Horizontal force \( F_H = 150.00 \) kN/m

Moment \( M_0 = 500.00 \) kN/m

Moment \( M_1 = 0.00 \) kN/m

Diameter \( D = 3.500 \) m

Bearing capacity coeff. \( \phi \)

Below permanent loads:

Centricity \( e_z = 0.000 \) m
Shape coeff. \( \chi_z \)

Resultant in 1st core \( = 0.438 \) m
Graft. coeff. \( \phi \)

\( a_x = 2.329 \) m

\( b_x = 2.393 \) m

Bearing capacity:

Settlement from total loads:

Punching load:

Settlement, mean of all CPs = 1.13 cm

Partial FOS (bearing capacity) \( \phi_f \)

Tension (CP) = 1.248

Torsional stiffness:

LIGA analysis

\( \mu_{(parallel y)} = 0.485 \)

\( \mu_{(parallel x)} = 0.445 \)

Carrying term = 237.57 kN

Width term = 1682.76 kN

Depth term = 2452.94 kN