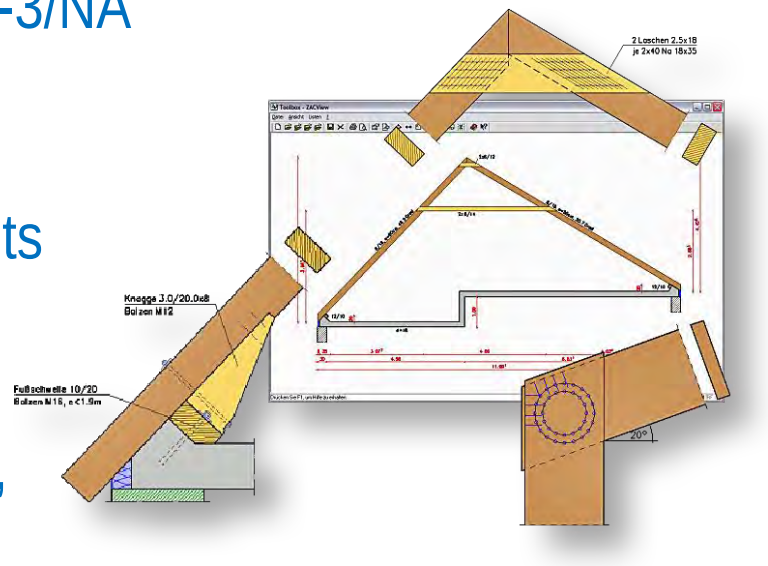
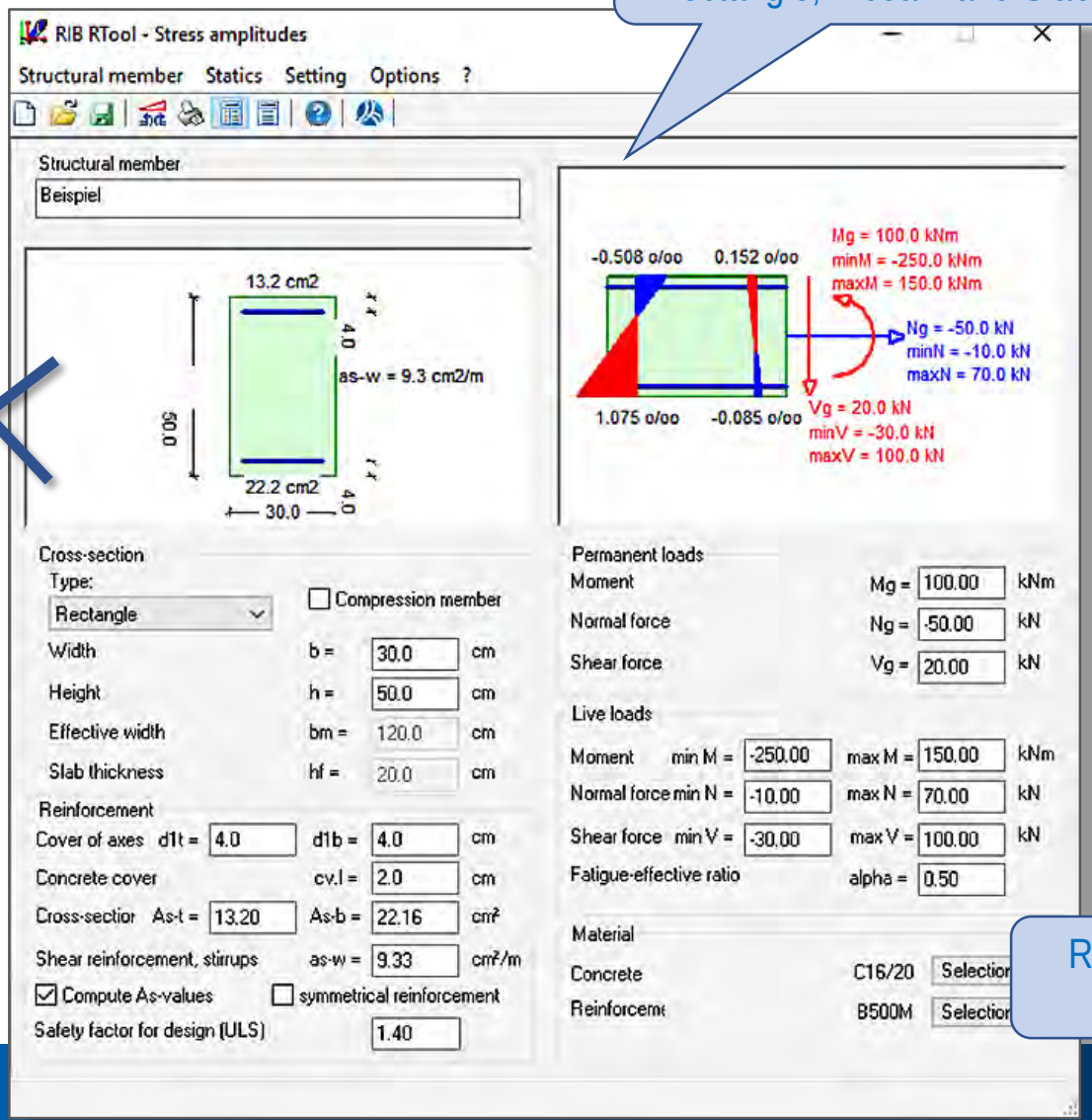
RTool – Collection of Design Tools

- Reinforced concrete, steel and timber design according to DIN and EN with corresponding national annexes for DE, AT, SK/CZ and UK
- Brickwork analysis according to DIN 1053-100 & DIN EN 1996-3/NA
- Simple handling for efficient and clear operation
- Graphic-interactive working environment with sensitive elements and dimension chains
- Versatile collection of proofs for reinforced concrete, brickwork, steel construction and timber construction
- Integrated software solutions for calculation, design and drawing

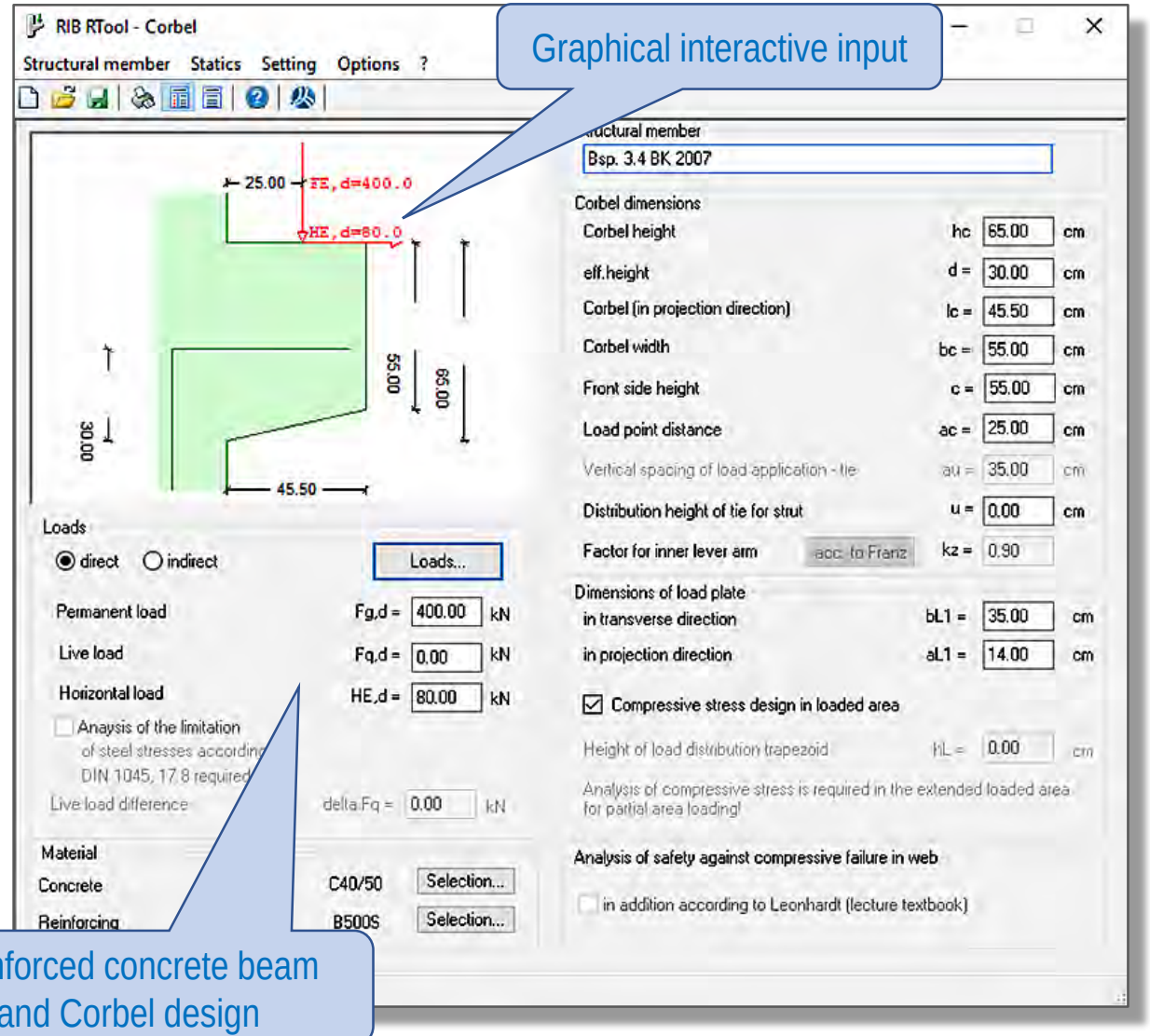


R RTool – einforced Concrete Design according to DIN & Euronorm

Bending and shear design for Rectangle, T-beam and Slab

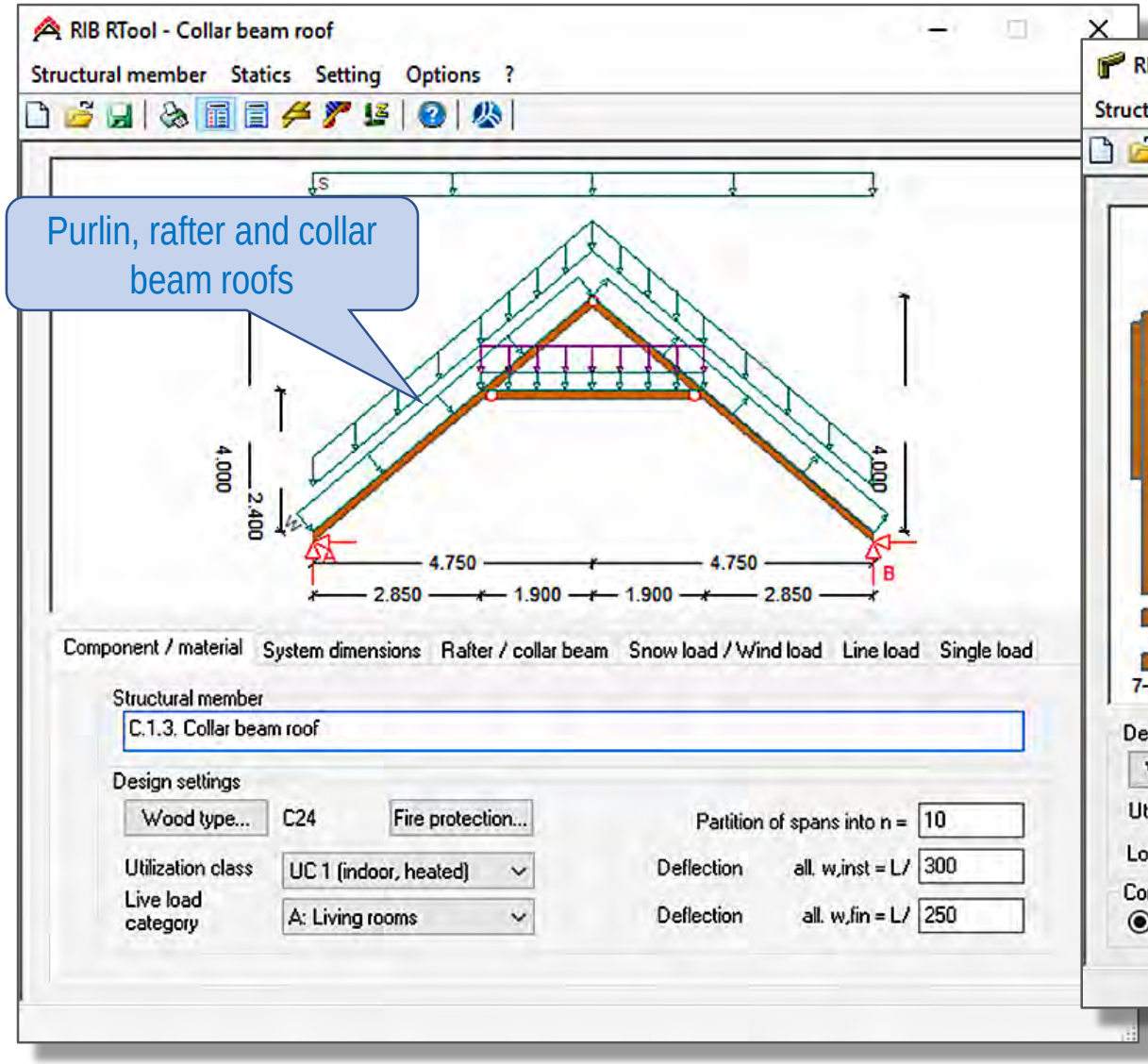


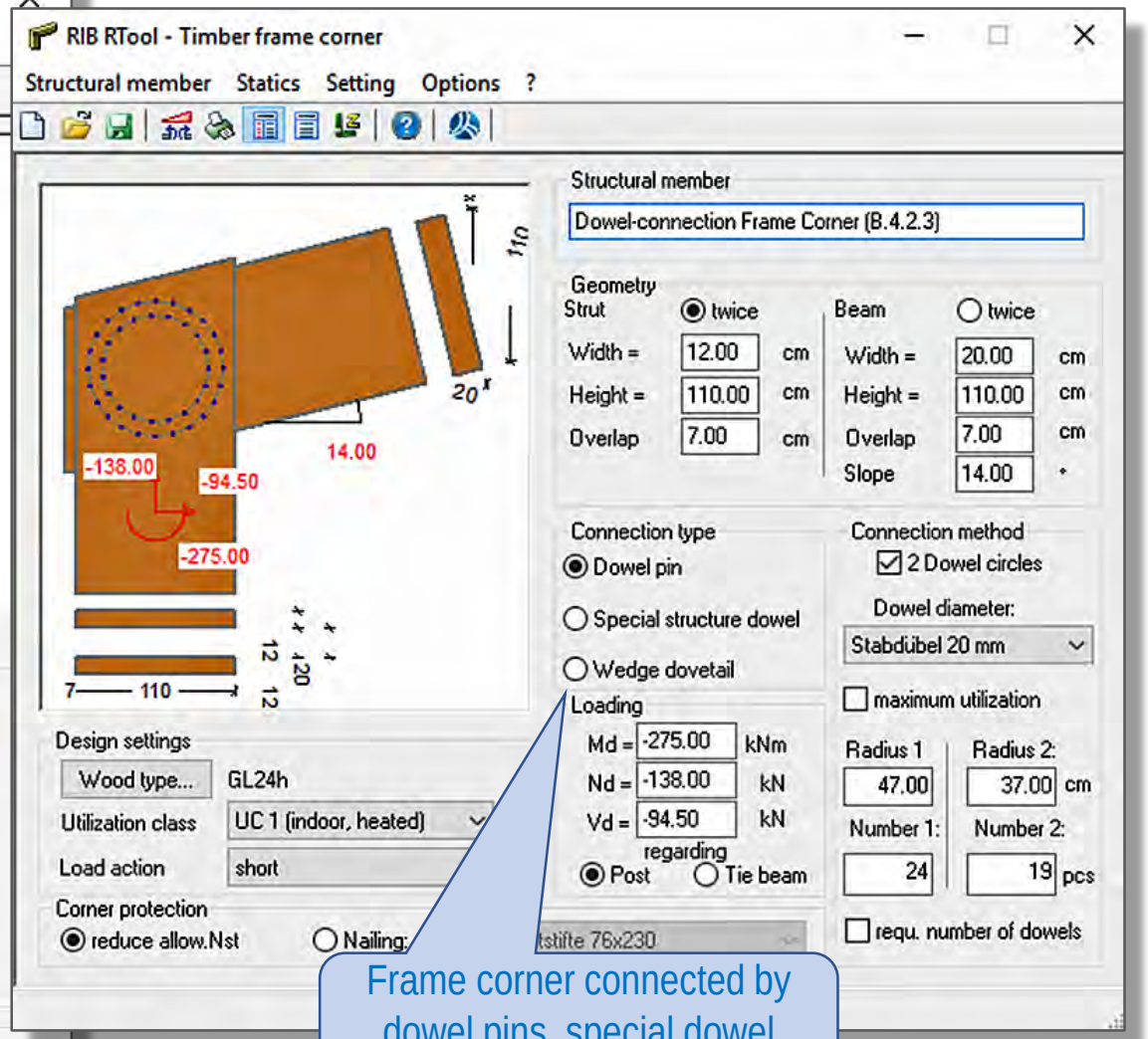
Graphical interactive input



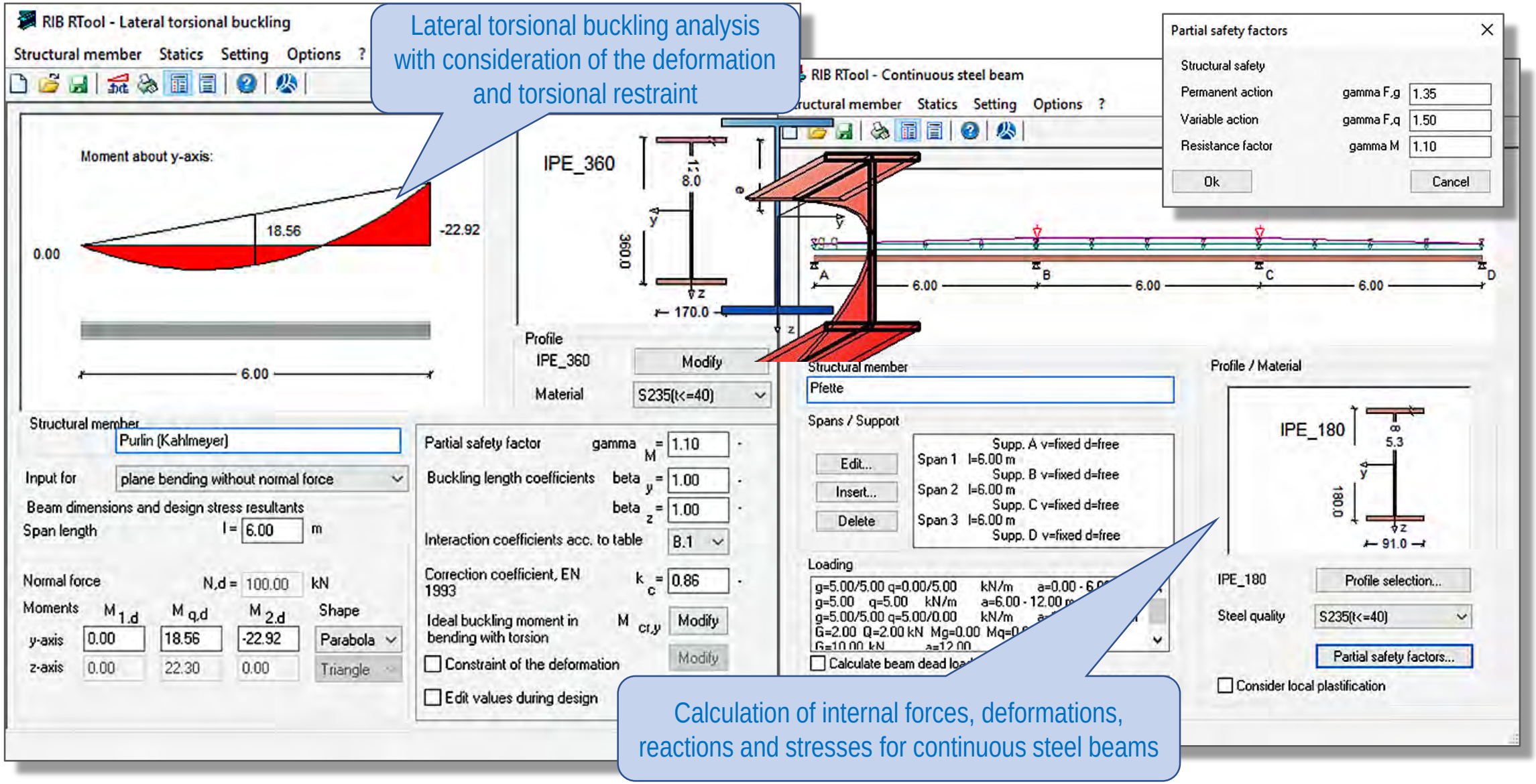
Reinforced concrete beam and Corbel design

RTool – Timber Construction Design according to DIN & Euronorm

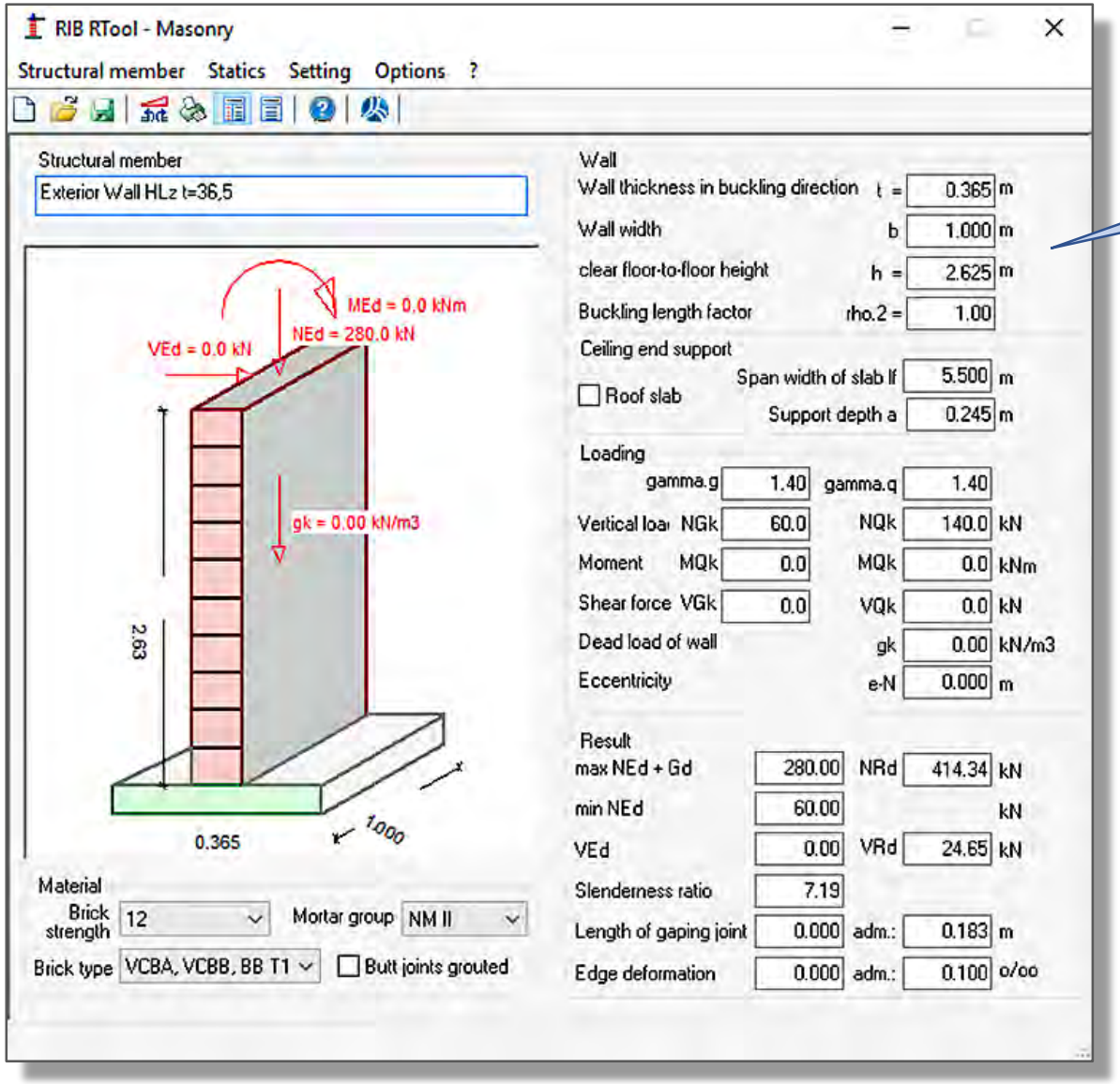




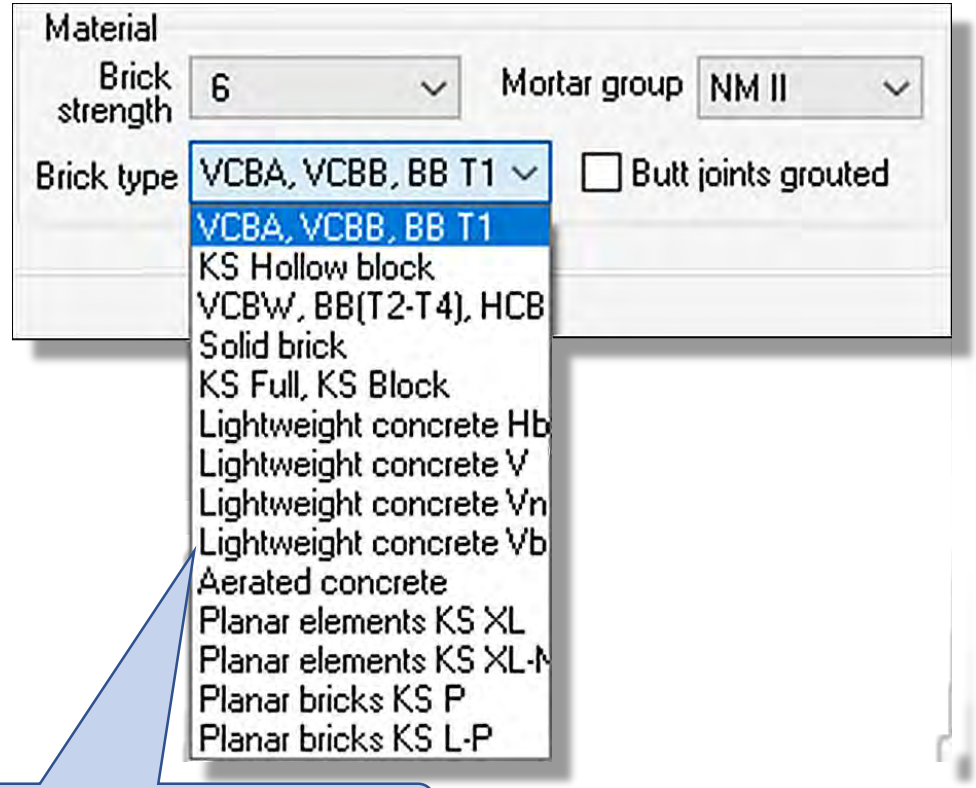
RTool – Steel Construction Design according to DIN & Euronorm



RTool – Brickwork Design according to DIN & Euronorm

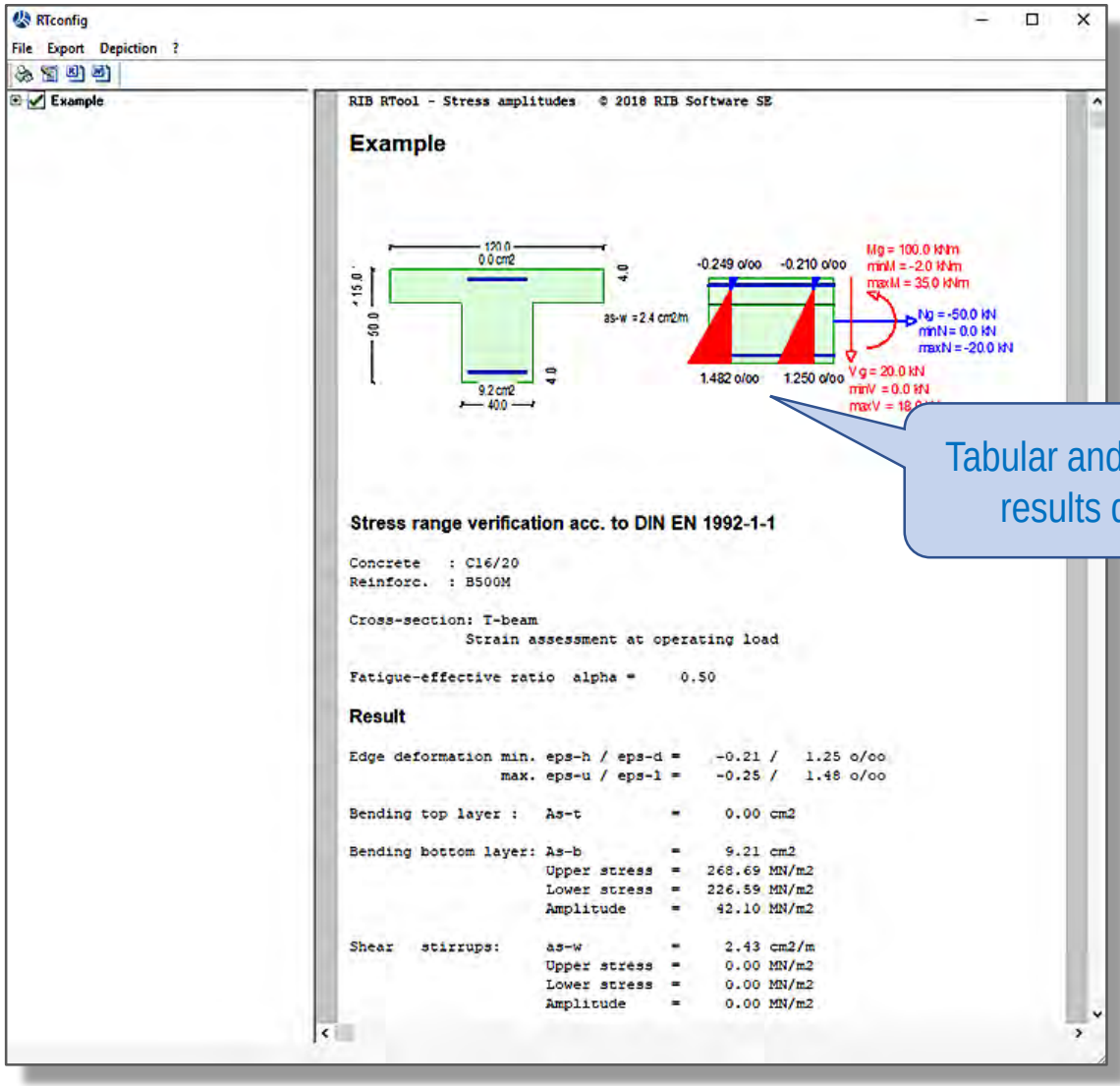


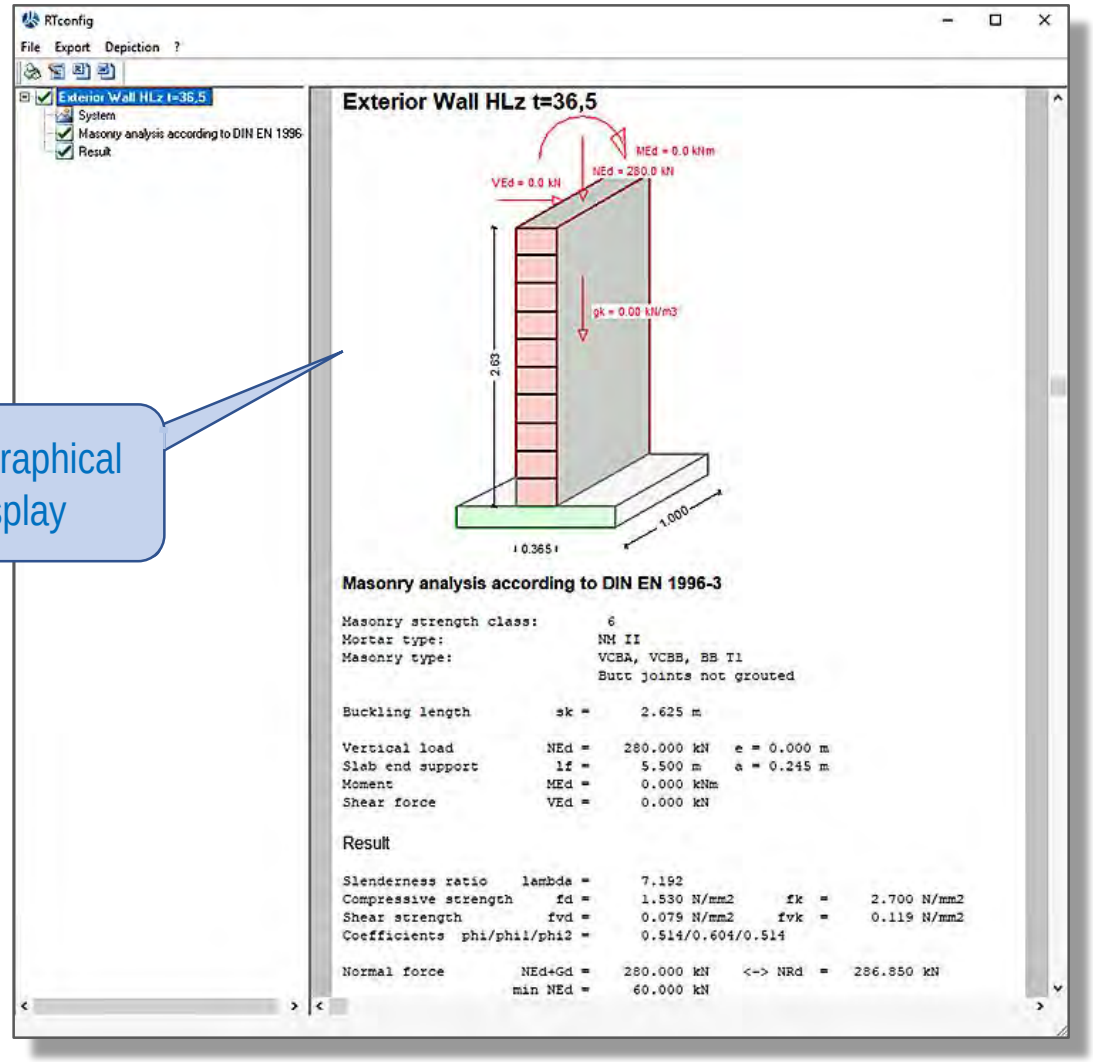
Max/min compression and shear stresses as well as the slenderness of the wall



Different types of bricks

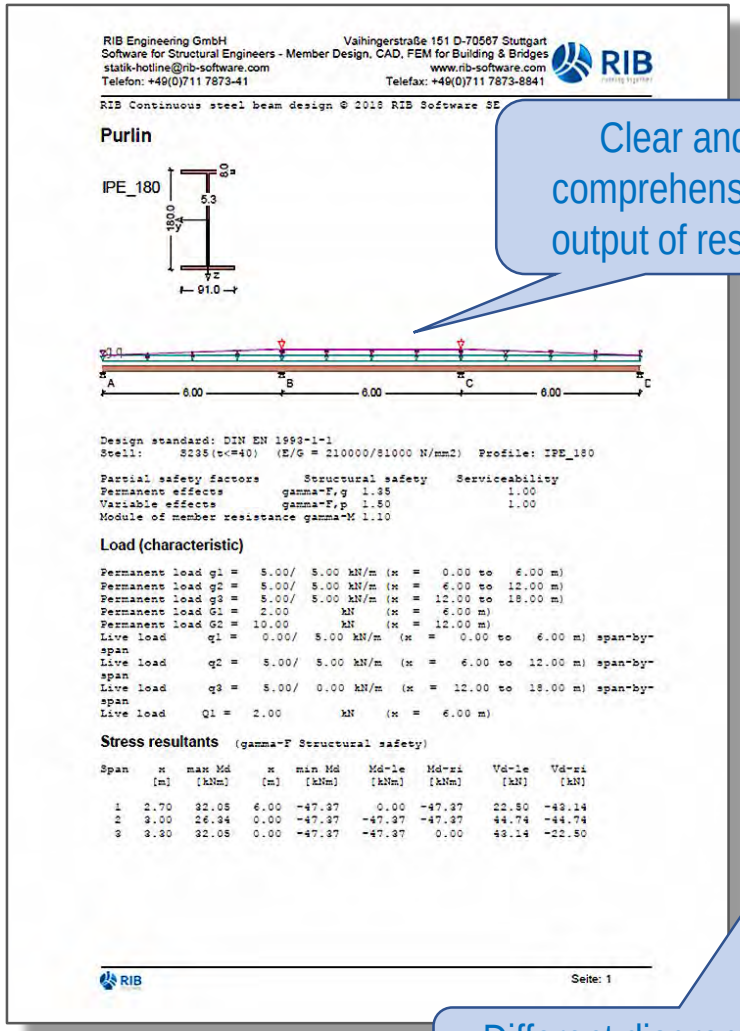
RTool – Configurable Result Output





Tabular and graphical results display

RTool – Verifiable Result List with graphics



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RIB Continuous steel beam design © 2018 RIB Software SE

Purlin

IPE_180

Design standard: DIN EN 1993-1-1
Stell: S235(t<=40) (E/G = 210000/81000 N/mm2) Profile: IPE_180

Partial safety factors	Structural safety	Serviceability
Permanent effects	gamma-F,g 1.35	1.00
Variable effects	gamma-F,p 1.50	1.00

Module of member resistance gamma-M 1.10

Load (characteristic)

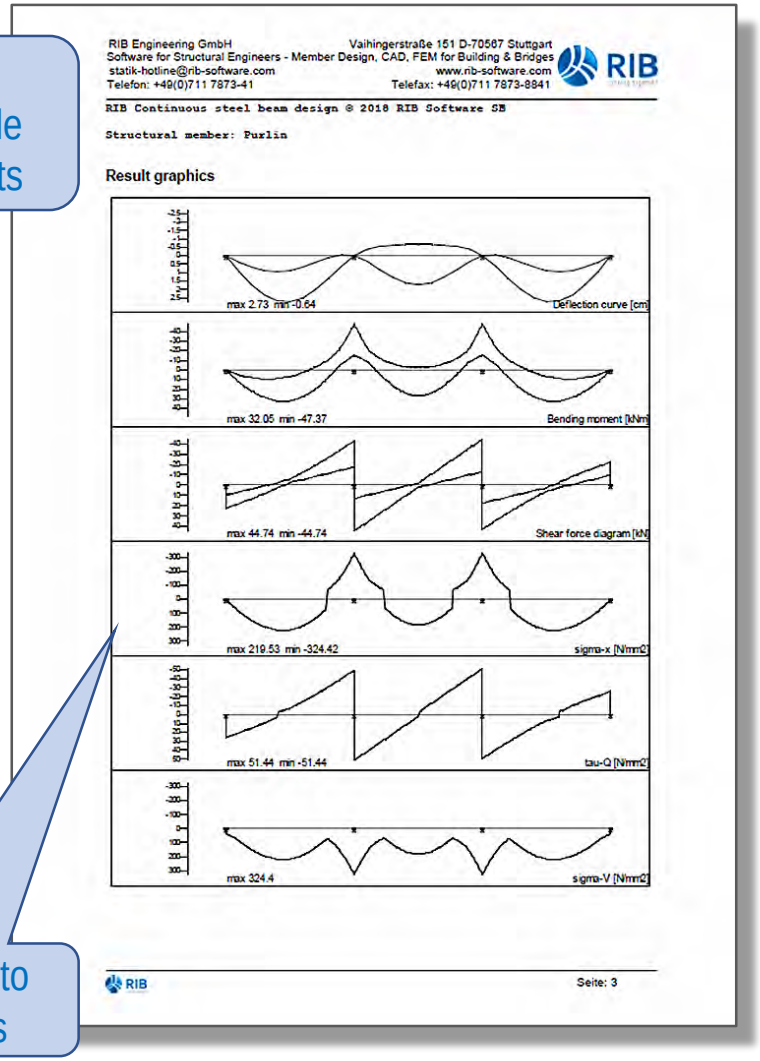
Permanent load g1 = 5.00/ 5.00 kN/m (x = 0.00 to 6.00 m)
Permanent load g2 = 5.00/ 5.00 kN/m (x = 6.00 to 12.00 m)
Permanent load g3 = 5.00/ 5.00 kN/m (x = 12.00 to 18.00 m)
Permanent load G1 = 2.00 kN (x = 6.00 m)
Permanent load G2 = 10.00 kN (x = 12.00 m)
Live load q1 = 0.00/ 5.00 kN/m (x = 0.00 to 6.00 m) span-by-span
Live load q2 = 5.00/ 5.00 kN/m (x = 6.00 to 12.00 m) span-by-span
Live load q3 = 5.00/ 0.00 kN/m (x = 12.00 to 18.00 m) span-by-span
Live load Q1 = 2.00 kN (x = 6.00 m)

Stress resultants (gamma-F Structural safety)

Span	x [m]	max Md [kNm]	x [m]	min Md [kNm]	Md-le [kNm]	Md-ri [kNm]	Vd-le [kN]	Vd-ri [kN]
1	2.70	32.05	6.00	-47.37	0.00	-47.37	22.50	-43.14
2	9.00	26.34	0.00	-47.37	-47.37	-47.37	44.74	-44.74
3	3.30	32.05	0.00	-47.37	-47.37	0.00	43.14	-22.50

RIB Seite: 1

Clear and comprehensible output of results



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RIB Continuous steel beam design © 2018 RIB Software SE

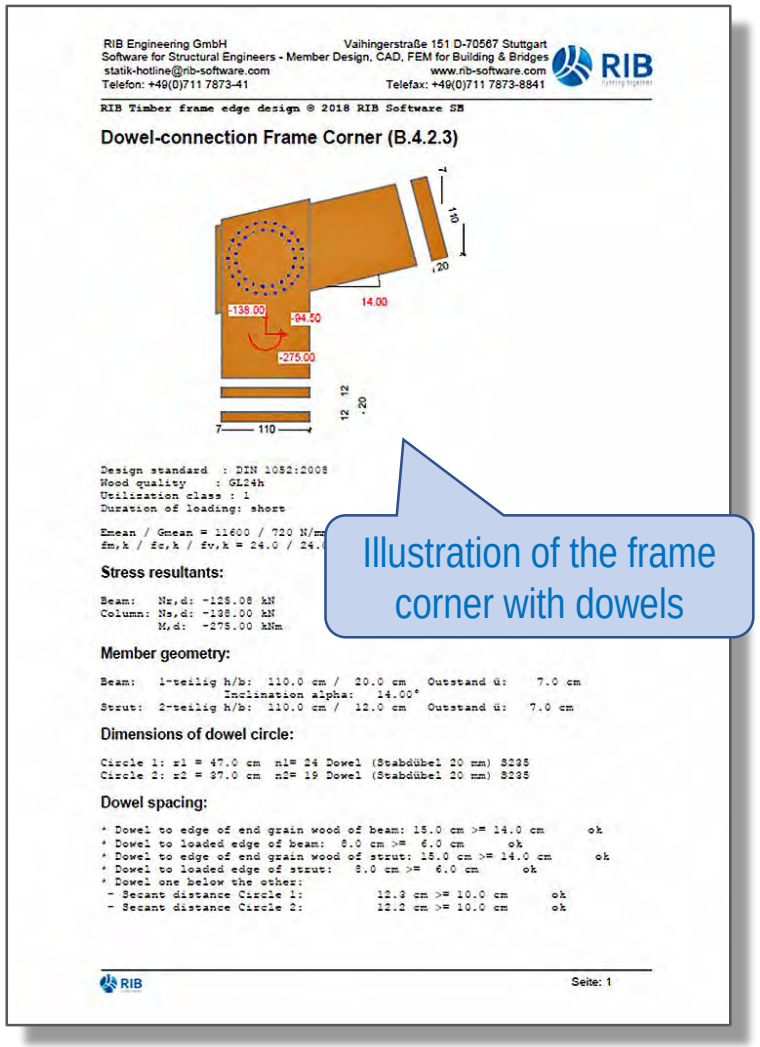
Structural member: Purlin

Result graphics

max 2.73 min -0.64 Deflection curve [cm]
max 32.05 min -47.37 Bending moment [kNm]
max 44.74 min -44.74 Shear force diagram [kN]
max 219.53 min -324.42 sigma-x [N/mm2]
max 51.44 min -51.44 tau-Q [N/mm2]
max 324.4 sigma-V [N/mm2]

RIB Seite: 3

Different diagrams to display the results



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RIB Timber frame edge design © 2018 RIB Software SE

Dowel-connection Frame Corner (B.4.2.3)

-138.00 -94.50 -275.00 14.00

Design standard : DIN 1052:2008
Wood quality : GL24h
Utilization class : 1
Duration of loading: short

Emean / Gmean = 11600 / 720 N/mm
fm,k / fc,k / fv,k = 24.0 / 24.

Stress resultants:

Beam: Nz,d: -125.08 kN
Column: Ny,d: -138.00 kN
Mx,d: -275.00 kNm

Member geometry:

Beam: 1-teilig h/b: 110.0 cm / 20.0 cm Outstand ü: 7.0 cm
Inclination alpha: 14.00°
Strut: 2-teilig h/b: 110.0 cm / 12.0 cm Outstand ü: 7.0 cm

Dimensions of dowel circle:

Circle 1: r1 = 47.0 cm n1= 24 Dowel (Stabdübel 20 mm) S235
Circle 2: r2 = 97.0 cm n2= 19 Dowel (Stabdübel 20 mm) S235

Dowel spacing:

* Dowel to edge of end grain wood of beam: 15.0 cm >= 14.0 cm ok
* Dowel to loaded edge of beam: 8.0 cm >= 6.0 cm ok
* Dowel to edge of end grain wood of strut: 15.0 cm >= 14.0 cm ok
* Dowel to loaded edge of strut: 8.0 cm >= 6.0 cm ok
* Dowel one below the other:
- Secant distance Circle 1: 12.3 cm >= 10.0 cm ok
- Secant distance Circle 2: 12.2 cm >= 10.0 cm ok

RIB Seite: 1

Illustration of the frame corner with dowels