

B2

Reinforced Concrete Design

The B2 application allows you to perform cross section analyses for bending with longitudinal force as well as shear force. Additionally, you can produce crack width evidence (loading), perform stress analyses or calculate effective rigidity.

Design

- DIN EN 1992
- ÖNORM EN 1992
- BS EN 1992
- UNI EN 1992 / NTC
- EN 1992
- DIN 1045 / DIN 1045-1
- ÖNORM B 4700
- British Standard BS 8110 und BS 8500-1
- NEN EN 1992
- NBN EN 1992
- CSN EN 1992
- PN EN 1992

When calculating in accordance with DIN 1045-1 and Eurocode, you can include high-strength and light-weight concretes as well as reduced material factors for precast components. These material peculiarities can also be considered in the accidental and earthquake design situations.

The entered exposure classes allow you to calculate the durability requirements (minimum concrete class, concrete cover and requirement class for crack width evidence) in dialogs.

You can optionally consider tension rigidity in the calculation of effective rigidity.

When performing a bending design calculation, you can optionally include the concrete area displaced in the compression zone of the steel, which is of particular importance where high-strength concretes are concerned.

The calculation can include several combinations of action-effects that you enter via a table.

You can prepare n/m design diagrams for the uniaxial symmetric design of circular and rectangular cross sections.

Additional module B2-Poly:

Design of polygonal cross sections

For polygonal cross sections with up to 100 straight outline sections, you can perform a design calculation for biaxial bending with longitudinal force or calculate the effective rigidity.

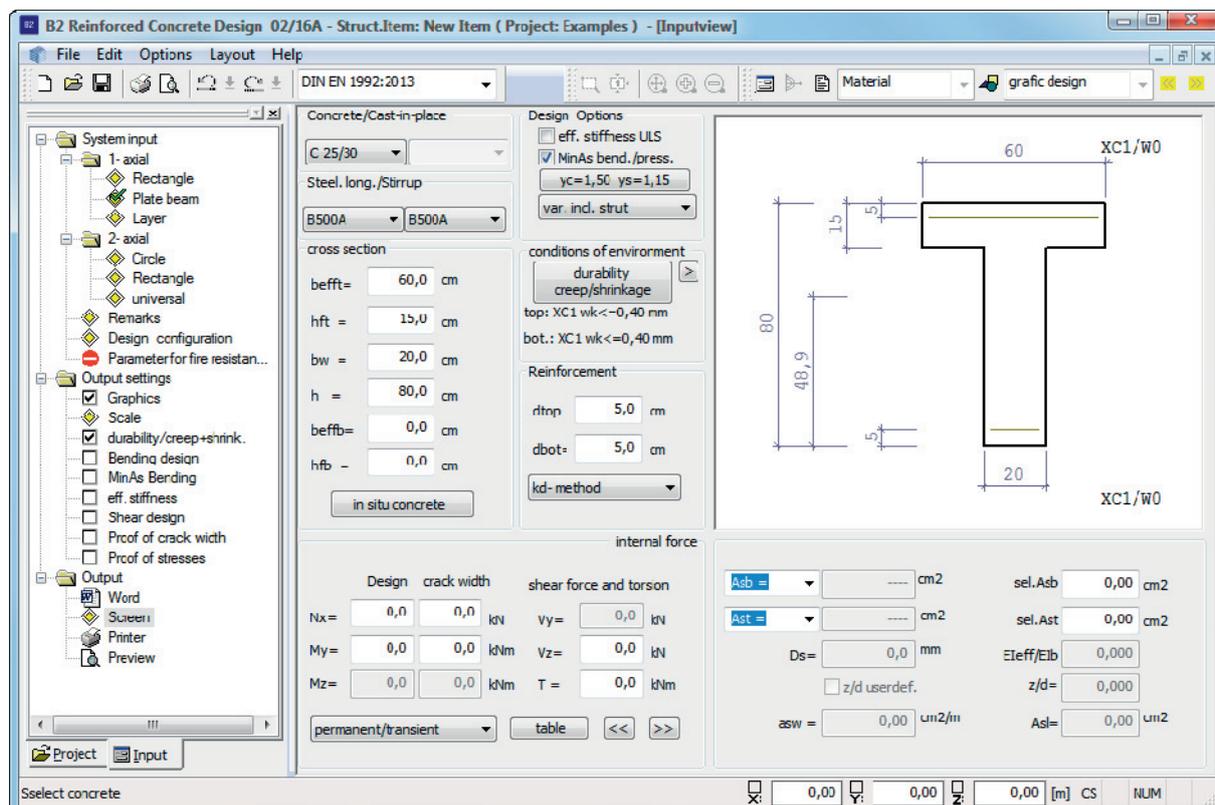


Table of available cross sections

Cross section	Effect of actions	ULS bending + longitud. force	ULS/SLS effective rigidity	ULS shear force + torsion	Stress analysis steel/ concrete	Crack width evidence	Comments
T-beams	Uniaxial	X	X	X	X	(1)	Cast-in-place concrete joint / with lattice girders (2)
Rectangle 1	Uniaxial	X	X	X	X	(1)	Cast-in-place concrete joint / with lattice girders (2) n/m diagrams
Rectangle 2/ box	Uniaxial and biaxial	X	X	(2)	X	-	
Circle/ annulus	Uniaxial and biaxial	X	X	(1)	X	(1)	n/m diagrams
Layers cross section	Uniaxial	X	X	X	X	X	Cast-in-place concrete joint / with lattice girders (2)
General cross section	Uniaxial and biaxial	X	X	-	-	-	(Additional module!) Rigidity for the design situation "fire": (3)

(1) Except BS 8110

(2) Only DIN 1045-1

(3) Rectangular and circular cross sections with general reinforcement, only DIN 1045-1/Eurocode

Bending design and stiffness assessment in the accidental design situation fire

You can verify rectangular and circular cross sections with spot reinforcement in any position in the accidental design situation fire in accordance with DIN 1045-1 + MLTB and Eurocode. You need the add-on modules B2-Poly and TA - Thermal Analysis to do this.