

## 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
- PN EN 1992
- EN 1992
- DIN 1045 / DIN 1045-1
- ÖNORM B 4700
- British Standard BS 8110 und BS 8500-1

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.

In addition to the usual reinforcing steel, the use of stainless steel reinforcement or the use of a high-strength reinforcement after approval is also possible with DIN EN 1992.

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.

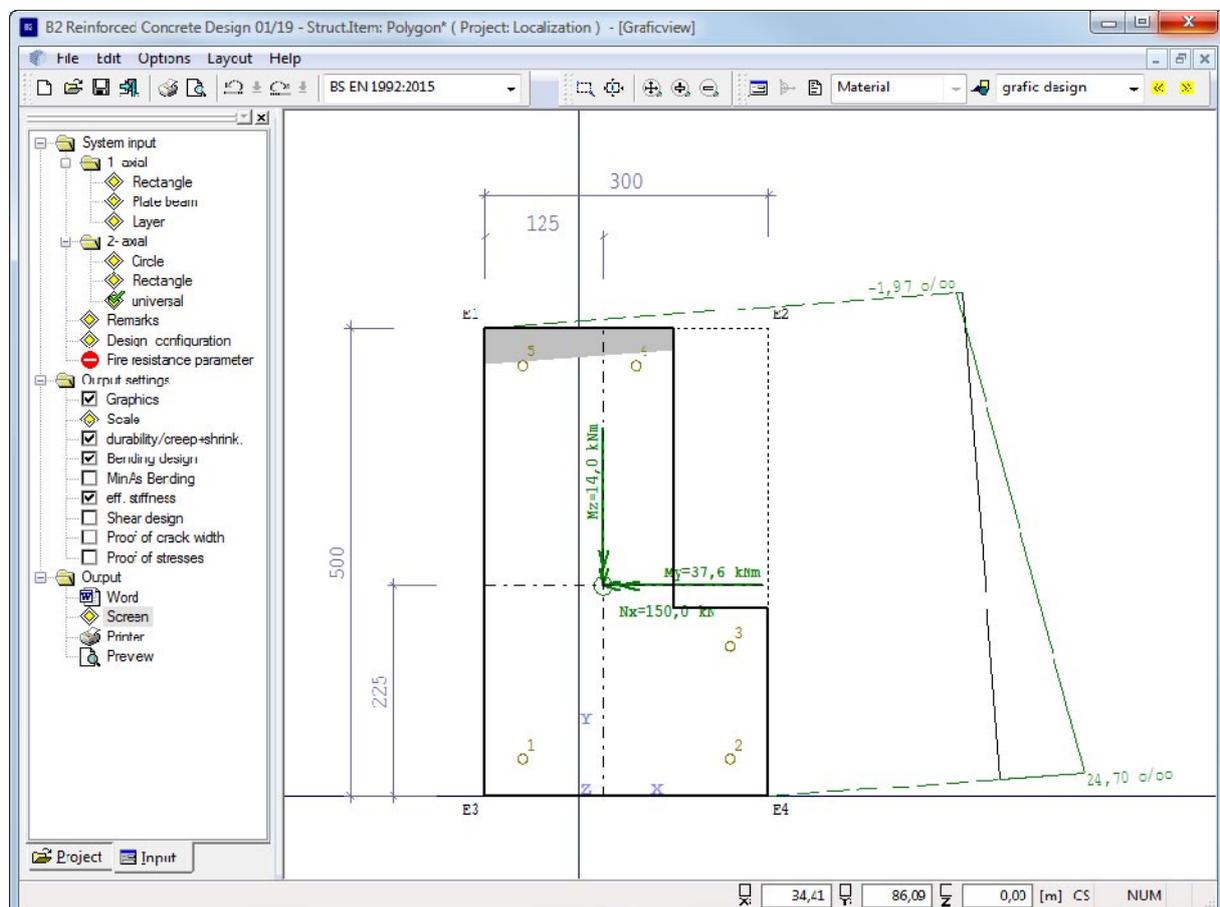
When performing a bending design calculation, you can optionally include the concrete area displaced in the compression zone of the steel, which is of particular importance where high-strength concretes are concerned.

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 options

- ▶ see next page



**Additional modules**

▪ **B2-Poly**

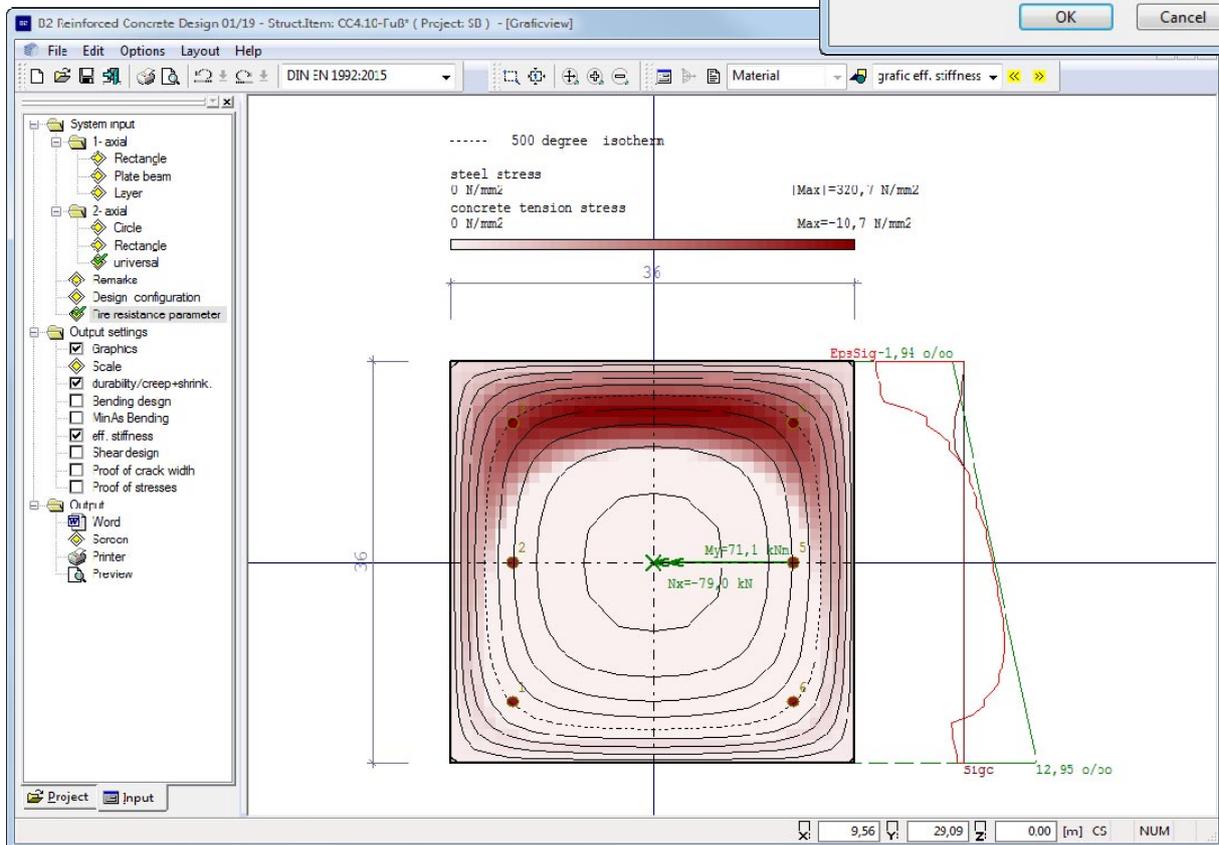
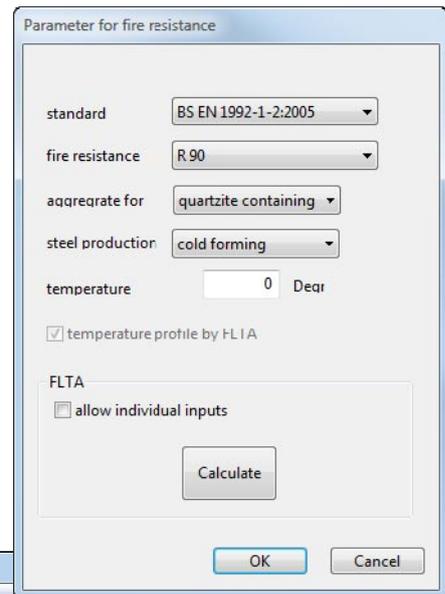
**Design of polygonal cross sections**

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.

▪ **Fire resistance**

**Bending design and stiffness assessment in the accidental design situation fire**

If the add-on modules B2-Poly and [TA-Thermal Analysis](#) are licensed, 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 Euro-code..



### 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
<b>T-beams</b> <i>(Plate beams)</i>	Uniaxial	X	X	X	X	X	optional with cast-in-place complement
<b>Rectangle 1</b>	Uniaxial	X	X	X	X	X	optional with cast-in-place complement (*1) n/m diagrams
<b>Rectangle 2, hollow box</b>	Uniaxial and biaxial	X	X	X	X	-	
<b>Circle, annulus</b>	Uniaxial and biaxial	X	X	X	X	X	n/m diagrams
<b>Layers cross section</b>	Uniaxial	X	X	X	X	X	optional with cast-in-place complement
<b>Universal cross section</b>	Uniaxial and biaxial	X	X	-	X	-	<b>(Additional module B2-Poly!)</b> Design and rigidity for the design situation "fire": (*2)

ULS Ultimate limit state

SLS Serviceability limit state

\*1 For floor slabs and NA Germany joint reinforcement also with lattice girders according to general building approval [67], [68], [69], [70], [71]

\*2 For rectangle and circle cross sections with general point reinforcement. Therefore the additional module TA Thermal analysis must be installed