SFB+ Fin Plate

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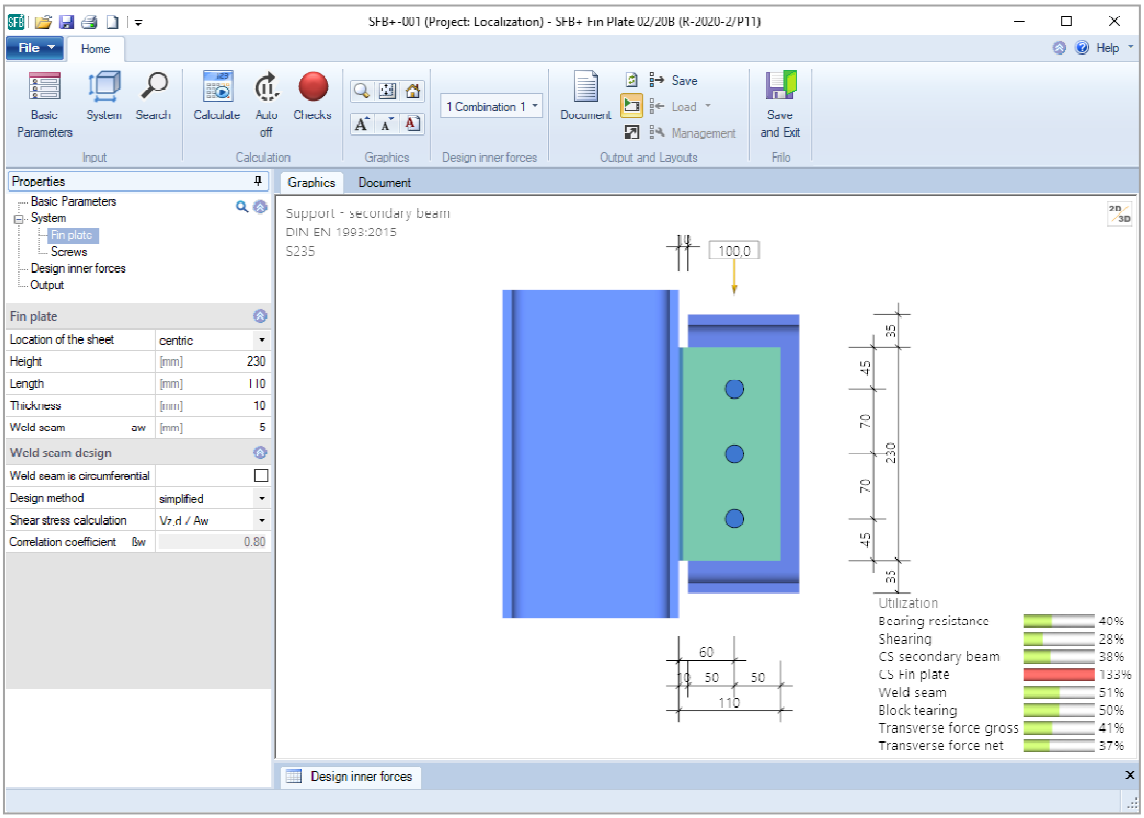

SFB+ Fin Plate

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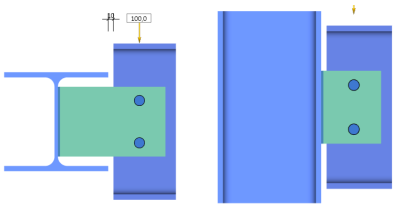
Basic Documentation – Overview

In addition to the individual program manuals, you will find basic explanations on the operation of the programs on our homepage www.frilo.com ▸ Support ▸ Articles/Information ▸ Basic operating instructions.

Application options

With the new SFB+ program, all necessary verifications for fin plate connections can be performed.



Connection types

- Steel beams to steel columns
- Steel beams to secondary beams

Profile types

The permissible profile types for columns, principal and secondary beams are I-shaped profiles that are connected by means of a fin pate.

Notch

In the case of beam-to-beam connections, the secondary beam to be connected can optionally have a notch at the top, bottom or on both sides or not have a notch.

Loads

Depending on the selected design model – i. e. connection either flexurally rigid at the centre of gravity in the bolt pattern or at the weld seam – transverse forces, normal forces and bending moments can be entered.

The existing loads, which always refer to the centre of gravity of the bolt pattern, are entered as design internal forces.

Output

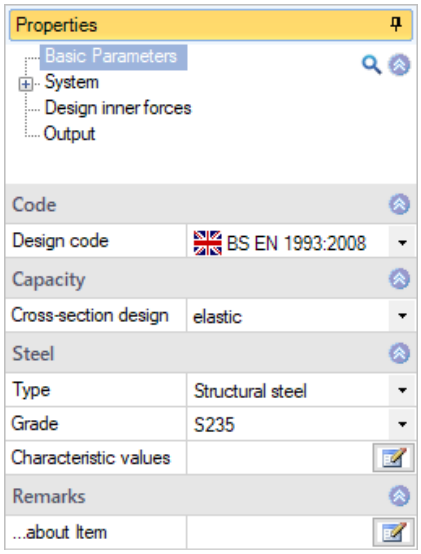
The output is compact and presents all performed verifications in a well-structured and reviewable form.

Available standards

- DIN EN 1993
- ÖNORM EN 1993

Data entry

Basic parameters

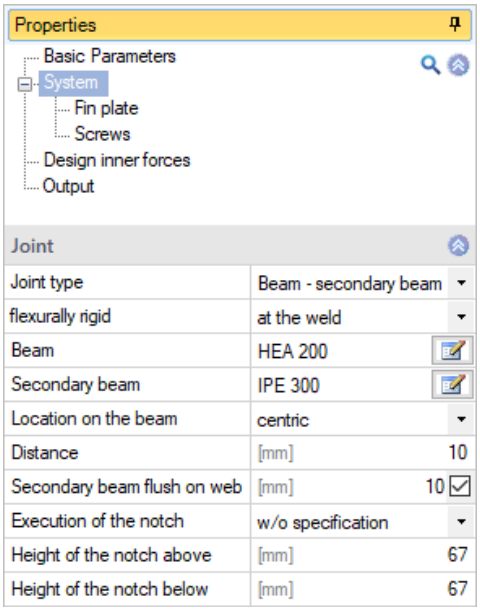


Select the standard and the material.

Load-bearing capacity

The cross-sectional design can be based on the elastic or plastic method.

Structural system



Joint type — beam – secondary beam or support – secondary beam

Flexurally rigid — select, whether the connection is flexurally rigid at the weld seam or in the centre of gravity of the bolt pattern (then no moment)

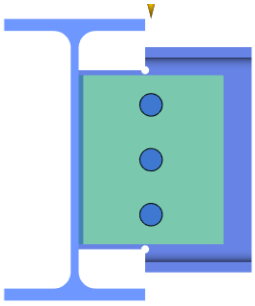
Cross-section selection for beams/secondary beams

Click on the Edit button to access the dialog for the selection of the cross-section.

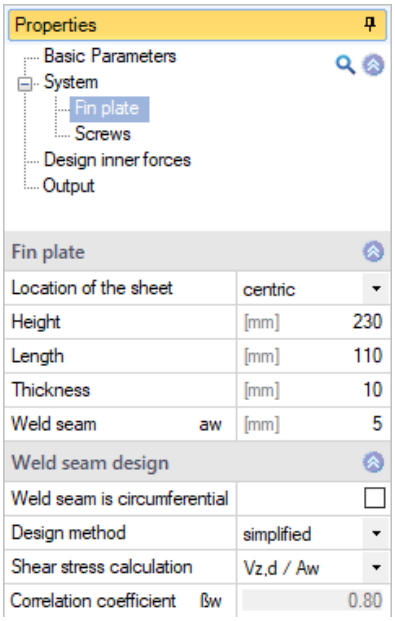
Location on the beam — with the connection type “beam – secondary beam”, the secondary beam can be positioned at the top, centre or bottom in relation to the beam.

Distance — distance between the outer edge of the beam flange and the secondary beam.

Secondary beam flush with the web — positioning with slight distance of the secondary beam from the web. You can enter the distance to the left of the (marked) option. If you enter "0" here, the data-entry fields for a notch are displayed. This notch can be defined with flame cut or with bore hole.



Fin plate



Location of the plate — position of the plate on the secondary beam: flush at the top or bottom or in the middle. The position is shown accordingly on the graphic screen.

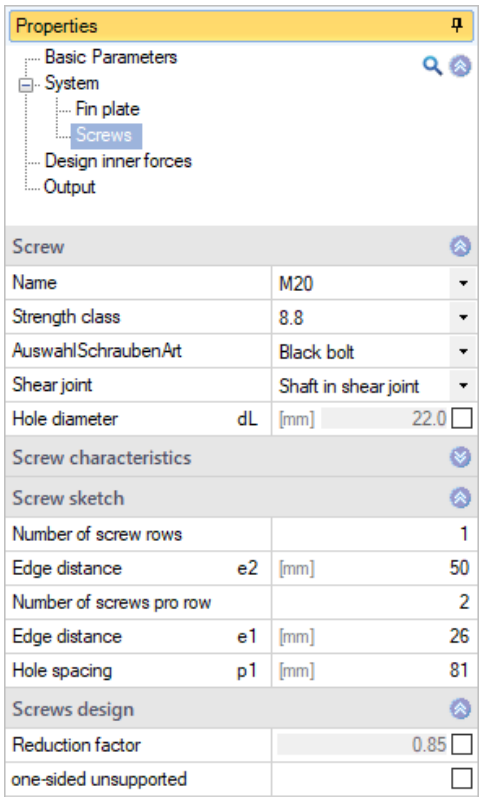
Moreover, you can enter the dimensions of the plate and the weld seam thickness. The weld seam can optionally be circumferential.

You can choose between the simplified and the directional design method.

For shear stress calculation, the following options are available

- Vz,ed / Aw
- Vz,ed / Az,w
- Parabolic tau line

Screws



Various selection lists are available for selecting the bolts (designation, strength class, black bolts, fit bolts, thread in shear joint, shank in shear joint, hole diameter).

Shear joint — indicates whether the thread or shank of the bolt is in the shear joint.

The bolt values can be displayed (folded out) if required.

You can define the bolt pattern by entering the number of bolt rows, the distance to the edges (at least 20 mm), the number of bolts per row and the hole spacing.

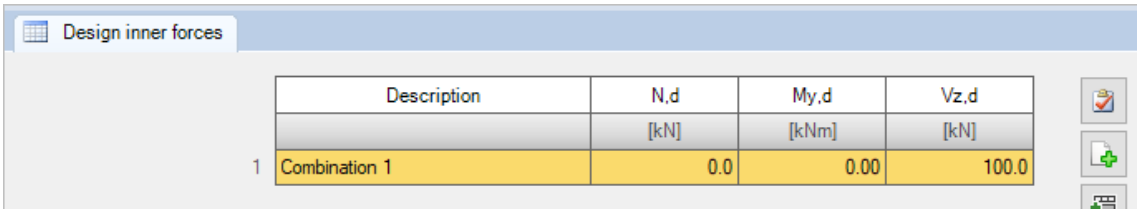
For the bolt design, a reduction factor as per EN 1993-1-8:3.6.1.(3) can be selected (otherwise fully load bearing).

Optionally, the connection can be single-shear and unsupported.

Design internal forces

Click on the table icon or use the tab below the graphic to display the table. Here you can enter a designation, N_d, My_d and Vz_d.

You can create additional table rows using the + icon.

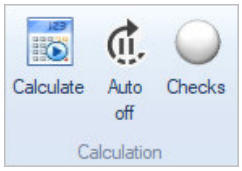


	Description	N,d	My,d	Vz,d
		[kN]	[kNm]	[kN]
1	Combination 1	0.0	0.00	100.0

Output

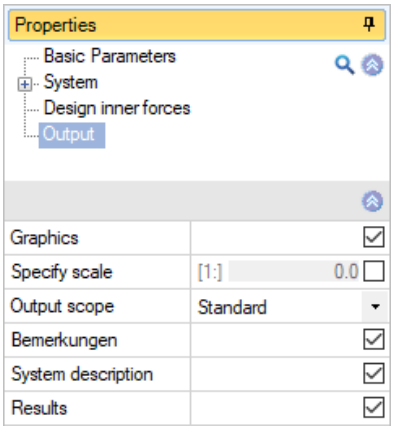
Before starting the output, click on the calculation icon if the option "automatic calculation after each input" is switched off ("Auto off"/"Auto on" icon).

After completion of the calculation, the utilizations are shown on the graphic screen.



Output scope

By checking the desired output options, you can determine the scope of data to be put out.



Output as a PDF document

Via the Document tab, you can display the document in PDF and print it.

See also Output and printing.pdf