FRILO
A NEMETSCHEK COMPANY

UPDATE NEWS
RELEASE
2023-1

This summary comprises the most important improvements of the Release 2023-1.

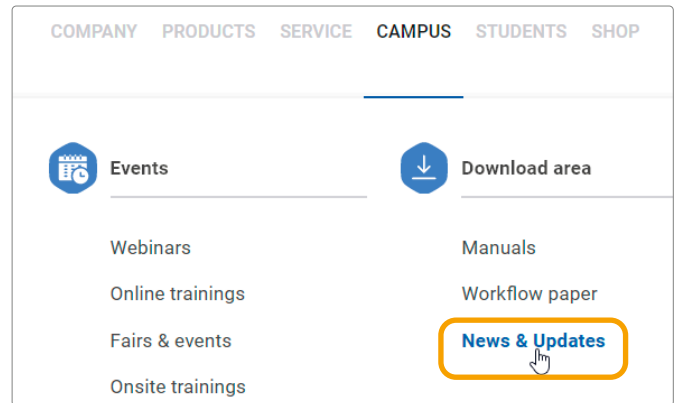Update News relating to former releases are available at

www.frilo.eu
- ▸ Campus
- ▸ Download area + News & Updates
- ▸ Update News

Update information referring to individual programs is available in the FRILO Control Center

If you have already installed the release, you will find the update information for each individual program in the FRILO Control Center under the „Programs" tab by right-clicking on the respective program and then on „Info".

Webinars / Online Event for Release 2023-1

On 21 November 2022, the new release was also presented in an online event. We will upload a recording of the event (in German) on our YouTube channel.
YouTube-channel
Upcoming events: see www.frilo.eu/event/
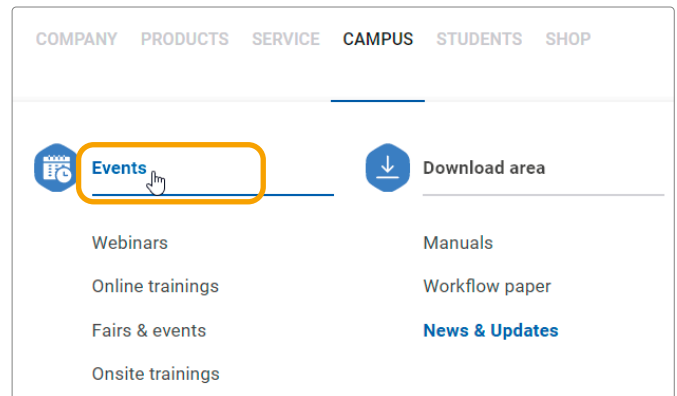
FRILO Insight

The FRILO newsletter „FRILO Insight" with product reports, current information, technical articles as well as tips & tricks that make it easier for you to work efficiently with our solutions is now available at CAMPUS - Download area - News & Updates.

GENERAL UPDATE INFORMATION

In this section, we point out the most important improvements and new features of individual programs.
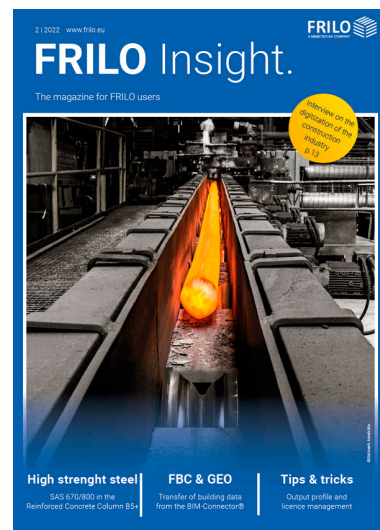
- BIM-Connector® FBC
- Help functions
- Building Model GEO & FEM
- Framework RSX
- Foundations
- Reinforced concrete design with carbon concrete ...

FRILO BIM-Connector® FBC

Functional enhancements

New in FBC is the measuring function for distances between two points as well as the straighten function which allows you to transform floor slabs (e.g. balconies, sloping roof slabs, sloping floor slabs) into the xy-plane for further editing. You can connect the slabs to each other, for instance, and then transfer them to the programs GEO or PLT. ▷ *VIDEO*

Additional functions:

- Shortcuts: Via the Help menu item, you can display a dialog with the shortcuts implemented in the program (Shortcuts FBC).
- Further improvements/enhancements refer to the functions Join, Disassemble Walls and Colours among others.

Interface SCIA Engineer/MWX+

An interface for the direct data transfer between SCIA Engineer and the FRILO Masonry Design program MWX+ has been newly developed. Now you can select an individual masonry wall in SCIA Engineer and transfer it to MWX+ including all loads.

Help

New Help buttons with enhanced functionality

In addition to the manual of the program, you can now find links to the basic operating instructions for the PLUS programs, to video tutorials (under construction) as well as to the Frequently Asked Questions about the program on our homepage under the Help menu item.
You can also get support from our service staff directly on your PC via "TeamViewer" without detouring via the FRILO start window (after consultation with our hotline). Furthermore, you have the possibility to send us your opinion or suggestions for improvement promptly and easily. The update and patch information for the program is now available more quickly. Manual calculation or reference examples are also linked as far as we have them already implemented (library under construction).
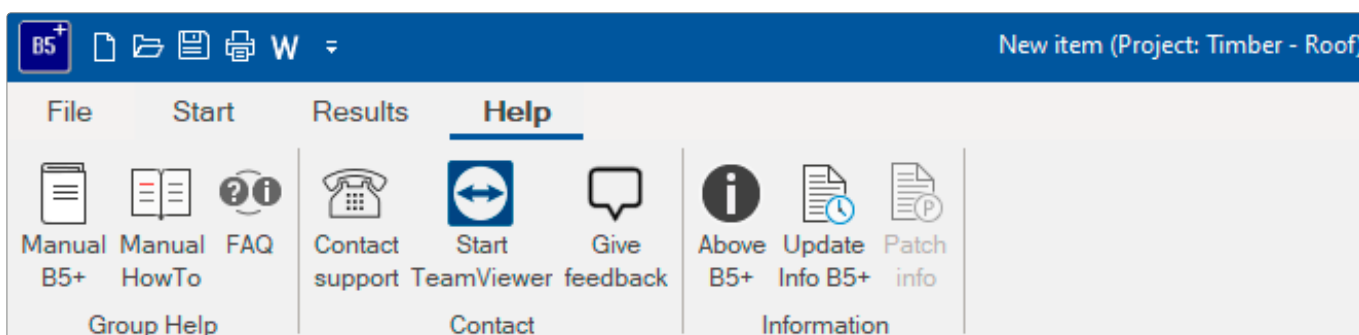
Framework RSX

Interface to the design program HO13+ Timber Joint and Hot Design for Timber.

New is an interface to the HO13+ Timber Joint program. After the calculation, the transfer to HO13+ can be started by right-clicking on a node in the result graphic. The member assignment is done by the user or, if possible, automatically with a mouse click. ▶ *VIDEO*.

Furthermore, you can perform a hot design for timber components. To do this, select „Fire protection settings" in the catalogues.

Building Model GEO

Enhancements

- Earthquakes as per DIN EN 1998-1/NA:2021-07
- Interpolation algorithm for determining the spectral acceleration SapR
- A FE mesh generation for the slab of the current storey level was implemented (analogous to PLT).
- A new feature for foundation slabs is the design of a column via an interface to the design program PFAHL+. After the calculation, support springs are returned to the Building Model.

Further extensions/improvements are available in the „Update Info..." for the program (Help menu item).
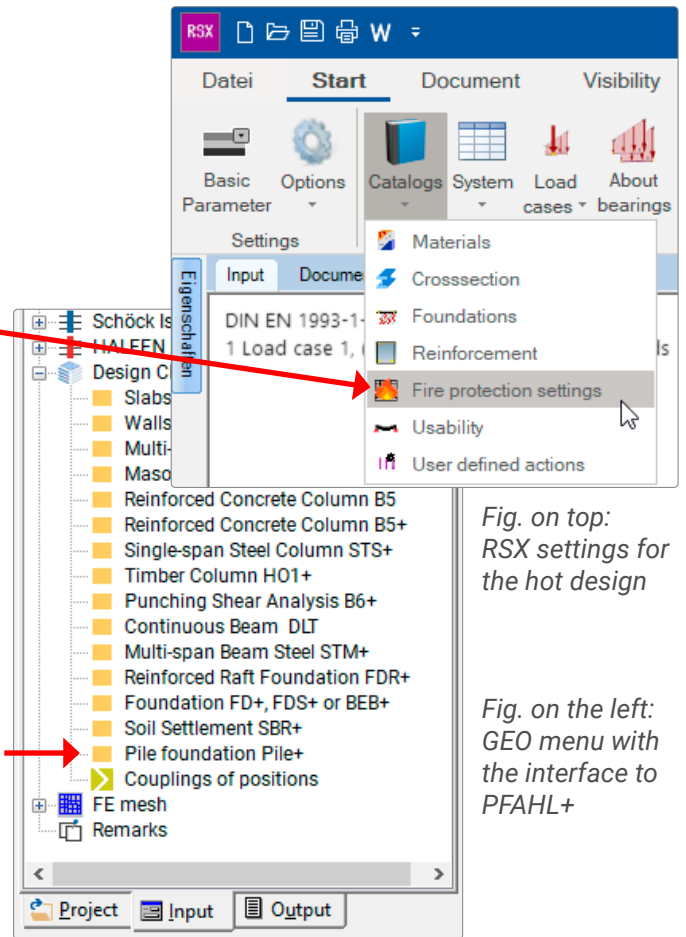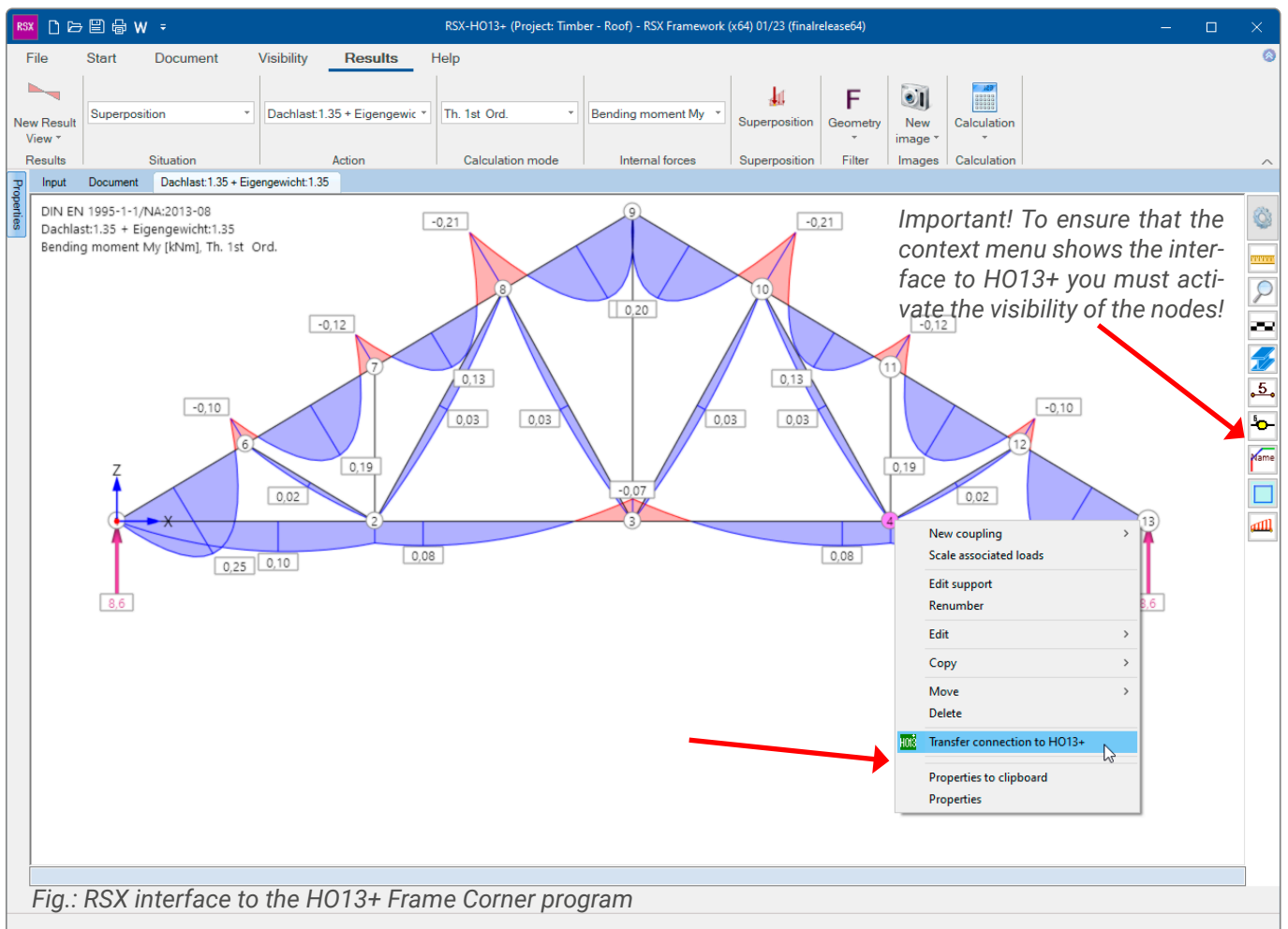
Fig. on top: RSX settings for the hot design

Fig. on the left: GEO menu with the interface to PFAHL+

Important! To ensure that the context menu shows the interface to HO13+ you must activate the visibility of the nodes!

Fig.: RSX interface to the HO13+ Frame Corner program

Slabs by Finite Elements PLT

In the PLT program, the evaluation of results for sections has been improved. For support reactions, the resultant has been marked with a dot in the graph.

GEO and PLT

Improvement of the multi-selection feature
In both programs, the properties to be changed can now be selected in detail when editing multiple columns or walls.

Add-on option Foundations

Add-on option FD+ PRO
With the add-on option FD+ PRO, you can enhance the foundation programs FD+/FDB+/FDS+ and GBR+ with:
- the application of earth pressure
- an inclined foundation base
- a 4-sided different surface definition at the foundations faces
- a seismic ground failure analysis
- a ground failure punching shear analysis
- a calculation of the load bearing capacity
- a graphical output of the internal forces along the main axes
  - ▶ *Video*.

Note concerning the free 30-days demo version
You can test the add-on option FD+ PRO for 30 days without a licence.

Reinforced Concrete Design B2

In the program Reinforced Concrete Design B2, reinforcements to increase the bending load capacity can now be defined for rectangular cross-sections subjected to uniaxial bending loads with CARBOrefit® according to approval. ▶ *Video*.

Pile Foundation Pfahl+

In the program PFAHL+, any rigid or elastic bearings can now be defined at the pile head as well as at the pile toe. Furthermore, you can consider piles inclined in their axis and also additional eccentricities.

EDB+: Lateral pressure calculation

The new calculation approaches for lateral pressure calculation on piles according to the 2020 annual report of the DGGT working group „Pfähle" and the 3rd edition of the EA Pfähle have been implemented in EDB+.

Toolbox TB-AQS

With the new Toolbox module TB-AQS, cross-sectional properties can be determined for a range of standard cross-sections. The translation of the program interface is currently in progress
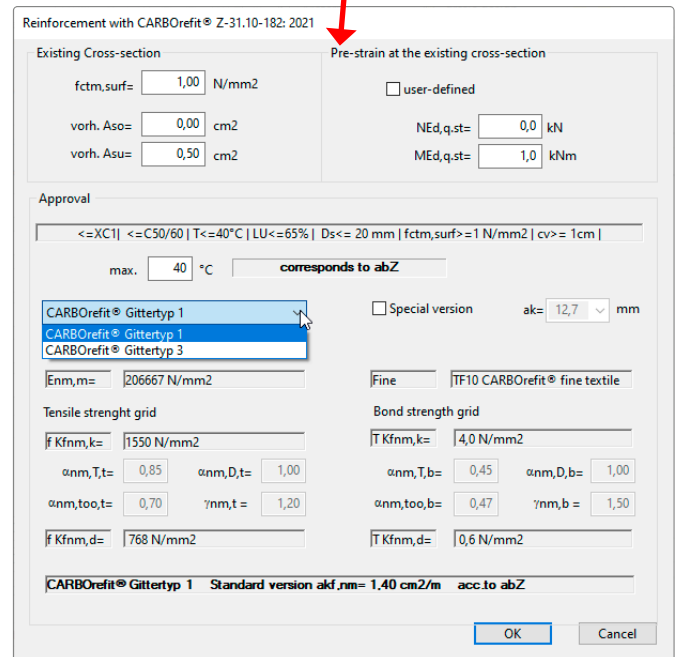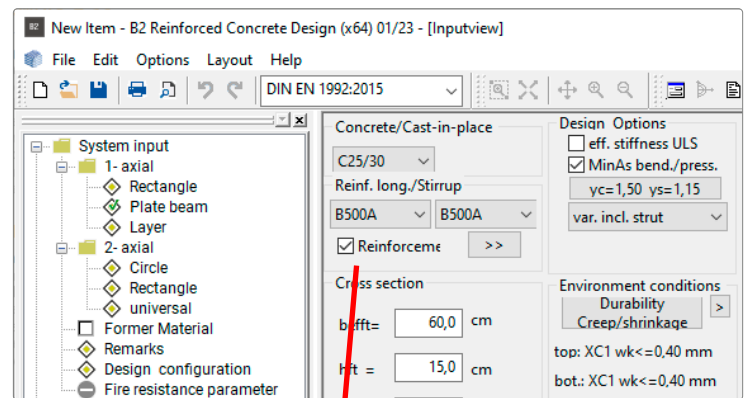

Fig.: Calling up the reinforcement with carbon concrete in B2

Localization

Italy
In the Reinforced Concrete programs B5+, B6+, B9+ and B10+ the user interface and the output section have been translated.

Poland
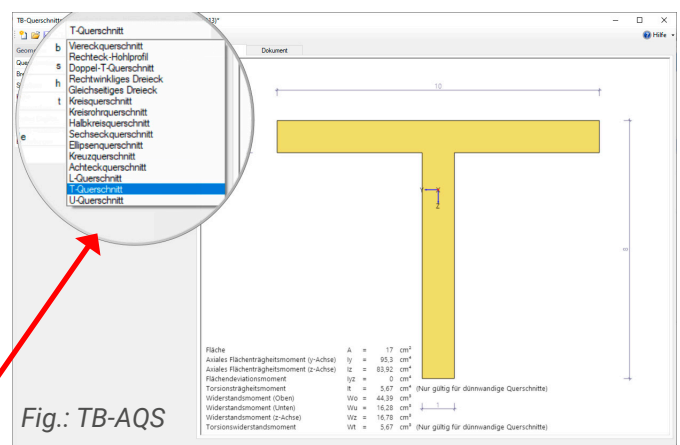The Polish Eurocode was implemented in the Masonry programs MWX+, MWM+ and MWP+.

Fig.: TB-AQS

The following is a list of the new programs in this release

- Antenna Mast Design ATB+
- Steel Chimney Design S8+
- Frame Corner HO6+
- Continuous Beam DLT+

Antenna Mast Design ATB+ and Steel Chimney Design S8+

ATB+ and S8+ have been newly developed as PLUS versions. ATB+ designs antenna masts, S8+ steel chimneys according to Eurocode 3 taking into account the regulations of the national annex. The internal forces and deformations according to second-order elasticity theory are calculated. By determining the resonance frequencies the verifications of the structural safety, service strength and serviceability are performed.

Structural system
- Entry of several length segments with different cross-sections and materials.

Available structural systems
- Cantilevered masts or chimneys restrained at the base.
- Cantilevered masts or chimneys supported at any point and restrained at the base or articulated.

Guying ATB+
You can define guying for the system. Three or four cables are available for selection.

Guying S8+ with add-on option S8-S
In S8+ you can define guying with three or four cables when using the optional add-on licence S8-S.

Cross-sections
- Circular hollow sections as standard shapes
- User-defined circular hollow sections

Details
- Base:
  - circular or annular
  - with or without stiffener
  - with or without annular stiffener
- Flange connection (interior/exterior)
- Mast opening (ATB+) or flue opening (S8+)

Supports
- The support at the base can be defined as either rigid, articulated or elastic (enter a spring value).
- You can arrange additional supports for each length segment along the mast or chimney.

Loads
- Automatically generated wind loads depending on the selected geographical location
- Automatically generated equivalent loads caused by vortex-excited transverse vibrations
- Automatically generated seismic loads
- Automatic inclusion of the self-weight of the steel sections
- Additional, user-defined load cases can be entered (e.g. icing of the supporting tube, thermal loads etc.).
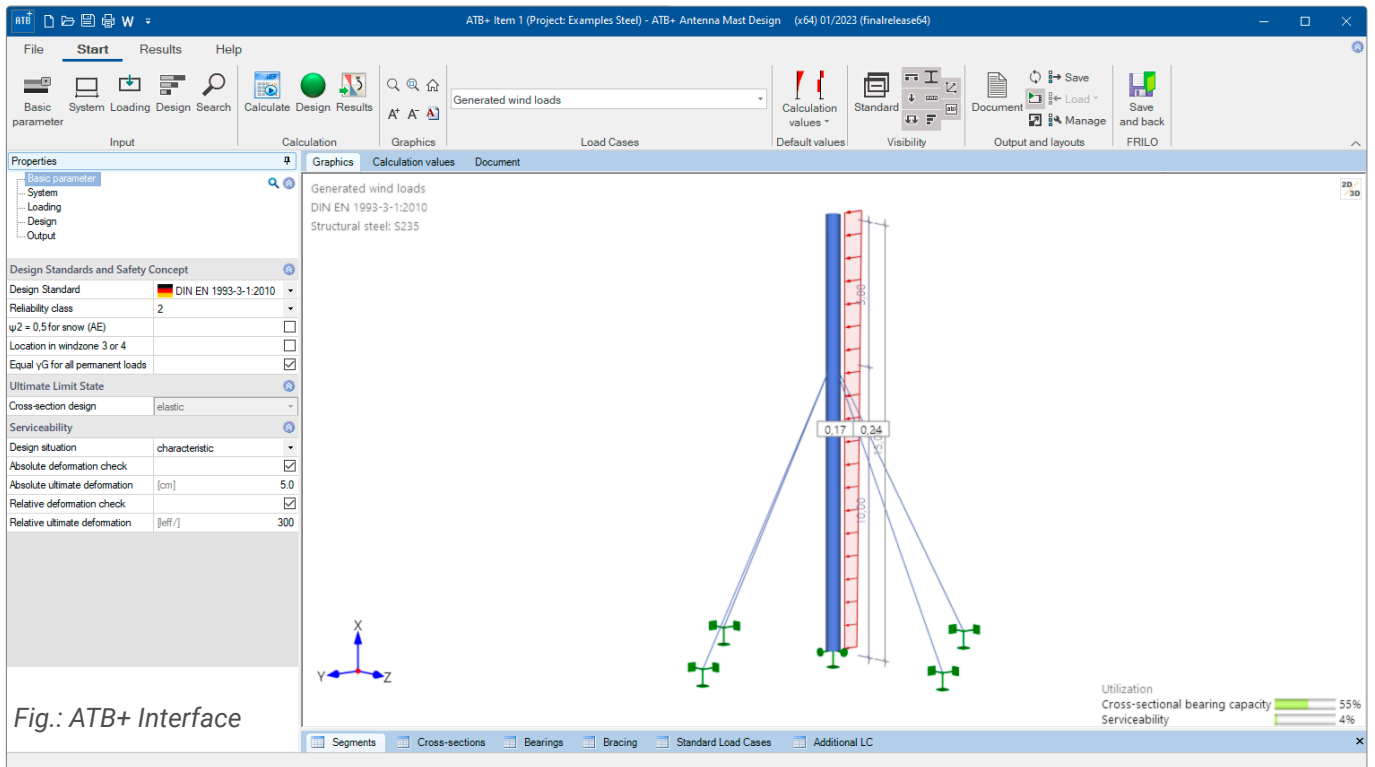
Fig.: ATB+ Interface

Material

The materials available for selection are presented in a list: structural steel, weathering structural steel, fine-grained structural steel, stainless steel and high-temperature steel. You can also enter a user-defined steel type.

Verifications

- in the ultimate limit state
- in the serviceability limit state
- earthquake
- detail verifications (flange connection, base point, mast or flue opening, service strength)

Standards

Structural safety verifications:
- DIN EN 1993-1-1/NA & DIN EN 1993-3-1/NA

Wind and snow loads:
- DIN EN 1991-1-3/NA & DIN EN 1991-1-4/NA

Fatigue:
- DIN EN 1993-1-9/NA

Earthquake:
- DIN EN 1998-1/NA & DIN 4149

Frame Corner HO6+

HO6+ Frame Corner has been completely redesigned as a PLUS program for Eurocode.

The HO6+ program can be used to design connections at flexurally rigid frame corners of portal trusses of glued laminated timber. The connection can be made either with dowel pins in a circular arrangement, special dowels or wedge finger joints (one or two joints).

The verification of the corner connection resistance requires the specification of the internal forces N, M, and Q acting on the frame corner. These forces result from an examination of the entire structural system. ▶ *VIDEO*

As an extension to the former HO6, you can also define vertical and horizontal members with haunches.

Standards:

- DIN EN 1995
- ÖNORM EN 1995
- BS EN 1995
- EN 1995
- DIN 1052
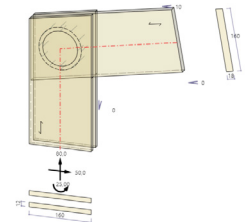
Continuous Beam DLT+

The new version of the Continuous Beam DLT+ is also available and offers the materials reinforced concrete, steel and timber for selection. The successor to the widely used Continuous Beam program DLT offers the modern functionality of the PLUS versions with an interactive graphical user interface. *See also* ▶ *VIDEO*
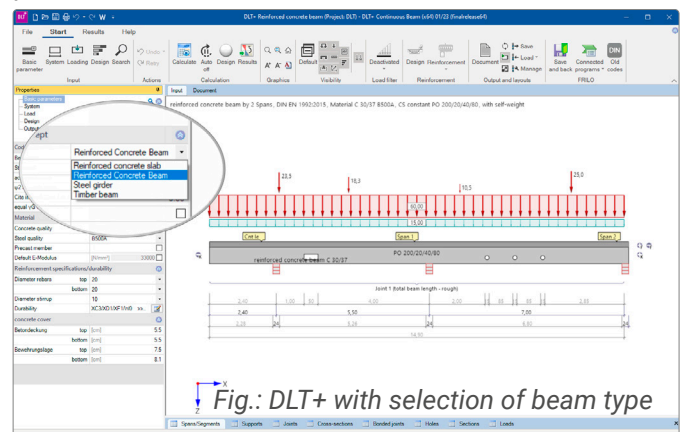

Fig.: DLT+ with selection of beam type

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STABILITY

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