FRILO
A NEMETSCHEK COMPANY

UPDATE-NEWS
RELEASE
2022-2

This summary contains the most important new features in the 2022-2 Release.

You can find the update news for older releases under www.frilo.eu
- ▸ Service
- ▸ Download + Demo
- ▸ Update-News

Further notes and information
- Update information
  Overview: the most important update information
- Notes on the relea...
- System requirements
- FRILO Software: installation and configuration
- License Manager – installing a new license
- Project administration in the network
- Basic operating instructions

Update info in the FRILO Control Center
If the release is already installed, you will find the update information in the FRILO Control Center under the tab „Programs": simply right-click on the respective program and then click on „Info".

Programs				
Program	Shortn...	Version	Date	License
Soil Mechanics				
Slope Failure Analysis (x64)	BBR+	02/22	20.05.2022	02/22
Beam on Elastic Foundation (x64)	BEB+	02/22	20.05.2022	02/22
Basement Wall (x64)	BWA+	02/22	20.05.2022	02/22
Earth Pressure Calculation (x64)	EDB+	02/22	20.05.2022	02/22
Isolated Foundation (x64)			20.05.2022	02/22
Pad Foundation (x64)			20.05.2022	02/22
Mast Foundation (x64)			20.05.2022	02/22
Reinforced Raft Founda...			20.05.2022	02/22
Strip Foundation (x64)			20.05.2022	02/22
Bearing Resistance Failur...			20.05.2022	02/22
Pile Foundation (x64)			20.05.2022	02/22

Open
Favorites
Info
Documentation
Properties

Webinars / online event for the 2022-1 Release
The new release was also presented in an online event on the 19th of May 2022. We will provide a recording of the event at
- ▸ Service ▸ Video-Clips ▸ Webinars

Current dates: see www.campus.frilo.eu

FRILO CAMPUS
A NEMETSCHEK COMPANY

FRILO
A NEMETSCHEK COMPANY

COMPANY   PRODUCTS   SERVICE   NEWS   BUY   CAMPUS

This section shows the most important innovations and new functions of individual programs.

- **BIM-Connector® FBC**
- **Pfahl+**
- **Building Model GEO & FEM**
- **Würth anchor / Schöck Combar®**
- **RSX, localisation, X64**

FRILO BIM-Connector® FBC

Optional Load Entry and Functional Enhancement
As a new feature, the user can enter permanent and variable loads that apply to selected storey floors in FBC. A constantly acting area load can be applied to both sides of walls. These loads are included in the transfer to the programs GEO Building Model or PLT Slabs by Finite Elements.

Additional functions:
- Import/export of IFC files in the structural analysis view.
- Selected elements or all non-bearing elements can be removed, a feature that improves considerably the performance of the program.

Pfahl+

Enhancements and Improvements
- Derivation of the characteristic pile resistances by evaluation of dynamic test pile loads.
- Automatic calculation of the pile's skin friction and end-bearing pressure for non-cohesive/cohesive soils based on empiric values taken from tables of the Recommendations of the German Pile Work Group EA-Pfähle.
- Output of spring stiffnesses and spring characteristic curves of the piles based on the decisive resistance-settlement curves.
- Output of the required bending and shear reinforcement in tables and in reinforcement graphics.
- Minimum reinforcement as per DIN EN 1536.
- Iterative calculation of the required pile length based on the axial pile resistances.

GEO / PLT / SCN

Lightweight concrete in the Building Model and the Finite Elements programs

In the programs GEO/PLT/SCN, lightweight concrete (LC12/13 – LC 80/88) has been added to the selectable materials.

Building Model GEO and FEM Slabs program PLT

Steel beams as downstand beams

A new feature allows the user to define steel beams as downstand beams. The downstand beam dialogue was enhanced accordingly and a design interface to the program STM+ Continuous Steel Beam was implemented. The previous interface to the design program DLT was extended for the transfer of a steel beam. Moreover, the program add-on GEO-ME (Mass Calculation) was adjusted accordingly.

Additional functionality:
- Standard DIN EN 1996-2019 for masonry
- Interface to the program Punching Shear Analysis B6+: the punching shear analysis is now also available for wall corners and wall ends.

GEO - Building Model

Automatic generation of eccentric wind action

Wind load cases with an eccentricity of +/- 10 % can be generated automatically.

Slabs by Finite Elements PLT

Interface to Schöck Isokorb®

The interface to design a Schöck Isokorb®, which is a solution for the thermal separation of components offered by Schöck Bauteil Gmbh was newly implemented. In the new Schöck dialogue, the properties of the Schöck Isokorb®, such as the load-bearing behaviour, can be defined. Depending on the load-bearing behaviour, a pinned joint is considered. The axial moment and the shear force along the Isokorb® are considered in the design.
Depending on the geometry, a staggered distribution of the insulating elements is available then.
See also (only in german)
Bemessung Schöck Isokorb® in FRILO PLT

Framework RSX

## Redesign, visibility options, output profile

The RSX interface has been reorganised so that individual functions are easier to find. The visibility functions to hide and display elements, for example, are more clearly arranged. In addition, the output profile has been redesigned to provide a better overview and is now easier to use. Furthermore, numerous functions have been enhanced and improved. This applies also to the panels for the load design, which have been optimised.
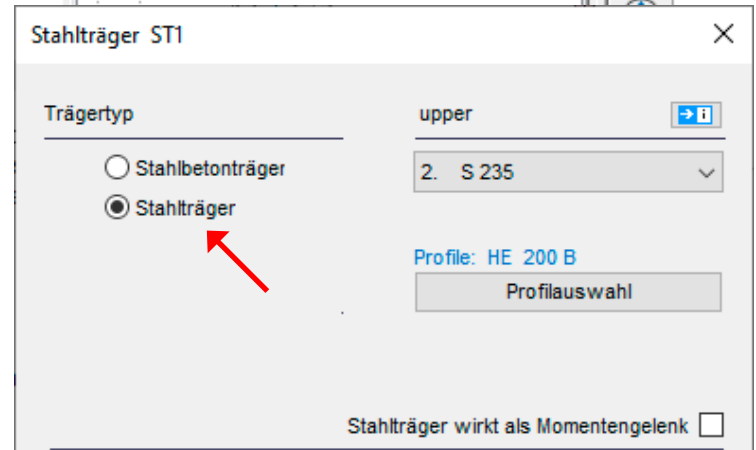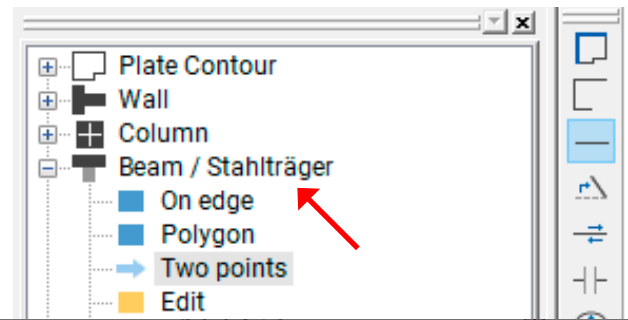
Ill. top/right/bottom:
- downstand beam in GEO and PLT
- eccentric wind action
- Schöck-Isokorb dialog in PLT
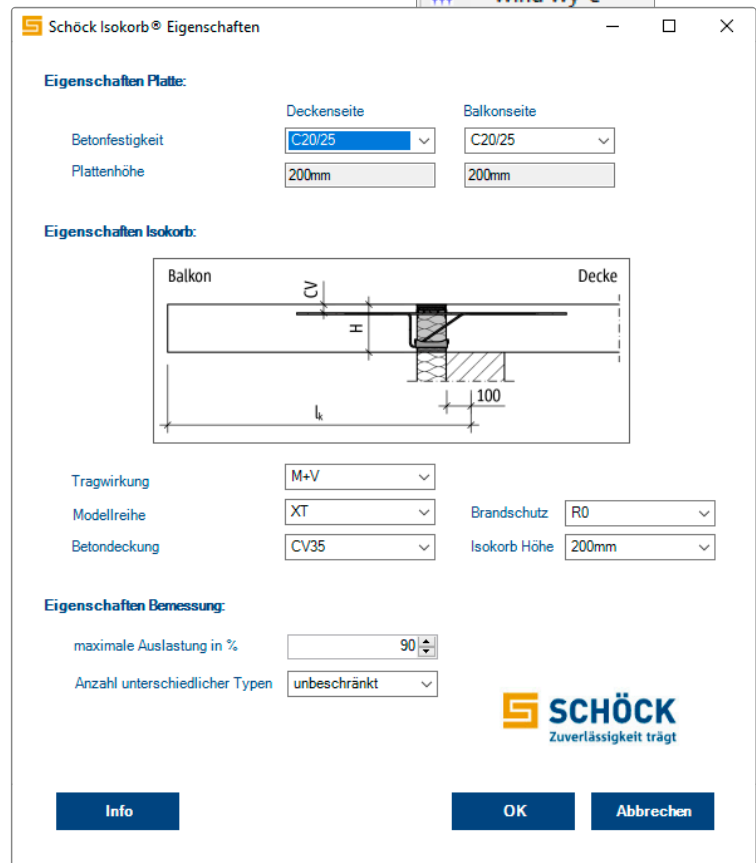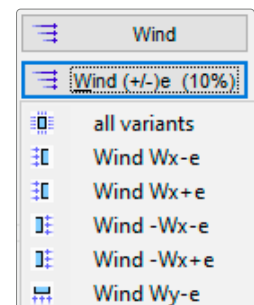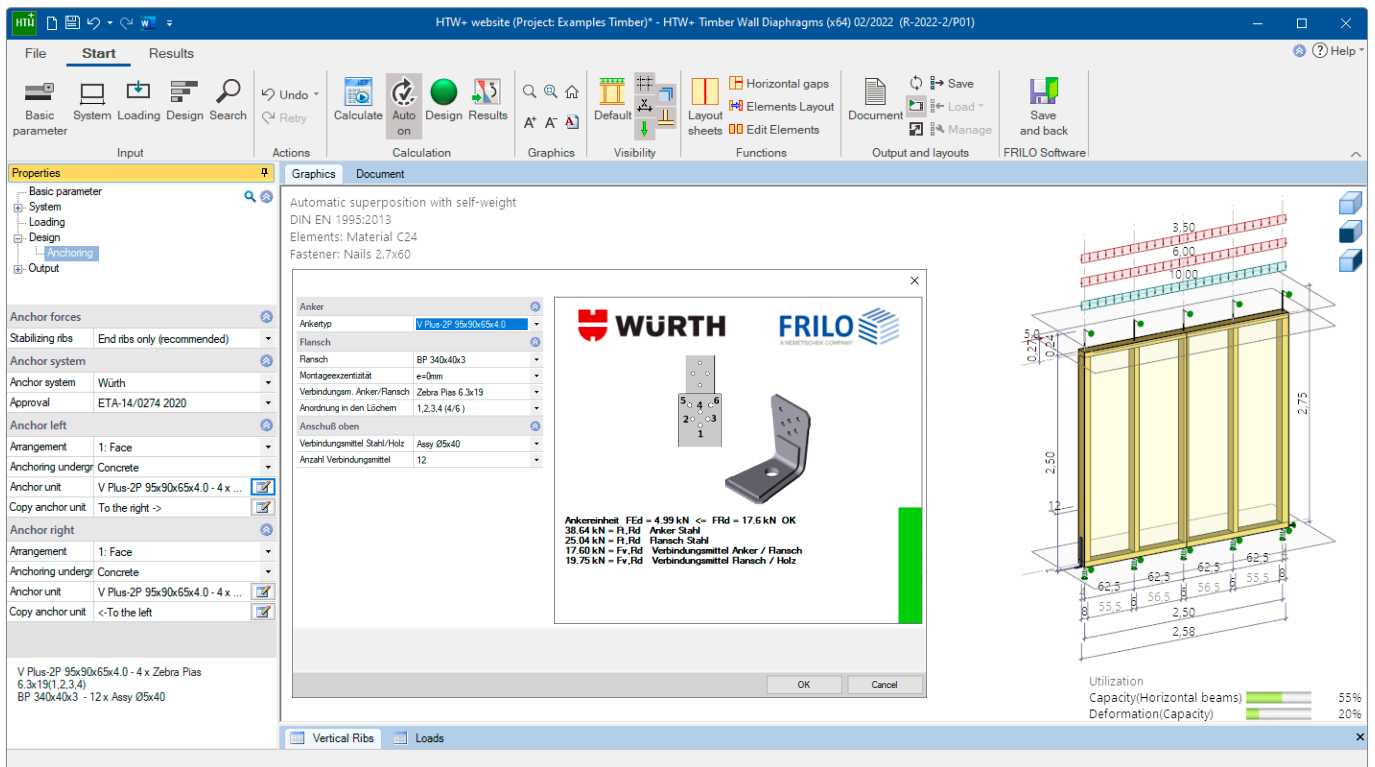
Würth anchors

Timber Wall Diaphragms HTW and new Toolbox TB-HWA

In both programs, the tension anchors HTA and Vplus offered by Würth for the anchoring of timber-panelled walls against uplift forces are now available. The new Toolbox product TB-HWA is offered with this release.

Schöck Combar®

Now available in the Reinforced Concrete Design B2

In the B2 program, the Schöck glass-fibre reinforcement Combar® was implemented as flexural and shear reinforcement.

Properties of this reinforcement:

long-lasting high strength, chemically resistant, non-corrosive, non-conductive, non-magnetisable, easily machinable, minimal thermal conductivity.
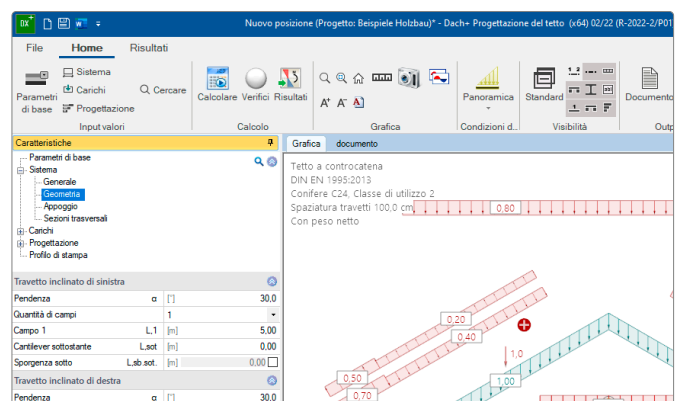

64 bit Programs

Improved performance

The new release has been largely converted to 64 bits. Therefore, considerably larger structural systems can be calculated in GEO or RSX, for instance. Even in programs with a large number of load combinations, a significant improvement is also noticeable in terms of computing time.
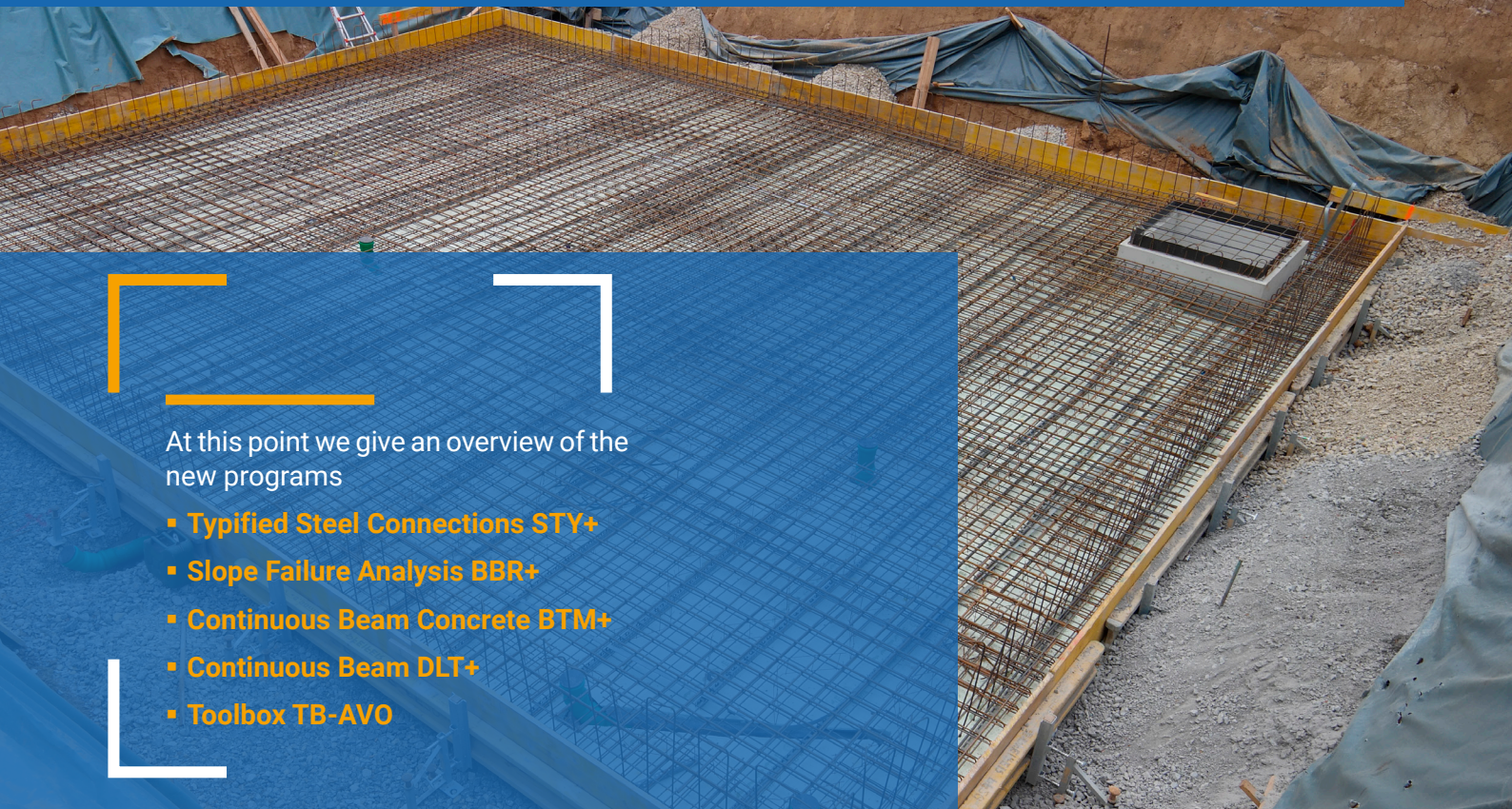
Localisation

Italy - NTC EN and language selection

In numerous timber engineering programs, the Italian standard NTC EN 1995:2018 is now available. Moreover, Italian is now available as user-interface language in these programs. In the reinforced concrete programs B6+, B7+, B9+ and B10+, the Italian standard NTC EN 1992-1-1:2018 has been implemented.

At this point we give an overview of the new programs

- **Typified Steel Connections STY+**
- **Slope Failure Analysis BBR+**
- **Continuous Beam Concrete BTM+**
- **Continuous Beam DLT+**
- **Toolbox TB-AVO**

## Typified steel connections Steel Connections STY+

The program STY+ Typified Steel Connections has been newly developed with the PLUS user interface. STY+ is the successor of the ST8 program and offers among other innovations an additional connection variant as well as the definition of multiple load combinations.

STY+ can be used to design moment-resisting and pinned I-beam connections of the IH and IS type series in combination with IK beam notches in accordance with the DSTV guidelines „Typisierte Anschlüsse im Stahlhochbau" (Typified connections in steel building construction), edition 2013.

All connections permissible for the defined system are listed as specified in the catalogue of the German Steel Construction Association DSTV. You can further refine the list by defining additional criteria such as the type of connection, the material or the screw strength or metrics. The program calculates the utilization for each listed type of connection and generates a well-structured presentation of the details including a 3-d model and a 2-d workshop drawing.

Slope Failure Analysis BBR+

Another new development is the program Slope Failure Analysis BBR+. The state-of-the-art PLUS interface now offers intuitive customisation of the basic system via the interactive graphical user interface as well as the free
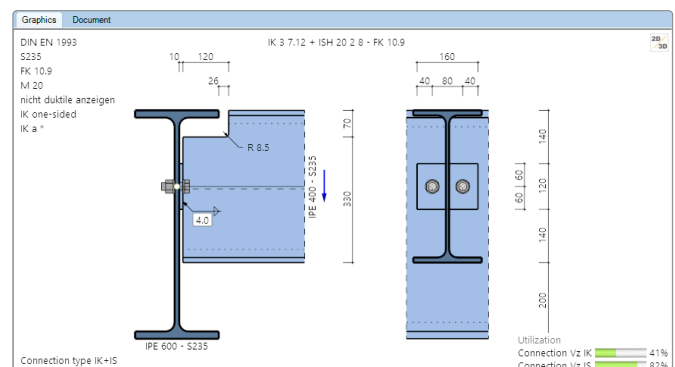
definition of points independently of vertical sections. Furthermore, constraint and rigid body points can be defined. BBR+ is the successor of the BBR program.

BBR+ determines the slope failure safety of a defined ground surface and presents it in the form of a degree of utilization, which is determined based on the method of slices according to BISHOP. The utilization is calculated for a slip circle, which is determined by its centre and its radius.

A wizard is available to facilitate the definition of the ground surface parameters. It generates the structural system from a few essential parameters.

In addition to this, you can define a rectangular or circular area for various slip circle centres. Depending on your specifications, the software performs a slip circle variation in order to determine the shape and position of the decisive slip circle.

Definition options

- Definition of a polygonal ground profile, the soil stratification and the ground water levels.
- Permanent and variable loads applying to the ground surface.
- Several water removal actions are available.

Relevant standards

- DIN EN 1997-1 with NA
- ÖNORM EN 1997-1
- DIN 1054 in combination with DIN 4084

Continuous Concrete Beam BTM+

BTM+ calculates single-span and multi-span reinforced concrete beams. A cantilever beam can also be selected as a special case.

The cross-sections can differ from each other and can have a haunch. The spans can be divided in sections, also pinned joints can be defined.

The superposition and the design are performed automatically. The data can be entered in tables or via the graphical user interface.

Relevant standards

- DIN EN 1992
- ÖNORM EN 1992
- NTC EN 1992
- BS EN 1992
- PN EN 1992

Supports

The user can define supports in the z-direction as well as for torsion about the y-axis. In each case, he/she can optionally define rigid supports or enter a spring value. A column settlement can be pre-set for the individual supports. Alternatively, also the spring values of a single column that can be defined underneath and/or above the beam can be calculated by the program and then be used for the beam calculation.

Loads

Load types:
Uniformly distributed, trapezoidal, triangular, concentrated loads and concentrated moment.
Entered loads can be converted into area loads by activating the option "for each beam" for the design and by defining a beam spacing.

Interfaces to other programs

- Framework RSX+, Continuous Steel Beam STM+, Continuous Timber Beam HTM+ (alternative calculation)
- Transfer of the support reactions to the Column programs B5+, STS+ and HO1+.

Add-on module:

- Reinforcement Layout

Continuous Beam DLT+

After releasing the various Continuous Beam Programs for the materials wood, steel and now also concrete (BTM+), the development of the new Continuous Beam DLT+ is progressing at full speed. DLT+ encompasses all these materials in a single solution and is thus the successor to the previous DLT.

Even though not all functions of the previous program could be implemented and sufficiently tested for this release to our regret, we yet offer interested SSA customers an activation. Missing features and corrections will be added successively.

Toolbox for Volume Calculation TB-AVO

This new toolbox module offers a volume calculation for various geometric bodies ranging from cuboids, pyramids and obelisks up to circular truncated cones or ramps.
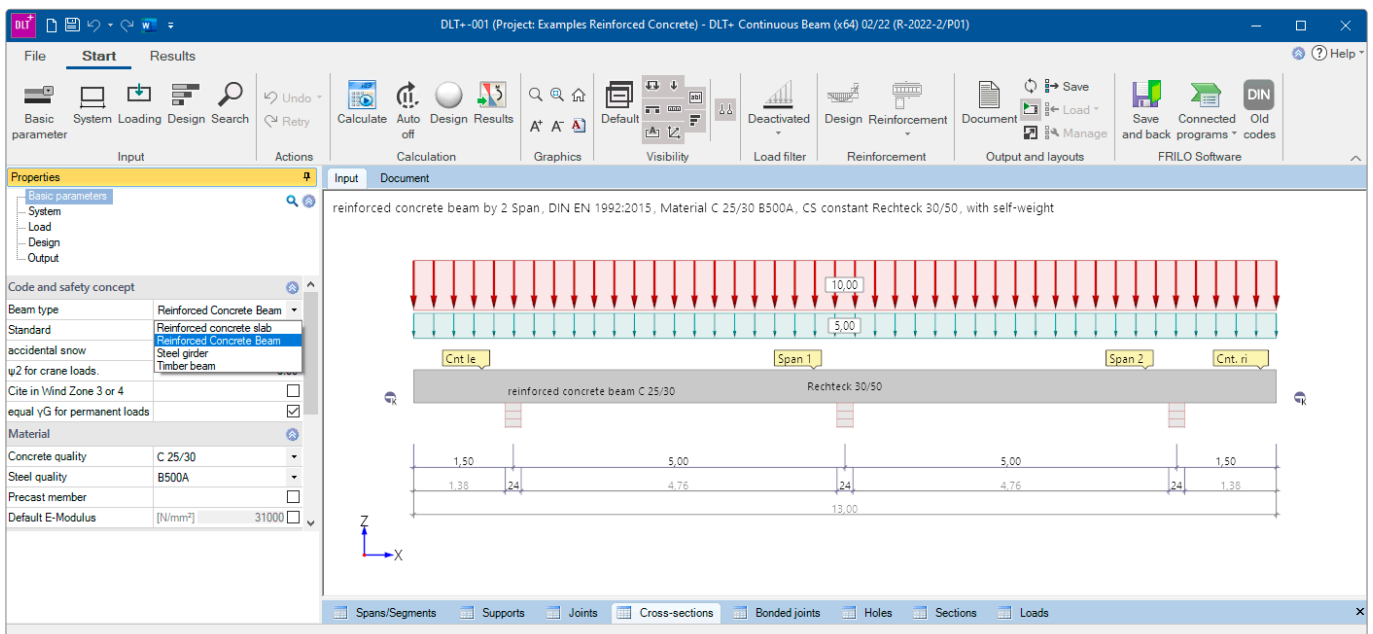
You can find dates, webinars and online training courses on our FRILO campus
www.campus.frilo.eu

FRILO
A NEMETSCHEK COMPANY

FRILO Software GmbH
Stuttgarter Straße 40
70469 Stuttgart
Phone: +49 711 81 00 20
Fax: +49 711 81 00 230
www.frilo.eu
info@frilo.eu

Update-News Release 2022-2