

## Release notes R 2019-2

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### New reinforced concrete Eurocode implemented for Austria

In the reinforced concrete programs, the new Eurocode ÖNORM B 1992-1-1: 2018-01 was implemented.

### New snow load Eurocode for Austria implemented

In programs with automatic snow load generation, the new Eurocode ÖNORM B 1991-1-3: 2018-12 has been implemented.

### New program Framework RSX

The program "Framework" has been completely redeveloped and is now included as program RSX for the material steel in the new release for all customers.

### New program Reinforced Concrete Column B5+

The program "Reinforced Concrete Column" has been completely redeveloped and is now included as program B5+ in the new release for all customers.

### New program Reinforced Concrete Corbel B9+

The program "Reinforced Concrete Corbel" has been completely redeveloped and is now included as program B9+ in the new release.

### New program Basement Wall BWA+

The program "Basement Wall" has been completely redeveloped and is included as program BWA+ in the new release.

### New program Steel Frame STR+

The program "Steel Frame" has been completely redeveloped. With this program, the user receives a tool to calculate steel frames quickly and efficiently.

### Reinforced Concrete Design B2

The B2 program now includes stainless steel from Scheibinox and SWISS STEEL and high-strength SAS 670 reinforcement from Annahütte for bending components.

### New Toolbox-modules TB-BTO/BTU

In our product segment Toolbox, the modules Notch Stairs Top/Bottom are now available.

### Building Model GEO: Output in plan format

The graphical output in plan format is optionally available with this program version. In addition, numerous improvements and additions have been implemented in the program layout and interfaces to the design programs.

### Loads from wind and snow LWS +: Wind-induced internal pressure

The wind-induced internal pressure can now be determined with flexible open walls.

### Plates with finite elements PLT: output in plan format

When printing directly from the graphics window, the layout format is now available. In addition, downstand beam and cross section results can now also be output in the plan format.

### Steel construction programs ST9, ST10, ST14: 4 screw rows vertical

In programs ST9, ST10 and ST14, the component method was implemented with 4 vertical rows of screws.

*Various programs have addressed minor issues and incorporated improvements. Further information can be found in the respective update info.*

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### Plus programs: Show document in new window

In the Plus-programs it is now possible to open the output document in a separate window. Thereby it is e.g. possible to move the document to a second screen.

### FRILO.Document.Designer FDD: Description for the current revision

For a fixation, a description (overview sheet) of the current revision can be created. This automatic listing of the changed items indicates the insertion point and can be supplemented with descriptions.

### All masonry Plus-programs: UNIPOR available

The product database for approval-controlled masonry was supplemented by UNIPOR.

### Reinforced Concrete Column B5 +

The program reinforced Concrete Column B5 + was newly developed in the PLUS version and is available to customers with a software service contract (SSC) on request.

### Stair run B7+: Design of the corbel support

In the program B7+ the dimensioning of the corbel support has been added.

### New interface of Timber Truss (FWH+) to Timber Joint HO13+

In the FWH+ program it is now possible to transfer individual nodes with all load combinations to HO13+ for steel-to-timber connections and to dimension them there. The connection between node and node design is retained.

### Timber Joint HO13+: Several load combinations can be entered

It is now possible to enter internal forces from several load combinations for one node.

### Single Fastener Timber Joint HO14+: nails by ITW implemented

Manufacturer-specific nails Haubold and Paslode from ITW were implemented.

### Dovetail connection HSC+: new approval implemented

The new approval Z-9.1-649 from June 2018 was installed. In addition, now doubly inclined systems are possible (tilt in the ground and view, example Schifter). In addition to vertical loads, horizontal loads can also be taken into account.

### Building Model GEO: Extension of the graphical input options and the graphical output

An Excel-based interface to SCIA-Engineer has been implemented. This allows complete FRILO building models to be read into SCIA Engineer.

In addition, various new design standards, such as DIN EN 1996:2015 and DIN EN 1993:2015 has been added.

The interface to the SCN-program has been supplemented with regard to earthquake loads and indirect bearings.

### Panels by Finite Elements SCN: Consideration of seismic action

The standard earthquake effects from the building model are now treated according to rule 6.2.4.1 (3) of DIN 4149:2005-04 (taking account of the 30% share of the earthquake effect of the transverse direction).

### Load determination from Wind and Snow Loads LWS+: Implementation of snow load zones

The change of the snow load zones according to administrative limits of July 2018 of the DIBt was implemented. In addition, a sketchy output of the graphic is alternatively possible for a compact representation.

### Portal Frame S7+: load transfer to the Isolated Foundation FD+

The load transfer of the bearing loads to the foundation FD+ is now possible. In addition, the actions were supplemented by crane loads.

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### Steel construction standard DIN EN 1991-1-1 / NA 2015 available

DIN EN 1991-1-1 / NA 2015 was installed in the programs BTII+, S7+, ST12+, STS+, STT+, STX+ and ESK.

### Word printout completely revised

Output files are now generated in .docx format.

### New program Wind and Snow Loads LWS +

The program "Wind and Snow Loads" has been completely redeveloped and is included as program LWS + in the new release.

Note: By default, LWS items are automatically started with LWS+, but the items can also be opened with LWS as before: Right-click the item in the Frilo.Control.Center - Open with - LWS

### New programs Trusses Timber FWH+ and Trusses Steel FWS+

The programs "Trusses Timber/Steel" has been completely redeveloped and are included as FWH+ and FWS+ in the new release.

### Flight of Stairs B7+

Intermediate platform available.

### Rafter Purlins D7+: Normal forces and lateral supports

Normal forces can now be considered globally or field by field. In addition, lateral supports can be modeled.

### **Building Model GEO**

The possibilities for the representation of wall-like beams have been extended. There are also additional options for displaying horizontal stresses and internal forces for walls.

### **Plates by Finite Elements PLT: Consideration of seismic action**

The standard earthquake actions from GEO (building model) are now treated according to rule 6.2.4.1 (3) of DIN 4149: 2005-04 (taking account of the 30% share of the earthquake action of the transverse direction).

### **Italian standard NTC EN 1995 2018 available in numerous programs**

The Italian timber construction standard NTC EN 1995 2018 is now available in numerous timber construction programs.

*More improvements and bugfixes: see corresponding updateinfo.*

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## **Release notes R 2018-1**

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### **Attention: New module FRILO.Software (FSO) required**

This release requires the new module FRILO.Software (FSO). With a current version of FRILO.System.Next (FSN) and fully installed R-2017-2 Patch 11, "FSO" is automatically installed via the Frilo.Control.Center with the update to version 2018-1

For older versions of FSN this module can be downloaded from our homepage <http://www.friilo.eu/en/download/release-download.html>.

### **New program of Elastic Bedded Beam BEB +**

The program "Elastic Bedded Beam" has been completely redeveloped and is included as program BEB + in the new release.

### **New masonry programs as plus programs**

The masonry programs MWX+, MWM+, MWK+ and MWP+ have been converted to the plus layout.

### **New programm Flight of Stairs B7+**

The Flight of Stairs program has been completely redeveloped and is included as program B7 + in the new release.

### **New programm Steel Bracing ST12+**

Also the program Steel Bracing was newly developed and is included as program ST12 + in the new release.

### **Building model (GEO): Min / Max superposition of the wall stresses in the result graphic R3**

The result graphic R3 is now displayed with the Min / Max superposition of the the wall stresses. The representation of the Min / Max stress superposition is available for both: top and bottom of the wall. For the individual wall, the information on the Min / Max superposition of the stresses is displayed as tooltip.

### **Cantilevered Retaining Wall WSM+: Settlement calculation available**

In the WSM+ program a settlement calculation can now be carried out.

*More improvements and bugfixes: see corresponding updateinfo.*

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## **Release notes R 2017-2**

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### **PLUS programs: Load input with load value compilation**

New function: access to load value compilation.

### **PLUS programs: Unification of the load input in the graphics**

In the PLUS programs the load input and the load presentation were standardized.

### **FRILO.Control.Center (FCC): Favorites list in the program selection list**

In the FRILO.Control.Center (FCC) it is now possible for the user to compile a favorite list of the most frequently used programs, thereby speeding up access to the programs.

### **Building model (GEO): Graphical representation of bearing forces and stresses**

In the GEO building model, the graphical representation of the bearing forces and stresses was supplemented by the graph.

**Foundation FD+**

Reinforcement distribution for eccentric columns, further reinforcement distributions for the design of the connection reinforcement, circular cross sections for columns, Allplan Export implemented.

**Portal Frame S7+**

An optimization of the calculation reduces the calculation time by more than 80% (2 calculation modes selectable), further improvements/functions can be found in the updateinfo S7 +.

**Document.Designer FDD**

Advanced features for layout structure and layout design, an alternative layout can be defined, improved scalability, a free plan format can be defined for PLT. Further improvements can be found in the updateinfo FDD.

**New program Cantilevered Retaining Wall WSM+**

This program has been completely redesigned and is included as a WSM+ program in the new release.

**New programm Load compilation LAST+**

Das Modul zur Lastzusammenstellung wurde komplett neu entwickelt und ist als Programm Last+ im neuen Release enthalten

**Wood construction: Custom material in some programs**

In the programs HO2 +, HO3 +, HO11 +, HO13 +, HO14 + and D7 +, it is now possible to define a custom material for solid wood and glulam.

*More improvements and bugfixes: see corresponding updateinfo.*

**Release notes R 2017-1****Timber: Soft- and hardwood according to EN 338:2016**

Implemented in our timber/roof programs

**New programs:**

Rafter Purlins D7+, Timber Tension Joint HO3+, Timber Joint HO13+ and Single Fastener Timber Joint HO14+

This programs are completely new developed and have the new PLUS-Layout.

**Building GEO and Plates by Finite Elements PLT:**

Extension of the graphical Input  
Regular Polygon function and marking of non-bearing walls.

**Plates by Finite Elements PLT: Schöck Isokorb function**

The cutting forces are determined along a defined line and a suitable Schöck Isokorb is proposed.

*More improvements and bugfixes: see corresponding updateinfo.*

**Release notes R 2016-2****Attention: FRILO.System.Next (FSN) version 4.2016.609 required**

For this release FRILO.System.Next (FSN) with version 4.2016.609 or later is required. Update on "Configuration > Primary Functions > Update FSN with current customer version" (Internet connection required) or download the FRILO.System.next.msi from <http://www.friilo.com>

**Reinforced concrete**

The new standards DIN EN 1992: 2015 and BS EN 1992: 2015 has been added.

**Timber**

Glued laminated timber according to EN 14080:2013 are available.

**FEM**

PLT Plates by Finite Elements: Outputfunction "Plan Header" for large-size print.

**GEO - Building Model**

The graphical representation of the tensions in wall groups have been added.

**New program**

Eart Pressure Calculation EDB+

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## Release notes R 2016-1

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### Revised layout of the foundation-Plus programs

In the programs FD+, FDS +, FDB+, FDR and GBR the layout has been completely revised with a view to easier and more intuitive input.

### Load transfer from the masonry programs to the foundation programs

In the masonry programs an interface to the foundation programs FDS+ and FDR+ has been implemented.

### Building Modell: Windloads

Wind loads are now automatically generated in the building model as standard and in case of changes eg of the geometry, they will be automatically adjusted. In addition, the representation of the horizontal loads was expanded both in plan and in the OpenGL display.

### British Standard implemented

In some programs the new British Standard has been added.

*More improvements and bugfixes: see corresponding updateinfo.*

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## Release notes R 2015-2

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### New applications STS+ and STT+

The programs Single-span Steel Column STS+ and Single-span Steel Beam STT+ are now available as a new "PLUS" Version with our new input interface.

STS + also has been significantly expanded.

### DIN EN 1992:2013 added

In several applications DIN EN 1992:2013 has been added:

DLT/B5/FD+/FDB+/FDS+/WSM/TEB

### DIN EN 1995-1-1/NA:2013-08 added

DGK/D7/D9/D11/D12/HO1+/HO2/HO3/HO6/HO13/HO14

*More improvements and bugfixes: see corresponding updateinfo.*

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## Release notes R 2015-1

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**!! Note: Release 2015-1 will not run under Windows XP!!**

### New application FDB+

FDB+ now available as new PLUS-version.

### Earthquake-Eurocode (DIN EN 1998) implemented in GEO

In GEO - Building Model now DIN EN 1998-1/NA:2011 is available.

### Reinforced Concrete Column B5: fire protection

The fire protection for the Reinforced Concrete Column can be calculated also with the simplified method according to EN 1992-1-2 Table 5.2a

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## Release notes R 2014-2A

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### New applications S9+ and BTII+

The programs Crane Runway Girder S9+ and Lateral Torsional Buckling Analysis BTII+ are now available as a new "PLUS" Version with our new input interface. In addition, S9+ now runs with Eurocode.

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## Release notes R 2014-2

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!!! Note:

This version will only run with the project management Frilo.Control.Center!  
FLEplorer and FLManager are no longer supported as of this release!  
The languages czech and dutch as well as the national appendixes NEN/NBN/CSN are no longer maintained.

### **New applications FDS+, GBR+ und HO1+**

The above mentioned programs are now available with our new input interface. In addition, the functionality of the program FDS + has been significantly expanded.

### **PLT now with joints**

Calculation with joints now available.

### **DLT: Verification of vibrations according to Eurocode and hot design**

Verification of vibrations according to Eurocode for timber beams has been fundamentally revised. Additionally hot design is available.

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## **Release notes R 2014-1C**

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### **New application S7+**

S7+ is now the successor of the S7 application. S7+ is equipped with our new interactive graphic interface.

### **ST8 - Standardized Connections DSTV**

In ST8 now the values from the "ring binder 2013" according to DIN EN 1993 are deposited.

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## **Release notes R 2014-1B**

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### **Punching Shear Analysis B6+ directly executable via interface from GEO and PLT**

The applications PLT and GEO now have an interface to the new program B6+ .

### **Timber Wall Diaphragm HTW: wind action**

The Kmod -value for wind can be chosen between "short" and the average value from "short" and "very short" (german NA).

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## **Release notes R 2014-1A**

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### **Verification of position stability according to Eurocode**

In the foundation applications FD, FDB and FDS the verification of the position stability according to Eurocode was complemented.

### **Proof of punching in FD, FD+ and FDB**

The proof of punching was changed according to "Heft DAfStb Heft 600:2012 pages 107/108". The cut  $u_{Out}$  is reduced with soil pressures from the last row of punching reinforcement. Now there are probably more rows of punching reinforcement necessary.

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## **Release notes R 2014-1**

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### **Masonry: Eurocode 6**

Masonry applications MWX, MWM, MWP and MWK are now available with the option DIN EN 1996.

### **New applications Punching Shear Analysis B6+ und Plate Buckling PLII+**

The new applications replace the older B6 and PLII. The "PLUS"-versions have new graphic interactive user interfaces.

B6+: additional function: shear rails (Schöck, Halfen, Jordahl) as punching shear reinforcement based on the Eurocodes.

### **FCC - Frilo.Control.Center: Synchronization**

New function for automatized synchronization of projectdata (exchange, offlineoperations).

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