Version 18.0

Build	Module	Description	ID
29.11.18	Calculation	The maximum number of iteration steps has been increased to 20 for the **non-linear calculation of the lateral buckling stability**.	13146
29.11.18	Design	Recesses whose distance was entered with reference to the center were displayed correctly, but wrongfully calculated with the distance to the bottom edge of the recess.	13135
29.11.18	Design	The admissible compressive stress in a node of the strut and tie model (notch) has been adjusted to the national coefficients. The coefficients according to DIN EN hereby remain unchanged.	13086
29.11.18	Output document	A utilization > 1,0 in the design for shear force and torsion according to CSN EN eq. 6.29 was not issued in the result list.	13081
29.11.18	User interface	When changing the type of a recess from circular to rectangular, a termination in the 3D view could occur.	13129
19.10.18	User interface	When activating the buckling analysis, now also the buckling analyses for the individual time segments are being automatically activated.	12959
19.10.18	User interface	The corresponding table is now activated when clicking onto an entry in the object tree.	12934
19.10.18	Calculation	The singularity problem in the calculation of the **deflection in the cracked state (condition II)** has been fixed.	13089
19.10.18	Design	The equation 6.31 of the DIN EN 1992 is being considered for the torsion design again.	13085
19.10.18	Design	The determination, respectively, consideration of the effective increase in stiffness from the shrinkage proportion in the deflection calculation according to Krüger-Mertzsch has been removed again. Thus, the determined deflection in the cracked state correspond with the results in Version 17.0 again.	13084
19.10.18	Design	Design sections for the shear force were not automatically generated in the cantilevers.	12999
19.10.18	Design	**Reinforcement distribution in the tension chord of an I-beam** In the calculation of the required reinforcement a uniformly distributed reinforcement was applied at the bottom and the greater value of specified and required reinforcement was assumed in the analysis of the bending bearing capacity. This may have resulted in the loss of a systematic reinforcement distribution.	12817
19.10.18	Design	The program termination in the calculation of the accidental design combination has been eliminated.	12766
19.10.18	Output document	In the deflection analysis the cantilevers were not considered in the determination of the effective stresses.	12998
19.10.18	Output document	For notches, the input of d1 was not considered at the left support.	12912
19.10.18	Output document	Tendons, which are in the bottom layer, were displayed beyond the support for notches.	12824
19.10.18	Output document	The x-position of the cross-section was incorrectly labeled at the position of a notch.	12811
19.10.18	User interface	Now, a notch can be specified at the one end and the system can be supported with a cantilever at the opposite end.	12986
19.10.18	User interface	The last cross-section was sometimes not displayed for a general cross-section distribution.	12961
19.10.18	User interface	If the eccentricity of all cross-sections was unequal to 0 for a general cross-section distribution, then the tendon layers were displayed too far down in the longitudinal section.	12880
19.10.18	User interface	A reinforcement distribution, whose origin (a) is within the positions of cross-sections, was displayed at the wrong position.	12810
19.10.18	User interface	The maximum decisive edge stress is issued in the decompression analysis instead of the utilization.	12782
19.10.18	User interface	The structure class was inadvertently changed to 'Building construction' during the design of discontinuities.	12715

Release Notes
FERMO

Build	Module	Description	ID
06.06.18	User interface	The handling of the program has been improved.	12664
06.06.18	Analyses	The creep deformations in the **analysis of the lateral buckling stability** were possibly wrong, if the deformations according to Krüger-Mertzsch were calculated with user-defined creep and shrinkage coefficients.	12651
06.06.18	Calculation	A calculation with the material ComBAR is possible again. However, it can only be used for the bending and shear bearing capacity.	12579
04.05.18	FERMO is a completely new developed program application for the calculation and design of prestressed concrete girders in building construction and for bridge construction and is the successor of RTfermo and FETT. FETT provides compact input and output options, respectively, result graphs and RTfermo enhances the application by a non-linear calculation technology, extended possibilities in the prestressing and analyses for bridge construction. Now, system changes due to construction states, such as a subsequently added in-situ concrete slab, can be considered just as influences form creep, shrinkage and relaxation. Different girder types such as beams with parallel chords, double-pitch and single-pitch roof girders, with notches and recesses as well as prestressing effects in the support, final or composite state can be edited quickly and efficiently. All necessary functions are offered in a consistent user interface. The program application concurrently combines a non-linear FEM technology for the system calculation, the processing and determination of a time-dependent stress redistribution and the graphic-interactive editing of the tendon run with direct visual control. The new program environment is particularly characterized by the following innovations: • adjustable program environment • intuitive user guidance • enhancement of the functionality • configurable result output Additionally, the following functionality improvements are available: • modern interface with ribbon bar, quick access bar, tree view and property grid as well as 2D and 3D graphics • efficient quick input • new possibility to work with templates • well-arranged program control and configuration with an independent language setting (DE, EN and CZ) for the input and output • typified symmetric and non-symmetric cross-section runs in longitudinal direction • varying statically determinate construction states for factory support, transport support, assembly support, auxiliary support and final support with a maximum of 8 analysis moments along the timeline • stressing bed prestressing as well as post-tensioning • tabular load input with versatile load types and generation possibilities • automatic load transfer and user-defined transfer from other positions • continuous application and complete reinforced and prestressed concrete design in the ULS, SLS and FLS in building and bridge construction • integrated biaxial analysis of the lateral buckling stability as geometrically and physically non-linear bearing load calculation at the deformed system • non-linear combination generation (user-defined or automatic) for up to 4 different points in time and all relevant support systems • integrated design for small and large recesses • integrated design for notches • bearing capacity analysis for refurbishment with utilization levels for a specified longitudinal and shear reinforcement • result output with masks for the pre-design, short, long and detailed list as well as user-defined configuration and filter options • export of a formwork drawing to CAD including the plan view and view of the girder, cable plan (cleat list) as well as to scale sections The module concept of FERMO corresponds to that of FETT in the broadest sense, whereby the use of high-strength concrete and the fire protection analysis have been included in the basic module. With FERMO you are using a structural member design application, which distinguishes itself both in the day-to-day routine and in the solution of complex problems.		12499