

ETABS® 2015 Version 15.2.0 Release Notes

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Notice Date: 2015-11-25

This file lists all changes made to ETABS since the previous version. **Most changes do not affect most users.** Incidents marked with an asterisk (*) in the first column of the tables below are deemed more significant.

Changes from v15.1.0 (2015-07-27)

User interface

Enhancements Implemented

*	Incident	Description
	53345 60965	An incident was resolved in which the 64-bit version of the program could take a minute or more to launch on certain machines. This is a result of Microsoft's JIT (just-in-time) compiler and not a bug in the software. Not all systems are equally affected, and newer versions of the Windows (8.1 and 10) tend to be less affected, especially if Windows Updates are current. A new tool, CSiNativeImageGen is available to 'precompile' the software after installation, prior to use. In most cases this should resolve the slow startup time, as well as speed up the displaying of forms. CSiNativeImageGen is available in the installation folder and must be Run As Administrator. Information on the use of this optional tool is provided within CSiNativeImageGen itself using the Help command, and by searching the CSI Knowledge Base at wiki.csiamerica.com for 'native image generation'.

Modeling

Enhancements Implemented

*	Incident	Description
	83286	An enhancement has been implemented to update the Russian material library to modify the concrete ultimate strain values.

Frame Design - Chinese

Enhancements Implemented

*	Incident	Description
*	86106	The Simplified column design procedure previously available for Chinese 2010 concrete frame design has been removed. Only the PMM design method is now available for concrete column design which provides a more rational approach for designing columns.

Composite Beam Design

Enhancements Implemented

*	Incident	Description
*	81752 82997	Two enhancements have been made to the design of composite beam per the CSA S16-09 and CSA S16-14 codes. (1.) When there is a slab on both sides of a composite beam, ETABS now limits its total effective width to 1/4 the span of the beam as prescribed in Clause 17.4.1 of the CSA Design of Steel Structures specification. Previous versions of ETABS limited the effective width to 1/8 the beam span on each side of the beam, which was consistent with Clause 17.4.1 but could occasionally be more conservative. In determining if there is a slab on both sides or on only one

*	Incident	Description
		side of the beam, the program takes into account the actual width of the steel section and looks for a slab beyond a zone equal to the width of the section on each side. (2.) When checking that the total deflection of a composite beam is acceptable, ETABS now takes into account the amount of deflection caused by shrinkage of the concrete as prescribed in Clause 17.3.1(c) of the CSA specification. Earlier versions of ETABS did not account for the amount of deflection caused by shrinkage. This was consistent with the output, with the composite beam design example given in the CSA Handbook of Steel Construction, and with international practice. This did not affect the strength of the composite beams designed by ETABS. The Composite Beam Design Manuals for CSA S16-09 and CSA S16-14 have been updated to reflect these two enhancements.

Shear Wall Design

Enhancements Implemented

*	Incident	Description
	78995	An enhancement has been made in the Eurocode 2-2004 shear wall design report to report the wall unbraced height used for computing the pier buckling load capacity. Also, the design manual for Eurocode 2-2004 has been updated to reflect that a beta1 factor of 1 is currently used and cannot be overwritten by the user.

Results Display and Output

Enhancements Implemented

*	Incident	Description
	70739	An enhancement has been implemented to report maximum drifts for each diaphragm on the story. Previously, only the diaphragm with the maximum drift was reported.
*	83290	An enhancement has been made in which the drifts are now reported at brace locations also. Previously drifts were only reported at column and wall locations and at the outer perimeter.
	83291	An enhancement has been made to report story and diaphragm maximum and average drifts in the database tables.
*	83292	An enhancement has been made in the Chinese version of the program where the results of the three methods of “Frame Overturning Moments in Dual System” are output in a new database table and included in the Chinese summary report.
*	83294	A tailored summary report is now provided for the Chinese versions.
	83485	An enhancement was made where frame unique name have been added in the frame design details.

Database Tables

Enhancements Implemented

*	Incident	Description
	84563	An enhancement has been implemented to consider the current selection when displaying the material list tables. Only materials used in the selected objects will be displayed in the table.

External Import/Export

Enhancements Implemented

*	Incident	Description
	83276	Support for AutoCAD versions 2015 and 2016 has been added for the export of AutoCAD .dwg files. The export of AutoCAD .dwg files is still available for older version of AutoCAD. Note that AutoCAD must be installed on the same machine as ETABS in order to export .dwg files. The export of models as AutoCAD .dxf files, which are compatible with all versions of AutoCAD, does not require the presence of AutoCAD.

Application Programming Interface (API)

Enhancements Implemented

*	Incident	Description
*	63893	Plug-ins written to access the API (Application Programming Interface) can now be accessed within ETABS. Users can write their own plug-ins or obtain them from a third party to perform additional functions such as creating template models, performing specialized design, or running parametric studies. Plug-ins added to the Tools menu are remembered from session-to-session. COM plug-ins can be added if they are registered with the operating system, and .NET plug-ins can be added by specifying their file location.
	81925	New functions have been added to the API (Application Programming Interface) to set and retrieve the design section for concrete frame members: SapModel.DesignConcrete.SetDesignSection and SapModel.DesignConcrete.GetDesignSection.

Miscellaneous

Enhancements Implemented

*	Incident	Description
	82018	The version number has been changed to v15.2.0 for a new intermediate release. ETABS v15 will be known as "ETABS 2015".

User Interface

Incidents Resolved

*	Incident	Description
	74607	An incident was resolved where the software could terminate abnormally when adding a story in certain models. This problem was not common. Results were not affected.
	79384 79909 82372	An incident was resolved where "Set Grid System Visibility" did not work properly for a single grid system if additional grid systems had previously existed in the model and then subsequently deleted.
	80317	An incident was resolved where, for certain models, an error message was generated or an abnormal termination occurred when trying to change the section property of a frame member. This was not common. No results were affected.
	80696	An incident was resolved where the "Advanced DirectX Options" dialog was available but was not functioning. This is a test form and is now no longer exposed.
	81966	An incident was resolved where in certain special cases the Load Case form would temporarily show the wrong mass source for a response spectrum case until the form was closed and reopened.
	82136 85079	An incident was resolved where adding a new story when defining custom stories in the New Model templates could, in certain cases, generate an abnormal termination error.
	82530	An incident was resolved where pasting values copied from Excel into the "User Wind Loads on Diaphragms" form generated an error message. No results were affected.
	82630	An incident was resolved where, for certain models, an error message was generated or an abnormal termination occurred when trying to change the section property of a frame member. This was not common. No results were affected.
	82782	An incident was resolved where, for certain settings of the screen fonts, the label text for option buttons in some of the forms (dialog boxes) would be missing or curtailed.

*	Incident	Description
	82884	An incident was resolved where the "Rebar Selection Rules" button was inadvertently exposed under the Concrete Design menu. This is already available through the Detailing menu.
	82979 85810	An incident was resolved where one of the 15 contour colors could not be changed when using the command Options > Graphics Colors > Output. No results were affected.
	83029	An incident was resolved where, for a particular model, ETABS would terminate abnormally when performing the command Design> Live Load Reduction Factors> User Defined Curves > Define. When this occurred no results were available.
	84281	An incident was resolved where for certain models the "Relabel All" command would not work.
	84494	An incident was resolved where an error occurred in forms showing lists of sections for certain model files where the section names were duplicated. Duplicate names are not allowed. These are now trapped.
	85015	An incident was resolved where clicking on the ellipsis button for the column property drop down box in the flat slab template form and then clicking the OK button in the frame section property form could cause an Abnormal Termination.

Drafting

Incidents Resolved

*	Incident	Description
	79264	An incident was resolved where adding an area object in plan view was causing an abnormal termination when no grid system was present in the model.
	82781	An incident was resolved where some settings for the Quick Draw commands did not function correctly in Chinese version due to incorrect handling of the Chinese characters in the Properties of Object window that opens when drawing. This affected the selection of the grid, moment releases, and other properties to be used while drawing. Results were consistent with the model as actually drawn.
	84323	An incident was resolved where, in an elevation view, joints not on a grid intersection could not be snapped to when drawing other joint objects.

Graphics

Incidents Resolved

*	Incident	Description
	75196	An incident was resolved where objects present at the level of the BASE could, in rare cases, become assigned to stories above the BASE. This could prevent them from displaying in the plan view of the base, but did not affect results. Now such models are automatically corrected when detected.
	79322	An incident was resolved where the font size for dimensions on drawn wall openings was dependent on the database units and could be too small or too large.
	79563	An incident was resolved where an abnormal termination error would occur when viewing a particular model in 3D. This was due to the presence of a cylindrical grid system with zero circumferential grids and also the presence of special characters for some imported Architectural layers. These cases are now handled.
	79818	An incident was resolved where the visibility of curved walls in plan view could not be turned off. No results were affected.
	83356	An incident was resolved where cycling through elevations in a particular model would generate an error message. No results were affected.
	83723	An incident was resolved where in a particular model an illegal developed elevation was created which later resulted in an error if it was attempted to be displayed. Such illegal developed elevations are now deleted when the model is opened to avoid such errors.

Modeling
Incidents Resolved

* Incident	Description
80627	An incident was resolved for the SidePlate(R) beam-connection properties (command Assign > Frame > Moment Frame Beam Connection Type > SidePlate Option) where the built-in values for the plate depth were also being used for the length. As an enhancement, the built-in table of SidePlate properties has also been expanded to include values for AISC Metric, HSS, UKC, UKB, UB and UC shapes.
85040	An incident was resolved where adding a new story below the base was adding it with a zero height as a default. If not corrected, this created problems later.
85469	An incident was resolved where de-selecting the "Include Selected Frame Objects in Mesh" option in the Assign > Frame > Frame Floor Meshing Options form was not working. The option was always shown in the right-click form as being selected, and affected slab meshes as if it was selected even if it had been deselected.

Section Designer
Incidents Resolved

* Incident	Description
78874	An incident was resolved by trapping a condition in Section Designer where requesting a moment-curvature diagram for an un-reinforced section and specifying an axial tension force caused an error to occur and the software to terminate.
81011	An incident was resolved in Section Designer in which the parametric values used for generating the stress-strain curves were not consistent with those used in the main ETABS program. Section Designer has been modified to be consistent with ETABS.
82645	An incident was resolved where an abnormal termination error could be generated when editing a previously defined Section Designer section that contained an added reference point.

Loading
Incidents Resolved

* Incident	Description
79186	An incident was resolved where an error message was generated for a particular model when trying to run the analysis due to presence of an unnecessary wind exposure definition which was not needed when applying wind load from open structure based on area objects. Any results that were available were not affected.
82498	An incident was resolved where the "Load Objects" operation specified for staged analysis would get deleted when the file was saved. The "Load Objects if Added" operation was not affected. The Auto Construction Sequence Cases were not affected as they use the "Load Objects if Added" operation.
82829	An incident was resolved for auto-wind load patterns using the AS 1170.2:2011 code where negative eccentricity was changed to positive eccentricity when the analysis was automatically re-run for calculating the structural period.
82831	An incident was resolved where the flag "Loads are Reversible for Combos" on the User Wind Load dialog was always considered to be true even if it was set to false. This resulted in additional design load combinations being created which were not needed.
82965	An incident was resolved for auto seismic load according to the ASCE 7-05 code where the parameter "SD1" was not updated in the form when Spectral acceleration S1 was changed. This was a display issue only and results were unaffected.
84386	An incident was resolved for UBC 94, UBC 97, UBC 97 Isolated, NBCC 95 and Indian auto seismic loads where the forms had a problem saving the correct values for some parameters when a comma was used for decimal separator in the regional settings.
84808	An incident was resolved where the weight of layered shells may be slightly overestimated in analysis if the layers overlap or have different unit weights.

* Incident	Description
84822	An incident was resolved where the AutoSeismic and AutoWind bottom story specification may not have adjusted correctly if an intermediate story was deleted.
85321	An incident was resolved where the Ground Type specified by the user in the form for the Eurocode 8-2004 auto seismic was not being saved, but was instead always displaying the default value of "B" in the form after it is closed and re-opened. The correct value of Ground Type originally specified in the form was correctly shown in the tables and reports, and results were consistent with the original value.
85363	An incident was resolved for Chinese auto wind load pattern where the model was not being automatically rerun when modal period was changed from the analysis results.

Analysis

Incidents Resolved

* Incident	Description
82091 82244 82353 82449	An incident was resolved where the solution of linear load cases could be slow after running a P-delta or other nonlinear static or direct-integration load case in the same run. This only affected models with a large number of shell elements when using the Advanced solver. The Standard and Multi-threaded solvers were not affected. This was an efficiency issue only. No results were affected.

Frame Design

Incidents Resolved

* Incident	Description
79236	An incident was resolved where the command Design > Frame Design Procedures was not working for composite column design. The design procedure, if automatically set to No Design, could not be changed to Composite Column.
79508	An incident was resolved for steel frame design per the Indian "IS 800:2007" code where a member could be incorrectly considered Class 4. This could occur when a member was considered as an "Axial Only" member and then the classification was performed based on Table 2. When this occurred no other design results were affected, only the reported Class was wrong.
80031	An incident was resolved for the AISC 360-10 steel frame design code where the Beam/Column capacity check was being performed for buckling restrained brace frames (BRBF) where this check was not applicable. This check is no longer performed for BRB frames.
81098	An incident was resolved for composite column design for filled tube or filled pipes where viewing the design results was causing a crash when the "section was too slender".
81182	An incident was resolved for steel frame design per the Indian "IS 800:2007" code where the display of the individual components of the demand/capacity (D/C) ratio as an equation was incorrect. However, the resultant D/C ratio actually used for design was correct. This was a display issue only, and no other design results were affected.
82581	An incident was resolved for composite column design using the AISC 360-10 code where the column stiffness was not being reduced as expected when using the direct analysis method.
82989	An incident was resolved for concrete frame design with the IS 456:2000 code where the reinforcement information for the major-direction shear check or design was not being reported. This was a reporting issue only and no other results were affected.

Frame Design – Chinese

Incidents Resolved

* Incident	Description
66812	An incident was resolved where the Shear/Gravity ratio based modification factor was being applied to vertical-only Response Spectrum loads whereas it is applicable only to lateral seismic loads. This only affected designs based on the Chinese 2010 code.

*	Incident	Description
	76395	An incident was resolved for concrete frame design using the Chinese 2010 code in which the G_RE(PMM) value was always reported as 0.80 instead of varying based on the axial force ratio. The effect of this error was generally small.
	78379	An incident was resolved for composite column design with the Chinese 2010 code where all design results for the composite column were shown as zeroes in the Design Details form for load combinations that included seismic loads and for which the section was reported as slender.
	82236	An incident was resolved for steel frame design per the Chinese 2010 code in which the reported design forces (moment, shear and axial force) in the Design Details form sometimes did not correspond to the values used to calculate the D/C ratio. This could happen when the design combination was multi-valued, for example any combination with spectral loading or containing other load combinations. For algebraic load combinations producing single-valued results, the Design Details form reported the correct forces. This was a reporting problem only. This did not affect the PMM ratios or any other design results.
	82777	An incident was resolved where the top and bottom reinforcement were flipped in the view when displaying concrete beam design results using the special Plan Representation option available in the Chinese version. All other views and the tabulated values were correct. No other results were affected.
	82778	An incident was resolved for concrete frame design with the Chinese 2010 code where the design torsion value did not change when the Torsion Modification Factor was overwritten. Results were consistent with the displayed value.
*	82787	An incident has been resolved for concrete column design per the Chinese 2010 code where the effective length factors were incorrectly based on the ground story specification as given in the general structure preferences. As per GB50010-2010 6.2.20 the column effective length factor is 1.0 for the bottom most story and 1.25 elsewhere. This has been corrected.
	82788	An incident was resolved for concrete beam design with the Chinese 2010 code in which the summary information used the incorrect header "lo" for the effective length instead of the correct header "lc". No results were affected.
	82790	An incident was resolved for concrete frame design with the Chinese 2010 code where the Beam Gravity Negative Moment Reduction Factor was not being applied. The effect upon results was conservative.
*	82791	An incident was resolved for concrete frame design per the Chinese 2010 code in which the live-load reduction for columns was only being applied to Axial Load Only even when the Application to Columns was specified as Apply to All Forces/Components (command Design > Live-Load Reduction Factors).
	82792	An incident was resolved for concrete frame design using the Chinese 2010 code where the M1, M2, and Cm parameters used for column design were not being reported for some load combinations that contained response-spectrum load cases. This was a reporting error only and design results were not affected.
*	82794	An incident was resolved for Chinese 2010 default design load combinations where some combinations were not generated and some were duplicated.
	82796	An incident was resolved for Chinese 2010 concrete frame design code where the minimum rebar of a beam under non-seismic condition was using the requirements for seismic condition. Results were always conservative when the minimum reinforcement governed for gravity design.

Composite Beam Design Incidents Resolved

*	Incident	Description
	80296	An incident was resolved for composite beam design where changing the pre-composite deflection limit in the Composite Beam Preferences from its default value of zero (meaning that pre-composite deflection is not to be checked) to a non-zero value had no effect on the design of the beams. The strength of the beams was not affected, and if camber was allowed, most of the dead deflection was cambered out. The workaround was to select the beams and set a non-zero pre-composite deflection limit in the Composite Beam Overwrites. Affected versions were 13.2.0 to 15.1.0.

*	Incident	Description
	81947	Two incidents were resolved that affected composite beam design output with all codes: (1.) The value of the construction load case component of the reaction was improperly shown as negative at the I-end of the beams, even in the absence of any uplift. This incident affected versions 13.2.0 to 15.1.0. (2.) When the loads applied to a composite beam included loads of type "Wind" or "Seismic", and the load combination that controlled the design of the beam took such loads into account, the loading of the beam was incorrectly reported. The "Wind" or "Seismic" column was missing from the table reporting the loading, and the wind or seismic load component of the loads was listed under the "Total" column in place of the actual total load. This incident affected version 15.1.0 only. Both errors were reporting errors only and did not affect design results in any other way.
	84946	An incident affecting composite beam design was resolved. When the user specified some overwrite values for the right-side effective widths of some selected composite beams, and later brought up the composite beam design preferences form and clicked the OK button, ETABS reset the right-side effective widths of these selected composite beams to their calculated values. When this occurred, the results agreed with the model and with the output. User specified overwrite values for left-side effective widths were unaffected. As long as the user did not change the design code while reviewing the composite beam design preferences, left-side overwrite values were retained as expected. This affected all versions of ETABS since v13.2.0. In earlier versions, ETABS always reset all composite beam design value overwrites when the user brought up the composite beam design preferences form and clicked the OK button.
	85304	An Incident was resolved that corrected two issues with the design of composite beams per the Canadian codes CSA S16-09 and CSA S16-14. (1.) Occasionally, in interactive design mode, all the designs in the Alternate Designs box were incorrectly shown as unacceptable – even when they were acceptable – due to an incorrect value reported for the bottom flange stress-check ratio. A correct design assessment could be obtained for any design by selecting it and choosing a percentage of composite action. This issue affected ETABS 2015.0.0 and 2015.1.0. This incident did not affect the composite beam designs automatically chosen by ETABS nor did it affect any other design results. (2.) When a beam framing into girders was checked for vibration, the contribution of the girders to the natural frequency of the beam was incorrectly computed and the beam vibration rating was off. This issue affected ETABS 2013.0 and later. It did not affect the strength of any beams.
	85375	An incident was resolved which affected composite beam design for all codes: When a composite beam framed into a girder with a section of type Steel Plate, Box, Pipe, Steel Rod or General and the beam section was deeper than the girder section, the shear capacity of the beam was computed based on the assumption that, in order for the beam to frame into the girder, its section needed to be coped. When this happened, the beam was over-designed and the results were conservative. This incident affected version v15.1.0 and all prior versions. The design no longer makes an allowance for section coping in such a case.

Shear Wall Design Incidents Resolved

*	Incident	Description
*	78242 79895 85898	An incident was resolved for shear wall design per the ACI 318-14 code where an upper limit of 60 ksi was being imposed on the yield strength of the rebar for flexural design, even if the wall design was specified as non-seismic. Now this limit is imposed only if the wall design is tagged as seismic, otherwise the upper limit is set as 80 ksi. Previous results could be over-conservative for flexural design in non-seismic cases.
	82086	An incident was resolved for shear wall design per the ACI 318-14, ACI 318-11, and ACI 318-08 concrete codes and the ACI 530-11 masonry code where the values for "C Depth" and "C Limit" at the "Top-Right" and Bottom-Right" locations were incorrect in the Boundary Element Check table of the design report. This was only a reporting issue and all other design results were unaffected.
	82604	An incident was resolved for the C&T method of shear wall design where the pier edge length (DB1) was not effective unless the pier edge length (DB2) was also specified for the same location.

* Incident	Description
82789	An incident has been resolved for concrete shear wall design using the Chinese 2010 code where the program-calculated bottom strengthening zone of shear walls was not correctly following the code. This has been corrected for single-tower models. The bottom strengthening zone for shear walls in multi-tower models should be specified as an overwrite by the user rather than using the program-determined option.
83303	An incident was resolved for the shear wall design report where the reported LLRF for piers and spandrels were reported as negative values when the LLRF was overwritten by user. This was a display error and design results were unaffected.
83341	An incident was resolved for shear wall design using the CSA A23.3-14 and CSA A23.3-04 codes where changing the wall ductility type in the design preferences was not working and the design was always performed based on "Ductile Partially Coupled Wall". The ductility type was only used for boundary zone design where applicable.
85347	An incident was resolved for masonry shear wall design per the ACI 530-11 code where design moments were being amplified by the factor $1/(1-(h/140r)^2)$ when h/r ratio was less than 99 and by $(h/70r)^2$ for other values instead of enforcing ultimate axial compressive strength limit using these same factors according to code equations 3-18 and 3-19. Design results were always conservative. Here h is height of the wall and r is the minimum radius of gyration.
85496	An incident was resolved for shear-wall spandrel design where overwriting the spandrel depth or width was producing an "NA%" message for the reinforcement in the spandrel flexural design results. This was a display error only and design results were otherwise unaffected.

Results Display and Output

Incidents Resolved

* Incident	Description
77144 83582	An incident was resolved where using right-button click for the display of pier design results was causing an abnormal termination when the pier was masonry and the displayed wall design results were based on a concrete design code, or vice-versa. No design results were affected.
79154	An incident was resolved where an error could occur in certain models while attempting to display joint response spectrum curves for a time history load case using command Display > Response Spectrum Curves.
80049	An incident has been resolved in which the project report was unable to be generated in instances in which incomplete model data was input by the user. This was a reporting issue only and did not affect results.
80254	An incident was resolved for the concrete frame design report where the following reporting inconsistencies existed. 1.) For special moment resisting frames, the table "Beam/Column Capacity Ratios" in the envelope tab was incorrectly reporting the previous table results for columns 3 to 6 when the beam/column capacity ratio exceeded the limit. These columns should have been blank. 2.) Table "Sum of Beam and Column Capacities About the Axes of the Column Below" was incorrect. The last column heading should have been SumColCapacity (minor) instead of SumBeamCap (minor). 3.) Table "Beam-column Flexural Capacity Ratios" headings were incorrect. Column headings should have been "6/5 B/C Major, 6/5 B/C Minor, Col/Beam Major, and Col/Beam Minor.
81153	An incident was resolved in the project report for ASCE 7-05 and ASCE 7-10 auto seismic loading where ASCE equation 12.8-6 was not reported in the calculations. Results were not affected.
81673	An incident was resolved where the report was unable to be generated when point displacements were requested and when column points exists below the base level.
81766	An incident was resolved to connect the font size of the on-screen tabulated reaction values to the user-specified maximum font size.
83085	An incident was resolved where the command Draw > Draw Section Cuts gave zero forces and moments when drawn to cut through the internal parts of an auto-meshed shell. If the section cut went through multiple auto-meshed elements but did not cross the edge of the defined slab object, no forces were computed.

* Incident	Description
83363	An incident was resolved for AS 4100-1998 and NZS 3404-1997 steel frame design codes where the deflection report was not available and was causing an abnormal termination.
83744	An incident was resolved for AS 3600-0, CSA A23.3-14, CSA A23.3-04, BS 8110-97, Eurocode 2-2004, Hong Kong CP 2013, Hong Kong CP 2004, IS 456:2000, Italian NTC 2008, Singapore CP 65:99 and TS 500-2000 concrete design codes, where the P-M-M interaction surface of concrete columns was allowing an option to show curves with and without phi factor. These design codes do not have a phi factor so the option is now turned-off.
84514	An incident was resolved where the Display > Force/Stress Diagram > Support Reactions > Tabulated type plot was not displaying reactions for some models. This was a graphical font scaling issue only, and no results were affected.
84628	An incident was resolved where the "Concrete Beam Flexure Envelope" table was showing large negative areas of reinforcement for the middle location when the beam only had two output stations. When this occurred, the error was obvious.
84868	An incident was resolved in which the spandrels selected for including their design details in a report were not saved, resulting in no spandrel calculations being included in the report. This was a report generation issue only and did not affect any results.

Data Files (.EDB, .E2K, .SET)

Incidents Resolved

* Incident	Description
79501	An incident was resolved where, in certain cases, edge rebars in Section Designer sections were not being imported from the model text file (.e2k, .Set). Models opened from the .edb data file were not affected.
79549	An incident was resolved where material references in fiber hinges could get corrupted and an error message would be generated when saving the text file if some materials were deleted after the hinges were defined. This will no longer occur, and previously corrupted models will be corrected when opened. No other data was affected.
78886	An incident was resolved where Export to XML File and subsequent import of the XML file for concrete frame sections did not correctly show the rebar layout in the sketch on the form after import.
82826	An incident was resolved where FiberPM3 hinges were being imported from the text model file (.e2k, .Set) as FiberPM2M3 hinges. Results agreed with the model as imported.

External Import/Export

Incidents Resolved

* Incident	Description
79712	An incident was resolved for the import of SDNF files where non-default (rotated) frame local axes were not always properly applied to the model. When this occurred, the default local axes were being used instead. Exporting the model to ETABS text file (.e2K) and re-importing it would correct the problem. This affected all versions of ETABS that could import SDNF files up to and including 15.1.0.
79813	An incident was resolved which affected the import of 3D DXF files. When a DXF file contained AutoCAD "LWPOLYLINE" objects in planes other than the global XY, XZ or YZ planes and the selected import units were millimeters, these objects were incorrectly imported as ETABS floor objects, i.e., as if they were in the XY plane. When this occurred, the error was obvious and the results agreed with the model. This affected ETABS versions 13.2.1 to 15.1.0. Earlier versions of ETABS imported all "LWPOLYLINE" objects in planes as if they were in the XY plane, even if they were in the XZ or YZ plane.
* 79926	An incident was resolved where the distortions exported to SAFE for mode shapes were being multiplied by the number of Response Spectrum cases being exported. Results in SAFE were consistent with the model as imported.

*	Incident	Description
	82783	An incident was resolved for the Chinese version where some of the design information (text) shown on the screen was omitted when the graphical display was captured and exported to AutoCAD .dwg files.
	82785	An incident was resolved for the command Define > Section Properties > Frame Sections where the last section property edited or viewed in the Frame Section Property Data form was not available for export using the button Export to XML File. All other section properties could be exported. Closing the form and using the Define > Section Properties > Frame Sections command again would avoid the problem.
	83248	An incident was resolved where import of models from GT-STRUDL would give an error when a load combination with an alphabetic character in the name was present.
	83884	An incident was resolved where exporting a text file from ETABS to SAFE was also exporting point loads that were associated with the story being exported but were not at floor level. Such loads had no point names in the exported text file. Importing such text file into SAFE generated warning messages. Results were unaffected as these point loads were not intended to be part of the floor exported to SAFE.

Application Programming Interface (API)

Incidents Resolved

*	Incident	Description
	83023	An incident was resolved for API (Application Programming Interface) functions to retrieve analysis results where the StepType and StepNum fields may have been blank for multi-step load cases including modes.
	82984 83336	An incident was resolved for the API (Application Programming Interface) where the functions SapModel.Results.PierForce and SapModel.Results.SpandrelForce were returning a non-zero error flag or were producing incorrect values.
	84753	An incident was resolved for the Application Programming interface (API) where calling the function SapObject.SetAsActiveObject() on an instance of SapObject that had previously been set as the active instance caused subsequent calls to SetAsActiveObject() on all other SapObject instances to fail. Consequently, no other SapObject instance could be set as the active instance until the active SapObject instance was destroyed by closing the program or calling the function SapObject.ApplicationExit(). No results were affected.