

ETABS® 2013 Version 13.2.0 Release Notes

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Notice Date: 2014-11-03

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 v13.1.5 (2014-06-13)

User Interface

Enhancements Implemented

*	Incident	Description
	13758	Load combination names are now sorted in numerical order for names beginning with alphabetic characters, whereas previously they were sorted in Windows default alpha-numerical order. For example, names previously ordered as DCon1, DCon10, DCon11, DCon2, DCon3, ..., DCon9 are now ordered DCon1, DCon2, DCon3, ..., DCon9, DCon10, DCon11. This affects the commands Define > Load Combinations and the various Design >> Select Design Combinations.
	56187	An enhancement has been implemented to indicate the license level and version number in the title bar of the graphical user interface main window.
	60243	An enhancement has been implemented to set the initial focus of the Frame Assignment - Section Property form to the Filter field, allowing the user to immediately start typing the name of a section to filter the list.
	62127	An enhancement has been implemented on the Link Assignment Property form to now display the properties in sorted order.
	63307	An enhancement has been implemented to order joints alphabetically in the form used for the command Display > Response-Spectrum Curves.
	65481	An enhancement has been made to show the frame sections in the design overwrites form in the same special sort order as used in the frame sections definition form.
	67106	An enhancement has been implemented to provide user control over the amount of zoom that occurs when using the mouse wheel by linking it to the Auto Zoom Step option in the graphics preferences (command Options > Graphics Preferences).
	67515	An enhancement has been implemented in the Set Elevation View form to set the initial focus to the filter box.
	68440 69166	An enhancement has been implemented to now show wall edge colors in plan view based on the requested color specification (material, section, group, etc.).
	68799	An enhancement has been implemented to provide more detailed messages when the model file (.EDB) is unable to be saved because of disk-full or other conditions.

Modeling

Enhancements Implemented

*	Incident	Description
*	53793	The Auto-Relabel All option that was available in ETABS v9 has been restored.
	65234	An enhancement has been implemented to add the Russian material property and section property libraries.
	66704	An enhancement has been implemented to add undo and redo options for Group definitions and Group assignments to objects.

* Incident	Description
67569	A number of enhancements have been implemented to incorporate ASCE 41-13 guidelines for performance-based design. (1) Frame hinge definitions have been updated to follow ASCE 41-13 guidelines. Older files with automated FEMA hinges will be converted to follow the new guidelines. (2) The performance point calculations for pushover curves have been updated to ASCE 41-13. (3) To clarify their different performance-based acceptance criteria, masonry material has been added as a separate material; previously it was treated as a subset of the concrete material. (4) Panel-zone and BRB (buckling-restrained brace) definitions have been updated to accommodate ASCE 41-13 behavior and acceptance criteria. (5) Other minor enhancements have been made to improve the plotting and reporting for performance-based design.
68038	An enhancement has been made to allow multiple named mass-source definitions in the same model. Different load cases of type nonlinear static or nonlinear dynamic can then use different mass configurations. Linear cases starting from these nonlinear cases will use the corresponding mass configuration. One of the mass source definitions is declared as the default and that is used for all load cases not starting from a nonlinear case, as well as for the auto P-Delta case based on mass, and for all auto seismic load patterns used to calculate loads.
68089	The Check Model feature has been enhanced to allow automatic correction of connectivity issues (gaps and overlaps) within a user-specified tolerance for members that are selected prior to using the command Analyze > Check Model.

Section Designer

Enhancements Implemented

* Incident	Description
59988	An enhancement has been implemented in the Section Designer such that it now defaults to using the base material when drawing shapes of the base material type (i.e. steel, concrete, etc). Previously it was choosing the first material matching the type of shape that was being drawn.

Loading

Enhancements Implemented

* Incident	Description
52704	The Singapore National Annex has been added as an option to the Eurocode 8-2004 response spectrum function.
61659	An enhancement has been made to allow notional load patterns to now be based on snow loads as well as other gravity loads.
69133	An enhancement has been made to rectify the difference between the self-weight of frame members as accounted for in the analysis and the material weights given in the tables. The difference was due to the material tables accounting for the duplication of material at the beam column joints by ignoring the beam weight overlapping the column while the analysis was not ignoring the overlap. A user control is now provided on the End-Length Offset form to explicitly specify if the weight of the offset portion is to be excluded. Both the analysis and the material tables will now be consistent in this respect. Note that the two can still differ if weight modifiers are specified on the frame section or assigned to the frame object, as these affect only the analysis and not the material tables.

Analysis

Enhancements Implemented

* Incident	Description
65587	Nonlinear static analysis, including staged construction, has been enhanced to allow the use of the line-search algorithm during iteration. This feature was already available for nonlinear direct-integration time-history analysis. Line search is helpful for models where the stiffness changes significantly from one step to the next, particularly in cases where the model is stiffening. The line-search option is only available under force control and when event-to-event stepping is not used. By default line-search is turned off, since event-to-event stepping is more effective for most case.

* Incident	Description
65841 66696	The speed of analysis has been increased by internal changes that have no effect upon results.
67283	The iteration strategy for nonlinear static and nonlinear direct-integration time-history load cases has been made more adaptive to typically improve convergence behavior and to reduce the time of analysis. User-specified limits on the number of constant-stiffness and Newton-Raphson iterations are used to guide the iteration, but may not be strictly observed. Models run in the new version should produce the same results as in the previous version, subject to minor variations approximately within the convergence tolerance. Larger differences may be observed for ill-conditioned or sensitive models. Analysis Verification Example 14 has been updated for minor changes in results due to this enhancement.

Frame Design Enhancements Implemented

* Incident	Description
55074	An enhancement has been made to the steel frame design for the Indian IS 800:2007 code to implement the changes in Amendment Number 1.
60171	Steel frame design has been enhanced for the display of the design input parameters (overwrites) using the command Design > Steel Frame Design > Display Design Info > Design Input. Numerical values of the input parameter being displayed will be shown with an asterisk (*) if they are program-determined (automatic) and will be shown without an asterisk if they were assigned by the user using the command Design > Steel Frame Design > View/Revise Overwrites. Program-determined numerical values will only actually be displayed for a member after it has been designed, while user-defined values will be shown before or after design. For the following codes, additional overwrite items are now available for display: AS 4100-1998, EC 3-2005, Italian NTC 2008, IS 800:2007, and NZS 3404:1997.
62714	An enhancement was made for concrete frame design, steel frame design, and shear wall design per the Canadian design codes (i.e., CSA A23.3-04 and CSA S16-09) to now include snow loads in the default design combinations.
62719 68721	An enhancement was made for concrete frame design per the AS 3600-09 code where N_{uo} (i.e., ultimate strength in compression, without bending, of an axially loaded cross-section) will no longer be subject to the 0.75 capacity limit given in Section 10.3.3. Section 10.3.3 is only applicable for short braced columns with small bending moments where the bending moment is to be ignored for design. This situation is not applicable in ETABS frame design since moments are not ignored.
67315	Concrete frame design has been enhanced to additionally report the total transverse rebar required (shear plus torsion) in the right-click design details and for the plot in the model window. This affects the following codes: ACI 318-11, ACI 318-08, AS 3600-09, TS 500-2000, Eurocode 2-2004, and Italian NTC 2008.

Composite Beam Design Enhancements Implemented

* Incident	Description
59912	An enhancement was made to the design of composite beams per the AISC 360-05 and 360-10 codes. The Composite Design Preferences form now allows the user to specify the relative position within the deck rib of shear studs welded to a beam through a deck with its ribs perpendicular to the beam. The default relative position is the Middle of the ribs, with Strong Position and Weak Position also available. Examples AISC-360-05 Example 001 and AISC-360-10 Example 001 in the Composite Beam Design Verification Manual have been updated accordingly.
65379 65479	Several enhancements have been made to the design of composite beams: (1) The Composite Beam Design Preferences form now features two additional tabs for Shear Stud preferences and Camber preferences and several new preference items, including: (a) project-wide minimum and maximum percentages of composite action (b) project-wide minimum and maximum shear-stud spacing (c) in the case of design per the AISC Specification, the location of the shear studs within the deck ribs

*	Incident	Description
		(strong or weak position) (d) a minimum beam span, beam depth and section web thickness for cambering beams (e) a unit price for steel. After changing design preferences, any individual beam overwrites are now retained (previously they were being reset to default). In addition, all beam designs are retained and can be checked against the new preferences with the Verify All Members Passed command. (2) The Composite Beam Design Overwrites form now features an option to limit the width of the selected steel section. (3) The Interactive Composite Beam Design and Review form has a new look and functionality. Summary design check results for any potential design are now shown on the form itself (the Details sub-form is still available). For any potential design, the user can adjust the percentage of composite action, the camber and, in the case of a girder supporting beams, whether shear studs are specified as a total number or as a breakdown across segments. (4) Changes made in the Interactive Composite Beam Design and Review form will be applied to the member when clicking the OK button. The corresponding beam will be affected in other stories if the Similar stories or All stories option is active in the main window of the graphical user interface. (5) Beam designs are retained when the model is reanalyzed and can be checked against the latest analysis results with the Verify All Members Passed command (6) The output for individual beams has been rearranged to fit on one page for most beams and girders, and at the same time, includes new information such as (a) the loading of the beam (b) a breakdown of the horizontal shear force transmitted by the shear studs (c) the Y1 and Y2 distances listed in Table 3-19 Composite W-Shapes of the AISC Steel Construction Manual for convenient cross-reference. (7) Two new commands, Copy Design and Paste Design let the user apply a selected design from one beam to others.
	71279	An enhancement has been made affecting the design of composite beams per any design code. When the user specified a stress-ratio limit other than unity, this stress ratio limit was being applied to deflection and vibration checks as well. When this occurred, the designs were conservative and the strength of the beams was not affected. ETABS now applies the stress-ratio limit to strength checks only, and passes the deflection and vibration checks if the design values are less than the allowable values.

Shear Wall Design Enhancements Implemented

*	Incident	Description
	36598 38550 42417	Shear wall design per the Indian IS 456:2000 code has been enhanced to add control in the Wall Design Preferences for enforcing the minimum eccentricity due to slenderness separately in the major and minor directions.
	63048	An enhancement was made to shear wall design for the Eurocode 2-2004 code to expose the Force Modification Factor for Shear Design in the design preferences. Previously the built-in default value was and still is 2.0, but now users can explicitly overwrite the default value in the shear wall design preferences.
	68006	An enhancement has been made to add descriptive notes to items in the shear-wall design preferences form for all design codes. This does not affect any design results.

Results Display and Output Enhancements Implemented

*	Incident	Description
	55089	An enhancement has been implemented to allow sorting tabular data by story, object, or load when the tables contain any of these columns. This can be set in the table options for displaying and exporting tables, as well as the report settings for generating reports.
	63998	An enhancement has been implemented to show the wind loads applied to stories in the report when the loads are based on exposure from area objects.
	68830	An enhancement has been implemented to improve the line quality when export to PDF is used. The line thickness is no longer dependent on the model window size and zoom level.
	71881	An enhancement has been implemented to restrict the calculation of story drifts reported in the joint,

*	Incident	Description
		diaphragm and story drift tables to only those joints that have a column, brace or wall support underneath. This change produces meaningful results with less data.

Database Tables

Enhancements Implemented

*	Incident	Description
	57625	An enhancement was implemented to add database tables for section cut definitions.
	60816	An enhancement was made in the Shear Wall Pier Summary tabular output to report the shear reinforcing and boundary-zone information for each leg when multiple legs are present in a pier.
	68532	An enhancement has been made to provide additional information on hinge status in tables created from static pushover plots of base shear vs. displacement.
	69061	An enhancement was implemented adding the following new database tables that display additional information for certain load cases. (1) Load Cases - Response Spectrum Eccentricity Override (2) Load Cases - Proportional Damping (3) Load Cases - Interpolated Damping (4) Load Cases - Damping Overrides.
	70425	An enhancement was implemented to add object unique names to the analysis results database tables where applicable.

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

Enhancements Implemented

*	Incident	Description
	67004	An enhancement has been implemented to include table set definitions in the text file (*.e2k, *.Set) for export and import.

External Import/Export

Enhancements Implemented

*	Incident	Description
	64916 69417	<p>An incident related to the import of Revit Structure projects was resolved. When a Revit column spanning multiple stories and not aligned with the X or Y axis was imported in ETABS, its orientation in ETABS was the opposite of its original orientation in Revit. When this occurred, the results agreed with the model as imported.</p> <p>In addition, several enhancements have been made to the import of Revit Structure projects and export of ETABS models to Revit Structure. These enhancements require Revit Structure 2015 and CSiXRevit 2015. (1) The import of precast concrete structures has been enhanced as follows: (a) Revit precast concrete sections are now identified (b) Revit precast-concrete double-tee framing elements are now imported as pairs of single tee beams in ETABS (c) Revit precast-concrete solid-slab framing elements are imported as ETABS floor area objects. (2) The original family name of Revit elements is stored in ETABS and exported back to Revit if it is compatible with the section shape of the corresponding line objects in ETABS. (3) ETABS removes extraneous blank spaces from Revit British Universal Beam and Column designations, and if it does not find a matching UC or UB section, ETABS looks for an equivalent UKC or UKB section.</p>

Documentation

Enhancements Implemented

*	Incident	Description
	59189	The Lateral Loads Manual has been updated to explain the Seismic (Drift) load pattern type in Chapter 2, Section 2.2.
	66166	The context sensitive help now contains a list of the default keyboard shortcuts. These shortcuts can be modified using the Options > Customize Toolbars command, in which case the default shortcuts may no longer apply.

* Incident	Description
71127	The composite beam design verification examples manual and associated ETABS models have been updated. A few hand calculations were inaccurate and as a result did not exactly match the ETABS output. These calculations were corrected and now more closely match the original numbers output by ETABS. Other manual revisions are due to the ETABS output changing as a result of enhancements being made and incidents getting resolved; these changes appear in the Release Notes relative to these other enhancements and incidents.

Miscellaneous

* Incident	Description
60063	The version number has been changed to v13.2.0 for a new minor release.

User Interface Incidents Resolved

* Incident	Description
62746	An incident was resolved where an Elevation view could not be renamed when added at specific ordinates using the command View > Set Elevation > Add at Ordinate. Now a 'Change Name' option is provided to rename such added Elevation views. Note that elevations from the grid systems can be renamed in the grid system definition.
64330	An incident was resolved where the command Display > Load Assigns > Shell would not properly display the form used to select the load case to be shown in certain rare cases when temperature loads were present on shell objects.
65747	An incident was resolved where deleting a pier/spandrel label during the assign pier/spandrel process after the model was run and then saving the model would cause a runtime error and the file would not be saved.
65919 67790	An incident was resolved where wind parapet information in the auto wind load form for ASCE 7-05/7-10 codes did not display correctly when the form was reopened and thus appeared to have not been saved. The values shown when the OK button were last clicked were used for analysis, regardless of what the form showed.
67694	An incident was resolved where, in some rare cases, a developed elevation view was not saved when the model was saved and reopened. The view reverted to a default 3D view. No results were affected.
68339 69633	An incident was resolved where, in some rare cases, the Select by Spandrel Labels form could not be opened when using the command Select > Select > Labels > Spandrel Labels. No results were affected.
68434	An incident was resolved where opening an item for modification from the Model Explorer tree would sometimes bring up the form for the wrong item. This could happen when the selected item had a name that was a subset of the name of another item in the list. When this happened, it was obvious which item was being modified and results agreed with the model.
69111	An incident was resolved where the frame section assignment form (command Assign > Frame > Section Property) could behave incorrectly: using the Apply button multiple times could cause the list of frame sections to become unusable, and/or the form could close itself. This did not affect the model or any results.
69637	An incident was resolved where coordinates displayed at the bottom-right corner of the graphical user interface were incorrect when using architectural units (feet, inches and fractional inches) and the coordinate value was negative. The value could be in error by one foot due to rounding. This was a display issue only.

* Incident	Description
69942	An incident was resolved where the thickness of layered shell walls was not shown with the correct thickness in extruded views. This was a display issue only.
70353	An incident was resolved where planar walls with multiple wall thicknesses were not displayed correctly in plan views. This did not affect any results.
70459	An incident was resolved where the rebar area units on the frame section property reinforcement form were using Area (Length ²) units instead of Rebar Area units. This could affect the accuracy of the values (i.e., the number of digits) displayed when the form was re-opened and the OK button clicked, otherwise results were unaffected.
71479	An incident was resolved where the position of the centroid for some Section Designer sections was not shown correctly in the display (plan view and extruded 3D view). This was a display issue only and no results were affected.
71721	An incident was resolved where the value of Rigid Frequency, f2, for a response-spectrum load case was not retained when setting it using the command Define > Load Cases. It was always defaulting to zero, which had the effect of not considering rigid frequency behavior.
71865	An incident was resolved where selecting piers by labels may, in some rare cases, select the wrong pier.
71974	An incident was resolved where in some cases a new story could not be added to the model when link objects were present in the model.

Graphics and Drafting Incidents Resolved

* Incident	Description
60891	An incident was resolved where the quick draw commands were not working when using the Chinese language option.
60927 61848	An incident was resolved for the command Draw > Draw Grid where grids were drawn twice the specified Plan Offsets Normal distance.
64359	An incident was resolved where in some cases the reshape tool would not work in certain elevation views.
69369	An incident was resolved where display of extruded shells was not correct when ribbed slabs were present.
70613	An incident was resolved where the extruded shape shown in the model window for certain Section Designer sections could appear incorrect for models opened from older versions of the software. No results were affected. Now such sections are corrected when the model is opened so that they appear correct when displayed as extruded. In older versions of ETABS, opening the affected sections in Section Designer and clicking OK back to the main window would also correct the displayed shape.

Modeling Incidents Resolved

* Incident	Description
66923	An incident was resolved where pasting joint-coordinate information from Excel (command Edit > Paste) did not add the joints to the model.
68376	An incident was resolved where replication of links would sometimes cause the replicated links to lose the link property assignment. In such a case the link property would be identified as "None". Analysis and design results agreed with the model when this occurred.
68883	An incident was resolved where nonlinear auto concrete beam hinges could not be assigned to frame objects with concrete T and L sections. Now auto hinges can be assigned to frame objects having these types of sections using the ASCE 41-13 Table 10-7 (Concrete Beams) hinge assignment options. Other types of auto hinges are not supported for these sections.
68933	An incident was resolved where the correct frame section property was not assigned to replicated frame objects when the Replicate command was used and the 'Similar Stories' or 'All Stories' option was on. This happened when there was a conflict between the replicate and similar stories options. Now the replicate takes precedence over the similar stories option.

*	Incident	Description
	70143	An incident was resolved where the torsional constant calculated for certain flanged sections (T, L, C) could have been incorrect, even negative, if the thickness of a flange was larger than its width.
	70156	An incident was resolved where the torsional constant J calculated for concrete-filled pipe sections was obviously too large. This did not affect similar sections created using the Section Designer nor were other section shapes affected.

Section Designer Incidents Resolved

*	Incident	Description
	68735	An incident was resolved where, in some rare cases, the shear area and torsion for some Section Designer sections would be incorrectly calculated as zero. When this occurred the error was obvious by reviewing the calculated properties, and results agreed with the calculated properties.

Loading Incidents Resolved

*	Incident	Description
	64093	An incident was resolved for the ASCE 7-10 auto wind load pattern where the form was still showing the Importance Factor 'I'. The importance factor is no longer available when the ASCE 7-10 auto wind load pattern is selected. The loading was not affected as the importance factor was not used for ASCE 7-10 code calculations. The Lateral Loads Manual has been updated to reflect the correct sections from the ASCE 7-10 code.
	65431	An incident was resolved for auto lateral wind load where the Wind Direction angle was not saved correctly.
	67298 67461	An incident was resolved in which the zip-code, latitude-longitude, and/or island location information was not available when defining ASCE 7-05, ASCE 7-10, and NTC-08 response-spectrum functions or auto-seismic load patterns when ETABS was run from the default shortcuts created during installation. When this occurred an error message was generated. Running ETABS by double-clicking on the application or with user-created shortcuts would enable the location data to be accessed as expected.
	68594	An incident was resolved where, in some rare cases, line loads on Null lines (frames) were not being transferred to the area (shell) objects underneath them. This was a tolerance-related issue that could have occurred when the line was very close to the edge of the area.
	68745	An incident was resolved for auto seismic load based on the NBCC 2010 code where the minimum base shear for a shear-wall system was not enforced correctly. The minimum base shear was using S(2.0) instead of using S(4.0) which produces higher minimum base shear. Results were always conservative.
*	70505	An incident was resolved where the auto static seismic loads were being duplicated for multiple tower models. Automated loading for multiple tower models is not recommended as it is based on a single dominant period.

Analysis Incidents Resolved

*	Incident	Description
	54802	An incident was resolved where the Reduced Beam Section (RBS) specification was not being applied when assigned to a frame section imported from a database. It did work correctly when assigned to frame sections explicitly defined by the user.
	60964	An incident was resolved where the analysis could sometimes be terminated prematurely and the analysis results lost if previous analysis results were present and were being displayed in the graphical user interface (GUI) before an analysis was started, and then the GUI was minimized and maximized or otherwise resized while the analysis was running. Only models running the analysis as a separate process (either set explicitly by the user or determined automatically by the program)

*	Incident	Description
		were affected. When this occurred, the model would be unlocked so that it was obvious that the results were lost. In some cases an error message was generated. Analysis results, if not lost, were correct and not affected by this error.
	62419	An incident was resolved where, in some rare cases, an ETABS v9 model opened in v13 would give a run-time error when the analysis was run. This only affected models where the concrete design code was Chinese and an artificially low or zero value was input for concrete material strength in the v9 model.
	66562	An incident was resolved where the shear area of double angles and double channels in the minor direction kept increasing with increasing distance between the component sections. It is now restricted to not exceed the area of the section.
	66916	An incident was resolved where the analysis was unable to run for certain large models using the 64-bit version when available RAM (memory) was small. The use of limited RAM has been made much more efficient, however it is still possible that very large models may not run unless adequate RAM is available.
	68075	An incident was resolved where an error message was issued during analysis if seismic loads of type User had no loads defined.
	70221	An incident was resolved where the forces and moments from section cuts that contained shells (walls), including story shears, could be incorrect for nonlinear static and direct-integration time-history load cases that include P-delta, as well as for linear load cases that use the stiffness from the end of such nonlinear load cases. Reactions at restrained joints connected to shells (walls) were similarly incorrect. The forces and moments were being calculated using the displacements that included the P-delta effect, but with the original material stiffness without any correction for P-delta effect. For the common case of P-delta compression, this tended to overestimate the reported results. In the case of tension stiffening, the reported forces and moments could be underestimated. This error was generally small in practical structures, although it tended to be more pronounced in tall buildings. Only the contribution from shell objects was affected, not from frame or link objects.
*	70951	An incident was resolved where the convergence behavior of the triple-pendulum isolator (link property) was poor for circumferential behavior. This could cause time-history load cases with independent loading in two directions to run slowly or to not converge, in which case results were not available. Radial behavior (along a fixed shear direction in the U2-U3 plane of the isolator) was not strongly affected. The overall convergence behavior of the triple-pendulum isolator has been made more efficient, and some small difference in results may be expected even for radial behavior.
*	71243	An incident was resolved where the slab local axis specification was not being applied to the analysis mesh if the slab meshing method was the default. It only affected analysis results if orthotropic slab properties were either specified directly or created through bending modifiers. Shell stresses were also being reported in this case based on the default local axes (local axis angle = 0).
	71364	An incident was resolved where, under certain rare conditions due to tolerance issues, some meshed floor shell elements for the analysis model were deleted and behaved as openings. When this occurred the error was obvious by looking at the deformed shape or shell stresses.

Frame Design Incidents Resolved

*	Incident	Description
	46770	An incident was resolved for the steel frame design of columns in eccentrically-braced frames (EBF) where the axial force calculated due to the capacities of EBF link beam capacities was not correct when the columns were shared by multiple EBF bays. The axial force for columns connected to more than one EBF bay was based on the summation of the shear capacities of all the link beams above the story level of the column that was connected to the bays. This was too conservative. Now the axial force for columns shared by more than one EBF bay is calculated based on the summation of the maximum shear capacities of link beams that are connected to the bays and that are above the story of the affected column. Only one capacity, the maximum from all the link beams connected to the bay, is taken per story in the summation. Affected codes are AISC 360-05, AISC 360-10, and CSA S16-09.

*	Incident	Description
	53761	An incident was resolved for steel frame design using the AISC 360-05 and AISC 360-10 codes where changing the Design Provision to ASD in the design preferences did not correctly update the strength reduction factors in the design preferences form. When the ASD option was selected, the design preferences form was still showing the default values for the LRFD option.
	53902	An incident was resolved where the command Design > Lateral Bracing could not be used to reset the lateral bracing back to 'Program Determined' (no lateral bracing) once user-defined bracing had been specified for a given member. The values of effective length actually being used for minor bending and lateral torsional buckling were being correctly reported and the design results produced were consistent with these values.
	59145	An incident has been resolved in concrete frame design for all concrete frame design codes in which the shear areas of the concrete for certain sections were not being calculated correctly. The affected sections were L-shapes, T-shapes, Boxes, Pipes, and Cross-shapes. When this error occurred the effect was generally small. The shear areas for Rectangles, Circles, and Section Designer sections were not affected.
	55179	An incident was resolved for steel frame design using the AISC 360-10 code in which the value of Ry was not being taken correctly and was not being reported correctly. The value of Ry is now taken as the ratio of fy (expected) over fy (design). These values can be input by the user while defining the steel material property.
	59295	An incident was resolved for composite column design per the AISC 360-10 code where the coefficient B1 factor was not being computed when the Amplified 1st Order method was selected in the design preferences. Instead the value of B1 was always taken as unity (1.0) for this case.
	60072 65308	An incident was resolved for steel joist design where some members were unable to be designed and instead displayed the error message "This joist is not designed because there is negative moment" or similar. This issue generally occurred when design moment was less than the internal tolerance used in the default database units.
	60484	An incident was resolved for composite column design per the AISC 360-10 code where the section capacity for minor axis bending was sometimes computed as zero. This could happen when selected steel sections were large, and would cause the D/C ratio to be reported as infinity.
*	61883	An incident was resolved for seismic design of concrete beam-column joints where the joints were always assumed to be confined in both the major and minor directions instead of getting the confinement from connecting beams. All concrete frame seismic design codes were affected. Models with concrete frame seismic designs should be re-run using the new version, since the previous results could be unconservative. This issue affected v13.0.0 to v13.1.5.
	64074	An incident was resolved for steel joist design that addressed the following issues: (1) Superimposed dead loads and roof live loads were not automatically being included in the default load combinations created for steel joist design. (2) The deflection check as reported had an incorrect conversion factor and label for the units; force units were being used rather than length units.
	64491	An incident was resolved for steel frame design where columns located below the Base level were not being designed when using the command Design > Steel Frame Design > Start Design/Check. However, the design was being performed when right-clicking on such a member while displaying design results. No other results were affected.
	65751	An incident was resolved for composite column design where the parameters Analysis Method, Second Order Method, and Stiffness Reduction Method were not saved in the design preferences. In addition, the design report for the concrete-filled pipe/tube was showing some parameters which were not being used in the design. These parameters are no longer reported.
	65937	An incident was resolved for composite column design where the moment capacity of concrete-filled pipes was incorrectly computed. The capacity was being underestimated and the error was always conservative. In addition, a typographical error in the AISC 360-10 Composite Column Design manual has been corrected for the equation on page 3-31 to calculate the theta angle for a circular composite section. This was a documentation error only and no results were affected.
	67203	An incident was resolved for composite column design per the AISC 360-10 code where repeatedly right-clicking on a member while displaying design results would keep changing the Demand/Capacity (D/C) ratio shown. The D/C ratio when design was first completed was correct.

*	Incident	Description
	67908	An incident was resolved for steel frame design using the codes AS 4100-1998 and NZS 3404-1997 in which the interaction equation and the value of N_{oz} was not being reported. This was a display issue only. No results were affected.
	68139	An incident was resolved for steel joist design where the reported controlling load combination may have been incorrect. This was only a reporting issue and design results were not affected.
	68908	An incident was resolved for concrete frame design where the optimization algorithm for auto concrete sections used, when used for concrete columns, was restricting the design rebar to a maximum of one percent and was thus resulting in larger sections than needed being selected or a failure condition being declared. When this occurred, the results were over-conservative.
	69079	An incident was resolved for steel frame design where compression-only members were sometimes incorrectly reported as flexo-compression members. Although the reported section classification could have been incorrect, there was no effect on the PMM ratio, which was correct. Affected design codes included AISC 360-05, AISC 360-10, AISC-LRFD 1993, AS 4100-1998, China 2010, CSA S16-05, CSA S16-09, Eurocode 3-2005, IS 800:2007, Italian NTC 2008, and NZS 3404-1997.
	69757	An incident was resolved for steel and concrete frame design where the load type Roof Live was not being added to the gravity portion of the design forces. It was included in the total design forces. This error did not affect other types of live loads. This could slightly affect the design for design codes where special treatment is given to gravity forces.
	71477	An incident was resolved for steel frame design using the Eurocode 3-2005 and NTC 2008 codes in which sections with 3mm thick elements were being reported as being too slender to design, while the design code permits 3mm thick elements to be designed. This limitation was conservative.
	71922	An incident was resolved for concrete frame design using the Canadian code CSA A23.3-04 in which the wrong phi factor for concrete was being used for the PMM interaction calculations. The value used was from the older version of the code CSA A23.3-94. Beam design was not affected, only column PMM design.

Composite Beam Design Incidents Resolved

*	Incident	Description
	52236	An incident was resolved affecting the display of composite beam shear studs and their export to AutoCAD. The numbers of shear studs making up the beam shear-stud distribution were shown in the opposite order from the intended order for beams which met the following criteria: (1) The beam end points were defined from right to left, or top to bottom (2) the beam supported other beams or point loads (3) the beam loading was unsymmetrical, resulting in an unsymmetrical distribution of shear studs on the beam (4) the user did not select the Single Segment distribution in the Composite Design Overrides form. When this occurred, the total number of shear studs to be placed on the beam was not affected, only the ordering.
	55288 58914 68731	An incident was resolved for composite beam design that addressed two issues with the vibration check. (1) When the live-load reduction method was set to None in the model, the value of the dead load applied on the beam for the vibration check was too large, which resulted in the beam passing the vibration check by a large margin. When this occurred, the reported design results were obviously invalid for vibration. The results for strength stiffness criteria were still correct. (2) When a beam was supported by a column at one end and a girder at the other end, the total deflection of the system comprising the beam and its supports was very small, which resulted in the beam passing the vibration check by a large margin. When this occurred, the reported design results were obviously invalid for vibration. The results for strength and stiffness criteria were still correct.

*	Incident	Description
	56192	An incident was resolved which affected the design of composite beams designed with no composite action. When computing the deflection of such beams, the moment of inertia of the steel section was being multiplied by the design preference value 'Ieff Reduction Factor for Composite Deflections', which is only intended to be used for composite action. Since this factor is usually less than unity (1.0), this could result in an over-conservative design when deflection controlled in the case of no composite action.
	56782	An incident was resolved that addressed several issues affecting the design of steel composite beams per the BS 5950 British Standard Code of Practice. These issues only affected beams for which the governing design criterion was deflection. (1) The total deflection computed for design could be greater than the sum of the pre-composite and post-composite deflections. When this occurred, the resulting design was conservative. (2) The beam composite moment of inertia used to check composite deflections was being computed based on the effective ratio 'ae' used to check vibrations. (3) The reported value of the effective ratio 'ae' used to compute composite moment of inertia and deflections did not match the actual value used, nor did it match the theoretical value. This was because the reported 'ae' was computed based on a ratio of short-term to long-term loads that did not necessarily correspond to the loads in the load combination that controlled deflection. Example 'BS-5950-90 Example 001' in the Composite Beam Design Verification Manual has been updated according to these three changes.
	61363	An incident was resolved for composite beam design where the reported number of shear studs required could be too small in the case where the percentage of composite action calculated to control beam deflection was less than the mandated minimum percentage. The number of shear studs was being calculated based on this smaller percentage of composite action rather than the mandated minimum. This did not affect the strength of the beam or any other design results.
	63571	An incident was resolved for composite beam design where the price of steel per unit weight was not available for cost optimization. The price per shear stud and the cost per weight for cambering were available in the design preferences, and these functioned as relative prices compared to an assumed unit (\$1.00) price for steel. Now the price per unit weight has been added to the design preferences and can be explicitly set along with the price for studs and cambering. In ETABS v9, the price of steel was available in the material property definition, but now the prices for composite beam design are all together in the design preferences.
	63806	An incident was resolved for composite beam design where the default absolute deflection limits were set to zero when overwrites were assigned to a member and the option for 'Deflection Check Type' was selected as 'Absolute' or 'Both'. The deflection limits could still be changed by the user. Now more reasonable default values are set.
	68028	An incident was resolved for composite beam design where vibration checks reported the parameters B and W as zero when composite beams were framing into walls.
	71297	An incident was resolved affecting the design of composite beams shored during construction. When shored construction was specified, a camber was specified for the beam based on the value of the beam deflection under dead load once construction was completed and shores were removed. When this happened, the beam had an upwards curvature which did not reduce when the concrete was poured (due to shoring), potentially leading to a thinner deck concrete cover than specified and resulting in an unconservative design. Composite beams for which shored construction has been specified are no longer cambered unless explicitly specified by the user. The Composite Beam Design Manuals applicable to the various design codes have been updated accordingly. Also, the default percentage of dead deflection which is cambered out is now properly given as 80% in these Manuals, reflecting the actual behavior of ETABS.
	71303	An incident was resolved for composite beam design using the CSA S16-05 and CSA S16-09 codes where the values computed by ETABS for the shear-stud capacity could be slightly incorrect. When this occurred, the computed shear-stud capacity differed from its prescribed value by 3% percent or less. Example "CSA-S16-09 Example 001" in the Composite Beam Design Verification Manual has been updated accordingly.

* Incident	Description
71844	An incident was resolved which affected the design of composite beams per the AISC 360-05 and AISC 360-10 codes. The default values of the phi factors used to compute the composite design positive strength has been changed from 0.85 to 0.9 in accordance with the code specifications. The default value of 0.85 resulted in composite beam designs that were conservative, although the design was consistent with the value specified by the user if the default was not used. The phi factor used to compute the composite design negative strength has been removed from the preferences, as ETABS does not rely on composite action in areas of negative bending when designing composite beams; instead, the phi factor for bending of the steel section alone is used when evaluating strength in areas of negative bending.

Shear Wall Design Incidents Resolved

* Incident	Description
68610	An incident was resolved for CSA A23.3-04 shear wall design where the phi factors for concrete and steel were not updated when overwritten by the user in the wall design preferences. Default values used in wall design preferences were in accordance with the CSA A23.3-04 code, therefore the actual design performed was per code. The wall design manual has been updated to reflect the default values used in wall design preferences.
68763	An incident was resolved for shear wall design using the Indian IS 456:2000 code where the design details displayed after right-button clicking on a spandrel showed incomplete information for diagonal reinforcement. In particular, certain seismic design information was omitted. The information that was being displayed was correct, and the design calculations were not affected.
70809	An incident was resolved for shear wall spandrel design using the NZS 3101-06 code where the Design Inadequacy Message: "Shear Force exceeds maximum allowed!" was shown incorrectly in the spandrel design output. The maximum design shear limits in accordance with NZS section 9.3.9.3.3 were not being correctly enforced. The shear capacity and shear rebar calculations were not affected.

Connection Design Incidents Resolved

* Incident	Description
55636 65023	An incident was resolved for steel connection design in which the D/C ratio was sometimes reported as excessively large or infinite when the model was created in any length unit other than inches. When this occurred the error was obvious.
57619	An incident was resolved for connection design where the 'Set to Default Values' button did not properly consider whether the connection was of beam or column type when setting the values. Results agreed with the values as set to default or subsequently changed by the user.
57795	Minor improvements have been made to the base-plate (connection) design. (1) A check has been added to ensure that the bearing length is greater than zero. (2) Checks have been added for the concrete bearing strength. (3) Minor improvements have been made to the base-plate thickness checks. (4) Minor improvements have been made to the side-face blowout checks

Results Display and Output Incidents Resolved

* Incident	Description
61114	An incident was resolved where changing the units from US default to SI would incorrectly change the horizontal axis (spectral displacement) of the static pushover curve of type FEMA 440 EL (equivalent linearization). This was a graphical display issue only.
66574	An incident was resolved where walls drawn in plan or elevation were being included when printing to PDF files.

*	Incident	Description
	66648	An incident was resolved for composite column design per the AISC 360-10 code that corrects two issues: (1) The composite column design calculation sheets in the report were blank. (2) The composite column design summary database tables were sometimes unable to be displayed. Both of these issues were reporting items only and did not affect the actual design results.
	67079	An incident was resolved where the load case/combo name was not displayed in the caption when the reactions were plotted on screen in tabular form instead of arrows.
	67084	An incident was resolved where the deformed-shape display, when shown in an elevation view, would sometimes snap-to and show displacement values at joints under the mouse cursor that were not in the displayed elevation plane.
	67132	An incident was resolved where right-clicking on a frame assigned as pier or spandrel would not show the pier/spandrel design results when they were being displayed on the model. This did not affect shell elements.
	67217	An incident was resolved for concrete frame design per the ACI 318-08 code where the Summary Report was reporting the longitudinal area of reinforcement required because of torsion in area/length units instead of area units. This was only a reporting issue. The design was not otherwise affected.
	67368	An incident was resolved where, in rare cases, the caption for a model window that was displaying results for a load combination would show additional items (such as step numbers) that did not apply. No results were affected.
	67377 67857 69952	An incident was resolved where, in certain cases, trying to display hinge status or deformation for a pushover (nonlinear static) load case would cause the software to terminate abnormally. This was restricted to the 64-bit version. Results, when available, were not affected.
	67470	An incident was resolved where non-fiber hinges with load carrying capacity after point E specified to be extrapolated (rather than dropping load) would report the hinge state as 'D to <=E' even for hinge deformations beyond point E. Now the hinge state will be reported as '> E' in the extrapolated region. Also resolved was an error where the stiffness of the extrapolated region of the force-deformation curve was taken to be a very small but finite stiffness instead of using the stiffness of the curve between points D and E as documented. This latter issue only affected non-isotropic, non-fiber hinges.
	67650	An incident was resolved that addressed two issues affecting Link hysteresis plots: (1) The scaling of the vertical axes was not correct. (2) The link selection by name was not picking the correct link. Both issues were obvious and affected the plot only and not the tabulated analysis results.
	68072	An incident was resolved where the beam moment diagrams would appear inverted in a developed elevation view when the developed elevation was first created. This did not affect subsequent displays of the same developed elevation.
	68543	An incident was resolved where right-clicking on a joint when the joint reactions are being displayed would show zero values.
	68858	An incident was resolved where the color legend would not show on the printed graphics when it was present for the screen graphics.
	68931	An incident was resolved where displaying shell results (Display > Force/Stress Diagrams > Shell Stresses/Forces) and using the option to average the contours at the nodes 'By Objects' would leave the area objects (walls and floors) selected after display and until the Clear Selection command was used. No results were affected.
	68935	An incident was resolved where, in certain cases, the load combination label as well as force/stress component type were not displayed in the window caption when displaying frame force results.
	71305	An incident was resolved where displaying shell force or stress contours with the Show Values option on would sometimes show incorrect values for the contour labels. This could occur when the display units were not the same as the database units (the consistent units in effect when the model is created or imported from v9). In addition, the contour labels were not updated when the units form was used to change the units or accuracy of the display. This latter error depended on which window was active when the units were changed. In both cases, only the contour labels were affected, not the values shown under the mouse cursor or when right-clicking on the shell object.

* Incident	Description
71761	An incident was resolved for steel frame design per the Eurocode 3-2005 code where the torsional force reported in the design report was using force conversion units instead of moment units. This was only a reporting issue and no other analysis or design results were affected.

Detailing Incidents Resolved

* Incident	Description
56197	An incident was resolved in the detailer in which openings in waffle and ribbed slabs were not properly drawn on plan and section views.
57348	An incident was resolved in the detailer where specifying the same value for maximum and minimum bar spacing in a wall pier, in an attempt to enforce a specific bar spacing, was not having the desired effect. The resulting spacing could have been larger or smaller than requested when the range was zero. This has been corrected. Note, however, that such a restriction by the user may not always satisfy capacity requirements.
61360	An incident was resolved in which the beam rebar tables from detailing were not exported properly to DXF files. Trying to open the DXF file would generate an error message and the file was empty.
66800	An incident was resolved in which the minimum bar size specified in the rebar selection rules was not always enforced in the detailing of wall piers. This did not affect design.
68059	An incident was resolved in which changing units in the main Detailing Preferences form did not update the units properly for other subsidiary Detailing Preferences forms.
68539	An incident was resolved for the detailer in which some forms did not show the correct units for setting drawing sheet sizes when using SI/Metric units. Results were unaffected.
68559	An incident was resolved in which the export of detailing drawings and views to DWG did not work for some AutoCAD versions, causing ETABS to become non-responsive. Now when the export to DWG fails for any reason, an option is provided to try again or to export to DXF instead. Note that the export to DWG requires a recent version of AutoCAD to be installed on the same machine as ETABS so that the two products can communicate. Older versions of AutoCAD may work in some cases, but not all.

Database Tables Incidents Resolved

* Incident	Description
62927 65485	An incident was resolved in which the composite beam design overwrites database table was sometimes unable to be generated for AISC 360-05, AISC 360-10, or Chinese 2010 codes. This was a table error only, which could also have affected the generation of reports, but did not affect results.
67574	An incident was resolved in which the Load Cases - Response Spectrum database table was using load names of UX, UY, etc instead of U1, U2, etc. This was a database table issue only and did not affect results.
67984	An incident was resolved in which the Shell Sections - Slab table was sometimes unable to be generated when there were ribbed slab properties present in the model. This was a table issue only and did not affect results.
68076	An incident was resolved in the database tables where a step number column was not present when presenting analysis results for certain load cases containing steps and when the table options were set to display the load case name and step number in separate columns. This was a database table issue only and did not affect results.
68484	An incident was resolved where saved table sets could become corrupted when the file was reopened. No results were affected.
68889	An incident was resolved in which the material list database tables would report the material for nonprismatic sections as steel when they were not. This was a table issue only and did not affect results. Nonprismatic sections are now included in the material list tables based on the material of the starting section.

* Incident	Description
70061	An incident was resolved where the inter-story drift was not being reported in the drift tables for the bottom-most story of a tower if it was sitting on top of another tower. This was a reporting problem only and no other results were affected.
71616	An incident was resolved in the Shell Sections - Summary database table in which the Total Thickness column was reporting the thickness of a filled deck as the value of the concrete thickness only. This was a reporting issue only and did not affect any results.

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

Incidents Resolved

* Incident	Description
60665	An incident was resolved where certain models could not be fully imported after being exported as text files (*.e2k, *.Set). The error occurred when reading group data.
63612 68212	An incident was resolved where, for certain rare models, composite beam design could not be performed due to corrupted data in the design settings. Exporting and re-importing the model would correct this issue. Now the data is corrected when it is opened from the model file (.EDB).
65361	An incident was resolved where line rebar specifications in Section Designer sections were not properly recovered when opening an ETABS v9 model into ETABS 2013 or when importing the model from a text file (*.e2k or *.Set). When this occurred, viewing the affected sections in Section Designer and clicking OK all the way back to the main interface would correct the problem. Without doing this, the design of such sections was affected, usually showing overstress due to lack of rebar.
65906	An incident was resolved where Section Designer section opening shapes were not exported or imported correctly in the text file.
68929	An incident was resolved in which ETABS v9 model files containing Section Designer sections could become corrupted when opened in v13.1.4 or v13.1.5. The Section Designer sections would be blank with zero properties. V9 models opened in v13.0.0 to v13.1.3 did not have this error.
69171	An incident was resolved where the CQC3 directional combination specification in Response Spectrum load cases was not being exported to the text file (*.e2k, *.Set) resulting in it being converted to the default SRSS directional combination upon import.
69322	An incident was resolved where, in rare cases, the message "Error cleaning Time History Plot Functions Array-Error 9" might appear when opening or saving a model. This error did not corrupt the model or affect any results.
69567	An incident was resolved where some hinges assigned to frame objects were not being written out to the model text file (*.e2k, *.Set), and hence were lost when the model was imported again. This did not affect models saved and opened using the model file (.EDB). This affected the export from versions 13.0.0 to 13.1.5.
69709	An incident was resolved where a model with a general pier design section could not be imported back after exporting to text file (*.e2k, *.Set).
71713	An incident was resolved where the shell section property was not imported correctly from v9 files if the bending thickness was specified to be different from the membrane thickness. The bending property modifiers are now modified when first importing the v9 file to reflect this difference in bending and membrane thicknesses.

External Import/Export

Incidents Resolved

* Incident	Description
65912	Two incidents affecting the export of models to AutoCAD DWG and DXF files were resolved: (1) When some of the grid lines in the model had blank labels, no DWG or DXF file was created. (2) Walls with three sides were exported as AutoCAD 3DFace objects with four points, one of which was at the drawing origin. When this occurred, the error was obvious. Both issues affected ETABS v9 and later.

*	Incident	Description
	69982	An incident was resolved where exporting a story to SAFE was not including the reactions from braces tagged as sloping beams for the option Export Floor Loads and Loads from Above.
	71499	An incident was resolved which affected the import of CIS/2 files. When the name of a CIS/2 file to import had several extensions, i.e., it contained more than one period, the file was not imported.

Documentation
Incidents Resolved

*	Incident	Description
	68264	An incident was resolved in which the help topic Local Axes - Shell Objects incorrectly documented the Normal to Selected Beam option as setting the local 2-axis of the shell to be perpendicular to the frame. This command sets the local 1-axis of the shell to be perpendicular to the selected frame. This was a documentation error only.
	69246	A documentation error has been corrected in the Lateral Loads Manual, Section 2.12 for the 2009 IBC/ASCE 7-05 seismic loads. The term Risk Targeted MCE in section 2.12.2, page 2-48, second paragraph was indicating that the S _s is the mapped Risk-Targeted MCER, when it is actually the maximum considered earthquake (MCE). ASCE 7-05 seismic maps are only for MCE. Separately, a clarification has been added in Section 2.1 and Section 2.2 of the Lateral Loads Manual for minor differences in the handling of lateral loads between various CSI products. No results were affected by these changes.
	71127	The composite beam design verification examples manual and associated ETABS models have been updated. A few hand calculations were inaccurate and as a result did not exactly match the ETABS output. These calculations were corrected and now more closely match the original numbers output by ETABS. Other manual revisions are due to the ETABS output changing as a result of enhancements being made and incidents getting resolved; these changes appear in the Release Notes relative to these other enhancements and incidents.
	71815	An incident was resolved in the context sensitive help where the description of the number of confinement bars data fields was incorrect in the Frame Section Property Reinforcement Data Form help topic.