

ETABS v18.1.1 Release Notes

© 2020 Computers and Structures, Inc.

Notice Date: 05-February-2020

This document lists changes made to ETABS since v18.1.0, released 11-December-2019. Items marked with an asterisk (*) in the first column are more significant.

Application Programming Interface

Enhancements Implemented

| * | Ticket | Description |
|---|--------|---|
| | 3572 | The Application Programming Interface (API) has been updated to add new functions that set and get design overwrite and design preference values for the following concrete design codes: AS 3600-2018, IS 456:2000, Mexican RCDF 2017, and TS 500-2000(R2018). |

Design – Shear Wall

Enhancements Implemented

| * | Ticket | Description |
|---|--------|---|
| | 3399 | An enhancement was implemented for shear wall design to report spandrel diagonal shear rebar (Avd) whenever diagonal rebar is computed. Previously, Avd was only reported when it was mandatory by design code. |

Detailing

Enhancements Implemented

| * | Ticket | Description |
|---|--------|--|
| * | 3523 | ETABS has been enhanced for compatibility with CSiXCAD™, a new software product from Computers and Structures, Inc., for the detailing and documenting of steel and concrete structures within Autodesk® AutoCAD® or Bricsys® BricsCAD®. Working with building models that were analyzed and designed in ETABS, CSiXCAD can automatically create plans, elevations, schedules, and 3-D BIM models. When changes are made to the originating ETABS model, the contents of these drawings can be compared to the updated model. Differences can then be imported into the drawings selectively, or in their entirety, in which latter case previous drawing edits will be maintained and a report listing the changes is generated. CSiXCAD is a separate product from ETABS, although it does require ETABS to be installed on the same machine for data exchange. For more information about CSiXCAD, please contact the CSI Sales department. |

Installation and Licensing

Enhancements Implemented

| * | Ticket | Description |
|---|--------|---|
| | 3516 | The version number has been changed to v18.1.1 for a new minor release. |

Loading

Enhancements Implemented

| * | Ticket | Description |
|---|--------|--|
| | 3528 | A change was made to give a warning message when running design if a design load combination includes load cases that have not been run by the user or that failed to run for some other reason. If the user chooses to run the design anyway, such load combinations will produce zero results and be ignored by the design. This behavior is unchanged from previous releases, only the warning message is new. Note that this warning message is not provided when the design is run via the API (Application Programming Interface). |

Structural Model

Enhancements Implemented

| * | Ticket | Description |
|---|--------|--|
| * | 1074 | An enhancement was made to panel-zone definitions to include nonlinear behavior that is automatically generated based on ASCE 41-17 criteria or specified as user-defined properties. The nonlinear behavior for panel zones allows the specification of a symmetrical multi-linear backbone curve with several available options for hysteretic behavior. Behavior in the major and minor directions can be separately defined. Panel-zone acceptance criteria definitions have been expanded to allow the major and minor directions to be separately specified and these can be automatically generated based on ASCE 41-17. Panel-zone definitions were also enhanced to allow better control of panel zone behavior: a beam-column connection panel zone can be defined for either the major or minor directions, or both, and the axial direction of a panel zone can optionally be based on a user-defined link property. |

Analysis

Incidents Resolved

| * | Ticket | Description |
|---|--------|---|
| | 3484 | An incident was resolved where, for direct-integration time-history load cases using Chung and Hulbert time integration parameters, an error would occur when running analysis preventing the model from being run. This issue did not affect other time integration schemes. |
| | 3510 | An incident was resolved where force-controlled hinges did not have the intended behavior in the positive direction. In the positive direction, the hinge status and D/C ratios were not consistent with the defined acceptance criteria. For force-controlled hinges with the option "Hinge Loses All Load Carrying Capacity When Maximum Force is Reached" selected, the hinge did not provide any force resistance in the positive direction for nonlinear load cases. This issue did not affect displacement-controlled hinges. Additionally, for such force-controlled hinges with the option "Hinge Loses All Load Carrying Capacity When Maximum Force is Reached" selected, the demand used to compute the hinge status and D/C Ratio is now arbitrarily set to 10 times the yield force once the hinge reaches the maximum force and begins losing load carrying capacity. This latter change applies to both the positive and negative directions of loading. |

Database Tables

Incidents Resolved

| * | Ticket | Description |
|---|--------|---|
| | 3424 | An incident was resolved where an error occurred when attempting to apply a format file to a database table. |
| | 3437 | An incident was resolved where the database tables for auto-seismic loads was showing blanks in calculated fields for single-step loads. It was showing all fields for multi-step loads, i.e., when multiple directions and/or multiple eccentricities were specified in same load pattern. No results were affected. |
| | 3551 | An incident was resolved where the database tables were not available for a particular model with a very large number of area spring properties defined. |

Design – Composite Beam

Incidents Resolved

| * | Ticket | Description |
|---|--------|--|
| * | 3472 | Three incidents affecting composite beam design per the Chinese 2010 design code were resolved. (1.) Attempting to design most composite beams in ETABS v17.0.0 through ETABS v18.1.0 triggered a series of error messages and produced no designs except in the case of beams featuring a symmetrical moment diagram and an odd number of output stations. (2.) Even for such beams, no acceptable designs relying on composite action were produced in ETABS v17 and no acceptable beam designs at all were produced in ETABS v18.0.0 to v18.1.0. (3.) All versions of ETABS that designed composite beams per the Chinese code were reporting seismically-compact sections as inadequate. When any of these problems occurred, the error was obvious, and no design was erroneously deemed acceptable. Composite beam designs per the Chinese 2010 code are now produced as expected. In addition, a related enhancement was made: When designing composite beams per the Chinese code and evaluating the compactness of their section, ETABS now respects the "Ignore B/T Check?" option as set in the Steel Design Preferences. |
| | 3541 | An incident was resolved which affected the input of composite beam web openings. When the internal length unit of an ETABS model was feet or meters, attempts to specify web openings in the Beam Web Openings form were frequently unsuccessful, with an invalid-input message displayed when the location was entered. This affected all versions of ETABS capable of designing composite beam with web openings, i.e. ETABS v17.0 to v18.1.0. Changing the internal length units of the ETABS model by exporting the model to an .e2k |

| * Ticket | Description |
|----------|--|
| | file written in inches and re-importing that .e2k file fixed the problem. Web openings can now be specified in the Beam Web Openings form irrespective of the internal length units. |

Design – Concrete Frame

Incidents Resolved

| * Ticket | Description |
|----------|--|
| 3471 | An incident was resolved for concrete frame design per the IS 456:2000 code the design ran slowly. This was inadvertently introduced in v18.1.0 and design results were not affected. |
| * 3485 | An incident was resolved where concrete column design could have been corrupted as some loading combinations could be skipped from the reporting envelope. This error was inadvertently introduced in the immediately preceding ETABS version 18.1.0 and only affected that version. Also, it only affected concrete column design when the required rebar was to be calculated. Concrete column design when the given rebar was being checked was not affected. Any model that used the concrete column design option (not the check option) when run in ETABS v18.1.0 should be rerun in this new version and the design verified. |
| 3529 | An incident was resolved for the ACI 318-14 concrete frame design code where the minimum shear rebar required for beams was not being enforced when torsion design was not required. |

Design – Shear Wall

Incidents Resolved

| * Ticket | Description |
|----------|--|
| 3508 | An incident was resolved for shear wall design per the Eurocode 2-2004 code where diagonal shear rebar for spandrels was not being computed. No other results were affected. |
| 3531 | An incident was resolved for the Mexican RCDF 2017 shear wall design code where the maximum shear-force limit for pier design was incorrect by accounting for the shear-reduction factor twice. This could cause the pier to be reported as overstressed (OS) in the wall design output when it wasn't. The error was over-conservative. |

Design – Steel Frame

Incidents Resolved

| * Ticket | Description |
|----------|---|
| 3539 | An incident was resolved for the Chinese steel frame design code where, for a particular model, some steel members gave an error message when being designed. These were members identified as braces, but were actually in the horizontal plane. These members produced no design results. All other members were properly checked, and the results were not affected. |

Documentation

Incidents Resolved

| * Ticket | Description |
|----------|--|
| 2467 | The Help topic "Link Property Data Form" has been updated to include information about the stiffness options for nonlinear links, including the stiffness to be used for linear load cases and as the basis for stiffness-proportional damping. These stiffness options became available with the release of ETABS v18.0.0, but the Help documentation was not updated at that time. |

Loading

Incidents Resolved

| * | Ticket | Description |
|---|--------|--|
| * | 3600 | An incident was resolved where nonuniform area load was additionally being applied to areas below the level where the load was specified. This was a rare occurrence because of a larger than expected tolerance being used. This error did not affect uniform area loads. |

Results Display and Output

Incidents Resolved

| * | Ticket | Description |
|---|--------|--|
| | 3427 | An incident was resolved for concrete frame design per the IS 456:2000 code where the item Capacity Ratio under "Flexural Details" in the detailed design report was reported incorrectly. This item is only reported for columns where the reinforcement is set to be checked rather than to be designed. This was a reporting error only and no other results were affected. |
| | 3518 | An incident was resolved where seismic coefficient Cs for NBCC 2010 auto-seismic load was not reported correctly in the project report when the report was requested for the first time. The value was shown correctly if the report was generated again. This was just a reporting issue and analysis results were not affected. |

User Interface

Incidents Resolved

| * | Ticket | Description |
|---|--------|--|
| | 3453 | An issue was resolved where the creep and shrinkage plots shown in the Material Property Time Dependence Plot when defining materials did not correctly display user-defined creep and shrinkage curves when the database units of the model were not millimeters (mm). This issue was a display issue only and did not affect the analysis results. |