

Release Notes for RISA-3D Version 6.0

Version 6.0 Enhancements / Corrections

Enhanced Wood Design Features

- Added Glu-Lam design per 2001 NDS

Enhanced Concrete Design Features

- Added user defined reinforcement layouts for flexure and shear for both beams and columns
- Added New Zealand Concrete Design NZS3101 -1995
- Added Australian Concrete Design AS 3600 -2001

Enhanced Steel Design Features

- Added New Zealand HR Steel Design NZS 3404-1:1997
- Added Australian HR Steel Design AS 4100-1998
- Added US Cold Formed Steel Design AISI 2001
- Added Mexican Cold Formed Steel Design AISI 2001
- Added Canadian Cold Formed Steel Design AISI 2001/CSA S136-01
- Added New HR Steel shapes per the LRFD 3rd manual.
- Added New AISI and SSMA shapes per 2001 AISI manual

Enhanced Analysis Features

- Added an Accelerated (Lanzcos) Dynamics Solver, up to 100X faster than previous solver
- Added Automatic Generation of Response Spectra Scaling Factors
- Added Plate Thermal Loading
- Added Option for Plane Stress Plates to assist in flexible diaphragm modeling.
- Added Linear Acceleration vs Period plots to response spectra dialog
- Modified Plate Corner Force reporting to also include the equivalent corner forces due to applied surface loads

Enhanced Loading Features

- Added Wind Load Force Generation
- Added Static Seismic Force Generation
- Greatly Expanded Load Combination Generation Options (International Codes, Directional Wind/Seismic, Accidental Torsional eccentricities)

Enhanced Graphics and Drawing Features

- Added Dynamic Zoom, Pan and Rotate to all Model View Windows.
- Updated Double Click Dialogs for all new data, including new Meshing options to the Plates Dialog.
- Enhanced Line Tool to now Report all Forces and Moments for Members and Plates.
- Enhanced AutoMesher with new Dimension Limit to produce more regular meshes.
- Added Expanded Font Control in Tools – Preferences
- Up to 5X faster model rendering
- Added Translucent plate and member rendering and member diagram graphics
- Added ability to graphically rotate or flip plates to align their local axes

Features Specific to the Indian Region

- IS 456 : 2000 — Plain and reinforced Concrete Code of Practice
- IS 800 : 1998 — Code of Practice for General Construction in Steel
- IS 875 (Part 3) : 1987 — Code of Practice for Design Loads (Wind Loads)
- IS 1893 : 2002 — Criteria for Earthquake Resistance Design of Structure
- Load Combinations can be automatically generated from the following codes:
 - IS 456 : 2000 — LSD (Collapse)
 - IS 456 : 2000 — LSD (Serviceability)
 - IS 1893 : 2002 — LSD
 - IS 875 (Part 5) : 1987 — WSD
- Also added pre-generated Indian Materials and Response Spectra:
 - Standard Indian Concrete Materials (M15, M20, etc.)
 - Standard Indian Steel Materials (Fe-410, Fe-570, etc.)
 - Indian Response Spectra as per IS 1893 : 2002

Enhanced Interaction with other software

- Added Connection Export to Descon
- Expanded DXF Import/Export to Handle Shapes AND Section Set Mapping to AutoCAD Layer Names.
- Linked to AutoDesk - Revit Structure

Miscellaneous Enhancements / Corrections

- Corrected problem where Help File was assumed to exist in the data file directory
- Corrected problem with the Help File Index and various Help File links
- Corrected issue with the reading of 5.5 files where a quotation mark (") was used in the shape name or section set
- Corrected issue with reading of Moving Load data in the 5.5 file format
- Corrected issue with the padding of shape names when a DXF file was imported
- Corrected file format issue with use of a single custom wood species for multiple wood materials
- Added registry entry for user to specify a server list for license management
- Modified network versions to check licensing less frequently than the stand-alone versions
- Corrected issue with units conversions for footing design results.
- Corrected issue with the J calculation of concrete Tees and Ls that have a stem which is wider than it is deep

Version 6.0.1 Enhancements / Corrections

Enhanced Loading Features

- Added a uniform distributed torque to the member distributed loads spreadsheet.
- Added a Projected Area option for wind loads. This only distributes wind loads based on the exposed area of the member in question. Good for wind loading on open structures.
- Corrected a typographical error in the United State.xml file that resulted in some load factors of 1.0 for ACI 318-02 load combinations.
- Renumbered the basic load case offsets to match the offsets generated by RISAFloor and RISA-3D version 5.5.
- Corrected a bug related to the string lengths for BLC entries on the Load Combinations spreadsheet.
- Corrected a bug with the units conversion of plate temperature loads.
- Corrected a bug which allowed users to access an old, unused spreadsheet for "pattern based distributed loads".

Enhanced Graphics and Drawing Features

- We now graphically color code axial and moment diagrams to distinguish between Tension / Compression or Positive / Negative bending.
- Corrected a bug with the Line Cut Summation tool where the forces were only getting displayed for the LAST load combination in a batch solution.

Enhanced Wood Design Features

- Corrected a bug that set the CV value for all newly created Glu-Lam members to 1.0. This entry now defaults to blank (which means that the program will calculate it).
- Corrected a units bug with the CV calculation where the length units were not getting accounted for properly. The result was an incorrect value of CV if your dimension and length units were not identical.
- Corrected a bug with the display of the CV value in the Member Detail reports.

Enhanced Steel Design Features

- Updated detail report to show B value for tapered members (AISC codes).
- Corrected an issue related to an inconsistency between Chapter B and Appendix F of the LRFD 2nd & 3rd editions. This inconsistency could result in unusual Mn calculations for wide flange members with significant axial compression.
- Corrected a bug related to the CB calculation for LRFD 2nd and 3rd Editions. The CB value was being conservatively limited to a maximum value of 2.3 (per the limitation of LRFD 1st Edition).
- Corrected an error with the rT value in the Australian database that was causing ASD code check problems.
- Corrected a bug with the M_{cr} calculation (LRFD 2nd and 3rd Editions) for Wide Flanges with slender flanges.
- Corrected a bug where the program was incorrectly calculating the classification (slender, non-compact, compact) for flange local buckling.

Enhanced Concrete Design Features

- Changed the code to allow a yield stress of 415MPa for Shear Steel. The previous limit was 413 MPa.
- Corrected a bug with the G30.8 rebar set where the bar areas were based on the nominal dimensions of the bars rather than the actual dimensions.
- Corrected a problem with the V_c calculation for Round Columns with a user defined bar layout.
- Corrected an error with the storing of Shear and Flexural Layouts offsets for foreign codes.
- Corrected a bug with custom rebar layouts which caused the program to think that the reinforcement was located outside of the cross section.
- Modified a warning message that was reporting that a user defined bar layout exceeding the maximum allowed by code. Warning message now only happens for ACI 1999, and clearly indicates that the maximum allowed is what we calculated for a singly reinforced member.
- Corrected an issue with the Rebar Layout database where the entire database was getting saved with each and every file.
- Corrected a bug with the Canadian rebar set. Previous versions were mistakenly using the nominal diameter to calculate the area.

Enhanced Analysis Features

- Corrected an error with saved Response Spectra Results in the Z direction when the "Dominant Mode" was used for signage.

Features Specific to the Indian Region

- Corrected an error with some shape names in the Indian database.

Enhanced Interaction with other software

- Corrected a bug with the Descon interaction where the forces in a batch solution were not getting transferred properly.

Miscellaneous Enhancements / Corrections

- Added a Default Region to the Tools – Preferences
- Corrected a file read error that occurred when the label for a Project Grid was blank.
- Corrected an error that caused the members spreadsheet to always set a member type to “Beam” even when the Section Sets spreadsheets listed it as something else.
- Added the following def files for each country: _dsgn_rl_3d_rf.def (Re-Design Rules), _material_3d_rf.def (Materials).
- Corrected bug with the display of “Legends” in multiple graphic view windows.
- Corrected a crash that occurred when sorting the Members spreadsheet by the Design List.
- Corrected a database bug with the display of RISASection shapes when an “arbitrary” member type was not selected.
- Corrected a bug where the Design Data for concrete columns and Concrete Beams were switched.
- Corrected a bug where the Material Take Off results were not being updated for a units change until the user re-solved their model

Version 6.0.2 Enhancements / Corrections

Enhanced Seismic/Wind Load Generation Features

- Added the ability to set the elevation of the “base” floor for wind and seismic calculations.

Enhanced Interaction with other software

- Fully Linked to AutoDesk - Revit Structure 4

Miscellaneous Enhancements / Corrections

- Corrected issue in the concrete design of T and L section from the 6.0.1.5 version where the self weight of the slab was not being considered in the design loads.
- Corrected units issue when reading and writing the custom wood database.

Version 6.0.3 Enhancements / Corrections

Enhanced Interaction with other software

- Added a link between RISA-3D and RISAFoundation

Enhanced Steel Design Features

- Added back to back cold formed channels (CS and CU).
- Added front to front cold formed channels (CS and CU).
- Corrected a bug related to the Material Take Off (MTO) of tapered steel members.
- Corrected issue with British steel columns where all columns were assumed to be I sections rather than H sections. This values affects the limiting compression stress from table 23.
- Added the “Code Check Based on Axial Only” message back into the Detail report for Single Angles.
- Corrected a conservative bug where a user entered Cb value could get ignored and reset to 1.0.

Enhanced Loading Features

- Corrected error in the Gust Factor for ASCE 7-02
- Corrected bug in reporting of area loads with crossing edges. Location of erroneous area load was always reported as BLC 1000.
- Corrected an error associated with the co-planar checking of area loads.

Enhanced Wood Features

- Corrected bug associated with using (") marks with Glu-Lams and default materials.
- Corrected a bug with DFL members based on Table 4D for NDS 2001. Fc was being conservatively set to 475psi rather than 700psi. Note this was a valid difference in 1997 based on different ratings for the various grading agencies. But, the 2001 code has the same rating for all grading agencies.

Miscellaneous Enhancements / Corrections

- Added infrastructure to Global Parameters to allow for switching between Sparse and Skyline Solvers.
- Corrected bug associated with resorting a Batch solution result from LC to Item or vice versa.