

MecaStack Revision History

| <u>Version</u> | <u>Date</u> | <u>Revision Description</u> |
|----------------|-------------|---|
| 5.2.9.5 | 4/11/2016 | Fix BS 6399 Shape Factor Cpe, which should have been doubled when D>1m. |
| 5.2.9.6 | 7/7/2016 | Issue a major release of the software: |
| | | 1) Revise the structure of the input files to be more stable |
| | | 2) Add CICIND 2010 to software (Along Wind, Across Wind and Owalling |
| | | 3) Revise way in which stiffening rings are entered and handled within the software, and added int'l shapes |
| | | 4) Allows user to move dimensions on drawing and those changes are retained when file is saved. |
| | | 5) Allow user to delete or modify text by right clicking, and those changes are retained with saved file. |
| | | 6) Allow user to enter different damping values for each mode of vibration under consideration. |
| | | 7) Allow user to manually specify natural frequency for all modes of vibration being considered. |
| | | 8) Fixed a bug that didn't consider all concentrated weights in the natural frequency calculation. |
| | | 9) Remove the option to pick what is output displayed, everything is displayed then you can select what's printed |
| | | 10) Add option on NBC 2010 to allow user to select which criteria is followed for flexible structures. |
| | | Correct problem with graphics not working in 5296, and consolidated StackHt, Diameters, Thick and Cor screens. |
| 5.3.0.2 | 9/14/2016 | Release the Beta version to a wider audience. |
| 5.3.0.3 | 9/15/2016 | Fix bug with Metric units and using Stack Geometry Screen. |
| 5.3.0.4 | 9/16/2016 | Fix CICIND10 Fat Cat, Adj Breech if tilt entered |
| 5.3.0.5 | 9/16/2016 | Fix bugs with CICIND2010 stiffening ring checks. |
| 5.3.0.6 | 9/23/2016 | Cleaned up graphics to print only important elevation changes, more bug fixes and clean-up. |
| 5.3.0.7 | 9/26/2016 | Fix some graphics issues and other bug fixes. |
| 5.3.0.8 | 10/4/2016 | More bug fixes, fix guy wires, add MaterialProperties, API Nozzle Loads |
| 5.3.0.9 | 10/30/2016 | Integrated MaterialProperties tool, and fixed bugs. Performed rigorous testing. |
| 5.3.1.0 | 11/2/2016 | Corrections to vortex shedding per BS4076 for Industrial area. |
| 5.3.1.1 | 11/3/2016 | Correction to enclosed elevation bug, where results sometimes blow up. |
| 5.3.1.2 | 11/4/2016 | Fix bug in lifting analysis, removed BS6399 from main code access thru customized. |
| 5.3.1.3 | 4/17/2017 | Continue to develop, test and debug. Internal version, never released |
| 5.3.1.4 | 4/25/2017 | Continue to develop, test and debug. Internal version, never released |
| 5.3.1.5 | 4/30/2017 | First release of beta version. |
| 5.3.1.6 | 5/11/2017 | More bug fixes and development, working toward full release. |
| 5.3.1.7 | 5/14/2017 | Continue with bug fixes, and started working on implementing Eurocode stress |
| 5.3.1.8 | 5/16/2017 | Corrections to Metric units problem for baseplates, and remove A-36 material designation in output. |
| 5.3.1.9 | 5/19/2017 | Added consideration for section properties for nozles, breech, stiffeners, etc.. Also added the shell properties option that allows the section properties to be visually examined at any elevation along the stack. Added stiffening ring material designation, and added ability to select shackle size on guy lug attachments. |
| 5.3.2.0 | 6/18/2017 | Debugging on CICIND 2010, relaxed ring Ir to use po rather than w5sec, cleaned up Wt & COG to use new ElevAdj calculation and make corrections on stiffening rings. |

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| 5.3.2.1 | 6/20/2017 | Bug fixes, Working on Eurocode |
| 5.3.2.2 | 6/21/2017 | Bug Fixes, working on Eurocode |
| 5.3.2.3 | 6/22/2017 | Bug Fixes, working on Eurocode |
| 5.3.2.4 | 7/4/2017 | Fix Shape factor for strakes, enclosed and ver stiff's. Added Eurocode. |
| 5.3.2.5 | 7/5/2017 | Load Combo's Manual were not sticking, and bug with stiffening ring dropdown being disabled |
| 5.3.2.6 | 7/11/2017 | Fixed unit bugs in Strucflg and Baseplate for metric units, baseplate vertical load always negative. |
| 5.3.2.7 | 7/12/2017 | Fix graphics controls on main menu, Print guy wire hardware hidden when no guys, add print drawing to button. |
| 5.3.2.8 | 7/13/2017 | Fix NBCC wind pressures generating all elements, removed design code custom option, fix font scale |
| 5.3.2.9 | 7/19/2017 | Struc Flange was showing wrong details for worst case, and added detailed Mmax formula |
| 5.3.3.0 | 7/20/2017 | Corrected AISC allowables to use RisElem.Leff, Fix Flare tip wt to be lbs, fix Load Num on Baseplate worst case |
| 5.3.3.1 | 7/21/2017 | Recompiled because the AISC allowable strsses were not calculating correctly for some unknown reason. |
| 5.3.3.2 | 7/25/2017 | Fix bugs related to the Guy Wire Pretension being added multiple times |
| 5.3.3.3 | 7/26/2017 | Fixed some weight bugs for Refrac and Jacket, Corrected riser loads when Guides are added, and fixed UBC97 EQ Loads |
| 5.3.3.4 | 8/1/2017 | Made Beta version the main version on website. Fixed problem with guyed stacks having negative vertical load |
| 5.3.3.5 | 8/3/2017 | Added warning if no strake data entered but strakes selected, swapped HL and HS on dimensions displayed on Guy Lug Double, added note for CICIND Full if Kao_z line is off chart, and corrected deflection limits displaying wrong values when metric selected. |
| 5.3.3.6 | 8/4/2017 | Correct location of Save file as default, and fix problem with Double Guy lug as a stiffening ring. |
| 5.3.3.7 | 8/9/2017 | Switch max reaction vertical/uplift, fix shape factor wrong on first pass and fix NBC Aero Damping value. |
| 5.3.3.8 | 8/10/2017 | Fix problem with single user activation not retaining license info. |
| 5.3.3.9 | 8/14/2017 | Fix GuyWire Hardware printing infinite loop, fix some probs with CICIND 10 br calculation for stiff rings |
| 5.3.4.0 | 8/15/2017 | Corrections to br for CICIND10, stiffening rings weren't retaining the country setting, and ring dim's not shown in metric |
| 5.3.4.1 | 8/17/2017 | Fix some problems with multiple sets of guy wires, and adjusted Struc Flg elevations to include Elev_Adj |
| 5.3.4.2 | 8/17/2017 | Fix some import issues and TLD drawn in wrong location |
| 5.3.4.3 | 8/29/2017 | Adjust Euro Vortex to be able to specify how many modes are investigated, and revised strake logic for Euro. |
| 5.3.4.4 | 8/29/2017 | Fix arraylist_clone when item was nothing, correct problems with STS stiff rings |
| 5.3.4.5 | 8/31/2017 | Fix metric conversion problem with AISC fatigue for elevation checks |
| 5.3.4.6 | 9/6/2017 | Fix problems with lifting analysis reactions being wrong, BC elev wrong. Sect Prop's being off a level due to elev match |
| 5.3.4.7 | 9/6/2017 | Internal unit problem with member mass uniform load, seismic loads too high. Enclosed building criteria broke. |
| 5.3.4.8 | 9/7/2017 | Fix problem with BaseDist = 30 ft, added doc to breech screen, fixed dimension problem with angles in database, |
| 5.3.4.9 | 9/8/2017 | Modified some documentation on frmBreech, added pdf save option to MecaStack. |
| 5.3.5.0 | 9/11/2017 | Correct problem with Shape fac for L&P's being zero. |
| 5.3.5.1 | 9/14/2017 | Fix single gusset graphic error for chair, add error checking for load combo form launch. |
| 5.3.5.2 | 9/15/2017 | Corrections to Guy wire analysis |
| 5.3.5.3 | 9/20/2017 | Correct shape factor override on piping, wrong units for qz metric (A05), Support duplicate TOC, Matl metric temp |
| 5.3.5.4 | 9/26/2017 | Corrected the refractory weight determination |
| 5.3.5.5 | 9/26/2017 | Adjustments to Weight, and fix title on NBCC 10 for seismic |
| 5.3.5.6 | 9/28/2017 | Fix bugs in lifting analysis, import of ASCE 7-10 corrected, other minor bug fixes. |

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| 5.3.5.7 | 10/3/2017 | Euro fatigue values not being retained, and other minor bugs. |
| 5.3.5.8 | 10/4/2017 | Correct manual override of shape factor |
| 5.3.5.9 | 10/5/2017 | Add Calt calculate for Euro Wind to address special requirement in NA for British |
| 5.3.6.0 | 10/10/2017 | Corrections to external loads applied to model, fix struc flange graphic and dim's. |
| 5.3.6.1 | 10/11/2017 | Correct sign for vertical load, and custom load combo screen was crashing |
| 5.3.6.2 | 10/11/2017 | Resolve some sign problems with primary loads, retained strake info after strakes turn off. |
| 5.3.6.3 | 10/14/2017 | Fix worst case summary, lift lwr radial offset allowed to be 0, add manual seismic, add ver to IBC 2012 |
| 5.3.6.4 | 10/16/2017 | UBC 97 couldn't change source/dist, minor corrections to CICIND. |
| 5.3.6.5 | 10/17/2017 | Corrections to units and various items in CICIND wind/vortex, Indian vortex bug, Guy Wire Hardware. |
| 5.3.6.6 | 10/17/2017 | Fix graphics issues with baseplate |
| 5.3.6.7 | 10/18/2017 | Baseplate skirt corrosion note, fix some baseplate graphics issues, add vertical accel to response spectrum |
| 5.3.6.8 | 10/19/2017 | STS Table 4.4.7-1 use uncorroded thk, remove double consideration of skirt CA, fix DM rad for BaseDist>0 |
| 5.3.6.9 | 10/29/2017 | Fix asymmetrical Deadmen not sticking, and dm radius wrong in report. |
| 5.3.7.0 | 11/21/2017 | Fixed some bugs with guyed analysis, add live/oper factors for resp seismic consideration, misc other bugs |
| 5.3.7.1 | 11/29/2017 | Correct some sign problems on support reactions for a guyed flare |
| 5.3.7.2 | 11/30/2017 | More work on the sign problems with support reactions on guyed flare |
| 5.3.7.3 | 12/4/2017 | Fix sign problem on self supported stack dead load, fix CICIND 2010 full formation producing loads with no vortex reqd |
| 5.3.7.4 | 12/5/2017 | Fix Baseplate OD for ID entry, fix axial stress being negative due to negative vertical load, fix refractory weight calc |
| 5.3.7.5 | 12/10/2017 | Correct double guy lug ring sec modulus and shear stress |
| 5.3.7.6 | 12/11/2017 | Oval vibration analysis wasn't printing for STS code. Some minor fixes on graphics. |
| 5.3.7.7 | 12/12/2017 | Revise the convention of Ext Load Vertical, negative is down and positive is up. |
| 5.3.7.8 | 12/13/2017 | Correct resp spectrum seismic mass, Ls for circumferential stiffeners and LF's for custom STS Vortex |
| 5.3.7.9 | 12/15/2017 | Manual shape factor data wasn't being retained. |
| 5.3.8.0 | 1/1/2018 | Add gen attach weight to Dead Weight, differentiate dead vs live platform weight, add correlation iter limit for Euro |
| 5.3.8.1 | 1/2/2018 | Adjust AISC Allowables to be higher when ASD = False |
| 5.3.8.2 | 1/4/2018 | Insulation on piping had a bug, and guy wire deadmen weren't printing right for sets 2+. |
| 5.3.8.3 | 1/8/2018 | Fix pdf save, flip ASCE 7 seismic ver to be negative, other minor bugs. |
| 5.3.8.4 | 1/9/2018 | Chg'd num of cycles to long variable and fixed load combo's for CICIND |
| 5.3.8.5 | 1/10/2018 | Correct load combinations, add xml files for standard flanges. |
| 5.3.8.6 | 1/11/2018 | Allow for custom S entry on several vortex code menus (STS, CICIND and Indian) |
| 5.3.8.7 | 1/18/2018 | Correction to Euro code Vortex, crashing |
| 5.3.8.8 | 1/25/2018 | Correction to platform wind area, fix problem with lifting impact load |
| 5.3.8.9 | 1/29/2018 | Bug fixes, no tip data causing program to crash, Euro seismic wiping out Guy Th data |
| 5.3.9.0 | 1/30/2018 | Corrections to vortex when NBCC selected, extraction bugs fixed, other minor issues |
| 5.3.9.1 | 1/31/2018 | Correct bug with guy hardware, gen attach conc wt wrong units |
| 5.3.9.2 | 2/1/2018 | Guy Lug Wt, Find Fail Fixed, Exit saving fixed, other minor bugs |
| 5.3.9.3 | 2/5/2018 | Weight error with use of strakes |
| 5.3.9.4 | 2/6/2018 | Avg 1/3 mass for Aero Damping showed wrong value for metric, vortex for STS was only considering riser mass |

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| 5.3.9.5 | 2/13/2018 | Work on speed and memory usage, fix guy wire info not printing, auto size turnbuckle sometimes broke, graphics bugs |
| 5.3.9.6 | 2/14/2018 | Found additional issue with defl joint coords for non-linear analysis, struc flange had +/- ver load reversed. |
| 5.3.9.7 | 2/20/2018 | Fix bugs with guyed stacks and metric units. |
| 5.3.9.8 | 2/27/2018 | Fix ability to enter custom strouhal number for STS, and fix other bugs. |
| 5.3.9.9 | 3/1/2018 | Fix bug with strake entry. |
| 5.4.0.0 | 3/6/2018 | Fix BC to allow pinned base for guyed stack and show guy wire form in demo mode, check for cone at top. |
| 5.4.0.1 | 3/7/2018 | Add Euro EQ custom option, fix Euro Wind not considering proper elevation when Base_Dist > 0 |
| 5.4.0.2 | 3/10/2018 | Fix DM formatting issue for metric, UBC-97 seismic always using Soil A, Shackle Column width, Flare Tip Metric Units |
| 5.4.0.3 | 3/13/2018 | Indian defl Load Combo to use Wind Static, IsLined wasn't working always, Seismic wasn't considering LiveLoad fac |
| 5.4.0.4 | 3/16/2018 | Correct properties for S275 and S355, add Load/Save option for design codes, fix seismic mass, update help file |
| 5.4.0.5 | 3/21/2018 | Fix TLD weight error for metric, and Euro Group option for vortex |
| 5.4.0.6 | 3/25/2018 | Fix ovaling vibration bug with API560, updated Help, change Euro Vortex layout for inputs |
| 5.4.0.7 | 3/29/2018 | Clean up lift extraction items, minor corrections to NBCC 2010 |
| 5.4.0.8 | 4/1/2018 | Corrections to ISO 13705, conversion problems with Vc and Allowable stress Elevations for base elev |
| 5.4.0.9 | 4/3/2018 | Corrections to ISO 13705, Stiffening ring Hs, Hs/D and Actual stress load num |
| 5.4.1.0 | 4/11/2018 | Correct insert bug on StrucFlange form, and minor corrections to stack geometry form formatting |
| 5.4.1.1 | 4/25/2018 | Correct external load for Oper and Live, fix auto generate platforms, make changes to security. |
| 5.4.1.2 | 5/1/2018 | Correct AISC fatigue category bug and correct Chinese angle shape database. |
| 5.4.1.3 | 5/3/2018 | Correct guy wire length (Too long), Baseplate sign convention, Double guylug Crotch clearance, Tilt on Round Nozzles |
| 5.4.1.4 | 5/4/2018 | Fix problem with Vertical Stiffeners giving strange results, and AISC fatigue categories |
| 5.4.1.5 | 5/9/2018 | Fix Guy length on Guy Hardware sheet, External Vertical Load Sign issues for Weight and Oper case |
| 5.4.1.6 | 5/11/2018 | ASCE 7-10 wind with Cat I had infinite loop, improve single guy lug check, fix bug in sect prop calculator |
| 5.4.1.7 | 5/12/2018 | Guy hardware crashing when regional settings use comma for decimal, extra length not added to guy length consistent |
| 5.4.1.8 | 5/15/2018 | Some more corrections to handle regional settings using comma instead of decimal (guy wire related) |
| 5.4.1.9 | 5/17/2018 | Added Euro lifting stress check, corrected Euro to be Limit States designation, fixed discrepancy in Lift reactions |
| 5.4.2.0 | 5/24/2018 | Fixed bug with round nozzle repad properties, Euro Fatigue Life bug, Deadmen naming convention |
| 5.4.2.1 | 6/5/2018 | Guy length wasn't taking lug offset into consideration, fix u-clip and thimble model # |
| 5.4.2.2 | 6/15/2018 | Fix help fro AISC 36010 Fatigue, Save Load Combos, Filter only Ext Loads for type Dead in lifting analysis, Add material input for Guy Lugs, allow entry of JE = 1 for pressure, fix Ext Loads API lookup with metric units. |
| 5.4.2.3 | 6/17/2018 | Fix Euro code when strakes used (Fatigue check trying to perform) and Euro summary was grabbing last case, not worst |