

	A	B	C
1	MecaStack Revision History		
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3	Version	Date	Revision Description
111	5.2.9.5	4/11/2016	Fix BS 6399 Shape Factor Cpe, which should have been doubled when D>1m.
112	5.2.9.6	7/7/2016	Issue a major release of the software:
113			1) Revise the structure of the input files to be more stable
114			2) Add CICIND 2010 to software (Along Wind, Across Wind and Owalling
115			3) Revise way in which stiffening rings are entered and handled within the software, and added int'l shapes
116			4) Allows user to move dimensions on drawing and those changes are retained when file is saved.
117			5) Allow user to delete or modify text by right clicking, and those changes are retained with saved file.
118			6) Allow user to enter different damping values for each mode of vibration under consideration.
119			7) Allow user to manually specify natural frequency for all modes of vibration being considered.
120			8) Fixed a bug that didn't consider all concentrated weights in the natural frequency calculation.
121			9) Remove the option to pick what is output displayed, everything is displayed then you can select what's printed
122			10) Add option on NBC 2010 to allow user to select which criteria is followed for flexible structures.
123			Correct problem with graphics not working in 5296, and consolidated StackHt, Diameters, Thick and Cor screens.
124	5.3.0.2	9/14/2016	Release the Beta version to a wider audience.
125	5.3.0.3	9/15/2016	Fix bug with Metric units and using Stack Geometry Screen.
126	5.3.0.4	9/16/2016	Fix CICIND10 Fat Cat, Adj Breech if tilt entered
127	5.3.0.5	9/16/2016	Fix bugs with CICIND2010 stiffening ring checks.
128	5.3.0.6	9/23/2016	Cleaned up graphics to print only important elevation changes, more bug fixes and clean-up.
129	5.3.0.7	9/26/2016	Fix some graphics issues and other bug fixes.
130	5.3.0.8	10/4/2016	More bug fixes, fix guy wires, add MaterialProperties, API Nozzle Loads
131	5.3.0.9	10/30/2016	Integrated MaterialProperties tool, and fixed bugs. Performed rigorous testing.
132	5.3.1.0	11/2/2016	Corrections to vortex shedding per BS4076 for Industrial area.
133	5.3.1.1	11/3/2016	Correction to enclosed elevation bug, where results sometimes blow up.
134	5.3.1.2	11/4/2016	Fix bug in lifting analysis, removed BS6399 from main code access thru customized.
135	5.3.1.3	4/17/2017	Continue to develop, test and debug. Internal version, never released
136	5.3.1.4	4/25/2017	Continue to develop, test and debug. Internal version, never released
137	5.3.1.5	4/30/2017	First release of beta version.
138	5.3.1.6	5/11/2017	More bug fixes and development, working toward full release.
139	5.3.1.7	5/14/2017	Continue with bug fixes, and started working on implementing Eurocode stress
140	5.3.1.8	5/16/2017	Corrections to Metric units problem for baseplates, and remove A-36 material designation in output.
141	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.
142	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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143	5.3.2.1	6/20/2017	Bug fixes, Working on Eurocode
144	5.3.2.2	6/21/2017	Bug Fixes, working on Eurocode
145	5.3.2.3	6/22/2017	Bug Fixes, working on Eurocode
146	5.3.2.4	7/4/2017	Fix Shape factor for strakes, enclosed and ver stiff's. Added Eurocode.
147	5.3.2.5	7/5/2017	Load Combo's Manual were not sticking, and bug with stiffening ring dropdown being disabled
148	5.3.2.6	7/11/2017	Fixed unit bugs in Strucflg and Baseplate for metric units, baseplate vertical load always negative.
149	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.
150	5.3.2.8	7/13/2017	Fix NBCC wind pressures generating all elements, removed design code custom option, fix font scale
151	5.3.2.9	7/19/2017	Struc Flange was showing wrong details for worst case, and added detailed Mmax formula
152	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
153	5.3.3.1	7/21/2017	Recompiled because the AISC allowable strsses were not calculating correctly for some unknown reason.
154	5.3.3.2	7/25/2017	Fix bugs related to the Guy Wire Pretension being added multiple times
155	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
156	5.3.3.4	8/1/2017	Made Beta version the main version on website. Fixed problem with guyed stacks having negative vertical load
157	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.
158	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.
159	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.
160	5.3.3.8	8/10/2017	Fix problem with single user activation not retaining license info.
161	5.3.3.9	8/14/2017	Fix GuyWire Hardware printing infinite loop, fix some probs with CICIND 10 br calculation for stiff rings
162	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
163	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
164	5.3.4.2	8/17/2017	Fix some import issues and TLD drawn in wrong location
165	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.
166	5.3.4.4	8/29/2017	Fix arraylist_clone when item was nothing, correct problems with STS stiff rings
167	5.3.4.5	8/31/2017	Fix metric conversion problem with AISC fatigue for elevation checks
168	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
169	5.3.4.7	9/6/2017	Internal unit problem with member mass uniform load, seismic loads too high. Enclosed building criteria broke.
170	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,
171	5.3.4.9	9/8/2017	Modified some documentation on frmBreech, added pdf save option to MecaStack.
172	5.3.5.0	9/11/2017	Correct problem with Shape fac for L&P's being zero.
173	5.3.5.1	9/14/2017	Fix single gusset graphic error for chair, add error checking for load combo form launch.
174	5.3.5.2	9/15/2017	Corrections to Guy wire analysis
175	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
176	5.3.5.4	9/26/2017	Corrected the refractory weight determination
177	5.3.5.5	9/26/2017	Adjustments to Weight, and fix title on NBCC 10 for seismic
178	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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179	5.3.5.7	10/3/2017	Euro fatigue values not being retained, and other minor bugs.
180	5.3.5.8	10/4/2017	Correct manual override of shape factor
181	5.3.5.9	10/5/2017	Add Calt calculate for Euro Wind to address special requirement in NA for British
182	5.3.6.0	10/10/2017	Corrections to external loads applied to model, fix struc flange graphic and dim's.
183	5.3.6.1	10/11/2017	Correct sign for vertical load, and custom load combo screen was crashing
184	5.3.6.2	10/11/2017	Resolve some sign problems with primary loads, retained strake info after strakes turn off.
185	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
186	5.3.6.4	10/16/2017	UBC 97 couldn't change source/dist, minor corrections to CICIND.
187	5.3.6.5	10/17/2017	Corrections to units and various items in CICIND wind/vortex, Indian vortex bug, Guy Wire Hardware.
188	5.3.6.6	10/17/2017	Fix graphics issues with baseplate
189	5.3.6.7	10/18/2017	Baseplate skirt corrosion note, fix some baseplate graphics issues, add vertical accel to response spectrum
190	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
191	5.3.6.9	10/29/2017	Fix asymmetrical Deadmen not sticking, and dm radius wrong in report.
192	5.3.7.0	11/21/2017	Fixed some bugs with guyed analysis, add live/oper factors for resp seismic consideration, misc other bugs
193	5.3.7.1	11/29/2017	Correct some sign problems on support reactions for a guyed flare
194	5.3.7.2	11/30/2017	More work on the sign problems with support reactions on guyed flare
195	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
196	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
197	5.3.7.5	12/10/2017	Correct double guy lug ring sec modulus and shear stress
198	5.3.7.6	12/11/2017	Oval vibration analysis wasn't printing for STS code. Some minor fixes on graphics.
199	5.3.7.7	12/12/2017	Revise the convention of Ext Load Vertical, negative is down and positive is up.
200	5.3.7.8	12/13/2017	Correct resp spectrum seismic mass, Ls for circumferential stiffeners and LF's for custom STS Vortex
201	5.3.7.9	12/15/2017	Manual shape factor data wasn't being retained.
202	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
203	5.3.8.1	1/2/2018	Adjust AISC Allowables to be higher when ASD = False
204	5.3.8.2	1/4/2018	Insulation on piping had a bug, and guy wire deadmen weren't printing right for sets 2+.
205	5.3.8.3	1/8/2018	Fix pdf save, flip ASCE 7 seismic ver to be negative, other minor bugs.
206	5.3.8.4	1/9/2018	Chg'd num of cycles to long variable and fixed load combo's for CICIND
207	5.3.8.5	1/10/2018	Correct load combinations, add xml files for standard flanges.
208	5.3.8.6	1/11/2018	Allow for custom S entry on several vortex code menus (STS, CICIND and Indian)
209	5.3.8.7	1/18/2018	Correction to Euro code Vortex, crashing
210	5.3.8.8	1/25/2018	Correction to platform wind area, fix problem with lifting impact load
211	5.3.8.9	1/29/2018	Bug fixes, no tip data causing program to crash, Euro seismic wiping out Guy Th data
212	5.3.9.0	1/30/2018	Corrections to vortex when NBCC selected, extraction bugs fixed, other minor issues
213	5.3.9.1	1/31/2018	Correct bug with guy hardware, gen attach conc wt wrong units
214	5.3.9.2	2/1/2018	Guy Lug Wt, Find Fail Fixed, Exit saving fixed, other minor bugs
215	5.3.9.3	2/5/2018	Weight error with use of strakes
216	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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217	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
218	5.3.9.6	2/14/2018	Found additional issue with defl joint coords for non-linear analysis, struc flange had +/- ver load reversed.
219	5.3.9.7	2/20/2018	Fix bugs with guyed stacks and metric units.
220	5.3.9.8	2/27/2018	Fix ability to enter custom strouhal number for STS, and fix other bugs.
221	5.3.9.9	3/1/2018	Fix bug with strake entry.
222	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.
223	5.4.0.1	3/7/2018	Add Euro EQ custom option, fix Euro Wind not considering proper elevation when Base_Dist > 0
224	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
225	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
226	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
227	5.4.0.5	3/21/2018	Fix TLD weight error for metric, and Euro Group option for vortex
228	5.4.0.6	3/25/2018	Fix ovaling vibration bug with API560, updated Help, change Euro Vortex layout for inputs
229	5.4.0.7	3/29/2018	Clean up lift extraction items, minor corrections to NBCC 2010
230	5.4.0.8	4/1/2018	Corrections to ISO 13705, conversion problems with Vc and Allowable stress Elevations for base elev
231	5.4.0.9	4/3/2018	Corrections to ISO 13705, Stiffening ring Hs, Hs/D and Actual stress load num
232	5.4.1.0	4/11/2018	Correct insert bug on StrucFlange form, and minor corrections to stack geometry form formatting
233	5.4.1.1	4/25/2018	Correct external load for Oper and Live, fix auto generate platforms, make changes to security.
234	5.4.1.2	5/1/2018	Correct AISC fatigue category bug and correct Chinese angle shape database.
235	5.4.1.3	5/3/2018	Correct guy wire length (Too long), Baseplate sign convention, Double guylug Crotch clearance, Tilt on Round Nozzles
236	5.4.1.4	5/4/2018	Fix problem with Vertical Stiffeners giving strange results, and AISC fatigue categories
237	5.4.1.5	5/9/2018	Fix Guy length on Guy Hardware sheet, External Vertical Load Sign issues for Weight and Oper case
238	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
239	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
240	5.4.1.8	5/15/2018	Some more corrections to handle regional settings using comma instead of decimal (guy wire related)
241	5.4.1.9	5/17/2018	Added Euro lifting stress check, corrected Euro to be Limit States designation, fixed discrepancy in Lift reactions
242	5.4.2.0	5/24/2018	Fixed bug with round nozzle repad properties, Euro Fatigue Life bug, Deadmen naming convention
243	5.4.2.1	6/5/2018	Guy length wasn't taking lug offset into consideration, fix u-clip and thimble model #
244	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.
245	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
246	5.4.2.4	6/21/2018	Added check for updates option, fix jacket units inconsistencies, Jacket weight issues
247	5.4.2.5	6/22/2018	Fix avg diameter calc for mode 2+ in CICIND
248	5.4.2.6	6/25/2018	Fix External loads which were being doubled in the dead load case.
249	5.4.2.7	6/27/2018	Fix glitch with Self Network License, fix Euro Fatigue which wasn't calculating.
250	5.4.2.8	6/29/2018	Dead load shear and moment wasn't being added (Only started in v5426), thermal expansion was considering entire stack to point of interest being at the specified temperature so inaccurate when varying temps entered.

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			Change Cone so it doesn't check hoop, since it's already checked at small and large end.
251	5.4.2.9	7/9/2018	Add new unity check for Euro Code, Add a check to filter out NaN for modes, corrections to composite section properties checks, and other minor bug fixes.
252	5.4.3.0	7/16/2018	Correct bug where Load Combo's wouldn't open with some Eurocodes.
253	5.4.3.1	7/18/2018	Jacket graphics issue, double guy lug without rings, single user activation leads to demo screen.
254	5.4.3.2	7/23/2018	Upgrade security to be compatible with TLS 1.2, Fix import error for old version of MS, Fix metric units for Multi-Tip
255	5.4.3.3	7/28/2018	Add NBCC 2015 to the software. The seismic changed quite a bit from 2010, the wind no longer has shape factor info and so we had to use 2010, and the dynamic criteria changed a little.
256	5.4.3.4	8/7/2018	Correct search for help file, update Material database to include bolts and use that database in bolt lookup for strucflg and baseplate, modifications to trial form to require phone #, minor bug fixes with graphics and other issues.
257	5.4.3.5	8/10/2018	Bolt material database was not correct, and bolt lookups needed fixed (Pulled yield instead of ultimate)
258	5.4.3.6	8/14/2018	Remove Vortex load case from ISO13705, fix ma for top 1/3 of stack for ASCE 7 wind