Version information

Version 9.0

22-04-2015 version 9.0.002

Development:

- Pad foundation design acc. EuroCode
- New type of beam-to-column moment end-plate connection with bolted tension splice
- New interpretation of the eccentricities of the composite beams: in case of composite beams the y direction eccentricity is measured from the centreline of the steel cross-section. The z direction eccentricity is measured from the top of the steel cross-section
- New type of load group in case of EuroCode: Crane
- In case of EuroCode, on the Automatic generation of load combination dialog, it can be selected which load combinations should be taken into account in the load combination generation
- In case of EuroCode, on the Automatic generation of load combination dialog, it can be selected which deflection limits (wmax or w3) should be taken into account in the serviceability load combination generation
- Check of the necessary memory before the run of the analysis
- Greek wind and earthquake maps are available
- Updated language files

Bug fixes:

- In case of seismic analysis the number of the dynamic eigenshape cannot be 0
- In case of opening of the Design dialog, the last used model portion is selected
- Line load wind and snow dialogs save and hand over the frame distance parameter to each other
- Object properties window save correctly the opened object type
- Improved handling of the model portions in case of buckling sensitivity analysis
- Improved visualization of the reaction force results in the user defined result table
- Characteristic snow load (sk) can be edited manually in case of the missing of the NA based function
- Improved scale of the graphical visualization of the deformation results
- Improved handling of the seismic load cases and load combinations on the Analysis parameters dialog
- Improved calculation of the reaction forces in case of second order analysis and directly connected tension bar
- Improved recognition of frame corner wizard in case of copy
- Improved recognition of members in case of influence line drawing
- Improved placement of the line load
- Improved check of the unloading of the plastic hinge
- Improved copy past function in case of editable tables
- Improved frame corner wizard in case of tapered members

- Improved documentation in case of point-point link elements
- Shortening of the title of the section documentation and smaller font size in the heading
- Improved member documentation. Shown design NA not was sufficient in every case
- Improved documentation. Used logo not was appeared on every page
- In case of manual placement of crane and train load, the load is assigned to the selected load case
- Improved consideration of the eccentricity of the moving load
- Improved load combination generation, and a new warning in those cases when none of the load case can be main in combinations
- Speed up load combination dialog operation
- Improved results visualization in case of prestressed bolts
- Improved searching of the local extreme values in case of influence graph loading
- Improved loading of the crane load dialog

30-03-2015 version 9.0.001

Development:

- Significant speed up of statical document generation.
- Speed up Delete the selected graphical objects.
- Speed up UnDo operations.
- Updated language files

Bug fixes:

- The wheel distance grid of crane load dialog accepts decimal comma.
- The crane load placement caused crash in case of right hand trolley position on single influence line.
- Snow parameter dialog, correction of Sk parameter dimension on the graph.
- Different colors of generated wind and snow load cases.
- Pop-up warning if the selected beam is already included in the influence line.
- Sorting correction of the sensitivity table on the Design tab. Correction of model portion handling on this figure.
- The second-order calculation could give different results if the model contained tension bars and buckling investigation was switched on to the combination, but not first-order calculation, compared with the case when only the second order analysis was turned on.
- Improve distribution of reaction forces among supports with small spring constants placed on the same point.
- Infinite reaction force may have occurred if linear support against rotating and point support were placed on the same finite element.
- Infinite reaction force may have occurred when a link element connected to a continuously braced member.
- Improve radius of curvature of partially encased composite section.
- Documentation - In the table of steel beams the title of the first column was too large in German language.
- Documentation – On the pages of design results of beams the applied EN NA was wrong.
- Documentation – The documentation of the following object types was wrong in case of partial model documentation: Load Transfer Surface, Diaphragm, Edge Support, Plate Support, Node-To-Node Connection Element, Edge-To-Edge Connection Element, Distributed Member Force.
- Documentation – Crash appeared in case of inserting more than one table at a time.
- When updating statical documentation, Undo, Redo and Delete operations, as well as chapters Drag & Drop transferring the contents tree is not blinking.
- Crash appeared in case of showing the Resistance surface of a composite column section.
- On the Design panel the Steel design options were not available when there were composite columns in the model together with steel beams.
- Bracing joints – the 3D graphics of the joint was wrong if a CHS profile had been replaced to RHS; the visualization of the width of the RHS profile was not correct on the bolt position graphics if the profile was rotated with 90 degrees.
- On the panel of creating truss joints the Create… button is not available until the applicable sections are selected properly.
- In case of multiplanar truss joints CHS profiles are available for the chord beam.

Version 8.0

03-12-2014 version 8.0.009

Development:

- Tekla export is now also compatible with 32 bit Tekla Structures version 20.1
- New cross-section macro type: cold formed C profile with edge folded back
- Updated language files

Bug fixes:

- Improved handling of Tension force and Change in length for tension bars
- More accurate visualization of dynamic eigenvalues
- Improved entitlement and handling of initial bow imperfection of beams
- Improved placement of edge-to-edge link element
- Checking of parameters of welded hat cross-section
- Improved handling of Finplate and Gussetplate connections in Tekla export function
- Improved handling of pins in second order, buckling and dynamic calculations
- Bugfix for program crash, when an empty model portion was selected for standard design
- Improved documentation of gusettplate
- Setting the amplitude of buckling shape by Eurocode formulas is no more available in case of AISC design standard
- The state of tension-bars was not reset to default in case of iteration error
- The selection of beams is kept after placing line load
- In a rare situation some cross-section properties are stored in the database could be wrong, when the cross-section was modified and at the same time it was opened in the csSection module.
- Improved handling of ComboBoxes on the EN annex tables
- Zone I and J were transposed in case of line wind load for duopitch roofs

29-10-2014 version 8.0.008

Development:

- Member conversion to plates function now works for UAP and UPE cross-sections

Bug fixes:

- It is not possible to place haunch on curved members
- Line load info button led to program crash
- Member conversion to plates function created an inaccurate model in case of symmetric C and macro Z sections
- Earthquake analysis could led to program freeze when only 2nd order analysis was turned on and 1st order is not
- Save and restore of Window position is fixed for currently connected monitors
- New snow and wind load group combination factors are set by the selected NA
- During the analysis the member end releases were identified as they were in the section main axes and not in the member local axes
- Several small fixes in the documentation module: window layout correction, drag and drop content move has been fixed, new documentation opens in full page view, previous window size and position are restored, fit view to page width and height icons are repositioned to other icons above the contents
- Undo and Redo function could led to program freeze in the documentation
- When the content of documentation was deleted then it could led to program freeze in some cases
- Loading the documentation template could led to program crash
- Insert heading function worked incorrectly in the documentation when the title of an appendix was selected
- Joint placement led to program crash in some cases
- It could led to program crash when a load transfer surface was moved which has no load on it
- Reduced shear resistance is calculated for notched beam in case of fin plate and shear end plate connections
- Beam to column connection could not be placed only to the top of the column

19-09-2014 version 8.0.007

Bug fixes:

- Joint place function was not correct in some cases
- When members were converted to plates then the link of the point load on member end was incorrect
- When converting tapered member to plates then the eccentricity and the link of the point load could be incorrect
- In case of wind line load generation to wall when 'SideWall' was selected the position of the frame could not be changed
- Drawing a local line support was incorrect in some cases
- Connection design OpenGL graphics has been fixed
- Switching to beam to beam connection could led to program crash

10-09-2014 version 8.0.006

Bug fixes:

- Dialog window position save and recover bug fixed
- When Windows did not contain English language then ConSteel worked incorrectly
- Cross-section name conversion worked incorrectly when the conversion file was Unicode coded
- Cpe dialog window did not updated in case of line wind load
- Exceptional load combination generation was corrected
- Load combination generation window was corrected. Image of the load combination formulas have been fixed
- Member design wizard display bugs were fixed. Bad settings could cause program crash.
- Composite beam rebar layout is corrected
- Composite beam design is fixed: longitudinal shear, moment resistance
- In case of KN joint round bars could be selected
- Truss connection calculation minor bug fix
- The eccentricities were wrong in case of identification of beam to column connection
- When main girder and secondary girder were the same size the placement of the beam to beam connection was incorrect
- Select by properties function could led to program crash if placed connections were selected

21-07-2014 version 8.0.005

Development:

- Bimoment is considered in the conservative interaction resistance calculation
- Italian language is now available
- Updated language files
- The amplitude of the applied eigenshape as global imperfection can be determined by using standard based method
- γ_{M0} or γ_{M1} can be used for cross section design depending on the design setting

Bug fixes:

- Minor bugs in cross section documentation have been fixed
- A bug has been fixed in the documentation of dominant member end internal forces table
- A bug has been fixed in the documentation of accuracy of earthquake analysis table
- Proper buckling curve (a0) is selected for S460 grade hot rolled I and square hollow sections
- The calculation of k_w is fixed in member design
- Point move function has been corrected for those cases when a plate with hole is edited
- Distribution of projected line load on curved member has been fixed
- Several minor bugs has been fixed related to generation of line wind and snow load
- A bug has been fixed in stability design when hollow section is calculated with the reduction factor set to minimum of (χ, χ_{LT})
- Truss joint identification is corrected
- Block tearing resistance calculation bug has been fixed in case of beam splice plate connection

17-04-2014 version 8.0.004

Development:

- EN Bulgarian National Annex is now available
- Updated language files

Bug fixes:

- Point-point connection element worked incorrectly in rare cases
- Resistance surface of composite column cross-sections was incorrect in those cases when a 7.0 or older model was opened and the composite cross-section was created
- User NA Cpe values were wrong in rare cases if flat roof, monopitch or duopitch roof was selected

21-03-2014 version 8.0.003

Development:

- Tension bars which are compressed are now marked in the analysis normal force result view
- Tekla export is now also compatible with 32 bit Tekla Structures version 19, 19.1 and 20
- Updated language files

Bug fixes:

- When the relative origin was replaced the coordinates on the status bar was not updated
- If surface temperature load was applied then the internal forces have not been deleted when the next load combination buckling analysis was performed
- Some parameters could be set to zero and led to program error when defining the cross-section of a composite beam with steel sheeting
- In the earthquake analysis the second order analysis used the deformation results of the previous load combination if the first order analysis was not turned on
- When the computer was turn on from standby mode while ConSteel was running the automatic save could cause program crash in rare cases
- When drawing a beam as the properties was copied from another beam, the eccentricity and imperfection was not copied
- Bracing joint identification bug has been fixed
- A bug has been fixed related to the design of composite beams with cantilever parts
- When two simple end plate connections were connected to the web of a column, changing the bolt positions could lead to errors
- Steel members were also displayed when composite member design results were selected

12-02-2014 version 8.0.002

Development:

- Snapshots and tables can be moved with 'drag and drop' in the documentation
- New joint manager window
- When creating a new joint without a main model it is now possible to select the cross section of the members
- Joint editor and calculator window is now automatically reorganized when resized
- Copy of the rigid body

Bug fixes:

- The design result table could cause program crash in rare cases
- Line wind load generation bug has been fixed
- On the line load dialog window the button for load positioning was not displayed
- Fit view animation is improved
- Removing a tab from the toolbar cause program crash in rare cases (Section modul)
- The bug in the simplified analysis of load combinations has been fixed
- Diagnostics bug of compound steel cross-sections has been fixed
- The analysis result table could cause program crash in rare cases
- Analysis settings dialog window in some cases worked incorrectly
- Opening a csm~ or csj~ file in the Open window led to program crash
- Joint symbols were not disappeared when the layer was turned off

- Joint model creation and joint identification bugs have been fixed
- Joint calculation bugs have been fixed in case of welded beam to column and gusset plate beam to column joints

16-01-2014 version 8.0.001

Development:
- Arc import and export from DXF file

Bug fixes:

- Composite beam shear stud layout calculation bug is fixed
- Sometimes the automatic number of finite elements in case of composite beams was not appropriate
- Design result view of composite beams in certain cases showed incorrect values
- When a composite beam was deleted from the list in member design the result was not removed from design result view
- Composite beam documentation bug is fixed
- The steel cross-section which is used in composite sections could be removed from the model and this led to program crash
- Load group combination factors could not be changed
- Drawing an arc on sloping planes is now possible
- Info button on wall and plate dialog window didn't work correctly
- Analysis table had caused program crash in very rare cases
- Plate finite element mesh bug is fixed
- Member to plate conversion could fail in case of compound sections. Point load conversion bug is fixed
- Deleting an user defined NA could led to program crash
- Wind load generator could cause program crash in rare cases
- Right click menu in the design result view table was not working correctly
- Initial bow imperfection is now displayed in graphics
- If a storey view was turned on and an object was selected, plus a parameter was modified then the object became unselected
- Minimal diameter is 2 mm for circular bars
- For gusset plate connections the middle beam joint type can be selected
- For gusset plate connections the middle end plate joint graphical problems has been fixed
- In case of beam to beam perpendicular connection gusset plate connection type can be selected

Version 7.0

26-07-2013 version 7.0.006

Development:

- New EN NA: German, Polish
- Moving and copying load transfer surfaces is possible with translation, rotation, mirroring
- Visualization settings of the analysis results are stored separately by type
- Update of language files. New languages: Chinese, Bulgarian
- The analysis gives a warning when there are no relevant buckling results, because all the calculated eigen values exceeds the limit specified on the Analysis parameters panel
- Folder containing the model can be opened by double clicking on the path at the ConSteel Start panel
- ConSteel start and model loading became faster

Bug fixes:

- Clicking the Apply button of the Select by property panel the selection was performed on the graphics only, but on the property bar it wasn't
- A new section was created when a macro L section was modified
- Documentation of beams, plates, and load transfer surface is corrected
- The finite element module didn't condense the a beam division when the plate edge and the beam axis coincided exactly
- The separation of the torsional force into Tsv and Tw components has been improved in the Section module
- Move a common point of two two-dimensional figure was not always possible
- Modification, parameters verification, application of h parameter has been improved for WQ macro shapes
- Fixed rarely occurring crash for computers with Intel Xeon processors
- The Standard panel saved the user defined terrain category erroneously
- Bug fix for AISC standard applied for cold formed sections (calculation + error message)
- Unification of font size of text on graphics
- Visualization of elastic supports was wrong on result figures
- Crash appeared for macro section "st I + plate" when the width of the flange of I section was equal to the width of the plate
- The macro section "st I + 2plate" was crated erroneously if the two plates were not equal
- Removing the result marks was not possible in some situations
- Placing result marks for section result figures was not possible for all points
- Edge to edge link element can be placed for beams and plate edges only
- Crash appeared during documenting earth quake effect if the twisting action has been set, but there were no levels created in the model
- Calculation of stresses and utilization are corrected for Beam-to-column gusset plate connections
- Error messages are corrected for Beam-to-column joints
- Showing the results of utilization of welds has been corrected for simple plate connections

18-03-2013 version 7.0.005

Development:
- Model editor panels opening at the top-left corner of the graphic window
- The model file will be opened for reading only if it is already opened in another ConSteel
- The method of automatic correction of small modeling inaccuracies has been improved
- The table of design results can be sorted according to the name of the load combinations
- The upper limit of buckling eigen values appears with 1 digit on the analysis panel
- ConSteel start became faster

Bug fixes:
- Placing fire effects by window selection led to program crash
- The names of the storeys could appear erroneously on the earth-quake effect panel
- The “Adjust selected line elements to limit lines” function didn’t work in case of less than 1mm difference
- New objects are placed to the layer of their origin in case of copy, cut etc.
- Stress figure of reinforced concrete and composite cross-sections led to program crash

04-03-2013 version 7.0.004

Bug fixes:
- Graphic of arc shaped beams has been improved
- Snap points along the beam occasionally didn’t work for long arc shaped beams
- Handling of load and support eccentricities has been corrected in the finite element generator module
- LTB curve of compound sections built from hot rolled shapes has been changed to “D”
- Handling of 7. degree of freedom of connection elements has been fixed in the analysis module
- Position of labels of arc length and angle quotas has been corrected
- Opening a stress figure could lead to crash in case of composite sections with CHS covering
- Calculation of web area has been corrected for beam splice plate connections in the Joint module
- Process display has been improved

18-02-2013 version 7.0.003

Development:
- New section catalogues: American, Russian
- Plates are visualized translucently on design result graphics

Bug fixes:
- Straight lines can be adjusted to arc limit line
- Straight lines can be trimmed by arc limit line one after another
- It was not possible to set the design standard during model import from external file format
- For mixed models with beams and plates in case of sensitivity analysis empty lines could appear in the analysis result tables
- Buckling verification was unavailable for round bars in the Member checks module

- During the distribution of surface wind loads the simplified method was working only if the beams are continuous along the whole length of the surface
- The visualization problem of earth quake load factors has been fixed on the load combination panel
- Transformation of loads given with invalid placement parameters could lead to program crash
- Now wind surfaces are not removed if the load transfer surface is being moved to another layer
- The visibility of the wind surface symbol depends on the visibility of the load transfer surface
- The rotate with copy function could lead to a wrong result in case of arc shaped structural elements, or plates containing arcs
- In case of complex structural models the results couldn't be checked by mouse for some points
- The modify function could lead to a crash in case of modifying a welded box section to a welded hollow section
- Member check tab is hidden in case of AISC standard
- Connection element are considered in model portions and automatic storeys
- Removing of structural object could cause wrong behaviour in the automatic storey handler
- The content of storeys are updated automatically during opening the model
- Mirror function for local line loads without members led to wrong orientation of the loads
- In the Joint User Configuration window it was not possible to type 'm' letter
- Fixed dimension for beam splice shear resistance calculation
- Fixing mistakes in different languages

09-01-2013 version 7.0.002

Development:

- In the Select by property function in case of text like parameter '*' character can be used in the beginning or/and in the end of the search expression
- In the object tree the objects are appearing in name order when a sub branch is expanded

Bug fixes:

- New error messages and fixed result view for 3D truss joint
- Hot rolled I shapes can be loaded for the chord beam of KNYT truss joints
- Wrong results appeared on the utilization figure of the structural model for beam splice plate connections
- The analysis didn't calculate buckling for plates if the "Whole model" was selected as the current buckling portion
- Fixed minimum width of panels docked to the right side
- Snap function of % is also depending on which end of the beam is approached with the mouse
- Dialog panels, which were opened earlier, are closed only if the design standard is being changed
- In case of downloading a new software version the correct page of www.consteelsoftware.com is being opened

Version 6.1

12-07-2012 version 6.1.005

Development:
- It became easier to create user-defined earthquake response spectrum
- Maltese composite macro cross-section has been modified
- ConSteel looks for the software key in All Users\Application Data\ConSteel folder if it cannot be found in Documents\ConSteel folder.

Bug fixes:
- For hollow section composite joints square hollow sections from standard database could not be selected
- When modifying composite cross section sometimes wrong steel profile was selected
- In the global checks settings window $\alpha_{ult.k}$ setting was available in some special cases even when it was unnecessary
- Column height modification has been corrected when exporting to Tekla Structures 17 and 18
- If user-defined earthquake response spectrum was created by importing a file it could cause program error when the spectrum in horizontal X,Y directions was identical
- In Member design documentation γ_{M1} was always 1.0 regardless of the National Annex setting but the calculation was performed using the right value.

28-06-2012 version 6.1.004

Development:
- Creating joints by structural model has been improved in case of Beam-To-Beam, and truss KN, YT joints
- RHS and SHS macro section is able to handle the radius of the corners
- Standard cross-sections can be applied in Composite sections
- Composite macro section prepared using RHS or SHS section can take into consideration the radius of the steel section

Bug fixes:
- Revision of cross-section classification for I, T, RHS, SHS, UAP sections, modification of the EPS section models
- Better default plate thickness calculation for gusset-plate connections
- New warning message: the Z coordinate of the lowest point of the load transfer surface, cannot be smaller than zero in case of wind surface
- Updating design results of models were created using ConSteel 6.0 became better
- Cross-hatching of static-moment diagram in Section module could be wrong
- Better handling of eccentric loads and supports in the special Member check analysis

13-06-2012 version 6.1.003

Development:
- ConSteel is compatible with Tekla Structures version 18
- Placing point loads and supports onto plates became easier

Bug fixes:
- In case of automatic calculation of initial bow imperfection for composite sections from CHS section the reinforcement ratio was not taken into consideration
- Buckling calculation has been repaired for such monosymmetric sections where the main inertial axes are rotated
- Fixed rarely occurring crash during copy with rotation and mirror functions
- Fixed rarely occurring crash in documentation of varying temperature loads
- Fixed rarely occurring crash in analysis process-display system
- Crash occurred when the software couldn't prepare the automatic backup file in its own installation folder because of special settings of Windows system
- Direction of line loads placed in the User Coordinate System could be wrong in the finite element model
- Joint module could get into an endless loop when many similar SHS or RHS section was loaded
- Crash could occur in csJoint software if a previously prepared model was opened from file manager software (Not by starting csJoint first, and then loading the model.)
- Reloading a backup file in csJoint software could lead to error if the backup file was created for a new model before the first saving

30-05-2012 version 6.1.002

Development:
- Software protection with network licensing

Bug fixes:
- Automatic filtering of Analysis and Design result tables according to actual submodel view
- Bugfix of modification of macro section "Partially encased I section in concrete"
- Model export to Tekla Structures version 14.1 and 15
- Better handling of visibility of fictive finite elements modelling eccentric loads and supports
- Installation of software protection driver

17-05-2012 version 6.1.001

Development:
- New macro types are available: Buckling Restrained Bracing – Star Seismic POWERCAT, welded T section, WQ section, cold formed angle profile, 2 C sections back to back
- Loads and supports can be easily positioned to different section points
- Wind load generation for multi-span flat roofs
- Automatic level management
- Handling model portions are more user-friendly and new modification options has been added

- Earthquake analysis has been completely revised. Accidental torsional effects can be considered according to EN-1998-1-2005 4.3.2.
- Animation for dynamic eigenshapes
- New EuroCode National Annexes are available: Austrian and Swedish
- Spanish EAE and SE-AE standard are available
- EC8 earthquake design factors and parameters can be set in NA manager
- Ground acceleration map for Austria and Turkey
- ConSteel is compatible with Tekla Structures version 17

Bug fixes:

- Wind generator used in some cases wrong sign Cpe factors for interpolation (+0,0; -0,0)
- Load distribution bug has been fixed for those cases when there was a hole in the load transfer surface
- Analysis of thermal load effect were some cases wrong when there was a members with a sliding end release
- The summarization of height coordinates was wrong for global horizontal deflection check.
- Calculation of concrete plate surface area were wrong in the model information window
- Revision of Polish and German language user interface and documentation
- Bug fix for exportation of eccentric tapered members to Tekla Structures
- Web shear area and web weld length calculation bug has been fixed for simple shear end plate connections.
- Overlapped hollow section joint calculation has been fixed
- Brace failure resistance calculation was incorrect for T type CHS hollow section joints

Version 6.0

18-10-2011 version 6.0.004

Development:
- New EN NA, using the recommended values of the standard.
- Vetted Polish and German language version.
- The L input field can be used for more functions when a point is being defined with coordinates.
- The coordinate input fields can be used for all steps of Move and Copy functions.
- Hungarian ground acceleration map, according to the valid national annex.

Bug fixes:
- Rarely appearing bugs are fixed in connection with Compound sections.
- Automatic generation of wind loads was not always successful in case of huge surfaces.
- Creating circular plate was not possible because of a faulty verification.
- The automatic e-mail generation with the default mail client didn't work on Windows7 64bit version, in case of software key request.

30-09-2011 version 6.0.003

Development:
- Snapping to point supports, point loads and end points of line distributed loads is available.

Bug fixes:
- The program imported both the first order and the second order results of the analysis into the joint module. The corrected method imports the second order results only provided there are second order results for a load combination.
- Web height of I beam was used as the length of the weld for calculation of simple plate connections, instead of the length of the endplate.
- The 2D bolt figure was erroneous if the joint was prepared by using the wizard for eccentric beams.
- In case of beam-to-column and beam splice joints it could happen that the software couldn't find the dominant load case if the automatic weld optimization was switched on.
- Fixes of minor improprieties in translations.

20-09-2011 version 6.0.002

Development:
- EN Portugal NA, EN Singapore NA.
- Automatic weld size optimization for bolted moment end-plate connections of beam-to-column beam-to-beam, and beam splice joints.
- Improved automatic geometry update function for joints.
- Copy loads without copying structural elements.

- Turkish translation.

Bug fixes:

- Revised EN NA handling panel.
- Generating load combinations according to the selected EN NA.
- Bug fixes in connection with memory handling in the Analysis module.
- Bug fixes in the Documentation module: contents won't be deleted together with the front page, when the front page should be deleted only, in member design documents sometimes the figures could overlap each other.
- Bug fixes in the Member check module.

Version 5.0

16-02-2011 version 5.0.010

Development:

- The user interface and documentation of ConSteel and CsJoint are available also in Spanish, Slovak and Czech language.
- The shell finite element mesh visualization can be turned off by clicking on the Two dimensional figure icon .
- The memory usage decreased by 10-30 %.
- The load cases appear in the order of the input in the analysis result selection and also in the documentation.

Bug fixes:

- Opening the 'Accuracy of the earthquake calculation' dialog window led to program freeze when the results were previously deleted and there were no new results.
- The range of colors in the graphics result view of the deformation showed not only the real model points but also the end points of the fictive elements used for eccentric loads and supports.
- The accuracy of the Saint Venant torsional moment calculation has been increased for circular hollow sections and for those sections which has zero warping constant.
- Calculation of the truss Y and T connection sometimes led to program freeze.
- Uncommon program freeze has been fixed in the visualization of the results.
- The window selection of plates has been fixed. The plate was selected even when only one side of the plate was inside the selection window.
- In the documentation the safety and combination factor of the meteorological load cases were missing.
- In the documentation the properties of the tapered hidden bars were visible.
- The load transfer surface created the line loads incorrectly when there were minor geometry differences in the model.
- The coordinate axes of the line to line link elements were displayed for hidden elements when the hidden elements were translucently displayed.

23-11-2010 version 5.0.009

Development:

- In the CsJoint module adding a new bolt became easier when designing a bolted end plate connection.
- The default beam to column connection has been improved.

Bug fixes:

- Tension bars were not handled correctly in some cases during earthquake calculation.
- The finite element generator created a wrong finite element for those arc segments which were vertical.
- In the documentation module deleting a column from a table caused a program freeze.
- In the documentation module deleting the last item of the documentation caused a program freeze.
- In the documentation module if undo function was used right after the creation of a new documentation the program freezed.
- The number in the documentation name was not increased.
- Load transfer surface distributed load to those members which were not under the surface if the model was inaccurate.
- Documentation tables of analysis did not contain those members which had no name. It could have happened when imported models were used.
- In CsJoint module bolt position problems now displayed better in case of bolted end plate connections.
- Zero value could be added for initial sway and that leaded to errors. The minimum value is H/100.
- Minor graphic problems were fixed in the member design diagrams.

28-10-2010 version 5.0.008

Development:

- The procedure of cross-section name conversion became faster and more comfortable during model import.
- ConSteel saves the type of the cross-section loaded last. This cross-section will be selected next time when the panel is opened.
- The Joint details dialog panel became resizable.
- Drawing straight lines and beams became easier. By pressing and holding the Ctrl button drawing line segments and continuous lines can be switched.
- The user interface and documentation of ConSteel and CsJoint now available also in Polish language.
- Tekla Structrures 16.1 is now supported in the model export.

Bug fixes:

- Beam-to-beam joint with moment connection did not load the saved material for the end plate.
- The hollow section KN joint was freezing when there was too little gap or overlap.
- There was an unnecessary point defined when copying members with support or point load at the end.
- The capacity table did not display the results in „Extreme values by members” view.
- When bending a straight member the point supports did not move.
- When moving points and lines the point loads and point supports did not move.

15-07-2010 version 5.0.007

Development:

- Switching to Fit view can be reached by pressing the Ctrl+0 keys.
- The documentation manager window appears in the csJoint program from starting the second documentation.
- The visibility settings panels are appearing centre aligned, this way it is easier to select the appropriate icons.
- The swaying and non swaying buckling modes are separated to y and z direction in case of Method 2.

Bug fixes:

- The support of Aero interface of Windows Vista and Windows 7 became much better. E.g. the tooltips of the toolbar icons appearing well, the 3D windows of the joint dialogs are showing the graphics of the joint immediately after the appearance of the panel, without clicking into the 3D window.
- Some irregularly appearing program crashes has been fixed.
- Smaller graphical problem has been fixed in the analysis result view of the Member design tab.
- The first drawn graphical object appeared with solid mode in case of hidden line view.
- In some cases the selection of some type of objects couldn't be done, after starting the program.
- The stiffness values of elastic line support were not taken into consideration as value per metre, when it was converted to discrete point supports in the finite element model.

29-06-2010 version 5.0.006

Development:

- The method of distributing surface load using load transfer surface became adjustable. The load can be distributed to uniform line loads, and different types of structural points can be selected for taking into consideration in the distribution method.
- The process display has been improved.
- In the documentation module the picture has been inserted last becomes selected in the content tree, so far the next picture to be inserted is placed bellow this.

Bug fixes:

- Some irregularly appearing program crashes has been fixed.
- The program calculated reaction forces by mistake in such points where a point support was placed to that end point of a Link element where the release was defined.
- The analysis module crashed if connection was placed to the end of a tension bar, and stiffness of the joint was taken into consideration in the calculation.
- Changes of cross-section parameters were not applied correctly in all cases in the joint module, and in the csJoint program.
- Minor graphical problems has been fixed on the result views (e.g. the visibility of the eccentricity lines).
- The mouse cursor disappeared in some positions while running the program under Windows Vista and Windows 7.

08-06-2010 version 5.0.005

Development:
- The joint designer module of ConSteel can be run as a standalone application. After the installation of ConSteel it can be launched by clicking on the csJoint icon.
- Progress bar can be seen during slow database and graphical processes.
- Material grades can be set in a table.

Speed-up:
- Model load is faster.
- Deleting elements in big models is twice as fast as in earlier versions.
- Undo delete is 20-30% faster.
- Zooming is faster.

Bug fixes:
- Serious bug has been fixed in the section properties calculation. For symmetric macro sections if I_Z inertia moment in the section edit system was greater than I_Y inertia moment then the main axis sloping (alpha) was 0 degree instead of 90 degree in the GSS section model. Previously created models can be fixed by changing one section parameter (for example grade) and accept the changes then change back the parameter to the original.
- In compound macro sections when I shape reinforced by I or H shape at flange was used the two sections was reversed in the GSS section model. The previously defined sections can be fixed by using the method described above.
- A memory leak bug has been fixed in the analysis module.
- The Line loads were incorrect when the member was divided.
- Point load which was placed in the local coordinate system of a member was handled as global load in the finite element model.
- Important data has been added to serviceability limit state documentation.

28-05-2010 version 5.0.004

Development:
- Enhanced rotating function. ConSteel analyses the possible speed of the rotating and if it is too slow, the view is automatically changed to wireframe.
- Enhanced BOCAD export using SC1 file. Handling of the section types is easier.
- The previously used Eurocode NA is automatically selected when creating a new model.

Speed-up:
- Graphical process is faster during loading a model and during deleting elements from a model.
- The analysis table shows the user selected result values as a default. Therefore changing the analysis result view is faster.

Bug fixes:
- Distributing surface loads to members worked incorrectly in some rare cases. This bug has been fixed.
- Eccentric loads were not taken into account in buckling analysis. The eigenvalue results were the same as for non-eccentric loads.
- Truss and beam splice joints could only be placed to members, which were parallel to XZ plan.
- Program freeze error was fixed in member design module. Bugs were also fixed in the displaying the results.

- Ordinal number of the load combinations have been fixed in documentation. Language problem has been also fixed in member design documentation and member number has been added. In the earthquake documentation the ground type parameters were not displayed when special ground type was defined.
- In snapshot images the sizes of coordinate axes were incorrect in some cases.

28-04-2010 version 5.0.002

Development:

- Circular hollow section and rectangular hollow section macros can create cold formed and hot rolled sections.
- If the section catalogue is loaded from the property bar the current section is automatically selected.

Speed-up:

- Exporting to Tekla Structures 16 is quicker.

Bug fixes:

- Coordinate axes are displayed in the documentation snapshots.
- Cursor point is not displayed in the documentation snapshots.
- Deleting more result labels at the same time can be undone by one click.
- There is no option for ‘mirrored position’ on the member dialog. Creating member in a mirrored position can be done by inverting the member direction.
- The ordering was wrong in the result sheet when the title of the column does not fit in the cell.
- The tooltips was not displayed on the icons of the load transfer surface.

Version 4.0

16-12-2009 version 4.0.522

Development:

- In the property sheet the various kinds of selected items can be removed from the selection by clicking on a new icon.
- Dialog windows handling supports, releases and sections can be opened right from the property sheet.
- Adding coordinates manually became easier. Small mouse movements are not deleting the typed coordinates.
- It is possible to add the earthquake load and earthquake analysis results to the documentation.
- Adjusting line to limit line and cut line by cutting line function now also works for more than one line.
- In the Dominant analysis result dialog there is a new button with which now possible to separate dominant result rows which were previously merged to one row.
- Release defining dialog can be opened right from the Link element window.
- Limit value can be set for the diagnostic on the Options dialog. This limit value controls the checking distance among objects.

Speed-up:

- Deleting the design results became faster therefore starting the analysis is also quicker.

Bug fixes:

- A bug related to temperature load on tension bars has been fixed.
- Bugs related to pretension and change in length has been fixed.
- Displaying eccentricity for members built up from one finite element has been fixed.
- The results were the same for triangular finite element nodes in the analysis result sheet. This bug has been fixed.
- The analysis result graphics problems has been fixed.

26-10-2009 version 4.0.521

Development:

- There is a new 'Apply' button on the Select by property dialog window. Using this function will apply the selection but the window won't be closed.
- The Section module could be opened from the bottom sheet in the Standard resistance tab when 'Extreme values by members' view is turned on.

Bug fixes:

- Generating finite element view could lead to program freeze.
- Analysis result sheets might cause program freeze.
- Undo/Redo list is deleted every time when finite element model is generated or analysis started, because the differences between the edited structural model and finite element model could lead to errors.

16-10-2009 version 4.0.520

Development:

- The OpenGL graphical engine has been enhanced. Model view rotating became faster and it is possible to show hidden parts translucently.
- Point support reaction sheet can be generated in the documentation for load cases and for load combinations also.
- The dominant internal forces, deformations and reactions sheets now sorted not only by alphabetic order but also by the number in the names.
- In the Standard resistance tab at the bottom sheet it is possible to show the dominant capacity for bars.
- Load cases and load groups can be moved by using the drag and drop technique. This order is applied by ConSteel in sheets and list also.
- Diagnostics has been enhanced. More geometric problems and possible errors are shown. These often appear when importing model from another program or from drawings. The typical problems are the followings: parts are very close but not reaching each other; columns are not perfectly vertical.
- The limit of the eigenvalue calculation has been increased to 30000 finite element points. This is 2 times higher than the original limit.
- When copying or rotating objects and the number of copies is set to one, then after the first copy is done ConSteel does not cancel copying but more copies can be placed until Escape button is pressed or dialog is closed.
- Program does not allow loading the same section with the same material again. The same sections with different materials are distinguished by a * mark in their names. Macro section names are automatically marked with an increasing number.
- Color settings can be changed in the Options.
- Program stores if grid visibility is turned off in a model.
- While generating documentation there is a feedback about the progress.

Speed-up:

- Generating documentation has become faster.
- Renumbering the objects has become faster.
- Handling of the new type dongle has become faster.

Bug fixes:

- Program used to start numbering the objects from 1 at every restart. Now it's starts from the highest object number.
- The sheet of the link elements in the documentation was wrong.
- Analysis results are more precise for bars with small bow imperfection or with small initial sway.

- Cold formed tubular section and square section figures were not shown while modifying them neither in the documentation.
- „Select all" function now selects only the visible objects.
- Dimensioning was also possible for invisible lines.
- Placing joints was also possible for invisible bars.
- "Adjust selected line elements to the limit lines" function was worked incorrectly when the direction was shown opposite to the limit line.
- "Stretch selected lines" function now moves not only the selected objects but also the linked loads and supports.
- Program bug has been fixed in Joint module which could lead to program freeze under Windows Vista operating system.

26-08-2009 version 4.0.519

Development:
- ConSteel user interface and documentation now available also in German language.
- When creating tables it is possible to overwrite an existing table. If a table is modified and it was previously inserted into the documentation then it will be automatically updated.
- ConSteel saves the last used layer when closing the model and sets it when the model is opened.
- 'Adjust selected line elements to limit line' function now works for circle arcs.
- ConSteel switches on the full screen antialias if the video card of the computer is capable of it.
- Point support can be connected to the structural model by using a link element.

Speed-up:
- Model loading is faster in case of those models that contain design results.

Bug fixes:
- The normal force and shear force figures on beams have been corrected in case of line distributed forces.
- Problems around temperature load placed on eccentric beam elements are fixed.
- Sign mismatch is fixed in the analysis results of triangle elements.
- Arc can be drawn in arbitrary plane by defining the center, start point and angle.
- Error message when applying the function "Chamfer of two selected line elements" to parallel or evasive elements.
- Fixed bug in the function "Curve selected line element" (sometimes it created the complementary arc).
- Appropriate colours on the deformed geometry in direction X,Y or Z.

04-06-2009 version 4.0.518

Development:
- ConSteel user interface and documentation now available also in Romanian language.
- 'Adjust selected lines function' now works for more selected lines at once and it is also possible to select a surface as a limit of the extension.
- 'Cutting line elements function' can be used when surface element is selected as a limit.

- When ConSteel starts the colour quality of Windows is checked and if the setting is not 32bit (best, true colour) then at request the control panel will be opened and this setting can be changed.
- Diagnostics show if two joints are placed at the same end of the bar.
- Angle dimension representation became better.

Bug fixes:
- Arc copy with rotating and mirroring works correctly in every plane.
- Copying 2D Figures and plates with rotating and mirroring works correctly in every plane when there are round edges or holes and the local system rotates the right way.
- 'Curving selected line function' works correctly also in sloping planes.
- Placing angle dimension works correctly also in sloping planes.
- Welds and cutting appearance has been fixed in the documentation of double plate flange connection placed on gusset plate.

25-05-2009 version 4.0.517

Development:
- The documentation tab has been moved next to the Layer tab in order to make access to documentation related functions much easier.
- New hot key has been added: Alt+P - create snapshot.
- When creating snapshots it is possible to overwrite an existing snapshot. If a snapshot is modified and it was previously inserted into the documentation then it will be automatically updated.
- Surface element's local coordinate system direction can be modified for more elements at once using the functions on the 'Plate' window.
- In the documentation the section names appear in alphabetical order in the following sheets: model information, member sections, and dominant forces for members.
- Point support reactions are shown with the names of the support in the documentation sheets. ConSteel collapses the same rows in the sheet.
- 'Renumbering selected object' function works not only for bars and surface elements but also for all kind of loads, supports and placed joints.
- Line load values and bar parameter labels became more readable.

Speed-up:
- Deleting sheets from the documentation became faster.
- Modifying parameters is faster in case the modification affects other items.

Bug fixes:
- In some cases if a joint was placed in the model ConSteel set pinned connection when connection stiffness could not be calculated (for example rigid connection with ground beam, truss KN, YT joints). With these joints ConSteel does not make any modification but leaves the original stiffness.
- If a section's warping constant (I_ω) was zero then the buckling eigenvalues was calculated sometimes as zero and the second order analysis was instable.
- In the analysis results sheet dominant values were sometimes not in correct order and when selecting a row the arrow was not shown in the right place.
- Link element worked incorrectly in case the connection was not in the end of the bar. (Position of the connection was not set to 0 or 1.)
- Using the 'select by property' function it was possible to delete section points which caused error.

- It was possible to delete sections which were not used in the model but in the Joint module. Deleting these sections led to program freeze.
- 'Place section plane' function can be only used if there is a surface element in the model. Previously this function was available when there were only bars in the model.
- When copying surface elements ConSteel keeps the local coordinate settings.
- When Esc button was pressed while checking the analysis results then no result values were shown.
- When creating documentation from a moment end plate beam to beam connection no picture was shown about the end plate.
- Selecting dominant values didn't function properly for 'Tension bar' items.
- For curved bars in the Section module no distance from the starting point of the bar was shown in the design sheets.

10-04-2009 version 4.0.516

Development:

- A new capability of the global resistance verification is that you can select which buckling eigenvalue should be used for the generalised stability calculation. (In the earlier versions it was always the first eigenvalue.)
  You can make this choice on the Analysis tab at buckling figure visualization by clicking the right mouse button. From the menu that appears you can select the "Select eigenvalue for design" option. On the lower part of the Design panel which can be run by clicking on the Global resistance icon on the Standard resistance tab there is an option to use either the first eigenvalue or the selected eigenvalue for the calculation of stability resistance.
- There is a new default point support type called „w" to fix the seventh degree of freedom. It's worth to use this support for example if a frame corner is stiffened by plates (beam to column joint) so the warping of a beam has no effect on the other beam.
- On the earth quake effects panel you can set the ratio of the vertical and the horizontal acceleration (a_{vg}/a_g) separately for spectrum type 1 and 2.
- There is a new connection type in the joint module. Within the beam to column joint you can find the Gusset plate joint, which can contain up to three brace connections.
- The table bellow the used capacity figure of the Standard resistance tab can be saved for using in the documentation module or it can be saved into Excel file (.csv)
- The diagnostics module shows the wrong object in pairs in the case of some special problems like "There is overlap between bars!".
- The joint placements can be selected by using the select by property panel.
- The visualization of the support names shows both the name and the type of the support.
- The results of the line support are grouped in the documentation.
- The memory management has been optimized. The software uses less memory.

Speed-up:

- Modification of the structural parameters is about two times faster.
- Switching on-of the visibility of layers is greatly faster.
- Modification of the documentations is faster than before (e.g. removing a chapter).

Bug fixes:

- Welds appear on the haunch on the 3D figure of haunched connections.
- Geometrical verification of the weld on haunch is corrected.
- Copy of the eccentricity in the z direction was not correct in the case of eccentric supports.

- Copies of a distributed load keep the position settings of the original load in case the load is on the whole length of the beam (A-0, B-0).
- Copies of beams get the Bow imperfection, Element type and Element group parameters of the original beam.
- If a point support is connected to a beam, then the copies of this support will be also connected to the new beams when it is copied with the beam.
- Copies of plates get the Finite element size parameter of the original plate.
- Snap function works for the end points of arcs.
- The Renumber load combinations function takes into consideration the Limit state type of the combinations while generating the new names.
- New layers appear in the objects tree. The names of the layers are refreshed in the object tree if changed. The names of layers appear in word order in the list.
- Eccentricity of columns pointing from up to down was not calculated correctly in the analysis module.