www.consteelsoftware.com

What's new in ConSteel 10

15.03.2016.

Version 10.0

Content

1. SYSTEM IMPROVEMENTS

1.1 64-BIT TECHNOLOGY

From ConSteel & csJoint 10, our products move to 64-bit. Thanks to the new technology, ConSteel and csJoint able to utilize more than 3GB memory therefore bigger and more complex models can be built in our software.

1.2 SPEED UP

ConSteel & csJoint 10 contain several system improvements for better speed. Thanks to the improvements the following operations were speeded up:

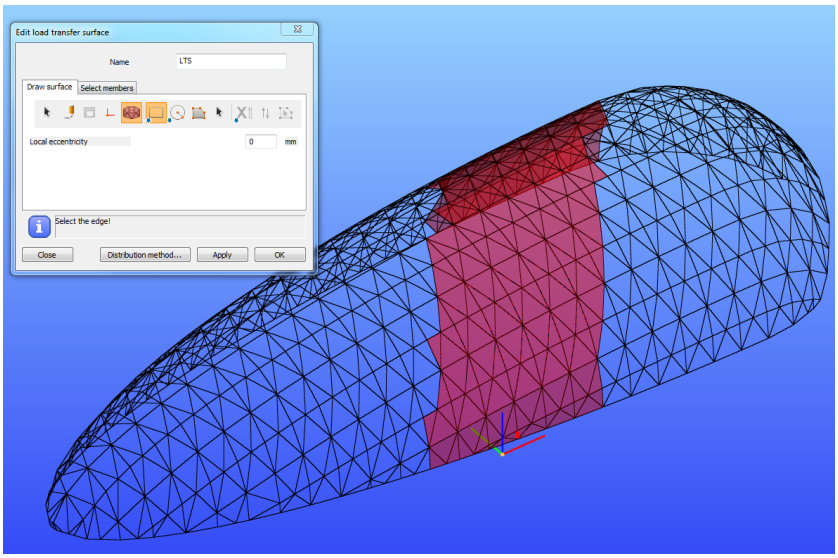
- Creating or modifying graphical objects
- Selecting many objects
- Creating analysis results diagrams
- Standard verification
- Database
- FEM model generation

2. FREEFORM PACKAGE

Whole new functionality package was implemented in ConSteel 10 to support and assist the freeform structure creation and design.

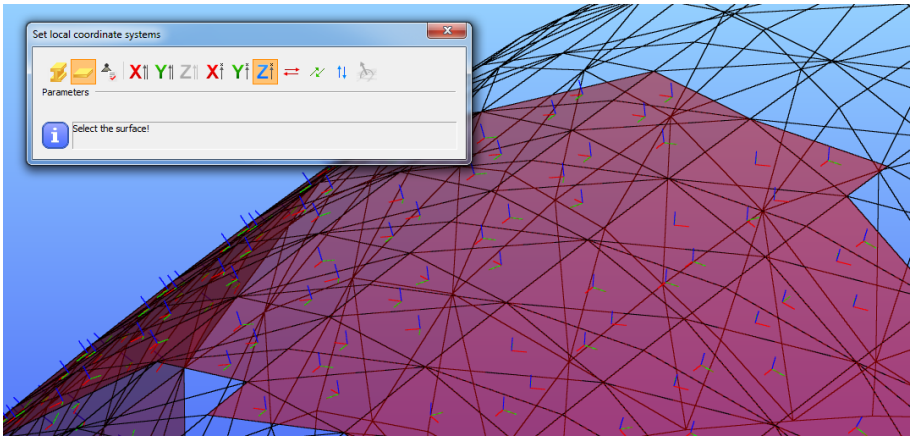
2.1 FREEFORM COVERING WITH LOAD TRANSFER SURFACE

With the new function, freeform structures can be easily covered with load transfer surfaces with a simple window selection. Quick and easy to place loads on a covered structure.



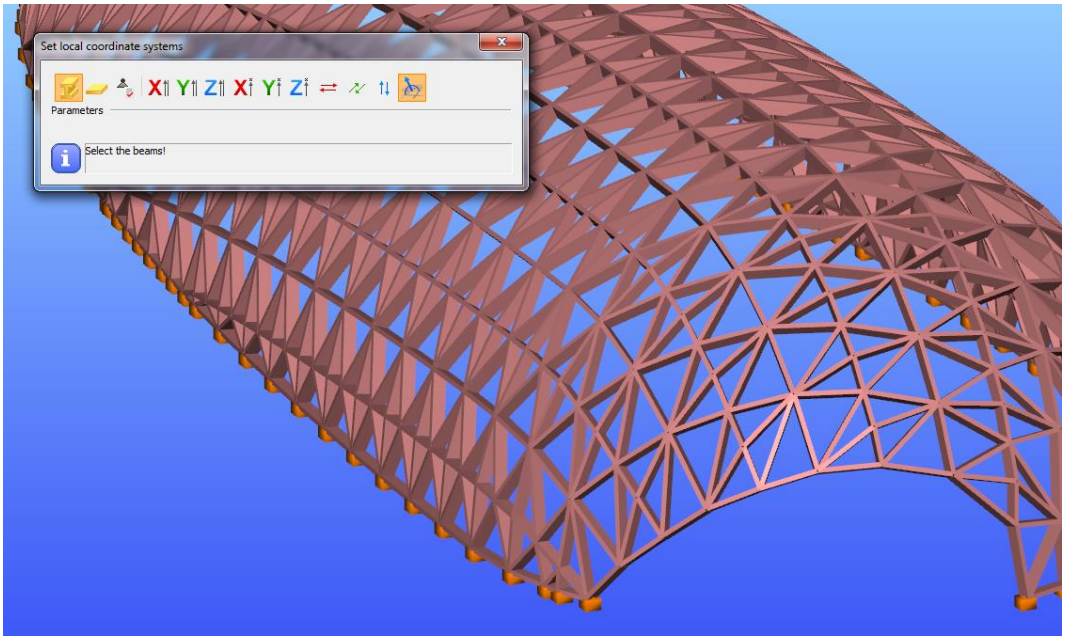
2.2 LOCAL COORDINATE SYSTEM SETTING BY POINT

Thanks to the new function, direction of the local coordinate systems can be set easily by point. All of the local coordinate axis of a covered freeform structure can be set to point out from the structure with a simple selection of an inner point.



2.3 SECTION ORIENTATION FOR FREEFORM SURFACE

With the new function, orientation of the sections can be set easily to fit to the surface of the freeform structure.



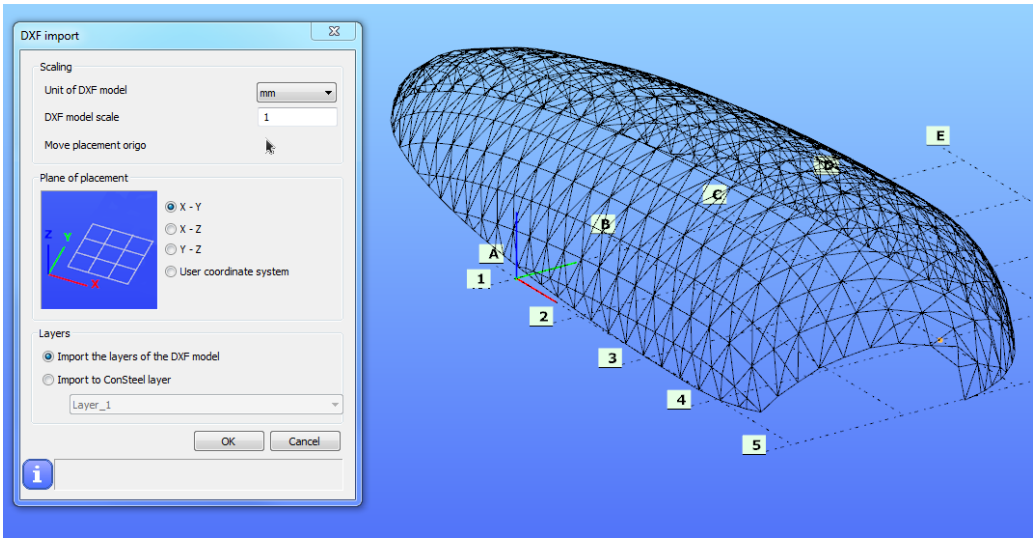
3. STRUCTURAL INPUT

3.1 DXF MODEL IMPORT

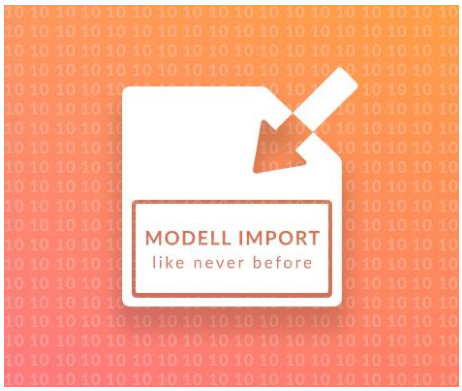
Dxf import function was totally renewed in ConSteel 10.

Dxf import was moved from the File/Open function to a dedicated File/Import/Dxf function. On the new import dialog, the following import parameters can be set:

- Scaling
- Plane of placement
- Layer usage



3.2 DLUBAL RSTAB AND SAP2000 MODEL IMPORT

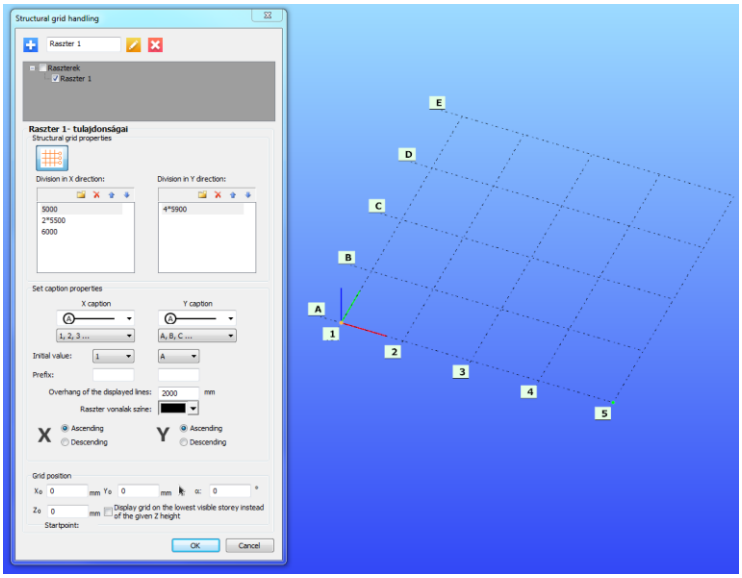


ConSteel 10 is able to import complete Dlubal RStab and SAP2000 models from MS Excel table files. On the import dialog it is possible to select the unit of the original model and those objects that will be imported to ConSteel.

3.3 STRUCTURAL GRID

Several structural grids can be place on the graphical area to assist the structural model creation, orientation and documentation. The intersection points of grid lines can be used as snap points for graphical input.

Spacings between grid lines can be uniform or arbitrary.



3.4 NEW SECTION CATALOGUES AND SECTION TYPES

New section catalogue:

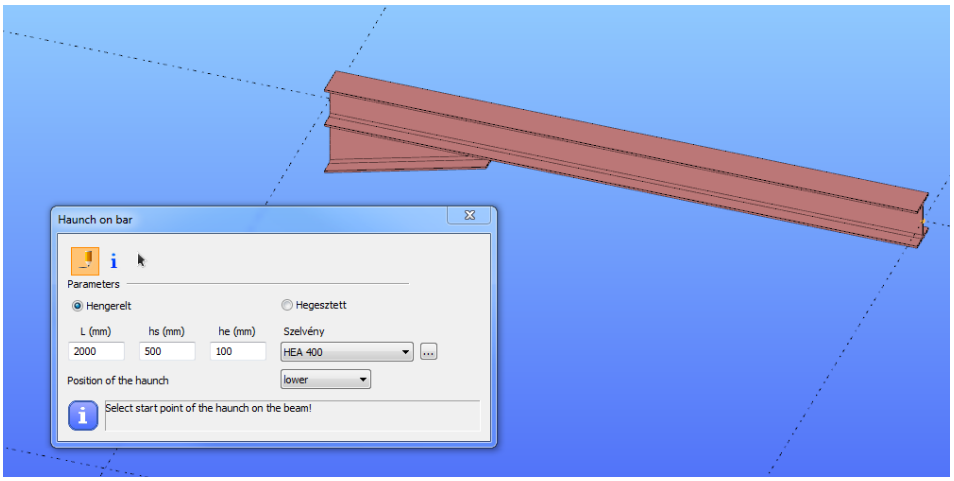
- British section catalogues

New cross-section macro types:

- Welded C section
- Welded I or H section with sloping top flange

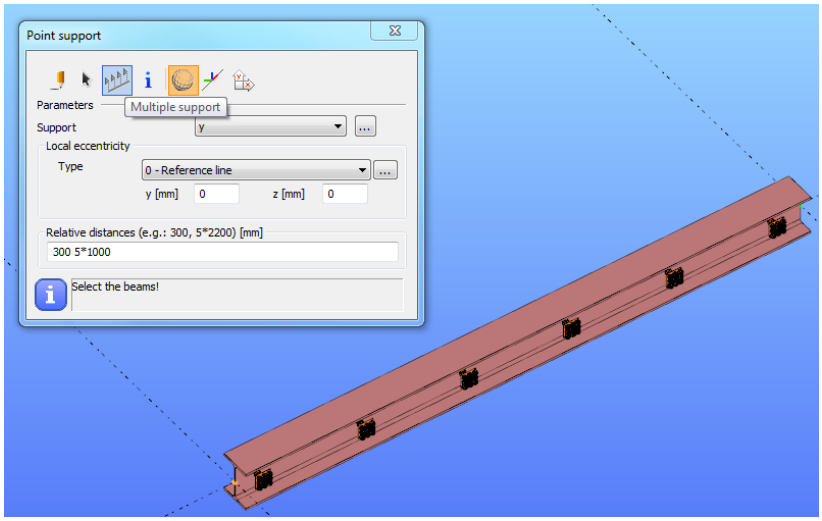
3.5 HOT-ROLLED HAUNCH ON BAR MEMBERS

With the new function not just welded haunch can be placed on bar members, but hot-rolled also.



3.6 MULTIPLE POINT SUPPORT PLACEMENT

With the new button, multiple point support can be placed with a simple click. Spacings between the supports can be uniform or arbitrary. Multiple point support is a new object type so the given distance(s) can be modified in the property area.

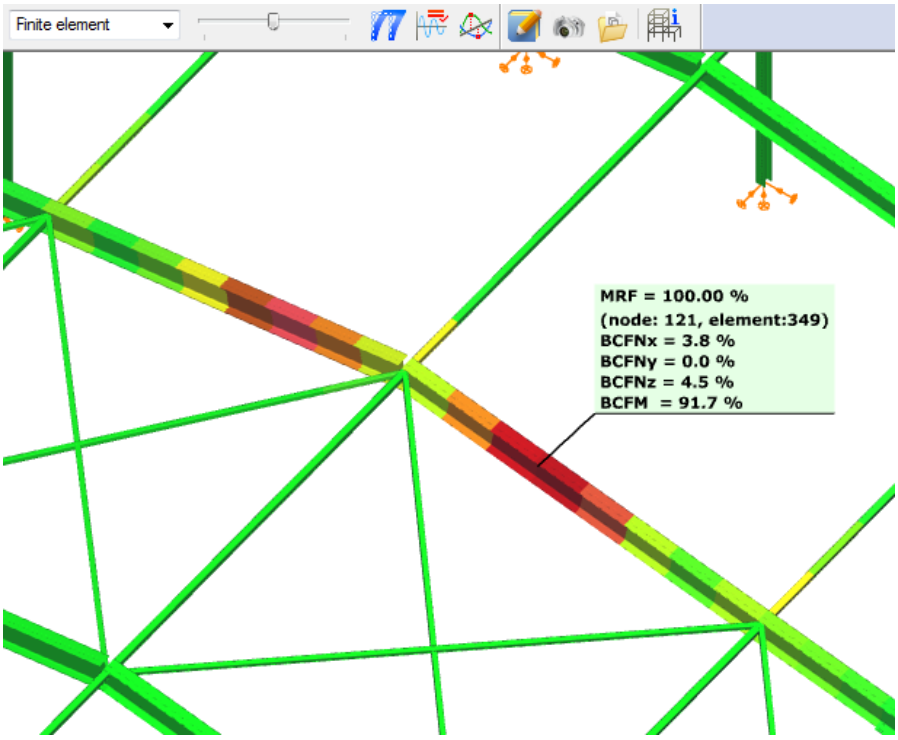


4. ANALYSIS

4.1 FINITE ELEMENT BASED SENSITIVITY ANALYSIS RESULTS VIEW

Sensitivity analysis results can be viewed nut just on member based but on finite element based also.

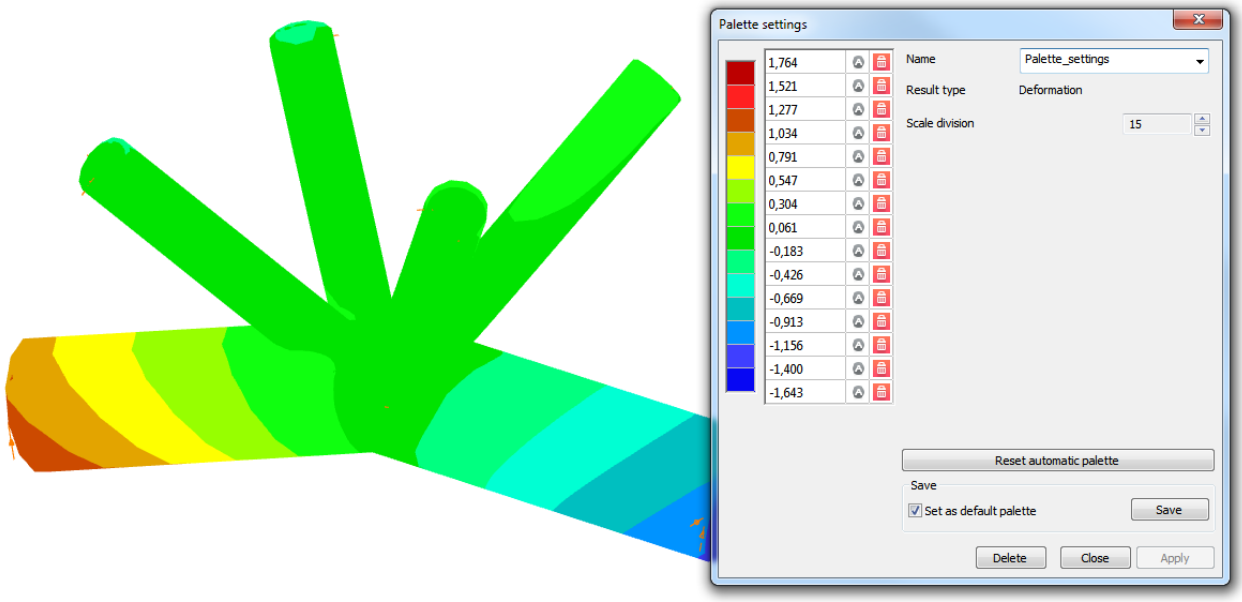
Result view of sensitivity analysis in extended with the Buckling mode Classification Factors (BCF). BSF results show the relevancy of the different types of buckling in the selected buckling shape.



4.2 ADJUSTABLE COLOUR LEGEND FOR SURFACE ANALYSIS RESULTS

Thanks to the new function two types of colour legend can be used for surface analysis results visualisation. First one is the well-known continuous colour legend; the second one is the discreet colour legend.

In case of discreet colour legend, the number of the colour levels and the value of the colours can be set. Created colour legend can be saved for later use.

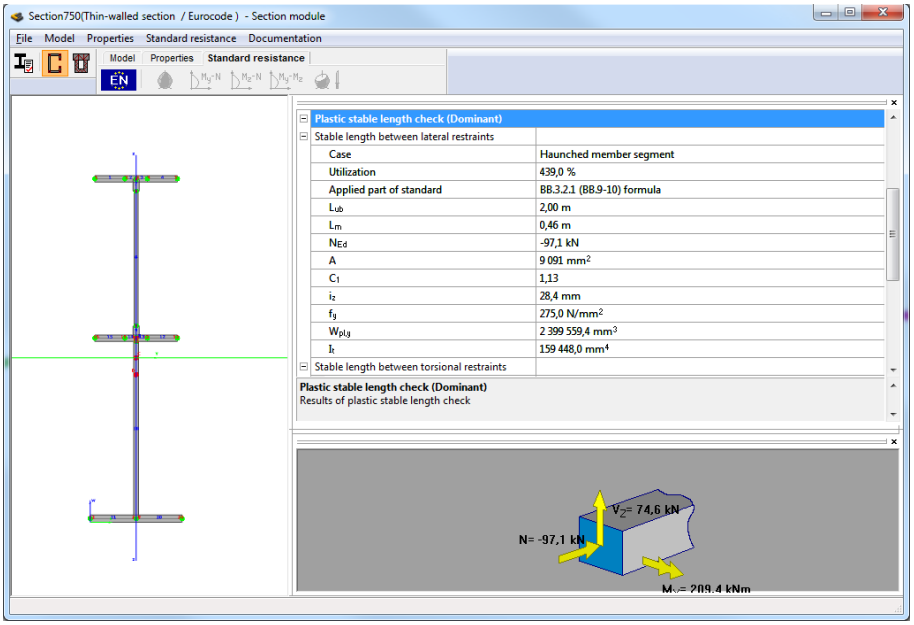


5. STANDARD DESIGN

5.1 STABLE LENGTH DESIGN

In case of plastic analysis, stable length design can be performed for steel members according to the EuroCode 1993-1-1 BB3.

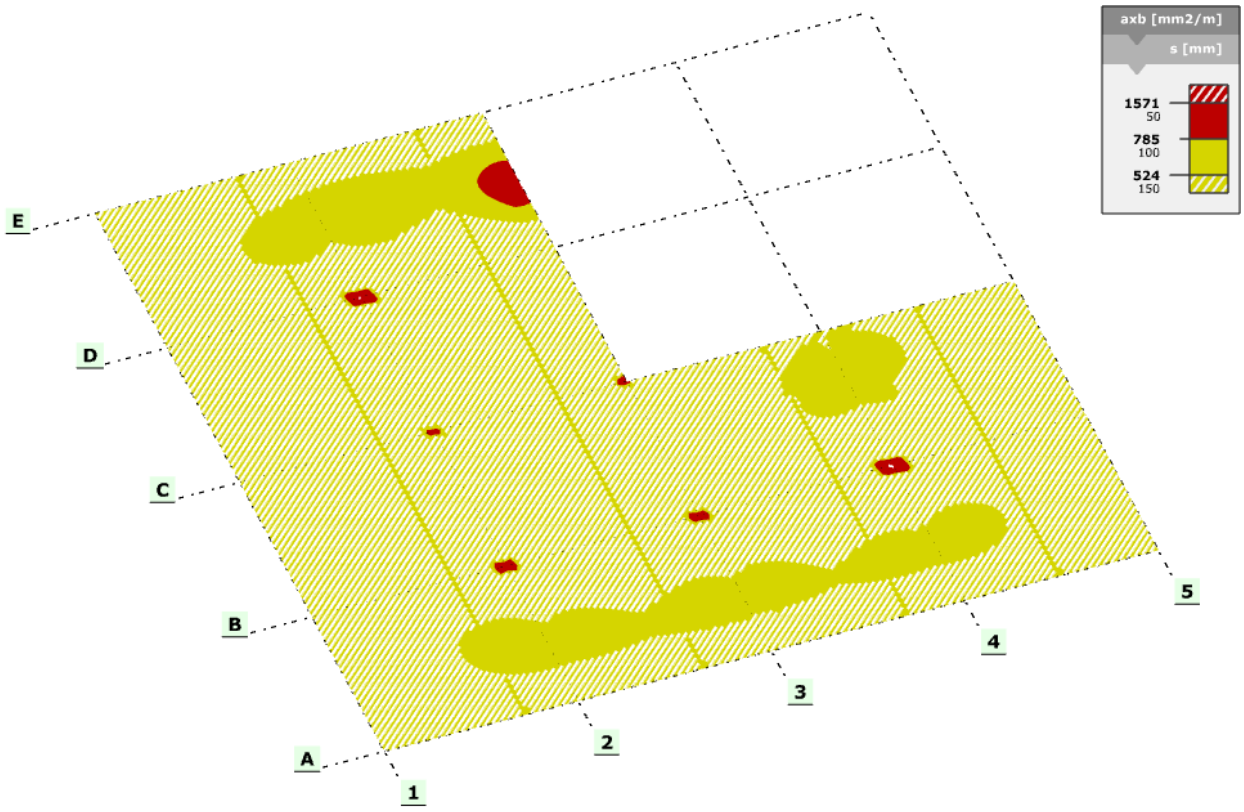
On model base ConSteel automatically recognize those supports and connecting members that can be apply as a torsional or lateral restrains for stable length design.



5.2 REINFORCEMENT CALCULATION FOR SLABS

Thanks to the new functionality, ConSteel 10 is able to calculate necessary reinforcement for slabs according to the EuroCode 2.

For surface object, as design parameters, it is possible to set the rebar parameters and covers.



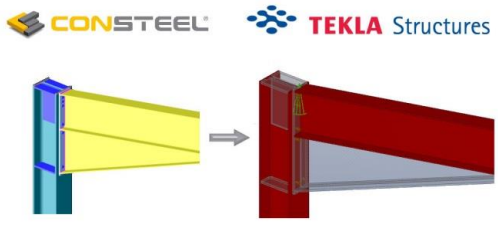
4.3 New Eurocode national annexes

A new national annex is implemented in ConSteel & csJoint 10:

- UK national annex
- Cyprus national annex

6. Model export

6.1 64-bit Tekla structures model import/export

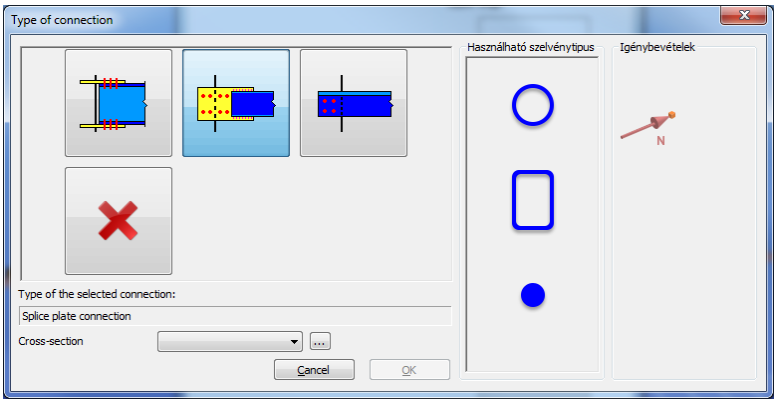


Thanks to the 64-bit technology, ConSteel 10 is able to import and export the whole model from and to 64-bit Tekla Structures.

7. CSJOINT JOINT MODULE

7.1 CONNECTION INFORMATION

Type of connection dialog is extended with an information field. This field shows all of the available section types in the selected connection and the necessary components of the internal forces that are needed for the calculation of the selected connection.



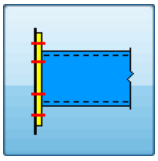
7.2 TABLE LOAD INPUT

In csJoint 10, user defined joint loading can be loaded not just manually but from tables files (*.csv) also.

With the new function the loadings can be easily exported from tables for all of the connections and load cases.

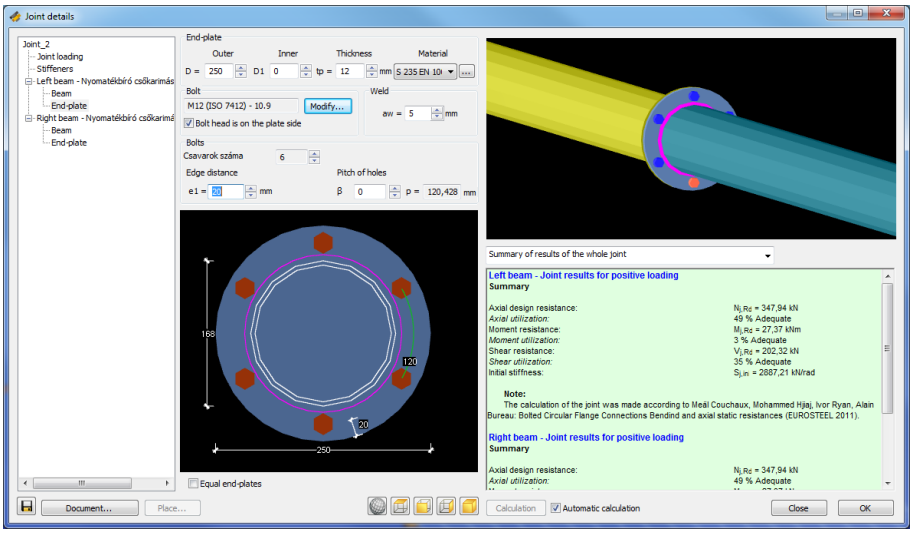
7.3 NEW TYPE OF BEAM SPLICE CONNECTION

New type of beam splice connection can be created and checked:

-  Bolted flange plate connection

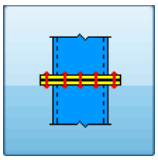
  Available section type(s): tube sections

  Section size of the left and right beam can be different and stiffeners can be placed if it is necessary.



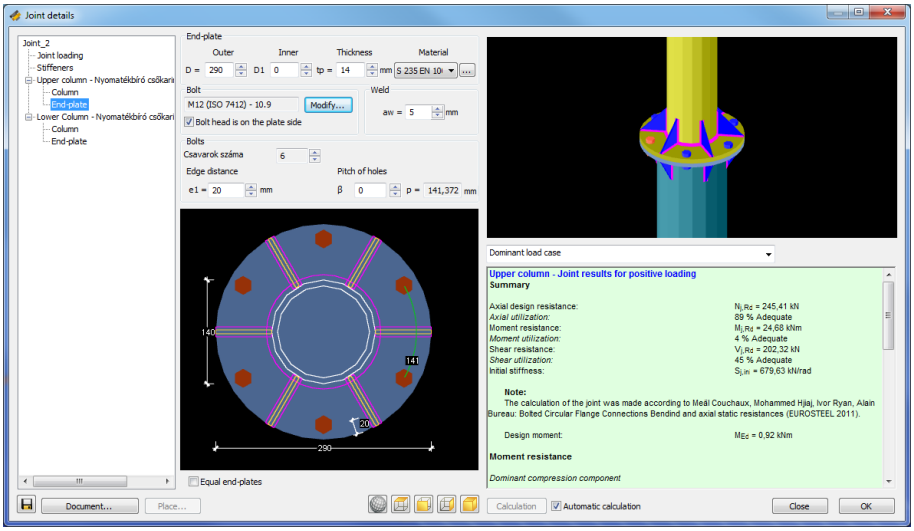
7.4 NEW JOINT TYPE: COLUMN SPLICE JOINT

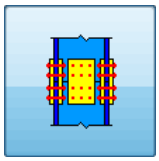
Column joint type contains two types of connection:

-  Bolted flange plate connection

  Available section type(s): tube sections

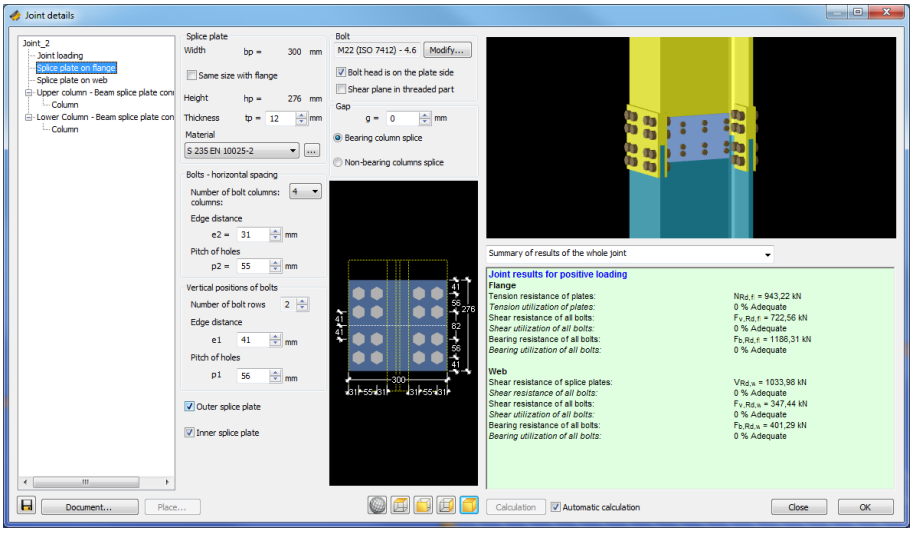
  Section size of the upper and lower column can be different and stiffeners can be placed if it is necessary.



-  Column splice plate connection

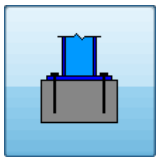
  Available section type(s): I or H sections

  Section size of the upper and lower column can be different and bearing and non-bearing columns splice also can be calculated.



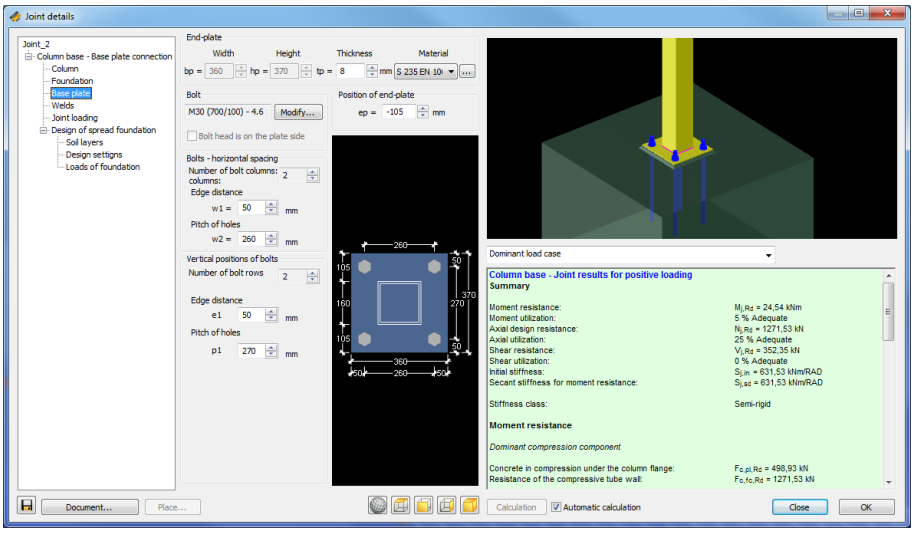
7.5 NEW TYPE OF COLUMN BASE CONNECTIONS

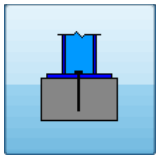
From csJoint 10, column base plate connection is divided into rigid/semi-rigid base and pinned connection. In the new connection types, the tube sections are also available.



- Base plate connection

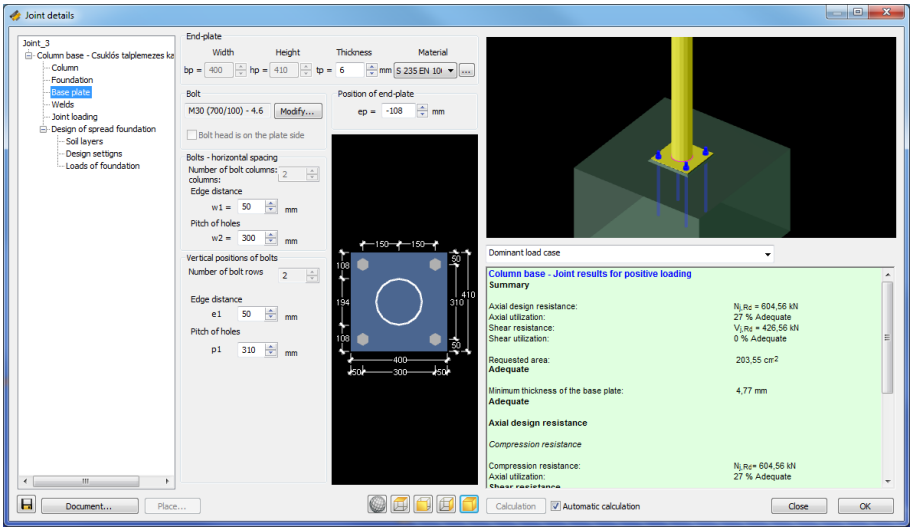
Available section type(s): I, H, tube



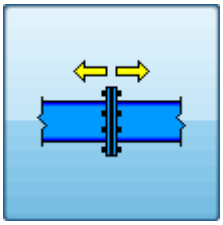


- Pinned base plate connection

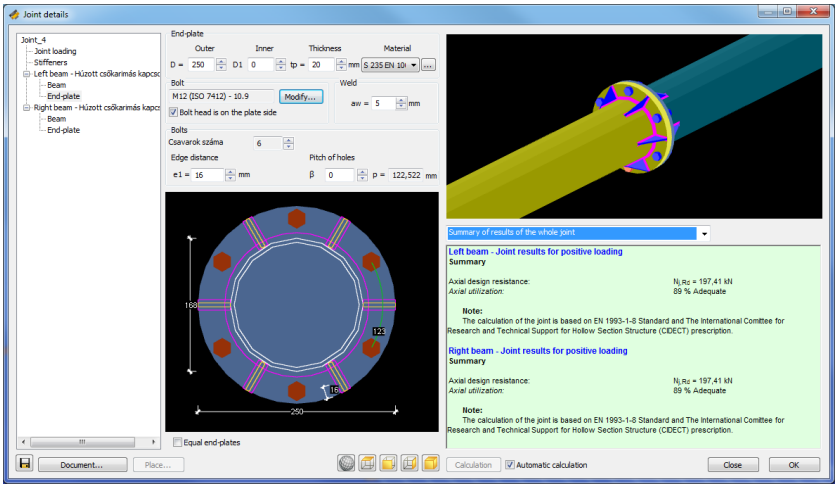
Available section type(s): I, H, tube



7.5 NEW TYPE OF HOLLOW SECTION CONNECTIONS

-  Tension chord splice for tube

  Available section type(s): I or H (for chord), tube and hollow sections



-  Hollow section K and T joint

  Available section type(s): I or H (for chord), tube and hollow sections