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Steel Structures

New version of program **STeelCON 2015.015**

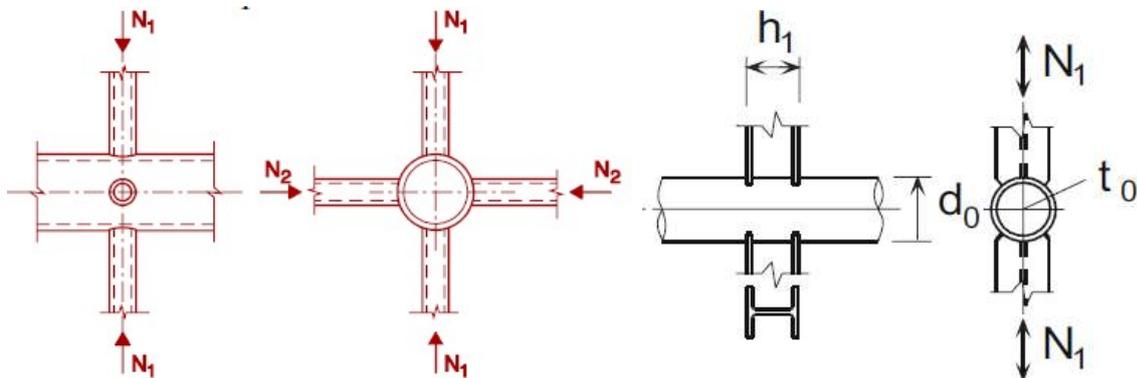
**SteelCon**

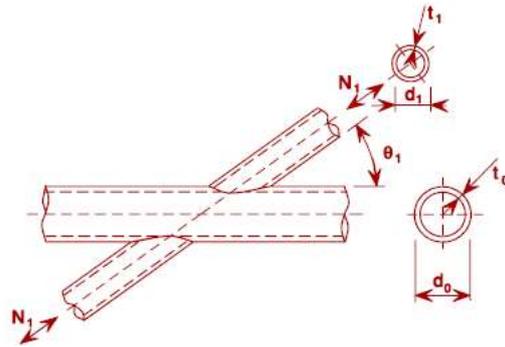
Dear colleagues,

A new version of the “**STeel CONnections**” program for the design of bolted and welded steel connections has been released.

This new version offers many new features :

- New connections between tubes. X type connections uniplanar or multiplanar.





The types of connections according to the connected member types are:

CHS Brace to CHS  
Chord

I/H Brace to CHS  
Chord

RHS Brace to CHS  
Chord

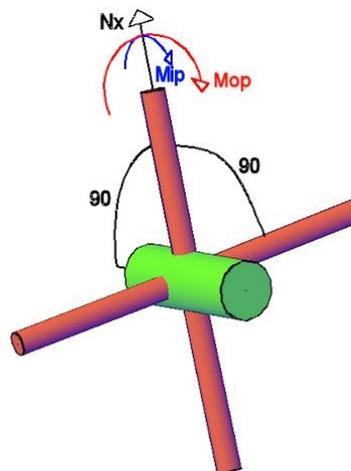
CHS Brace to RHS  
Chord

I/H Brace to RHS  
Chord

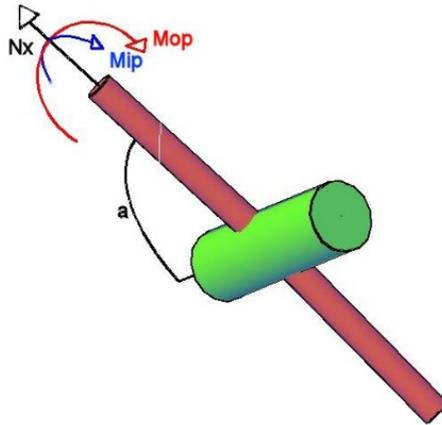
RHS Brace to RHS  
Chord

CHS Brace to I/H  
Chord

RHS Brace to I/H  
Chord



The checks that are performed are based on chap. 7 of EN 1993-1-8 and are:



- Chord face failure
- Chord web (side wall) failure
- Chord shear failure
- Punching shear
- Brace failure
- Local buckling

Based on the geometrical characteristics of the nodes the rule defines a range of connections that can be analytically calculated. The validity range evaluation ensures that the failure modes of the connection will be the same with the expected ones by the rule. For connections that belong into the validity range some failure types can be neglected under certain conditions, but for connections outside that range some failure modes that are not documented in the rule and need separate handling may happen. The program performs all the necessary geometrical checks and informs the user in the case that the node is out of the range of validity.

Furthermore the user has the option to add appropriate stiffener plates at the flanges or the web of the chord in order to reinforce the strength of the connection. The program will calculate the minimum dimensions and weld thicknesses.

The members can have axial force, tension or compression, and in plane and out of plane moments, according to the connection type. The program calculates the interaction of these forces according to EN 1993-1-8.

- **New Cross Sections are added to the library:**

Canadian Cross Sections:

CISC\_L  
 CISC\_HSS  
 CISC\_HSS\_Round  
 CISC\_Chann  
 CISC\_Wide\_Flange

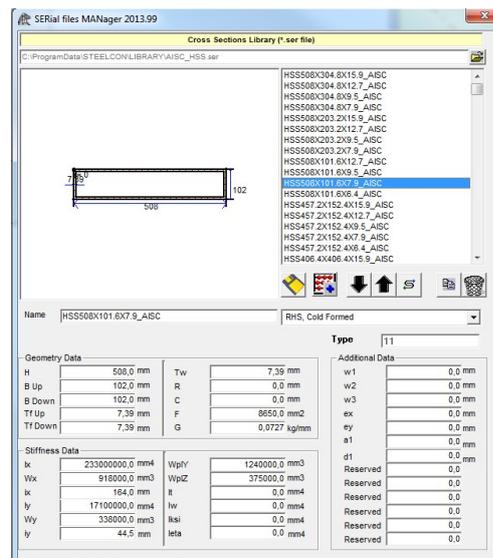
Japanese Cross Sections

JAP\_H\_JIS\_G\_3192

Chinese Cross Sections

Chinese\_L  
 Chinese\_I\_H  
 Chinese\_Chann

Of course the user can edit or change the existing cross sections and add new ones. This is done by using our Serial Files Manager (Ser.Man.), which is also improved to match the standards of the new STEELCON Version.



- **New options for the end plate connections**

For the end plate connections some **new options for the calculation of the slip resistance and the bending strength in the weak axis** have been added. The user can decide to consider that the tension force in one side of the connection is counterbalanced by equal compression on the other, so the additional friction on the compressed side ensures the slip resistance of the connection without any reduction, as described at 3.9.2(2) of EN 1993-1-8. This approach is followed widely in the literature and leads to larger slip resistances compared to those calculated using the conservative reduction of 3.9.2(1) of EN 1993-1-8.

All the connections between tubes are **updated to the provisions of EN1993-1-8/AC2009**.

SteelCON is SOFiSTiK Version 27 (2012) as well as Version 30 (2014) compatible and can be operated within the SSD integrated SOFiSTiK environment. All geometrical and topological data as well as forces can be imported from the overall structure. Connection design results are then a part of the SOFiSTiK Output Report.

Installs the following Plugins :

- SSD V30 Plugin (and SSD V27 plugin)

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