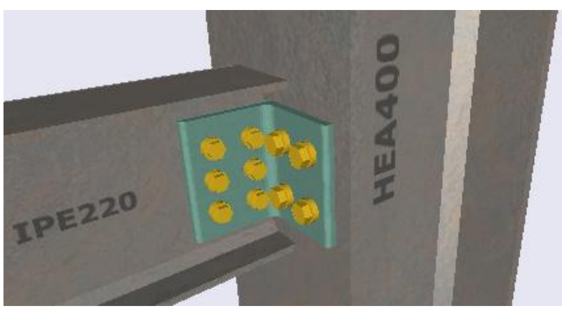
New version of STeel CONnections : 2011.280

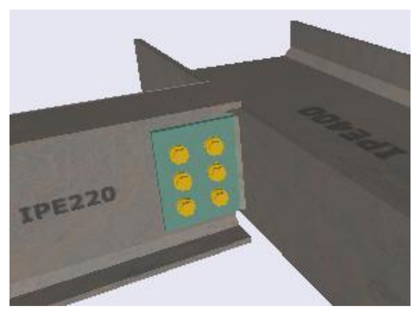
A new version of the “STeel CONnections” program for the design of bolted and welded steel connections has been released.

STeel CONnections can now analyze and design:

- **Beam to column angle cleat and fin plate connections, where the beam is connected to the flange of the column**
- **Beam to beam angle cleat and fin plate connections, where the secondary beam is connected to the flange of the main beam.**
- **Angle cleat and fin plate connections** (beam to beam or beam to column) **where the cleat(s) or fin plate(s) are welded on the secondary beam's web.**
- **Additionally, the pre-existing angle cleat and fin plate connection types are now designed with the complete and fully revised checks that consider 3D loading in both the secondary beam side and the main beam/column side.**

All the fin plate/angle cleat connection types can be configured with one or two fin plates/angle cleats and multiple bolt rows and columns.





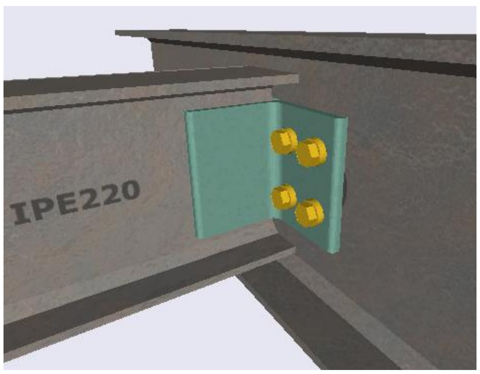
All connections can transfer **shear force in the major and/or minor axis** as well as **compressive or tensile axial force**. Each component is checked according to the final provisions of **EN 1993-1-1** and **EN 1993-1-8**, with the generalized 3D loading that includes forces in all 3 directions as well as bending moments due to load eccentricities.

The following checks are performed:

- bolts in shear,
- bolts in combined shear and tension,
- block tearing of the cleats/fin plates, the main beam's/column's flange or web and the secondary beam's web,
- bolts bearing on the secondary beam web, the angle cleats/fin plates and the main beam's/column flange or web,
- fin plate/cleat and secondary beam in combined biaxial bending, axial and shear at the most stressed net section and at the notch,

- column/main beam web in bending and shear and
- check of the welds using the directional method.

It is stated that all the checks are performed for both major and minor axis loads for both the secondary beam's side and the main beam/column side.



For the verification of the connections in tensile loading, **full T-stub analysis** is performed on the bolted assembly that includes the angle cleat(s) and the main member's flange or web.

The components examined are :

- **angle cleat in bending**,
- **main member's flange in bending**,
- **bolts in tension**,
- **main member's web in tension** and
- **beam web in tension,** considering the net tensile area of the beam web**.**

The bolts are analyzed as single acting and as part of a bolt group. For compressive loads, the component 'column web in compression' is considered.

SteelCON is SOFiSTiK Version 25 (2010) as well as Version 27 (2012) compatible and can be operated within the SSD integrated SOFiSTiK environment. All geometrical and topological data as well as forces will be imported from the overall structure. Connection design results are then a part of the SOFiSTiK Output Report.

Installs the following Plugins :
- SSD V27 Plugin (and SSD V25 plugin)
- Revit structure 2012 plugin (and Revit structure 2010 plugin)

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