



®

Software for effective steel connection design

SCS

STEEL CONNECTION STUDIO

Really user friendly and versatile! Design your connections the way you truly want them to be!

“We have been using SCS connection software since 2013 and have found major advantages in its flexible approach to seek out an efficient connection design solution. A key benefit alongside the complete range of international code checks which the software can deliver is the smart appreciation of each steelwork codes approach. We continue to use the software as a key tool in our extensive connection design process.”

Andy Gleaves, Director, William Hare (UK, India)

among customers:
TECHNIP
FLUOR
DANIELI
W. HARE
CB&I
HIDADA

“SCS is a great and unique software for connection design.”

Fuguo Zhou, PE, PSDesign (USA)

14 really flexible modules to design most of your connections

The screenshot displays three interconnected design modules in a software interface:

- End plate: Column - Beam - EM3** (Bolted end plate):
 - Technical drawing showing a column-beam connection with dimensions like 14th Ed, 15°, and 0.375.
 - Parameters: Standard: AISC LRFD, Language: English, Calculation update: Automatic update, Bolt eccentric. calc. method: Elastic, Connection axis: Column-Plate contact point.
 - Results: Bolt combined: ok 60% (a), Col. web tens.: ok 23% (a).
- Splice - SP4** (Beam - beam or column - column):
 - Technical drawing showing a beam-beam splice with dimensions like 0.93 and 16.33.
 - Parameters: Standard: DIN 18800, Language: English, Calculation update: Automatic update, Bolt eccentric. calc. method: Elastic, Connection axis: Centred, Plate position: Both web and flanges are connected, Category for shear: Slip resistant at serviceability.
 - Results: $\lambda_{1,2}^*$: 39, D_{10}^* : 254.2 MPa, $m_{1,2}^*$: 1, $M_{1,2}^*$: 16.33, $M_{Ed,1}^*$: 16.32 kN/m, $M_{Ed,2}^*$: 16.33 kN/m, P_{1}^* buckling: ok 34%, $\lambda_{1,2}^*$: 86.8, $\lambda_{1,2}^*$: 0.359.
- Design: Beam - Beam - XL2** (sec. beam, bolted to primary (or plate on it)):
 - Technical drawing showing a secondary beam connection with dimensions like 17x18x45mm S275.
 - Parameters: Standard: DIN 18800, Language: English, Calculation update: Automatic update, Bolt eccentric. calc. method: Elastic, Connection axis: Centred, Plate position: Both web and flanges are connected, Category for shear: Slip resistant at serviceability.
 - Results: $\lambda_{1,2}^*$: 39, D_{10}^* : 254.2 MPa, $m_{1,2}^*$: 1, $M_{1,2}^*$: 16.33, $M_{Ed,1}^*$: 16.32 kN/m, $M_{Ed,2}^*$: 16.33 kN/m, P_{1}^* buckling: ok 34%, $\lambda_{1,2}^*$: 86.8, $\lambda_{1,2}^*$: 0.359.

REPORT EXTRACT EXAMPLE:

Beam bearing

Case: a

Tot. ref. thk = 0.42 in

$\Phi R_{n,h,bw} = 35.52 \text{ kips} = (0.75) * \min(1.5 * (1.156(\text{in})), 3 * 0.625(\text{in})) * 0.4201(\text{in}) * 65(\text{ksi}), \Phi(= 0.75)\min(1.5l_c t F_u, 3.0dt F_u) (J3 - 6b)\#20$

$R_{u,h,bw} = 22.34 \text{ kips Bolt 1}$

$\Phi R_{n,v,bw} = 27.84 \text{ kips} = (0.75) * \min(1.5 * (0.9063(\text{in})), 3 * 0.625(\text{in})) * 0.4201(\text{in}) * 65(\text{ksi}), \Phi(= 0.75)\min(1.5l_c t F_u, 3.0dt F_u) (J3 - 6b)\#20$

$R_{u,v,bw} = 20.85 \text{ kips Bolt 2}$

Beam web bear h.: ok 63%

Beam web bear v.: ok 75%

Beam stress

Case: a

$\Phi P_{n,sec} = 458.1 \text{ kips} = (0.9) * 50(\text{ksi}) * 10.34(\text{in}^2), \Phi(= 0.9)F_y A_g (J4 - 6)\#20$

$P_{u,sec} = 3 \text{ kips } P_u$

Axial: ok 1% $\frac{|P_{u,sec}|}{\Phi P_{n,sec}}$

$\Phi M_{n,maj,sec} = 515.9 \text{ kips*in} = (0.9) * \min(50(\text{ksi}) * 15.54(\text{in}^3), 65(\text{ksi}) * 8.819(\text{in}^3) * 1), \Phi_b(= 0.9)\min(F_y Z_x, F_u \frac{A_{fn}}{A_{fg}} S_x) (F2 - 1)(F13 - 1)\#20$

$M_{u,maj,sec} = 192.4 \text{ kips*in } |V_{u,maj} * ecc. + M_{u,str}|$

Bending str: ok 37% $\frac{M_{u,str,sec}}{\Phi M_{n,str,sec}}$

Download the trial version at www.steelconnectionstudio.com

or at www.scs.pe

Check out prices on the website:

- full working monthly lease versions starting at **USD 189**

- full working Permanent versions starting at **USD 1,179**

CURRENTLY AVAILABLE STANDARDS:

EUROCODE

AISC LRFD + ASD (13th and 14th ed.)

BS5950

CSA S16

LSD IS800

DIN 18800

NTC 2008

SNiP

ADVANTAGES:

- Save time and improve the precision of results directly importing design loads from FEM software programs like **STAAD PRO** and **SAP2000**
- Exploit SCS **APIs** to create macro to import loads from other software and to create routines to match your workflow
- Import joint geometry from **Tekla Structures**
- Export your joint design to **Tekla Structures**
- Contemporarily analyze up to **499** load combinations for your joints
- Design for the full range of loads: axial, strong and weak axis, bending moments, torsion...
- Enjoy a full report in Microsoft Word that displays all the formula with the elegant **Equation Editor** format
- Quickly re-use your library of joints recalculating with just one click according to a different **standard** (large engineering companies love this!)
- Enjoy the **vast library** of connections
- Perform advanced design using stiffeners, slip resistant connections, web doublers, false flanges, notches, corner clips and many more options...
- Quickly get confident with software checking results against your Excel spreadsheets and then pass to SCS to exploit **productivity** tools and **advanced** design options
- Impress your customers with **efficient** designs and **elegant** reports

BOTTOM LINE:

- Qualify for **world class jobs** thanks to the powerful SCS engine and a wide range of international codes
- Improve your **efficiency** and help your **balance sheet** quickly performing connection design and interfacing with other BIM software