Bentley®
Sustaining Infrastructure

Limcon

Powerful Steel Connection Design Software

Limcon is productivity-geared steel connection design software. Connection types include beam to column, brace end, member splices, anchorage to concrete, and complicated multi-member joints. By using a library of standard connection types, designers can quickly arrive at results. Design calculations and CAD drawings can be produced directly within the software.
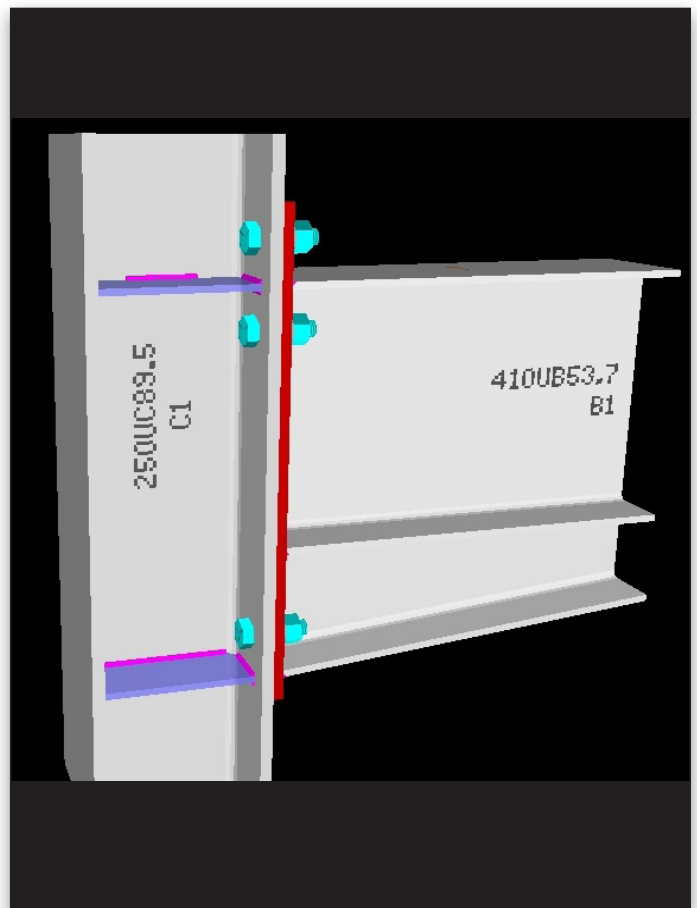
Comprehensive Connection Types

Limcon supports a wide range of connection types, including shear and moment connections, member splices, brace end connections, base plates, hollow section connections, and stiffeners. Design considerations include steel member sizes, plate dimensions and grade, bolting configuration, and weld details. Section properties are extracted from a library file containing standard steel sections. Section libraries are available for countries including Australia, U.K., U.S., Japan, China, and New Zealand. Users can edit libraries or create custom library content using the Section Library Manager.

Interactive Design

All connection information is shown on screen in the style of a connection engineering drawing, allowing for easy review of the design information. Connections can be proportioned automatically based on input loads and governing code provisions. Users can easily override the program selected design at any time by specifying specific connection details, including member sizes, plates, and bolts.

Reporting Results

Limcon produces concise calculation summaries, reporting results for all relevant limit states. Connection drawings can be produced in CAD format directly from the design environment. A navigable 3D view of the as-designed connection geometry can be reviewed.

Three-dimensional view of haunch end plate connection.

Limcon At-A-Glance

Connection Types and Geometry

- Simple shear connections including:
  - » Web side plate
  - » Flexible end plate
  - » Angle cleat
  - » Bolted angle seat
  - » Welded angle seat
  - » Bearing pad
- Moment connections including:
  - » Welded beam/column
  - » Bolted moment end plate
  - » Haunched beam end plate
  - » Flush moment end plate
  - » Extended moment end plate
  - » Welded flange plate
  - » Bolted flange plate
- Bracing connections including:
  - » Single brace
  - » KT gusset plate
  - » Uniform force bracing connection
- Hollow structural section (HSS) connections including:
  - » HSS cap plate
  - » HSS mitred knee
 - » HSS Y/T, X, K/N gap, and K/N overlap Analysis of stiffener seats, bolt groups, and weld groups

- Bracing members may be single or double angle, rod, flattened CHS, hollow section with cleat or tee plate, or rolled section

Design

- Implementation of the following design standards:
  - » AS 4100-1998
  - » NZS 3404:Part 1:1997
  - » ANSI/AISC 360
  - » CAN/CSA-S16
  - » BS 5950-1:2000
  - » BS EN 1993-1-8:2005
- Both auto-design and design-check capabilities
- Support for designing one connection at a time or several at once

Results and Output

- On-screen verification of connection results
- Concise design report summarizing all checks and connection status
- 3D realistic views
- DXF drawing generation
- DXF export to CAD
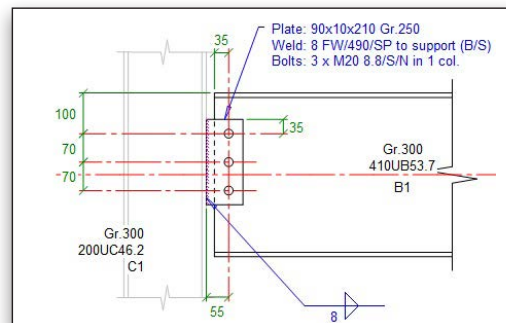
CAD drawing produced directly from design results.
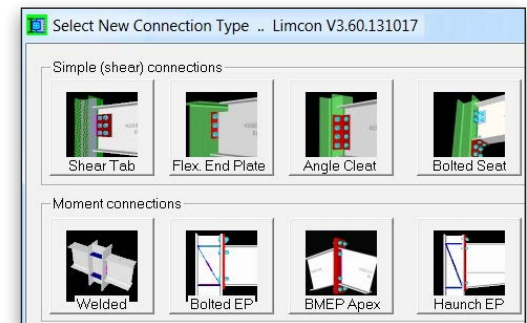
An example of the connections available in the Limcon connection library.