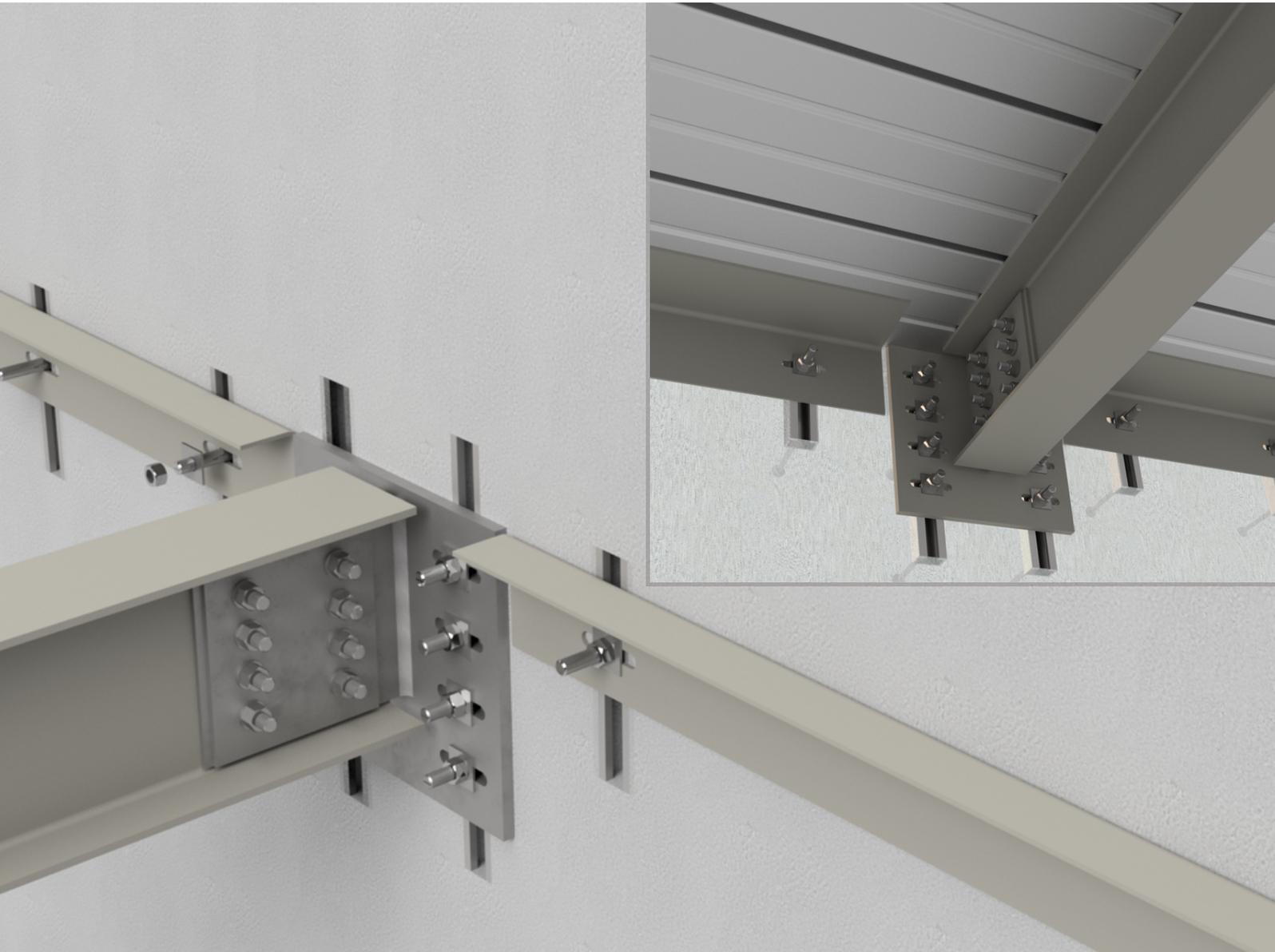


# J&P BEAMCON

CONNECTION SYSTEM FOR STEEL  
COMPOSITE STRUCTURES

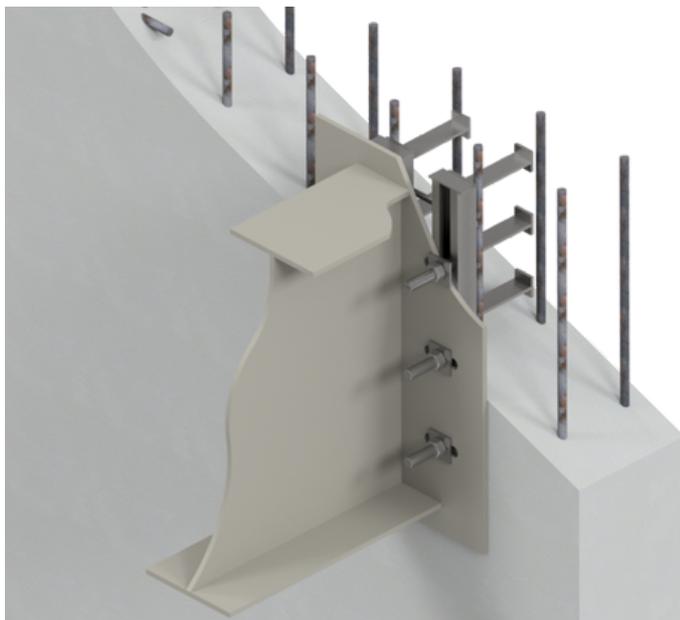
J&P Building Systems Limited



# J&P BEAMCON offers high capacity and adjustable connections to hybrid frame buildings.

J&P BEAMCON connectors provide a simple and straightforward method of connecting structural steel beams to reinforced concrete structures such as stair cores. By utilising toothed Jordahl® cast in channels and toothed T-bolt connections, J&P BEAMCON provides a safe and adjustable connection system negating the need for onsite welding or drilling.

The J&P BEAMCON assembly allows vertical adjustment of connections so that beams can be accurately levelled and positioned for height. In combination with packing shims and horizontal slots in the end plates at the T-bolt locations, three-dimensional installation tolerance can be achieved.



J&P BEAMCON and toothed T-bolts are available in hot dip galvanized or A4 stainless steel. If required, high-compression thermal insulation shims can also be provided to thermally insulate the steel beam from the concrete structure.

J&P BEAMCON typically consists of two toothed Jordahl® channels joined together in parallel with spacer bars. Toothed Jordahl® channels are available in several load capacities and are used in conjunction with a corresponding range of toothed T-bolts. The length of the channels is defined by either the length of the fixing plate or by the number of T-bolts required to transfer the shear load. Custom concrete anchorage can be designed to suit a wide range of loading and structural requirements.

## J&P BEAMCON benefits:

- Excellent load performance and fully adjustable connections
- Heavy duty, hot rolled toothed profiles absorb both static and dynamic loading.
- Special modifications aid installation in slip form structures
- Specialist labour not required for installation
- Connector weight is limited to enable hand installation without crane lifting.
- No special tools or electrical power requirements on site.

## Replacing drilled connections achieves the following:

- Potential exposure to silica dust is reduced
- Potential exposure to drilling noise levels is reduced
- Risk of drilling noise nuisance to neighbouring offices and residences is reduced
- Potential exposure to HAVS risk from vibrating hand tools is reduced.

## Replacing welded connections achieves the following:

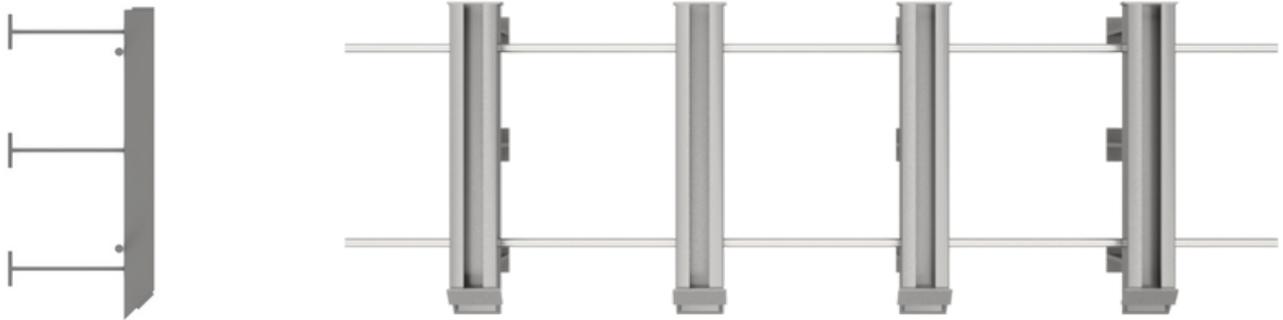
- Reduces the potential risk of fires or injury caused by falling sparks or hot surfaces
- No requirement for any site applied protective finishes after welding.

## Typical J&P BEAMCON



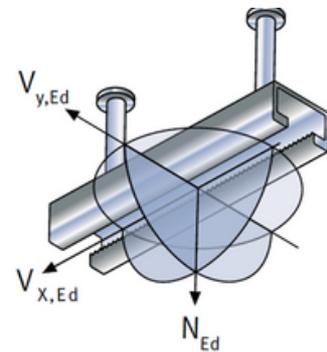
# J&P BEAMCON Modifications & Design Resistances

Section and elevation views of a J&P BEAMCON assembly illustrating optional diagonal ramps at the ends of the channels used to aid slipform transition



Design resistances

Profile	Design resistances <sup>1,3)</sup>			T-Bolts <sup>4)</sup>
	N <sub>Rd</sub> [kN]	V <sub>Rd</sub> [kN]	X <sub>Rd</sub> [kN]	
JM W 72/48	66.7	81.1	4.2/1.96 <sub>2)</sub>	JA M24
JM W 55/42	61.1	61.1	2.9/1.36 <sub>2)</sub>	JB M20
JM W 53/34	40.0	43.3	2.9/1.36 <sub>2)</sub>	JB M20
JM W 50/30	23.9	28.9	2.9/1.36 <sub>2)</sub>	JB M20
JM W 40/22	21.1	19.4	1.9/0.85 <sub>2)</sub>	JC M16
JXM W 64/44	59.1	67.2	37.8	JXE M24
JXM W 53/34	40.3/35.9 <sub>2)</sub>	56.2/50.9 <sub>2)</sub>	30.8/26.6 <sub>2)</sub>	JXB M20
JXM W 41/27	25.0	26.8	16.8	JXH M16
JXM W 38/23	19.6/23.8 <sub>2)</sub>	26.8/23.7 <sub>2)</sub>	16.8	JXH M16



1) For simultaneous load in all load directions, the following relationship must be verified:

$$N_{Ed}/N_{Rd} + V_{Ed}/V_{Rd} + X_{Ed}/X_{Rd} \leq 1$$

X<sub>Ed</sub>, V<sub>Ed</sub>, N<sub>Ed</sub>: Design loads

X<sub>Rd</sub>, V<sub>Rd</sub>, N<sub>Rd</sub>: Design resistances

- The factored resistance capacities apply to load application at the channel lip.

If the load, e.g., for stand-off installation, is introduced at a distance from the channel lip, the bolt bending moments must be taken into account and must be superimposed on the tensile load component.

- The factored resistance of the T-bolt and the channel profile need to be considered. The lower value is applicable in each case.
- For maximum factored resistance in shear, the tightening torques must be applied, depending on bolt size and bolt strength

2) Value applies to stainless steel.

3) Concrete strength will need to be verified on a case-by-case basis

4) Smaller bolt sizes can be utilised.

Reference project – SECC, Glasgow



**J&P Building Systems Limited**

Thame Forty, Jane Morbey Road, Thame, Oxfordshire OX9 3RR  
+44 (0)1844 215 200 | [www.jp-uk.com](http://www.jp-uk.com) | [enquiries@jp-uk.com](mailto:enquiries@jp-uk.com)

