

Fast Fit

 A KEE SAFETY PRODUCT

The Off The Shelf Fast Fitting Steel To Steel Connection System



- NO SITE DRILLING OR WELDING
- NO HOT WORK PERMITS
- NO FABRICATION OF PLATES OR CLAMPS

What is the Fast Fit system?

Fast Fit is an off the shelf engineered clamping solution to connect two steel sections together without the need for on-site drilling or welding. All you need to secure two sections together comes in one box. The system comprises a frame which wraps around the edges of the sections and slides into place to provide a position for the clamps to be secured.

The system allows for varying angles that can be easily achieved by sliding the beams relative to each other.

The Fast Fit system delivers a guaranteed connection every time without the need for on-site testing or relying on the skills of the installer. No removal of the protective coatings on the existing steel or holes is needed to make a connection. All that is required to complete a connection are simple hand tools and semi-skilled labour.



Why use Fast Fit and what benefits does it provide?

Features	Advantages	Benefits
No drilling or welding to existing structure	No on-site power required	Reduced installation time and no need to relocate cables, hoses etc.
Clamps directly to the existing structure	No damage to corrosion protection and no weakening of the steel	The structure retains its original strength and life expectancy
No heat or sparks generated	No hot work permit is necessary	Reduction in installation cost and administration time
No additional safety considerations	Safe for use in hazardous conditions	Peace of mind that the connection can be made without any hazards being created
Installation by semi-skilled labour	No need for specialist skills or equipment	Reduction in labour and hire costs
Easy realignment of steel members	Eliminates remedial work due to steel misalignment	Reduction in labour costs and provides on site flexibility
Tested at a third party test facility	Third party tested for use in tensile and frictional applications	Confidence that the connection will perform as stated in the literature
Electro Galvanised Finish	Corrosion protection is provided as standard meaning no post touch up or finish	Reduction in installation time and confidence in the finish
Suits a wide range of steel sections	A one stop shop for most connections	Reduced sourcing costs for users
Guaranteed loading and factor of safety	No on-site testing required or reliance on the skill of the installer	Reduction in installation time and peace of mind that every connection will perform as stated
Flush steel to steel connection	No location plate or spacers required	Saves time on re-design due to height level changes

Technical Information

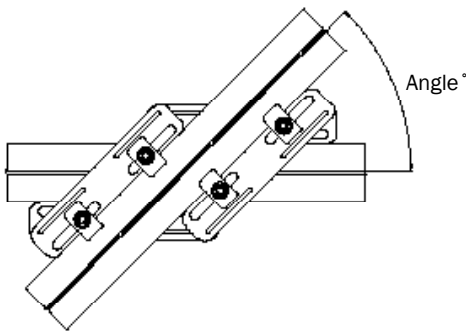
Product Code	Bolt dia.	Bolt grade	Bolt length (mm)	Overall size (mm)	Flange thickness (mm)	Flange width (mm)	Tightening torque (Nm)	Tensile load (4 bolts) (kN)	Frictional load (4 bolts) (kN)
BCFF16	M16	8.8	130	350 x 350	3 to 27	65 to 190	150	21.19	5.08

Factor of Safety

The above loading data has a 5 to 1 Factor of Safety.

Achievable Angles

The Fast Fit system is designed to allow sections of different widths to be connected at varying angles. The table below provides information on the angles which can be achieved.



		Top Section Flange Width										
		mm	65	76.2	88.9	101.6	114.3	127.0	139.7	152.4	165.1	177.8
Bottom Section Flange Width	65	45	45	50	50	50	55	55	60	65	70	75
	76.2	45	45	50	50	50	55	55	60	65	70	75
	88.9	50	50	50	50	55	55	55	55	65	70	75
	101.6	50	50	50	50	55	55	55	55	65	70	75
	114.3	50	50	50	50	50	55	55	55	65	70	75
	127.0	55	55	55	55	55	55	55	55	65	70	75
	139.7	55	55	55	55	55	55	55	55	65	70	75
	152.4	60	60	60	60	60	60	60	65	65	70	75
	165.1	65	65	65	65	65	65	65	65	65	70	75
	177.8	70	70	70	70	70	70	70	70	70	75	75
	190	75	75	75	75	75	75	75	75	75	75	80

Installation Instructions

The Fast Fit system can be fully installed in under 5 minutes which saves time compared to traditional welding or drilling methods. Following the steps below will give a fully guaranteed connection.

STEP 1 - Install the framework of plates around the two sections to be connected.



STEP 2 - Rotate the open side of the plate around the sections so that the frame is complete.



STEP 3 - Insert one set of clamps through each corner ensuring they are positioned as in step 4.



STEP 4 - The front and back edge of the clamps should run parallel with the steel sections.

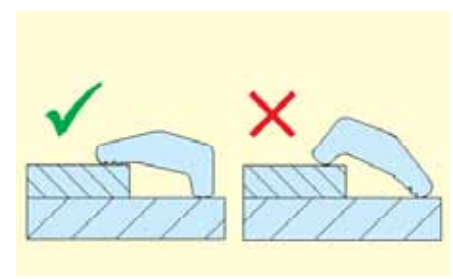


STEP 5 - Hold the head of the bolt with a standard wrench and tighten the nut with a torque wrench to the recommended torque stated above. Repeat this for all four bolts.



IMPORTANT CHECK!

Always check the clamps have been installed the correct way around. See diagrams below:



Fast Fit System vs. Drilling or Welding – Comparison

The model below is designed to demonstrate the time that can be saved by using a Fast Fit system compared to either a standard welded or drilled and bolted connection. The majority of time and cost is saved by the reduction in preparation and labour time. This model does not include the potential for remedy work that may need to be carried out should the connection not be in the correct place. With the Fast Fit system this is quick and easy to do where as with a welded or drilled and bolted connection it is more difficult and time consuming.

FAST FIT SYSTEM

Connection Requirements	Time (hrs)	Details of each step
Engineering	0.1	The design time is reduced dramatically as the system works within stated parameters
Marking of steel	0.05	The marking is reduced as the connection is adjustable
Site set up	0.05	Product arrives in a kit ready to install
Assembly time	0.05	The assembly time is quicker than a bolted connection as no hole alignment is required
Tightening of bolts	0.04	Allowing 1 minute per bolt and nut
Approx. 30 min		

WELDED

Using a fully filleted weld connecting to red oxide or galvanized steel.

Connection Requirements	Time (hrs)	Details of each step
Engineering	0.25	Limited design work required apart from highlighting the position and penetration of weld
Apply for hot work permit	0.5	The issue time is set at 30 min which can be much longer
Marking of steel	0.25	The marking of the steel is minimum for a welded connection
Site set up	0.5	Time to move equipment, power cords and get machinery ready
Removal of corrosion protection	1	The whole area for the weld needs to be removed by grinding and is time consuming
Performing of weld (including equipment)	1.5	Based on a coded welder and equipment to make the connection
Touch up of Galv / Paint	0.33	Replacement of the galv/paint will not be as good as the original finish
Non destructive testing	0.33	Testing of the weld required to prove load capabilities
Approx. 4.5 hrs		

TIME IS MONEY

Welding (hrs)	Drilling & Bolting (hrs)	Fast Fit (hrs)	Savings (hrs)
4.5	3.5	0.5	3 to 4

DRILLING AND BOLTING

Using M16 Grade 8.8 High tensile Bolts.

Connection Requirements	Time (hrs)	Details of each step
Engineering	0.25	Detailing the positions and checking the integrity of the existing steel after adding holes
Drilling time of new steel off site	1	Based on a flange thickness of 12 mm and 1/4 hr per hole (see cutting speed rates)
Marking of steel	0.25	The time required to mark the steel on site to ensure alignment with secondary member
Site set up	0.5	The time required to access power, get the drilling machine into position etc.
Drilling time on site	1	Based on a flange thickness of 12 mm and 1/4 hr per hole (see cutting speed rates)
Positioning and alignment	0.5	Alignment of Primary and secondary steel holes on site
Assembly time	0.05	Very quick to assemble with only four bolts and nuts once steel is aligned
Tightening of bolts	0.04	Allowing 1 minute per bolt and nut
Approx. 3.5 hrs		



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