



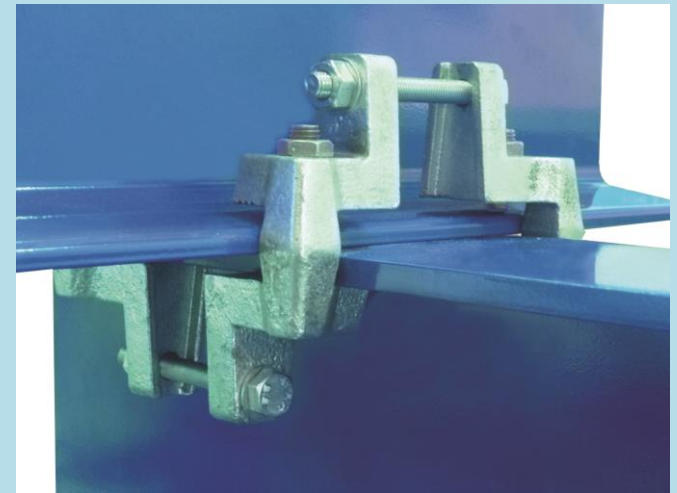
# GirderFix Launch

March 2013



# What is GirderFix?

- A patented solution for connecting two steel sections together at 90 degrees to each other. This is a totally new design that requires no fabrication of location plates, and provides a flexible and cost effective connection with a guaranteed load rating.
- **GirderFix delivers:**
  - A cost effective connection  
(Equal to that of a standard BeamClamp assembly)
  - Guaranteed loading of 1 ton with a 5 to 1 factor of safety
  - Requires no engineering
  - Installs quicker than traditional clamps or alternative methods.
  - All the benefits of clamping



# Features and Benefits

GirderFix provides a unique method of joining steel together but adopts the same concept as our existing BeamClamp Products. The main benefit is that this is an off the shelf solution that requires no off site fabrication of location plates or brackets. Below is a full list of features and benefits that are listed in our new literature:

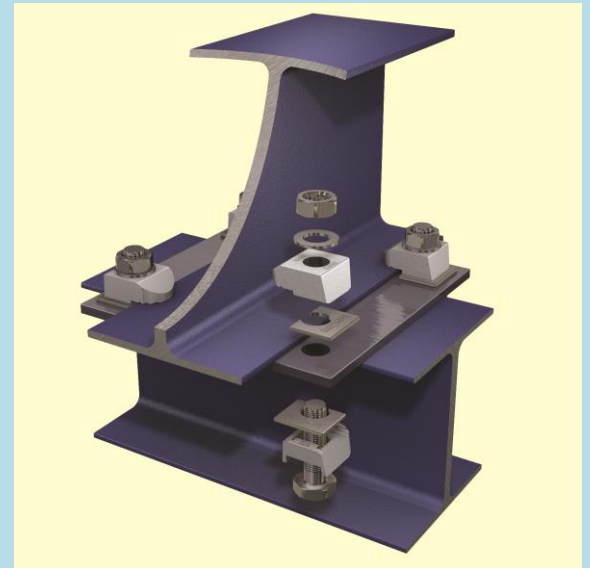
Features	Advantages	Benefits
<b>No fabrication of plates or clamps required</b>	Available off the shelf	Considerably reduces lead times
<b>No drilling or welding to the existing structure</b>	No on-site power required	Reduced installation times and no need for relocating equipment
<b>Easy re-alignment of steel members</b>	Eliminates remedial work due to steel misalignment	Provides on site flexibility
<b>No heat or sparks Generated</b>	No hot work permit is necessary	Reduction in installation cost and administration time
<b>Installation by semi-skilled labour</b>	No need for specialist skills or equipment	Reduction in hire and installation costs
<b>Tested at a third Party test facility</b>	Documentation to prove the testing	Confidence that the connection is guaranteed
<b>Hot Dipped Galvanised Finish</b>	No requirements for post connection touch up	Reduction in installation time and confidence in the finish
<b>Suits a wide range of standard steel sections</b>	A one stop shop for most connections	Reduced sourcing costs for users
<b>Guaranteed loading and factor of safety</b>	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
<b>Provides a flush steel to steel connection</b>	No location plate or spacers required	Saves time on re-design due to height level changes

# GirderFix vs. Standard BeamClamps

- Available off the shelf ready to make the connection
- No location plate required so no height changes between steel sections are required
- Flexibility for slight variances in Beam widths due to connecting fasteners
- Even faster assembly time due to less components
- Allows easier maintenance for re-location due to the clamping action

**Note:**

**GirderFix is designed to make 90 degrees connections.  
For alternative angles please see our Fast-Fit product.**



# Girder-Fix vs. Fast-Fit

- GirderFix is more cost effective
- GirderFix is a totally new design in the market
- Girderfix can provide safe relocation of unsupported beams
- GirderFix can connect wider steel sections between 80mm (3-3/16") to 250mm (9-13/16")
- Fast-Fit can connect 65mm (2 1/2") to 190mm (7 1/2") wide steel sections



# Literature / Website

## Literature

We have created a four page pdf that includes a time comparison to show how much time can be saved by using the GirderFix system. We have not included costs as these soon go out of date, however, costs can be applied by the individual to work out their saving. A step by step installation guide is also shown to show how easy it is to install.



**GirderFix**  
A KEE SAFETY PRODUCT

**Innovation In Steel to Steel Connection Systems – Available off the shelf**

- NO SITE DRILLING OR WELDING
- EASILY ADJUSTED
- RAPID INSTALLATION IN UNDER 5 MINS
- NO FABRICATION OF PLATES OR CLAMPS

**GirderFix** What is the GirderFix System?

GirderFix is an off the shelf engineered clamping solution that provides a way to connect two steel sections together without the need for on-site drilling or welding. The system is provided with four clamps to connect into each corner of where the steel sections cross over and all that is required to complete the connection are some linking fasteners to the correct specification. The specification and method to calculate the length is explained on the opposite page.

The GirderFix system provides a guaranteed connection every time it is installed correctly 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 bolting are required to make each connection. Every connection is made using simple hand tools and semi-skilled labour. The connections are very easy to install for initial alignment or for maintenance and re-positioning purposes.

The clamping action of the GirderFix provides a very high frictional capacity for the size of the clamp which is great for where full loads are applied.

**Why use GirderFix and what benefits does it provide?**

Features	Advantages	Benefits
No fabrication of plates or clamps required	Available off the shelf	Considerably reduced lead times
No cutting or welding to the existing structure	No on-site power required	Reduced installation time and no need for re-aligning equipment
Easy re-alignment of steel members	Eliminates remedial work due to steel mis-alignment	Provides on site flexibility
No heat or sparks generated	No hot work permit is necessary	Reduction in installation cost and administration time
Installation by semi-skilled labour	No need for specialist skills or equipment	Reduction in time and installation costs
Tested at a third Party test facility	Documentation to prove the testing	Confidence that the connection is guaranteed
Hot Dipped Galvanneal Finish	No requirements for post connection touch-up	Reduction in installation time and corrosion in the field
Bolts a wide range of standard sizes	A one size shop for most connections	Reduced stocking 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 means it is noted that every connection will perform as stated
Provides a flush steel to steel connection	No location plate or spacers required	Saves time on re-work due to height level changes

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**Technical Information**

Product Code	Dim A (mm)	Dim B (mm)	Dim C (mm)	Dim D (mm)	Dim E (mm)	Combined Flange Thickness (mm)	Flange Width (mm)	Tightening Torque for clamping screw (Nm)	Variable Load (4 bolts) (kN)	Fictional Load (4 bolts) (kN)
UPFL17	80	55	60	80	55	0 to 24	80 to 200	20	30	5.5

Note: The above Safe Working Loads (SWL) include a 5 to 1 Factor of Safety (FOS)

**Linking Fasteners**

The bolts or set screws should be M10 grade 8.8 or 3/8" SAE grade 5 as a minimum.

The length of the bolts required is determined by the width of the section being connected together in the direction that the bolt will be installed. When two sections of the same width are joined together all four bolt lengths will be the same, however, when the widths are different there will be two pairs of bolts of the same length.

**Bolt Length 1**  
Length = Beam width 1 + 30mm  
e.g. Beam width 1 = 120mm  
Bolt length 1 = 150mm

**Bolt Length 2**  
Length = Beam width 2 + 30mm  
e.g. Beam width 2 = 120mm  
Bolt length 2 = 150mm

The GirderFix MUST NOT be used without the correct specification of fasteners to join the two beams in each corner together.

**Installation Procedure**

- STEP 1 - Insert the end GirderFix Clamps into one corner by hand ensuring it is as close into the corner as possible.
- STEP 2 - Repeat this for the other three corners ensuring the connecting bolts for the bolts are being used steel and not zinc.
- STEP 3 - Once the sections are in the desired position, tighten each clamping screw to the recommended torque of 20Nm for GirderFix.

**IMPORTANT CHECK:** Tighten the linking fasteners together using the method finger tight plus 1/2 turn as below.

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**GirderFix system v's Drilling or Welding – Comparison**

The model below is designed to demonstrate the time that can be saved by using a GirderFix 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 remedial work that may need to be carried out should the connection not be in the correct place. With the GirderFix system this is quick and easy to do where as with a welded or drilled and bolted connection this is most time consuming and difficult.

**GIRDERFIX SYSTEM**

Construction Requirements	Time (hrs)	Details of each step
Engineering	0.1	The design time to create the assembly, as the system works with standard parameters
Marking of steel	0.05	The marking is reduced as the connection is pre-determined
Site set up	0.05	Product arrives as a kit ready to install
Assembly time	0.05	The assembly time is greater than a bolted connection as no hole alignment is required
Tightening of bolts	0.4	Allowing 1 minute per bolt and one

**DRILLING AND BOLTING**  
Using 4 Grade 8.8 High Tensile Bolts

Construction Requirements	Time (hrs)	Details of each step
Engineering	0.05	Creating the position and checking the straightness of the holes
Marking of steel	0.1	Drilling a range of hole sizes of 1/2, 3/4 and 1 inch for the use of standard bolts
Site set up	0.25	The time required to move the steel on site to ensure alignment with necessary tolerances
Drilling time on site	1	Drilling a range of hole sizes of 1/2, 3/4 and 1 inch for the use of standard bolts
Positioning and alignment	0.25	Alignment of flanges and necessary steel work on site
Assembly time	0.04	Very easy to assemble with pre-drilled holes and with the use of standard bolts
Tightening of bolts	0.4	Allowing 1 minute per bolt and one
Material costs (bolts)	0.4	Price of 4 bolts, nuts and washers (not included)

**WELDED**  
Using a fully filled weld connecting to red coat or galvanneal steel

Construction Requirements	Time (hrs)	Details of each step
Engineering	0.25	Construction work required about the highlighting the position and preparation of steel
Apply for hot work permit	0.5	The permit time is set at 30 mins which can be a much longer
Marking of steel	0.25	The marking of the steel is a maximum for a manual connection
Site set up	0.5	Time to move equipment, power cables and get material ready
Removal of corrosion protection	1	The access area for the weld needs to be removed by grinding and a time consuming
Performing of weld	1.5	Requires an skilled welder and equipment to create the connection
Heat up of steel / Heat	0.5	Temperature of the gas must not be as great as the original fabric
Non destructive testing	0.5	Testing of the steel requires to prove steel capabilities

**TIME IS MONEY**

It is important that over 3 hours can be saved in site labour by using our off the shelf GirderFix System. This not only means savings in cost but the connection can be made much quicker with a guaranteed connection every time.

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

**Approx. 4.5 hrs**

**Approx. 3.5 hrs**

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## Website



The Girderfix will feature in our new [www.beamclamp.com](http://www.beamclamp.com) site



**Keef Safety**

# Testing / Technical

- The product has been tested as a “full” system for tensile and frictional static loading at CERAM
- The full test report is available on request
- We are naming the GirderFix GFIX1t with the 1t standing for 1t. This is stated in the catalogue as 10kN or 2248lbs. This covers both and imperial and metric ton. Our research would suggest that a 1t system with a 5 to 1 Factor of safety will cover the majority of secondary steel connections within its target market.

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<b>TEST REPORT</b>		
Ceram Reference:	124967 (QT23665/1/IGL)/Ref. 1.0A	
Project Title:	Testing of GirderFix 1t System	
Client:	Kee Safety Limited 1 Boulton Road Reading Berkshire RG2 0NH	
For the Attention of:	Mr Paul Bowes	
Author(s):	Mr Dave Dix	
Report Date:	20 November, 2012	
Purchase Order No.:	STD414923	
Work Location:	Ceram UK	
This report supersedes the report issued on 09.11.12.		
 Miss Joanne Booth Consultancy Team Reviewer	 Mr Dave Dix Consultancy Team Project Manager	Page 1 of 5
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# Packaging

- It is important to note that a warning label has been added to the top of the box to ensure the user is clear that they must use linking fasteners with the Clamps.





# IFU

- One IFU has been designed in Metric and Standard units to cover all territories and will be placed at the tope where the box will be opened.



**A KEE SAFETY PRODUCT**



**Instructions for use:**  
 Girder Fix 1 Ton Beam Clamp Assembly  
 Part code: GFR1T  
 Manufacturer: Kee Safety International  
 Metric Website: [www.beamclamp.com](http://www.beamclamp.com)  
 US Website: [www.keesafety.com](http://www.keesafety.com)

Girder Fix is an off the shelf engineered clamping solution that provides a way to connect two steel sections together at 90 degrees without the need for on-site welding or bolting. The system is provided with four clamps to connect into each corner of where the steel sections cross one and another that is required to complete the connection are some linking fasteners to the correct specification. The specification and method to calculate the length is explained opposite under the heading: Linking Fasteners – Specification.

The Girder Fix system provides a guaranteed connection every time it is installed correctly without the need for on-site bolting or relying on the skills of the installer. No removal of the protective coatings on the existing steel or holes are required to make each connection. Every connection is made using simple hand tools and semi-skilled labour.

**⚠ Safety Instructions**

- Never exceed the maximum permissible loads. Before using the Girder Fix system it is essential to check that the steel it is connecting can support the load.
- Use appropriate PPE for resistance against thermal heating of the materials.
- Use Girder Fix only as described in these installation instructions.
- When using Girder Fix you should check the following parameters:
  - The thickness of each steel section
  - The total of both sections should not exceed 24mm (1 5/16")
  - The width of each steel section (Minimum 50mm (2 13/16"), Maximum 25mm (1 13/16"))
  - The angle cross over of the steel should always be 90 degrees
  - Tightening torque of clamping screw (20Nm – 15 lb-ft)
  - 1.1 ton (1.1) ton metric ton or 1 ton (2000) lb imperial ton

**Component Check**

- Each Girder Fix system comes with the following 8 items, please check before installation, that you have all of them.



2 x Right handed Girder Fix Clamps



2 x Left handed Girder Fix Clamps



1 x 6mm (1/4") A/F Socket Drive

**Tools Check:**

- The Girder Fix system only requires basic hand tools for installation as below:

**Tools not supplied:**

- 1 x 19mm (3/4") Across Flats Spanner/Wrench
- 1 x 17mm (11/16") Across Flats Spanner/Wrench
- 1 x Torque wrench to achieve 20Nm (15 lb-ft)



**Tools supplied:**

- 1 x 6mm (1/4") A/F Socket to achieve 20Nm (15 lb-ft)



**LINKING FASTENERS - SPECIFICATION**

The Girder Fix MUST NOT be used without the correct specification of fasteners to join the four clamps in each corner together.

The bolts or set screws should be M10 grade 8.8 or 9.8 / A193 grade 8 as a minimum.

The length of the bolts required is determined by the width of the section being connected together in the direction that the bolt will be installed. When two sections of the same width are joined together at four bolt lengths will be the same however, when the widths are different there will be two pairs of bolts of the same length.


**Bolt Length 1**  
 Length = Beam width 2 – 50mm (1-13/16")  
 e.g. Beam width 1 = 100mm (4")  
 Bolt length 1 = 70mm (2-13/16")




**Bolt Length 2**  
 Length = Beam width 2 – 50mm (1-13/16")  
 e.g. Beam width 2 = 120mm (4-3/4")  
 Bolt length 2 = 70mm (2-13/16")

**⚠ THIS PRODUCT MUST BE USED WITH LINKING FASTENERS THAT NEED TO BE PURCHASED SEPARATELY. PLEASE SEE SECTION TITLED LINKING FASTENERS - SPECIFICATION**


**Step 1**  
Install the first Girder Fix Clamp into one corner by hand ensuring they are in contact in both directions.




**Step 2**  
Repeat this for the other three corners ensuring the connecting holes for the bolts are facing each other and in line.




**Step 3**  
Once the sections are in the desired position, tighten each clamping screw to the recommended torque of 20Nm (15 lb-ft)




**Step 4**  
Ensure the locknut is tightened to the top of Girder Fix Clamp using the method finger tight plus 1/4 turn.



**Step 5**  
Connect the clamps together using fasteners that meet the specification in the section "Linking fasteners".




**Step 6**  
Tighten the linking fasteners together using the method finger tight plus 1/2 turn as below.



**Technical Information** Note: All of the Safe Working Loads (SWL) below include a 5 to 1 Factor of Safety (FOS)

Product Code	Dim A (mm)	Dim B (mm)	Dim C (mm)	Dim D (mm)	Dim E (mm)	Combined Flange thickness (mm)	Flange Width (mm)	Tightening Torque clamping screw (Nm)	Tensile load (4 bolts) (kN)	Tensile load (4 bolts) (kN)	Tensile load (4 bolts) (kN)
GFR1T	50	50	50	50	50	0 to 24	50 to 250	20	33	33	33
GFR2T	75	75	75	75	75	0 to 25	75 to 375	25	44	44	44



**⚠ THIS PRODUCT MUST BE USED WITH LINKING FASTENERS THAT NEED TO BE PURCHASED SEPARATELY. PLEASE SEE SECTION TITLED LINKING FASTENERS - SPECIFICATION**



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