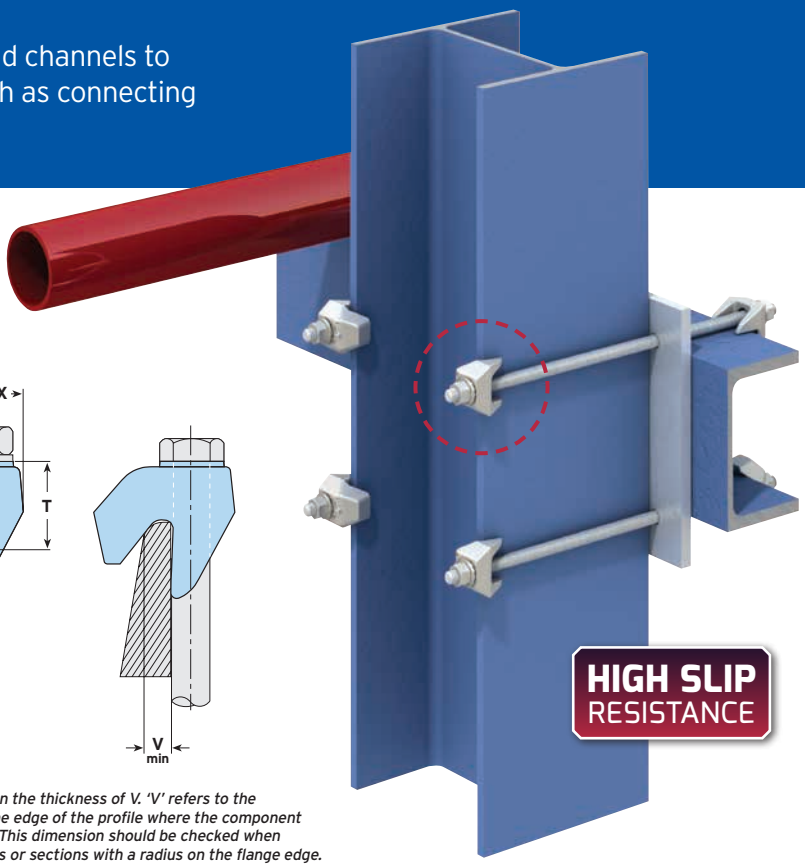
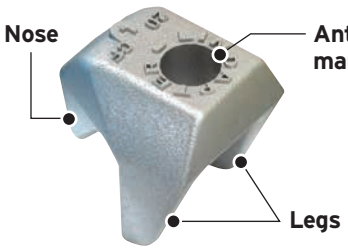
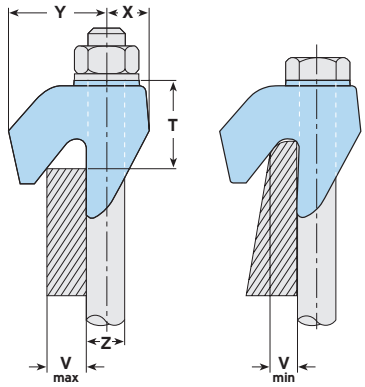
Type CF

Hooks over the flanges of beams, angles and channels to connect steel sections that do not face, such as connecting horizontal beams with vertical columns.







Note: T will vary depending on the thickness of V. 'V' refers to the thickness of the section at the edge of the profile where the component is in contact with the flange. This dimension should be checked when connecting to tapered flanges or sections with a radius on the flange edge.

- New options available to suit larger steel sections with thicker flanges.
- Suitable for parallel and tapered flanges up to and including 10°.
- Can be combined with other Lindapter HSR clamps when used with property class 8.8 bolts; see table below for safe working loads.

Location plate / end plate details can be found on page 19.

Lindapter recommends the use of DTI Washers conforming to EN14399-9 with the Type CF, see page 76.

For Characteristic Resistances when designing a connection to Eurocode 3, refer to DoP No.011 (CE) or DoC No.111 (UKCA) on Lindapter's website. Alternatively, request a DoP or DoC brochure.

Material: SG iron, hot dip galvanised.

Product Code	Bolt 8.8 Z	Safe Working Loads: Tensile / 1 Bolt (FOS 5:1) kN	Slip[1] / 2 Bolts (FOS 2:1) Painted Steelwork[2] kN	Slip[1] / 2 Bolts (FOS 2:1) Galvanised Steelwork kN	Tightening Torque* Nm	Dimensions: Clamping Range V mm	Y mm	X mm	T mm	Width mm
CF12	M12	8.5	3.4	3.9	90	6 - 13	32	14	21 - 29	46
CF212	M12	8.5	3.4	3.9	90	12 - 20	39	16	28 - 37	48
CF16	M16	16	8	10	240	8 - 16	44	18	25 - 33	56
CF216	M16	16	8	10	240	15 - 25	50	21	35 - 47	62
CF20	M20	26.3	13	16	470	10 - 19	53	22	30 - 41	65
CF220	M20	26.3	13	16	470	18 - 30	64	27	41 - 55	70
CF combinations with other Lindapter clamps										
CF + A[3]	M12	5.8	0.9	0.9	69					
CF + A[3]	M16	8.5	1.7	1.7	147					
CF + A[3]	M20	14.7	3.0	3.0	285					
CF + AF / AAF	M12	8.5	3.4	3.9	90					
CF + AF / AAF	M16	16.0	8.0	10.0	240					
CF + AF / AAF	M20	26.3	13.0	16.0	470					

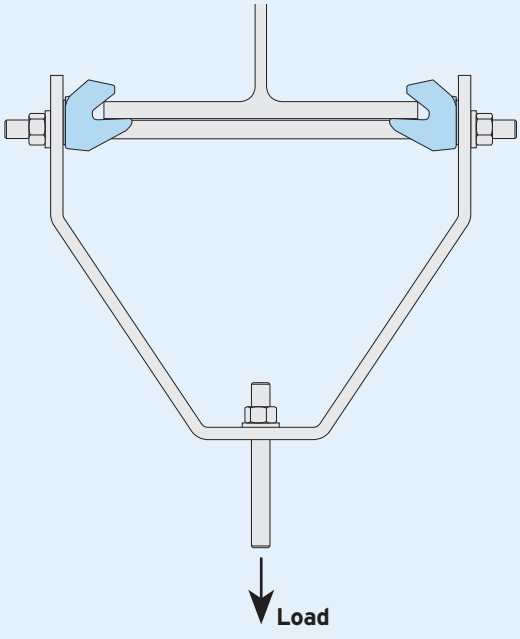
1) Slip resistant values calculated against movement exceeding 0.1mm.
2) Shot blast and painted steelwork.
3) Also applies to Type B (page 11), Type LR (page 20), Type D2 (page 21) and Type BR (page 33).
** Torque figures based on bolts / setscrews in an unlubricated condition. For further information on lubricated fasteners see page 76.*

Additional Applications for Type CF

Type CF is a versatile solution that has been tested in a wide range of applications, including suspending equipment from supporting sections. It can be easily adjusted for quick alignment of pipework, electrical cables and other building services equipment. Two popular connection arrangements are shown below.

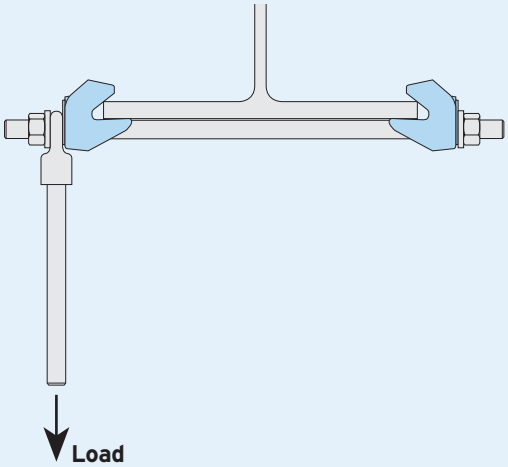
EXAMPLE 1

Bolt Size	Product Code(s)	Recommended Safe Working Load / bolt 5:1 Factor of Safety
M12	CF12 / CF212	5 kN
M16	CF16 / CF216	10 kN
M20	CF20 / CF220	20 kN



EXAMPLE 2

Bolt Size	Product Code(s)	Recommended Safe Working Load / bolt 5:1 Factor of Safety
M12	CF12 / CF212	1 kN
M16	CF16 / CF216	6 kN
M20	CF20 / CF220	12 kN



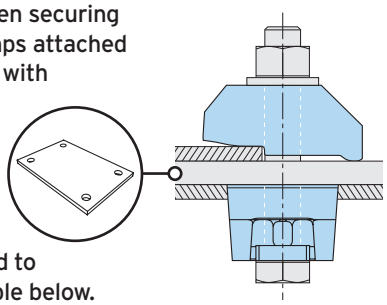
Location and End Plates for Types AF, AAF and CF

These plates ensure the clamps and bolts are located in the correct position relative to the supporting steelwork. If you would like help choosing a suitable plate, please contact Lindapter.

Location Plate

Location plates are required when securing two sections together with clamps attached to the upper and lower sections with both clamps directly opposing each other.

The plate is positioned between the two sections to hold the bolts at the correct centres and should be fabricated to the dimensions shown in the table below.



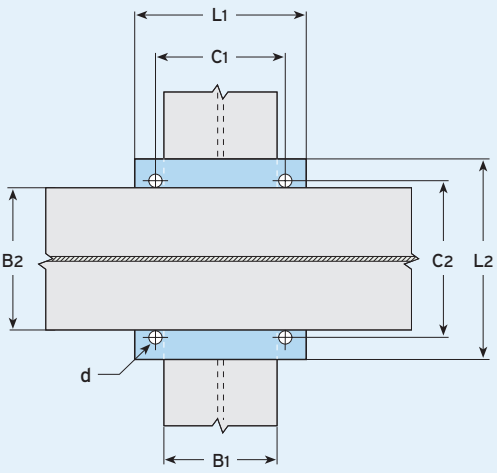
Material: Structural steel grade S355 JR, JO or J2. For other grades contact Lindapter.

Bolt Size	Hole Ø d mm	Plate Thickness 8.8 mm	Plate Thickness 10.9 mm	Hole Centres C1 mm	Length min L1 mm	Hole Centres C2 mm	Width min L2 mm
M12	14	10	12	$B_1 + 14$	$B_1 + 90$	$B_2 + 14$	$B_2 + 90$
M16	18	15	15	$B_1 + 18$	$B_1 + 110$	$B_2 + 18$	$B_2 + 110$
M20	22	20	20	$B_1 + 22$	$B_1 + 150$*	$B_2 + 22$	$B_2 + 150$*
M24	26	25	25	$B_1 + 26$	$B_1 + 180$	$B_2 + 26$	$B_2 + 180$

* Plate length / width for Type AF size M20 can be reduced to 130mm if required.

LOCATION PLATE DIMENSIONS

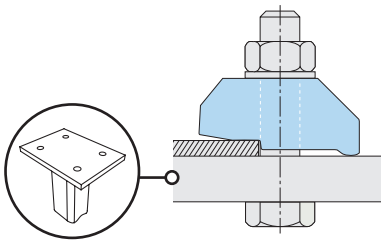
L1 = Location Plate Length, **L2** = Location Plate Width, **B1, B2** = Flange Width, **C1, C2** = Hole Centres, **d** = Hole Ø



End Plate

End Plates should be used when clamps are attached to the supporting section only.

The End Plate holds the bolts at the correct centres and should be fabricated to the dimensions shown in the table below.



Material: Structural steel grade S355 JR, JO or J2. For other grades contact Lindapter.

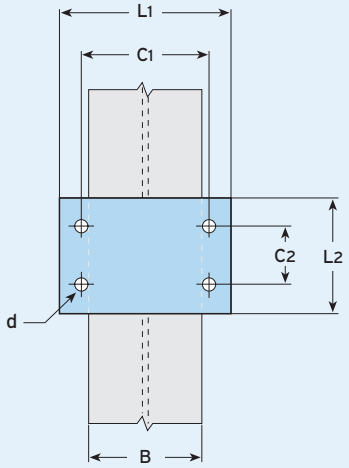
Bolt Size	Hole Ø d mm	Plate Thickness[1] 8.8 mm	Plate Thickness[1] 10.9 mm	Hole Centres C1 mm	Length min L1 mm	Hole Centres min C2 mm	Width min L2 mm
M12	14	15	20	B + 14	B + 90	80	$C_2 + 80$
M16	18	20	25	B + 18	B + 110	100	$C_2 + 100$
M20	22	25	25	B + 22	B + 150*	180	$C_2 + 180$
M24	26	30	30	B + 26	B + 180	200	$C_2 + 200$

* Plate length for Type AF size M20 can be reduced to 130 if required.

1) Depending on the type of connection and associated end plate use, the thickness may need to be modified to comply with accepted local design codes.

END PLATE DIMENSIONS

L1 = End Plate Length, **L2** = End Plate Width, **B** = Flange Width, **C1, C2** = Hole Centres, **d** = Hole Ø



To calculate the bolt length, add up the total distance that the bolt will pass through, plus half of the bolt diameter. Then round up the total to the nearest available bolt length. An example can be found on page 8.

If drilling through the flange of the supported steelwork please contact Lindapter to ensure suitability.