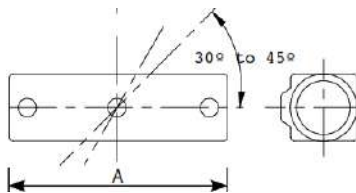# FastClamp C28
Adjustable Two Socket Cross

This fitting will accommodate any rake angle from 30° - 45°. Not recommended as the top fitting on a guardrail or balustrade system.

Made of cast malleable iron (BS EN 1562:2012)
HDG Galvanised finish (BS EN ISO 1461:2009)
Suits 1" (33.7mm) - 1 1/2" (48.3mm) OD steel pipeInstallation with 6mm or 8mm Allen key

Weight & Dimensions

Type	Tube Size	A	Kg
C28G25	33.7	162	0.71
C28G32	42.4	190	1.12
C28G40	48.3	218	1.38

All values are approximate. E&OE

The safe clamping system for circular hollow section tube

Access Technologies Limited was established in 1995 to manufacture access equipment for the Construction Industry. The **FastClamp** brand followed as a natural progression four years later and has since grown to become one of the premier ranges of slip on tubular fittings available today.

FastClamp is a range of fittings manufactured from Malleable Iron to BS EN 1562 or Ductile Iron (where noted in the fittings description) to BS EN 1563 . **FastClamp** fittings are used to construct lightweight tubular steel structures and are manufactured to suit five different tube sizes.

FastClamp fittings require no welding, drilling or special tools, simply use a hexagon key to tighten the special setscrews that embed into the tube. **FastClamp** fittings will support an axial load of up to 900 kg when tightened to a torque of 39Nm.

FINISHES AVAILABLE

FastClamp castings are Hot dip Galvanised to BS EN ISO 1461 as standard. **FastClamp** fittings can also be supplied in a powder coated finish to RAL standard colours, subject to quantity and availability from the coaters.

FASTCLAMP SELECTION

FastClamp fittings are suitable for use with steel tubes to BS EN 10255 with a minimum wall thickness of 3.2mm, however please note that internal fitting types: C01, C06, C65, DDA-02 & DDA-06 are only designed for use with 3.2mm thick tube.

Product codes are constructed as follows:

C	= FastClamp
No.	= FastClamp type
G	= Galvanised
P	= Plastic
S	= Stainless Steel
No.	= Tube size

Example: **C00G20** is a FastClamp, type 00, galvanised and suitable for 26.9mm diameter tube.

Fitting	Tube size ø	Nominal bore of tube	
		Metric	**Imperial**
20	26.9mm	20	3/4"
25	33.7mm	25	1"
32	42.4mm	32	1 1/4"
40	48.3mm	40	1 1/2"
50	60.3mm	50	2"

Important Note: The Tube Size Ø should be the first consideration as this is the primary structural component for any FastClamp structure. The application guidelines on the next page will help the design of Racking, General Structures and Handrail.

20 — 26.9mm

25 — 33.7mm

32 — 42.4mm

40 — 48.3mm

50 — 60.3mm
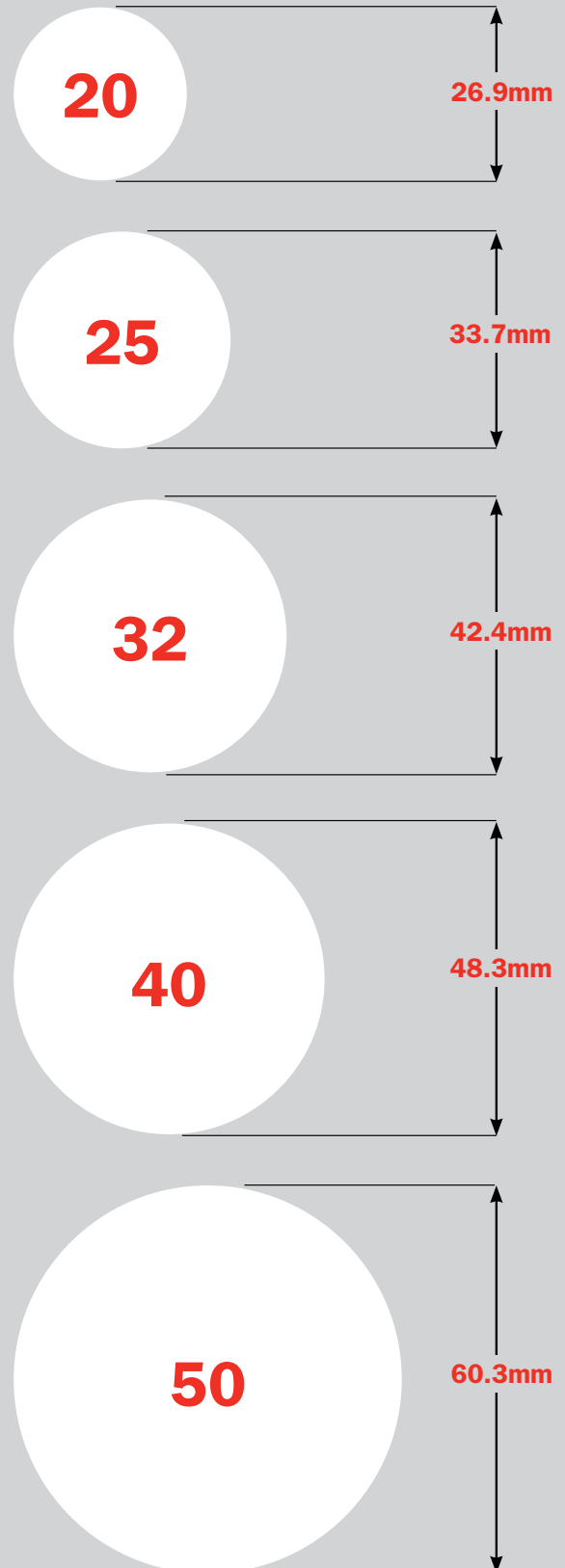
Racking and general structures

Racking and general structures can be constructed using **FastClamp** fittings. Care must be taken to ensure that the tube size selected is adequate for the loads anticipated. To help with the selection of the correct tube, table 1 provides the uniformly distributed loads that can be supported between upright posts, assuming that the load is supported by two tubes. These loads are calculated based on the maximum bending moment for the tube.

Table 2 provides the load capacity for single upright posts with various unsupported lengths. These loads are based on the compression strength and buckling loads of the circular hollow section (CHS) tube.

NB. When designing structures care must be taken to ensure that the load on any one grub screw does not exceed 900kg.

*For further help in using **FastClamp** please contact our sales office.*

Horizontal tubes load capacity

Uniformly distributed load in kg using two horizontal tubes

Table 1	Tube Ø				
Span (m)	**26.9mm x 2.6**	**33.7mm x 3.2**	**42.4mm x 3.2**	**48.3mm x 3.2**	**60.3mm x 3.6**
0.5	540	1060	1750	2380	4000
0.6	435	850	1407	1870	3250
0.7	375	730	1207	1595	2760
0.8	330	645	1063	1385	2420
0.9	295	579	946	1230	2160
1.0	265	525	850	1110	1950
1.1	240	478	770	1013	1775
1.2	219	438	705	930	1625
1.3	202	403	651	858	1497
1.4	187	373	604	796	1387
1.5	175	347	564	741	1290
1.6	-	325	529	693	1205
1.7	-	306	499	650	1129
1.8	-	290	472	613	1061
1.9	-	277	448	581	999
2.0	-	268	427	553	987
2.1	-	-	408	528	944
2.2	-	-	391	505	855
2.3	-	-	376	485	818
2.4	-	-	362	467	785
2.5	-	-	349	450	755
2.6	-	-	-	434	728
2.7	-	-	-	419	703
2.8	-	-	-	405	680
2.9	-	-	-	-	659
3.0	-	-	-	-	639
3.1	-	-	-	-	620
3.2	-	-	-	-	603
3.3	-	-	-	-	588
3.4	-	-	-	-	575
3.5	-	-	-	-	564

Grade: BS EN 10255 (ISO 65)

Vertical strut load capacity

Vertical load in kg per strut

Table 2	Tube Ø				
Length (m)	**26.9mm x 2.6**	**33.7mm x 3.2**	**42.4mm x 3.2**	**48.3mm x 3.2**	**60.3mm x 3.6**
0.3	1720	2950	4038	4783	7044
0.4	1435	2617	3703	4446	6661
0.5	1150	2284	3368	4109	6278
0.6	910	1951	3033	3772	5895
0.7	725	1618	2690	3435	5512
0.8	590	1348	2363	3098	5129
0.9	480	1128	2028	2761	4746
1.0	-	948	1752	2424	4363
1.1	-	798	1524	2134	3980
1.2	-	-	1340	1884	3597
1.3	-	-	1188	1668	3253
1.4	-	-	1066	1484	2951
1.5	-	-	-	1328	2681
1.6	-	-	-	-	2441
1.7	-	-	-	-	2226
1.8	-	-	-	-	2032
1.9	-	-	-	-	1857
2.0	-	-	-	-	1697

Grade: BS EN 10255 (ISO 65)

Guardrail

Guardrail is the most common form of structure that is built with **FastClamp** fittings and requires careful consideration to meet required design loadings. Design loads are usually specified, however if unsure BS 6399 and BS 6180 are good reference documents.

The loading capacity of any guardrail structure is determined principally by the diameter, thickness and frequency of its Uprights. The table below contains our recommendations to safely meet the stated design loads based on the maximum permissible bending moment of the Upright tube.

| Table 3	Tube Ø					
Design Load	**33.7 x 3.2mm**	**42.4 x 3.2mm**	**42.4 x 4.0mm**	**48.3 x 3.2mm**	**48.3 x 4.0mm**	**48.3 x 5.0mm**
	Maximum Upright Centres (mm)					
900 mm high						
360 N/m	814	1369	1595	1828	2584	3052
740 N/m	396	666	776	889	1257	2229
1500 N/m	195	329	383	439	620	1100
1000 mm high						
360 N/m	732	1232	1435	1645	2326	2930
740 N/m	356	599	698	800	1131	2006
1500 N/m	176	296	345	395	558	990
1100 mm high						
360 N/m	666	1120	1305	1496	2114	2778
740 N/m	324	545	635	728	1028	1824
1500 N/m	160	269	313	359	507	900

Grade: BS EN 10255 (ISO 65)
Rails need only be 3.2mm thick and the same diameter as the Upright.

How to calculate correct tube cutting length using types C05, C245, C28, C59A, C72 & C29 on slopes between 30° to 45°

Subtract/add dimension z, z1 & z2 from the upright height

TYPE SIZE	32			40		
	z	z1	z2	z	z1	z2
30°	-17	-48	+5	-27	-47	+6
35°	-16	-59	+5	-21	-53	+6
40°	-8	-69	+5	-14	-68	+6
55°	-2	-80	+5	-5	-79	-4
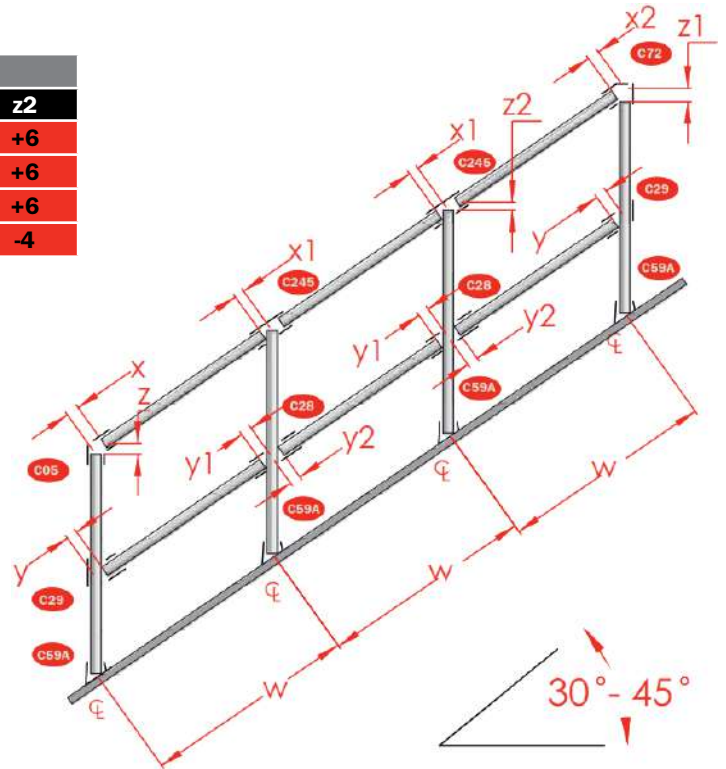
Subtract dimension x, x1,x2,y or y1 form upright centres (w). Please note the upright centres must be measured on the slope

TYPE SIZE	32					40				
	x	x1	x2	y	y1	x	x1	x2	y	y1
30°	-20	-39	-55	-37	-49	-17	-42	-48	-43	-64
35°	-16	-44	-61	-40	-50	-18	-46	-60	-47	-64
40°	-20	-47	-71	-45	-51	-21	-52	-65	-52	-64
45°	-26	-50	-85	-51	-51	-26	-58	-60	-59	-64

How to calculate correct tube cutting length for straight and level handrails

w = Distance between uprights ₵ to ₵

TYPE	SIZE
32	40
x	x
-22	-25