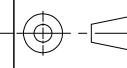


Cleat Fixing Selection Guide

- 1 - Select cleat & use formula on sheet 2 to calculate required fixing length.
- 2 - Using the calculated value from the formula, choose the next standard bolt length above that value from the table below.
- 3 - See table below for fixing part numbers. Other fixing sizes are available upon request.
- 4 - Ellis stocked fixings are in **bold** in the table below.
- 5 - Select suitable washers & nuts (typically 2 washers + 1 nut per fixing) from the table below.
- 6 - Example dimension: T for Unistrut would be 7mm

Individual Part Numbers						
Individual Fixing (Set Screws) Part #'s						
Bolt length	Bright Zinc Plated		Galvanised		Stainless Steel A4-70	
	M10	M12	M10	M12	M10	M12
20	OF-M10-020S-Z	OF-M12-020S-Z	OF-M10-020S-G	OF-M12-020S-G	OF-M10-020S-4	OF-M12-020S-4
25	OF-M10-025S-Z	OF-M12-025S-Z	OF-M10-025S-G	OF-M12-025S-G	OF-M10-025S-4	OF-M12-025S-4
30	OF-M10-030S-Z	OF-M12-030S-Z	OF-M10-030S-G	OF-M12-030S-G	OF-M10-030S-4	OF-M12-030S-4
35	OF-M10-035S-Z	OF-M12-035S-Z	OF-M10-035S-G	OF-M12-035S-G	OF-M10-035S-4	OF-M12-035S-4
40	OF-M10-040S-Z	OF-M12-040S-Z	OF-M10-040S-G	OF-M12-040S-G	OF-M10-040S-4	OF-M12-040S-4
45	OF-M10-045S-Z	OF-M12-045S-Z	OF-M10-045S-G	OF-M12-045S-G	OF-M10-045S-4	OF-M12-045S-4
50	OF-M10-050S-Z	OF-M12-050S-Z	OF-M10-050S-G	OF-M12-050S-G	OF-M10-050S-4	OF-M12-050S-4
60	OF-M10-060S-Z	OF-M12-060S-Z	OF-M10-060S-G	OF-M12-060S-G	OF-M10-060S-4	OF-M12-060S-4
70	OF-M10-070S-Z	OF-M12-070S-Z	OF-M10-070S-G	OF-M12-070S-G	OF-M10-070S-4	OF-M12-070S-4
80	OF-M10-080S-Z	OF-M12-080S-Z	OF-M10-080S-G	OF-M12-080S-G	OF-M10-080S-4	OF-M12-080S-4
90	OF-M10-090S-Z	OF-M12-090S-Z	OF-M10-090S-G	OF-M12-090S-G	OF-M10-090S-4	OF-M12-090S-4
100	OF-M10-100S-Z	OF-M12-100S-Z	OF-M10-100S-G	OF-M12-100S-G	OF-M10-100S-4	OF-M12-100S-4
Ancillary Parts						
Washer Form A	OF-M10-W001-Z	OF-M12-W001-Z	OF-M10-W001-G	OF-M12-W001-G	OF-M10-W001-4	OF-M12-W001-4
Full Nut	OF-M10-FNUT-Z	OF-M12-FNUT-Z	OF-M10-FNUT-G	OF-M12-FNUT-G	OF-M10-FNUT-4	OF-M12-FNUT-4
Flange Nut	OF-M10-ANUT-Z	OF-M12-ANUT-Z	OF-M10-ANUT-G	OF-M12-ANUT-G	OF-M10-ANUT-4	OF-M12-ANUT-4
Nyloc Nut	OF-M10-NNUT-Z	OF-M12-NNUT-Z	OF-M10-NNUT-G	OF-M12-NNUT-G	OF-M10-NNUT-4	OF-M12-NNUT-4
Channel Nut	OF-M10-CN02-Z	OF-M12-CN02-Z	OF-M10-CN02-G	OF-M12-CN02-G	OF-M10-CN02-4	OF-M12-CN02-4

Title: How to choose the correct standard bolt length		Part No: See Table	Drawn By: Tom Dunbar	Sheet Size: A1	Issue: A For Review B See Sht. 2 C Table mods to sht. 2	Details: N/A N/A N/A	NP/NECN: N/A N/A N/A	Checked by: S. Walton S. Walton S. Walton	Date: 29/03/19 17/07/19 04/12/19
Project: -		Drawing No: 5746	Material: N/A	Sheet No: 1 of 2	Volume (cm ³): N/A		Scale: NTS		
GENERAL DIMENSION TOLERANCES TO EN22768-1:1993 VERY COARSE, ALL DIMS IN mm (UOS)									
OVER 0 UP TO 3	OVER 3 UP TO 6	OVER 6 UP TO 30	OVER 30 UP TO 120	OVER 120 UP TO 400	OVER 400 UP TO 1000	OVER 1000 UP TO 2000	OVER 2000 UP TO 4000		
-	±0.5	±1	±1.5	±2.5	±4	±6	±8		



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ALPHA - M10 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Alpha	ALP01-AN1 to ALP15-AN1	M10	1	Length = T + 27

COLOSSUS - M10 or M12 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Colossus	COL24-29 to COL39-47	M10	2	Length = T + 23
Colossus	COL24-29 to COL39-47	M12	1	Length = T + 26
Colossus	COL45-54 to COL60-72	M10	2	Length = T + 23
Colossus	COL69-83 to COL142-172SC	M12	2	Length = T + 26

EMPEROR - M10 or M12 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Emperor	ER19-23 to ER119-128	M10	2	Length = T + 24
Emperor	ER19-23 to ER119-128	M12	1	Length = T + 27

Fixing options 1x M12, or 2 x M10 - See below

PHOENIX 1 - M10 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Phoenix 1	1FP-10SS to 1FP-21SS	M10	1	Length = Ø cable + T + 27

PHOENIX 2 - M10 or M12 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Phoenix 2	2FP-19SS to 2FP-21SS	M10	2	Length = Ø cable + T + 30
Phoenix 2	2FP-22SS to 2FP-25SS	M12	2	Length = Ø cable + T + 34

TRIDENT WITH SINGLE BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Trident	TR24-29 to TR69-83	M12	1	Length = T + 35

TRIDENT WITH 2 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Trident	TR24-29	M10	2	Length = T + 90
Trident	TR27-32	M10	2	Length = T + 95
Trident	TR30-36	M10	2	Length = T + 105
Trident	TR34-41	M10	2	Length = T + 110
Trident	TR39-47	M10	2	Length = T + 120
Trident	TR45-54	M10	2	Length = T + 130
Trident	TR52-62	M10	2	Length = T + 140
Trident	TR60-72	M12	2	Length = T + 170
Trident	TR69-83	M12	2	Length = T + 185

TRIDENT WITH 2 BOLT FIX - NO SUBSTRUCTURE

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Bolt Length
Trident	TR24-29	M10	2	Length = 90
Trident	TR27-32	M10	2	Length = 90
Trident	TR30-36	M10	2	Length = 100
Trident	TR34-41	M10	2	Length = 100
Trident	TR39-47	M10	2	Length = 120
Trident	TR45-54	M10	2	Length = 130
Trident	TR52-62	M10	2	Length = 140
Trident	TR60-72	M12	2	Length = 160
Trident	TR69-83	M12	2	Length = 180

NOTE : CAN BE USED WITH THE SINGLE FIX OPTION TO SECURE TO STRUCTURE IF REQUIRED

2A WITHOUT LINERS FITTED

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
2A Clamp	2A-07 to 2A-142 2A-1200, 2A-1201 & 2A-1202	M10	2	Length = Ø cable + T + 34
2A Clamp	2A-151 to 2A-152	M12	2	Length = Ø cable + T + 58
2A Clamp	2A-161 to 2A-172	M16	2	Length = Ø cable + T + 73

2A WITH LINERS FITTED

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
2A Clamp	2A-07 to 2A-142, 2A-1200, 2A-1201 & 2A-1202	M10	2	Length = Ø cable + T + 40
2A Clamp	2A-151 to 2A-152	M12	2	Length = Ø cable + T + 68
2A Clamp	2A-161 to 2A-172	M16	2	Length = Ø cable + T + 83

2F + WITHOUT LINERS FITTED

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
2F+ Clamp	2F+07 to 2F+11 2F+1200, 2F+1201, & 2F+1202	M10	2	Length = Ø cable + T + 47
2F+ Clamp	2F+131 to 2F+152	M12	2	Length = Ø cable + T + 56
2F+ Clamp	2F+161 to 2F+172	M16	2	Length = Ø cable + T + 74

2F + WITH LINERS FITTED

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
2F+ Clamp	2F+07 to 2F+11 2F+1200, 2F+1201, & 2F+1202	M10	2	Length = Ø cable + T + 53
2F+ Clamp	2F+131 to 2F+152	M12	2	Length = Ø cable + T + 66
2F+ Clamp	2F+161 to 2F+172	M16	2	Length = Ø cable + T + 84

1F - M10 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
1F Clamp	1F-10 to 1F-19	M10	1	Length = Ø cable + T + 42

1A - M10 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
1A Clamp	1A-10 to 1A-19	M10	1	Length = Ø cable + T + 42

VULCAN - M10 BOLT FIX

How to choose the fixing bolt size & length				
Cleat Type	Range	Fixing Size	Fixing Qty	Fixing Length Formula
Vulcan+	VRT+00 to VRT+09	M10	1	Length = T + 22
Vulcan+	VRT+10 to VRT+20	M10	3	Length = T + 22

Title: Cleats various - fixing bolt length calculator		Part No: See Tables		Drawn By: Tom Dunbar		Sheet Size: A1		Issue: A For Review		Details: N/A		NPN/ECN: N/A		Checked by: S. Walton		Date: 25/03/19	
Project: -		Drawing No: 5746		Material: N/A		Sheet No: 2 of 2		B Trident - additional options added		C Tables corrected		N/A		S. Walton		17/07/19	
Project No: -		Mass (kg): N/A		Volume (cm³): N/A		Scale: NTS		-		-		-		-		-	
GENERAL DIMENSION TOLERANCES TO EN22768-1:1993 VERY COARSE. ALL DIMS IN mm (UOS)																	
OVER 0 UP TO 3	OVER 3 UP TO 6	OVER 6 UP TO 30	OVER 30 UP TO 120	OVER 120 UP TO 400	OVER 400 UP TO 1000	OVER 1000 UP TO 2000	OVER 2000 UP TO 4000										
-	±0.5	±1	±1.5	±2.5	±4	±6	±8										

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