

Alpha™	06
Vulcan+™	08
Vulcan+™ Quad	10
Vulcan+™ Twist Foot	12
Emperor™ Trefoil	14
Emperor™ Single	16
Flexi-Strap™	18
Protect™	20
Trident®	22
Colossus™	24
Centaur®	26
Centaur® Strap	28
Cable Guide Clamp	30
Atlas™	32
Vari-Cleat™	34
No Bolts Cleat™	36
1A	38
2A	40
1F	42
2F+	44
Phoenix®	46
Matrix™	48
Bespoke	49
Mk2 Hanger	50
Convex Hanger	51
Pegasus	52
Triplex Cable Surround	54
Single Bolt Fixing Clamp	56
Various Plastic Products	57
Jointers Tools	63
Ladder Adaptors	65

# QUICK SELECTION GUIDE



Alpha™ page 06



Vulcan+™ page 08



Vulcan+™ Quad page 10



Vulcan+™ Twist Foot page 12



Emperor™ Trefoil page 14



Emperor™ Single page 16



Flexi-strap™ page 18



Protect™ page 20



Trident™ page 22



Colossus™ page 24



Centaur® page 26



Centaur® Strap page 28



Cable Guide Clamp™ page 30



Atlas™ page 32



Vari-cleat™ page 34



No Bolts Cleat™ page 36



One & Two Hole Cableclamps - Aluminium page 38



One & Two Hole Cableclamps - Non Metallic page 42



Phoenix® page 46



Matrix™ page 48



Mk2 Hanger page 50



Convex Hanger page 51



Pegasus Hanger page 52



Triplex Cable Surround page 54



Single Bolt Fixing Clamp page 56

# GRAPH BELOW IS FORFOR TREFOIL ONLY



## TRIDENT™

Light duty Polymeric cleat



## ALPHA™

Light duty Compact Aluminium



## VULCAN+™

Standard duty Compact Stainless steel



## EMPEROR™

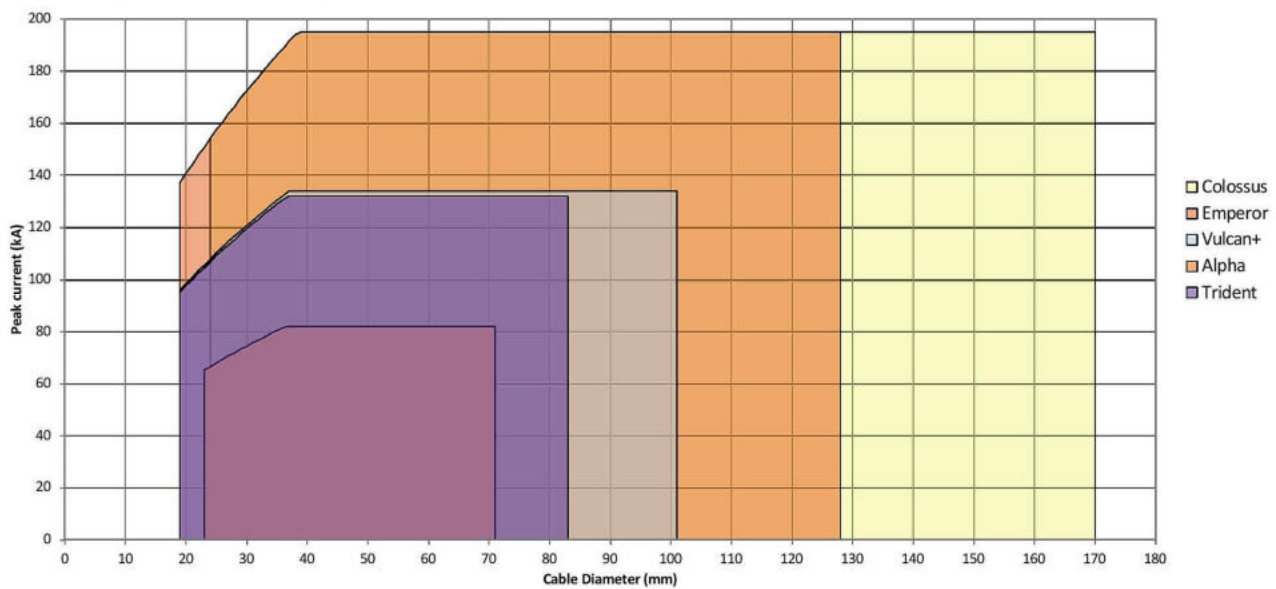
Heavy duty Compact Stainless steel



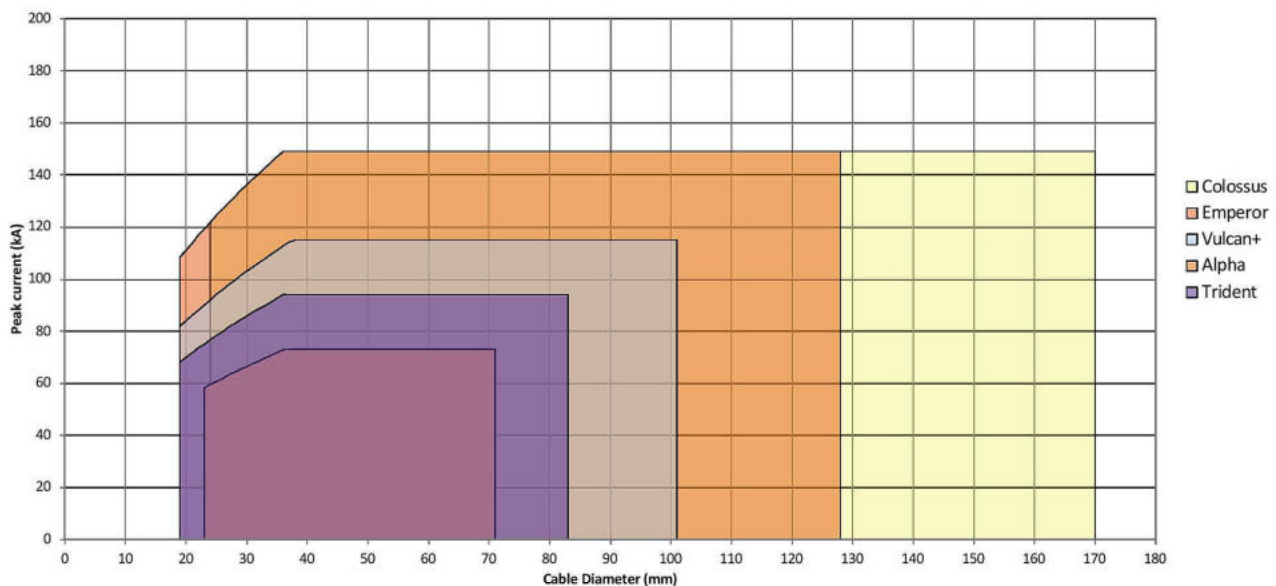
## COLOSSUS™

Heavy duty Compact Polymeric and Stainless steel

### CLEAT RANGE. CLEATS SPACED AT 300MM



### CLEAT RANGE. CLEATS SPACED AT 600MM



The above graphs can be used to provide a general indication of relative cleat strengths, for accurate cleat specification refer to the online calculator or black book. Also check product datasheets for actual short circuit test results.

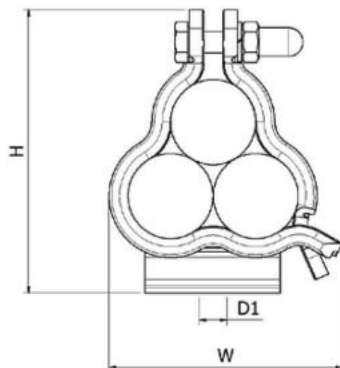
# ALPHA™

Aluminium Trefoil Cleats  
Patent No. UK Patent GB 240 5900

- ▶ 6000 SERIES ALUMINIUM FRAME
- ▶ ZINC PLATED STEEL M8 CLOSURE FIXINGS
- ▶ POLYESTER COATED FRAMES ARE AVAILABLE ON REQUEST
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ ABS APPROVED AND UL LISTED



PART NO. ALUMINIUM BASE	PART NO. POLYMER BASE	CABLE RANGE TREFOIL		DIMENSIONS (mm)				WEIGHT (g)
		MIN Ø (mm)	MAX Ø (mm)	W	H	D	FIXING HOLES (D1)	
ALP01-ANO	ALP01-AN1	23.2	25.1	76	93	48.5	1 x M10	168
ALP02-ANO	ALP02-AN1	25.1	27.1	79	96	48.5	1 x M10	178
ALP03-ANO	ALP03-AN1	27.1	29.3	82	101	48.5	1 x M10	185
ALP04-ANO	ALP04-AN1	29.3	31.7	86	105	48.5	1 x M10	195
ALP05-ANO	ALP05-AN1	31.7	34.2	91	110	48.5	1 x M10	205
ALP06-ANO	ALP06-AN1	34.2	37.0	96	116	48.5	1 x M10	217
ALP07-ANO	ALP07-AN1	37.0	40.0	101	121	48.5	1 x M10	229
ALP08-ANO	ALP08-AN1	40.0	43.2	106	127	48.5	1 x M10	241
ALP09-ANO	ALP09-AN1	43.2	46.7	113	134	48.5	1 x M10	255
ALP10-ANO	ALP10-AN1	46.7	50.5	119	141	48.5	1 x M10	272
ALP11-ANO	ALP11-AN1	50.5	54.6	127	148	48.5	1 x M10	288
ALP12-ANO	ALP12-AN1	54.6	59.0	135	156	48.5	1 x M10	307
ALP13-ANO	ALP13-AN1	59.0	63.8	144	165	48.5	1 x M10	327
ALP14-ANO	ALP14-AN1	63.8	69.0	153	175	48.5	1 x M10	348
ALP15-ANO	ALP15-AN1	69.0	74.6	163	186	48.5	1 x M10	372



ALUMINIUM BASE

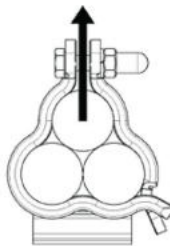


POLYMER BASE  
(WITH POLYESTER COATED FRAME)

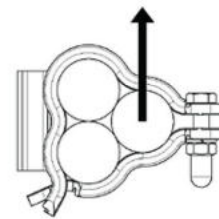
# TESTING SUMMARY

Alpha Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.1, 6.1.3	METALLIC / COMPOSITE	-
TEMP. FOR PERMAMENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1	XENON ARC METHOD A	PASS APPLICABLE TO POWDER COATED AND POLYMER BASE OPTIONS
CORROSION RESISTANCE	6.5.2	REFER TO ELLIS	REFER TO ELLIS
IMPACT RATING	6.3.5,	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 500N VERTICAL - 500N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	82kA (REPORT No. PDL-18.184) CABLE OD = Ø35mm
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	73.4kA (REPORT No. PDL-18.122.2) CABLE OD= Ø36mm



LATERAL LOAD  
'VERTICAL' DIRECTION



LATERAL LOAD  
'HORIZONTAL DIRECTION'



Conduit & cable hardware 4CG8 with  
AH-2 & wet locations. Listed sizes:  
ALP01-AN0 to ALP15-AN0.



LONDON UNDERGROUND  
Alpha Cable Cleats are compliant with  
the requirements of LUL-1085. Product  
register number 360.

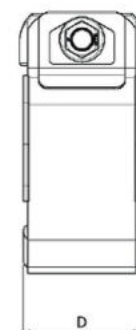
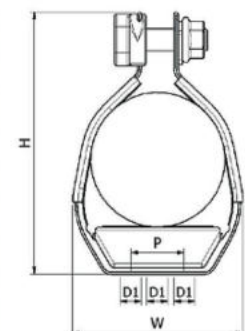
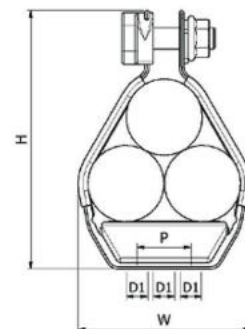
# VULCAN+™

Stainless Steel Cable Cleats  
Patent No. UK Patent GB 236 1029

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ SOFT LSF POLYMERIC LINER PROTECTS CABLE SHEATH
- ▶ CAPTIVE CLOSURE FIXINGS FOR FAST INSTALL
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ ABS AND DNV TYPE APPROVED AND ALSO UL LISTED



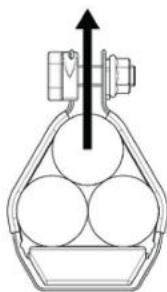
PART NO.	CABLE RANGE TREFOIL		CABLE RANGE SINGLE		DIMENSIONS (mm)					WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	D	P	FIXING HOLES (D1)	
VRT+00	19	24	30	42	60	93	54	N/A	1 x M10	251
VRT+01	23	28	38	50	63	98	54	N/A	1 x M10	258
VRT+02	27	32	43	58	72	106	54	N/A	1 x M10	269
VRT+03	30	35	49	64	79	112	54	N/A	1 x M10	279
VRT+04	33	38	55	70	85	118	54	N/A	1 x M10	284
VRT+05	36	42	58	75	96	125	54	N/A	1 x M10	319
VRT+06	40	46	63	84	105	133	54	N/A	1 x M10	331
VRT+07	44	50	73	90	112	140	54	N/A	1 x M10	391
VRT+08	48	55	83	100	121	149	54	N/A	1 x M10	405
VRT+09	51	58	86	104	126	154	54	N/A	1 x M10	411
VRT+10	55	62	88	110	134	162	54	50	3 x M10	442
VRT+11	59	66	90	115	143	170	54	50	3 x M10	453
VRT+12	63	70	100	125	152	177	54	50	3 x M10	460
VRT+13	67	74	107	132	161	185	54	75	3 x M10	524
VRT+14	71	78	120	145	169	192	54	75	3 x M10	536
VRT+15	74	82	125	150	176	199	54	75	3 x M10	542
VRT+16	77	85	132	153	183	205	54	75	3 x M10	544
VRT+17	81	89	136	156	190	216	54	75	3 x M10	618
VRT+18	85	93	139	159	200	225	54	75	3 x M10	628
VRT+19	89	97	142	162	200	235	54	75	3 x M10	637
VRT+20	93	101	160	170	215	240	54	75	3 x M10	646



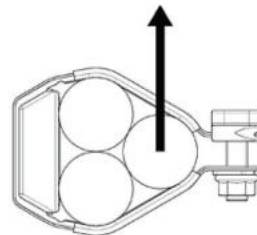
# TESTING SUMMARY

Vulcan+ Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS ≥16% CHROMIUM
IMPACT RATING	6.3.4	HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	150N - TREFOIL 45N - SINGLE
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 200N VERTICAL - 650N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	134kA (REPORT No. PDL-18.122.1)  CABLE OD= Ø36mm
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	115kA (REPORT No. PDL-16.164.3)  CABLE OD= Ø36mm



LATERAL LOAD  
'VERTICAL' DIRECTION



LATERAL LOAD  
'HORIZONTAL DIRECTION'



Conduit & cable hardware 4CG8 with AH-2 & wet locations. Listed sizes: VRT+00 to VRT+18.

LONDON UNDERGROUND  
Vulcan+ Cable Cleats are compliant with the requirements of LUL-1085. Product register number 361.

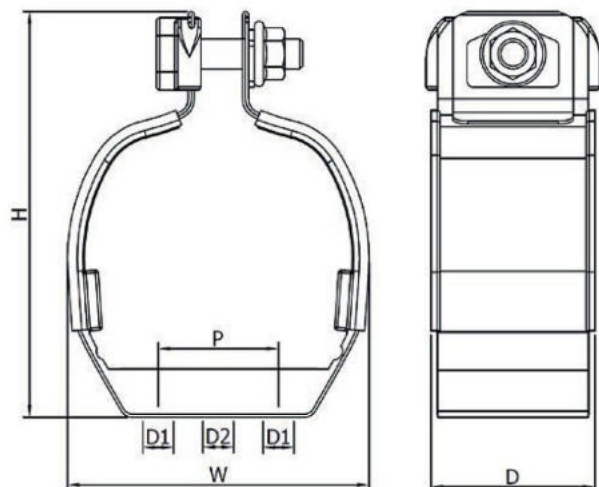
# VULCAN+™ QUAD

Patent No. UK Patent GB 236 1029

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ SOFT LSF POLYMERIC LINER PROTECTS CABLE SHEATH
- ▶ CAPTIVE CLOSURE FIXINGS FOR FAST INSTALL
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ ABS APPROVED AND ALSO UL LISTED



PART NO.	CABLE RANGE		DIMENSIONS (mm)				FIXING HOLES (D1)	WEIGHT (g)
	MIN Ø (mm)	MAX Ø (mm)	W	H	D	P		
VRQ+01	23	25	68	110	54	N/A	1 x M10	284
VRQ+02	26	27	70	113	54	N/A	1 x M10	286
VRQ+03	28	31	78	128	54	N/A	1 x M10	318
VRQ+03A	31	35	90	138	54	N/A	1 x M10	350
VRQ+04	35	42	103	148	54	N/A	1 x M10	378
VRQ+05	43	47	120	165	54	N/A	1 x M10	452
VRQ+06	48	50	121	170	54	N/A	1 x M10	467
VRQ+07	51	57	140	190	54	50	3 x M10	486
VRQ+08	58	63	150	200	54	50	3 x M10	499
VRQ+09	64	70	170	218	54	75	3 x M10	581

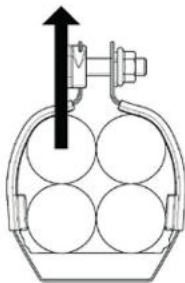




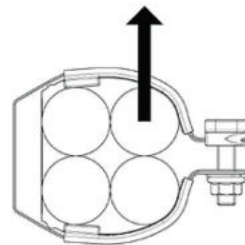
## TESTING SUMMARY

Vulcan+ Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS≥16% CHROMIUM
IMPACT RATING	6.3.4	HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	100
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 100N VERTICAL - 350N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	134kA (REPORT No. PDL-18.122.1) CABLE OD= Ø36mm (VRT+)
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	115kA (REPORT No. PDL-16.164.3) CABLE OD= Ø36mm (VRT+)



LATERAL LOAD  
'VERTICAL' DIRECTION



LATERAL LOAD  
'HORIZONTAL DIRECTION'



Conduit & cable hardware 4CG8 with AH-2 & wet locations. Listed sizes: VRQ+01 to VRQ+09.

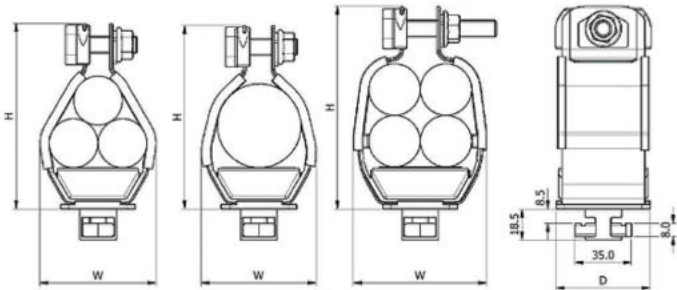
LONDON UNDERGROUND  
Vulcan+ Cable Cleats are compliant with the requirements of LUL-1085. Product register number 361.

# VULCAN+™ TWIST FOOT

Patent No. UK Patent GB 236 1029



- ▶ BASE FIXING KIT DESIGNED FOR FAST INSTALL ON 41X41 AND 41X21 UNISTRUT CHANNEL/LADDER
- ▶ CLEAT COMES WITH ALL FIXINGS IN PLACE READY FOR INSTALL, NO EXTRA FIXINGS ARE REQUIRED ON SITE
- ▶ FIXING KIT CAN BE SUPPLIED IN A4 STAINLESS STEEL, GALVANISED STEEL OR ZINC PLATED STEEL
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914 - REFER TO VRT+ AND VRQ+ DATA SHEETS



## VRT+ TWIST FOOT OPTIONS

PART NO.	CABLE RANGE TREFOIL		CABLE RANGE SINGLE		DIMENSIONS (mm)			WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	D	
VRT+00TFM10-X	19	24	30	42	60	96	54	301
VRT+01TFM10-X	23	28	38	50	63	102	54	308
VRT+02TFM10-X	27	32	43	58	72	109	54	319
VRT+03TFM10-X	30	35	49	64	79	115	54	329
VRT+04TFM10-X	33	38	55	70	85	121	54	334
VRT+05TFM10-X	36	42	58	75	96	128	54	369
VRT+06TFM10-X	40	46	63	84	105	137	54	381
VRT+07TFM10-X	44	50	73	90	112	143	54	441
VRT+08TFM10-X	48	55	83	100	121	152	54	455
VRT+09TFM10-X	51	58	86	104	126	158	54	461
VRT+10TFM10-X	55	62	88	110	134	166	54	492
VRT+11TFM10-X	59	66	90	115	143	174	54	503
VRT+12TFM10-X	63	70	100	125	152	181	54	510
VRT+13TFM10-X	67	74	107	132	161	188	70	525
VRT+14TFM10-X	71	78	120	145	169	195	70	636
VRT+15TFM10-X	74	82	125	150	176	199	70	642
VRT+16TFM10-X	77	85	132	153	183	208	70	644
VRT+17TFM10-X	81	89	136	156	190	219	70	718
VRT+18TFM10-X	85	93	139	159	200	228	70	728
VRT+19TFM10-X	89	97	142	162	200	238	70	737
VRT+20TFM10-X	93	101	160	170	215	243	70	746

'X' DENOTES FIXING MATERIAL, OPTIONS ARE AS FOLLOWS:

4 = A4 STAINLESS STEEL | G = GALVANISED STEEL | Z = ZINC PLATED STEEL

**E.G** A VRT+04 WITH STAINLESS STEEL TWIST FOOT FIXINGS BECOMES: VRT+04TFM10-4

## INSTALLATION OVERVIEW



1) Lower the cleat through the gap in the channel.



2) Once lowered twist the cleat 90°.



3) Tighten the M10 bolt in the base of the cleat.



4) As the bolt is tightened the channel nut will move up the twist foot base and grip onto the channel.



5) The cleat is now securely fastened to the structure and is ready to accept the cables.

# EMPEROR™

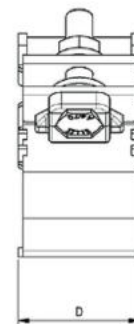
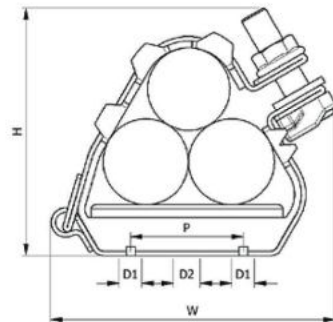
## TREFOIL

Stainless Steel Cable Cleats  
Patent No. UK Patent GB 233 9237

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ SOFT LSF POLYMERIC LINER PROTECTS CABLE SHEATH
- ▶ CAPTIVE CLOSURE FIXINGS FOR FAST INSTALL
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ ABS AND DNV TYPE APPROVED AND ALSO UL LISTED



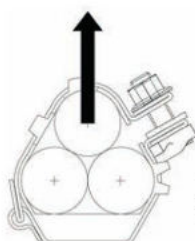
PART NO.	CABLE RANGE		DIMENSIONS (mm)				FIXING HOLES (D1 & D2)	WEIGHT (g)
	MIN Ø (mm)	MAX Ø (mm)	W	H	D	P		
ER19-23	19	23	96	83	54	25	2 x M10 + 1 x M12	425
ER23-28	23	28	96	83	54	25	2 x M10 + 1 x M12	425
ER27-32	27	32	97	88	54	25	2 x M10 + 1 x M12	440
ER30-35	30	35	99	91	54	25	2 x M10 + 1 x M12	445
ER33-38	33	38	103	95	54	25	2 x M10 + 1 x M12	460
ER36-42	36	42	124	100	54	50	2 x M10 + 1 x M12	600
ER40-46	40	46	125	106	54	50	2 x M10 + 1 x M12	605
ER44-50	44	50	130	117	54	50	2 x M10 + 1 x M12	630
ER48-55	48	55	132	121	54	50	2 x M10 + 1 x M12	640
ER51-58	51	58	136	128	54	50	2 x M10 + 1 x M12	650
ER55-62	55	62	160	135	54	75	2 x M10 + 1 x M12	810
ER59-66	59	66	163	143	54	75	2 x M10 + 1 x M12	825
ER63-70	63	70	166	151	54	75	2 x M10 + 1 x M12	850
ER67-74	67	74	169	158	54	75	2 x M10 + 1 x M12	850
ER71-78	71	78	172	165	54	75	2 x M10 + 1 x M12	890
ER74-82	74	82	177	171	54	75	2 x M10 + 1 x M12	890
ER77-85	77	85	183	177	54	75	2 x M10 + 1 x M12	905
ER82-88	82	88	191	187	54	75	2 x M10 + 1 x M12	820
ER88-96	88	96	207	203	54	75	2 x M10 + 1 x M12	890
ER96-103	96	103	221	218	54	75	2 x M10 + 1 x M12	940
ER103-111	103	111	237	235	54	75	2 x M10 + 1 x M12	950
ER111-119	111	119	253	250	54	75	2 x M10 + 1 x M12	1010
ER119-128	119	128	265	275	54	75	2 x M10 + 1 x M12	1220



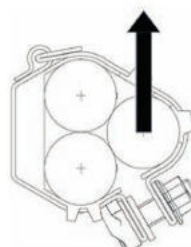
## TESTING SUMMARY

Emperor Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS ≥16% CHROMIUM
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	400
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 650N VERTICAL - 1000N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	195kA (REPORT No. PDL-09.098.2)  CABLE OD= Ø38mm (IEC 61914:2009)
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	149kA (REPORT No. PDL-17.137.4)  CABLE OD= Ø36mm



LATERAL LOAD  
'VERTICAL' DIRECTION



LATERAL LOAD  
'HORIZONTAL DIRECTION'



Conduit & cable hardware 4CG8 with  
AH-2 & wet locations. Listed sizes:  
ER19-23 to ER82-88.

LONDON UNDERGROUND  
Emperor Cable Cleats are compliant  
with the requirements of LUL-1085.  
Product register number 362.

# EMPEROR™

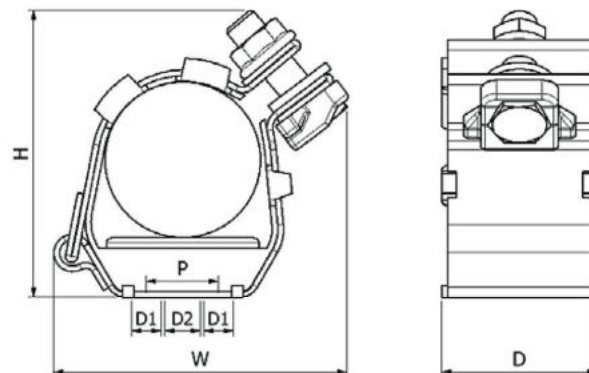
SINGLE

Stainless Steel Cable Cleats  
Patent No. UK Patent GB 233 9237

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ SOFT LSF POLYMERIC LINER PROTECTS CABLE SHEATH
- ▶ CAPTIVE CLOSURE FIXINGS FOR FAST INSTALL
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ ABS AND DNV TYPE APPROVED AND ALSO UL LISTED



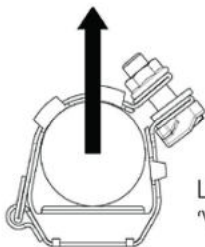
PART NO.	CABLE RANGE		DIMENSIONS (mm)				FIXING HOLES (D1 & D2)	WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	D	P		
ES32-39	32	39	91	89	54	25	2 x M10 + 1 x M12	450
ES37-45	37	45	96	93	54	25	2 x M10 + 1 x M12	470
ES44-52	44	52	99	98	54	25	2 x M10 + 1 x M12	480
ES51-59	51	59	103	102	54	25	2 x M10 + 1 x M12	490
ES58-66	58	66	109	101	54	25	2 x M10 + 1 x M12	500
ES65-73	65	73	111	103	54	25	2 x M10 + 1 x M12	510
ES73-85	73	85	135	112	54	50	2 x M10 + 1 x M12	640
ES84-94	84	94	135	135	54	50	2 x M10 + 1 x M12	660
ES94-118	94	118	160	150	54	50	2 x M10 + 1 x M12	710
ES118-130	118	130	175	160	54	75	2 x M10 + 1 x M12	900
ES127-150	127	150	180	180	54	75	2 x M10 + 1 x M12	940



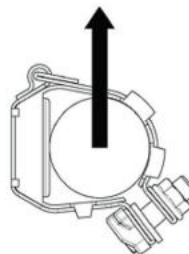
# TESTING SUMMARY

Emperor Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMAMENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS ≥16% CHROMIUM
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	125
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 650N VERTICAL -1000N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING) (EMPEROR TREFOIL)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	195kA (REPORT No. PDL-09.098.2)  CABLE OD= Ø38mm (IEC 61914:2009)
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING) (EMPEROR TREFOIL)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	149kA (REPORT No. PDL-17.137.4)  CABLE OD= Ø36mm



LATERAL LOAD  
'VERTICAL' DIRECTION



LATERAL LOAD  
'HORIZONTAL DIRECTION'



Conduit & cable hardware 4CG8  
with AH-2 & wet locations. Listed sizes:  
ES32-39 to ES94-118.

LONDON UNDERGROUND  
Emperor Cable Cleats are compliant  
with the requirements of LUL-1085.  
Product register number 362.

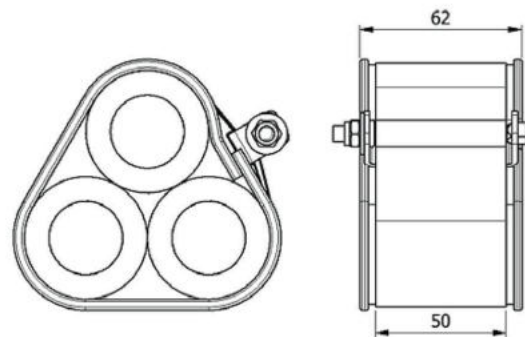
# FLEXI-STRAP™

Intermediate Short-circuit Strap  
Patent No. UK Patent GB 252 6331

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ OPTIONAL SOFT LSF POLYMERIC LINER PROTECTS CABLE SHEATH
- ▶ HEAVY DUTY AND STANDARD DUTY OPTIONS AVAILABLE TO SUIT DIFFERENT SHORT CIRCUIT CONDITIONS
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ STRAPS CAN BE USED BETWEEN CLEATS TO REDUCE THE TOTAL AMOUNT OF FIXED CLEATS WHILST ENSURING ADEQUATE SHORT CIRCUIT PROTECTION



Flexi-Strap is available with or without a polymeric liner. If a liner is not required remove 'L' from the part number (e.g. FS30-41SD).



## STANDARD DUTY SUITABLE FOR USE WITH VULCAN+ CLEATS

PART NO.	CABLE RANGE		WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	
FS24-34SDL	24	34	131
FS30-41SDL	30	41	144
FS37-47SDL	37	47	155
FS43-54SDL	43	54	168
FS50-60SDL	50	60	180
FS56-67SDL	56	67	193
FS63-73SDL	63	73	204
FS69-80SDL	69	80	217
FS72-85SDL	72	85	226
FS82-95SDL	82	95	245
FS92-105SDL	92	105	264
FS102-115SDL	102	115	282
FS112-125SDL	112	125	301
FS122-135SDL	122	135	319
FS132-145SDL	132	145	338

## HEAVY DUTY SUITABLE FOR USE WITH EMPEROR CLEATS

PART NO.	CABLE RANGE		WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	
FS24-34HDL	24	34	165
FS30-41HDL	30	41	185
FS37-47HDL	37	47	202
FS43-54HDL	43	54	221
FS50-60HDL	50	60	238
FS56-67HDL	56	67	258
FS63-73HDL	63	73	275
FS69-80HDL	69	80	294
FS72-85HDL	72	85	308
FS82-95HDL	82	95	336
FS92-105HDL	92	105	364
FS102-115HDL	102	115	392
FS112-125HDL	112	125	420
FS122-135HDL	122	135	448
FS132-145HDL	132	145	476



## TESTING SUMMARY

Flexi-Straps have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA (STANDARD DUTY)	TEST DATA (HEAVY DUTY)
CLEAT TYPE	6.1.3	COMPOSITE	N/A	N/A
TEMP. FOR PERMAMENT APPLICATION	6.2	°C	-40 to +60	-40 to +60
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS $\geq$ 16% CHROMIUM	316L STAINLESS STEEL HAS $\geq$ 16% CHROMIUM
IMPACT RATING	6.3.5	VERY HEAVY	PASS	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq$ 30s	PASS	PASS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	134kA (REPORT No. PDL-18.122.3)  CABLE OD= $\varnothing$ 36mm	-
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	114kA (REPORT No. PDL-18.122.4)  CABLE OD= $\varnothing$ 36mm	156kA (REPORT No. ZKU-15-204)  CABLE OD= $\varnothing$ 38mm (IEC 61914:2009)
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 2250N VERTICAL - 2250N	
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	134kA (REPORT No. PDL-18.071.6)  CABLE OD= $\varnothing$ 36mm	
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	94kA (REPORT No. PDL-18.071.5)  CABLE OD= $\varnothing$ 36mm	

### INSTALLATION INFORMATION:

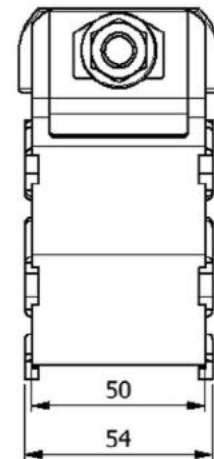
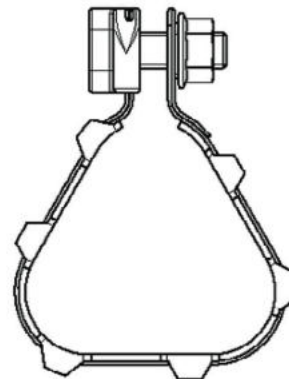
Flexi-Strap is installed by wrapping multiple layers of stainless steel strip around the cable. It is tightened and locked in place using a patented buckle and spindle design. Standard duty straps are wrapped twice around the cables and heavy duty straps are wrapped three times. For more information please refer to the product installation instructions or alternatively the videos section of our website.

A special drive socket to turn the spindle is supplied with every 50 straps ordered, the socket can attach to a standard 1/4" or 6mm ratchet handle. Drive sockets can be ordered separately using the part number FS-T001-4. Although the FS-T001-4 can speed up installation, standard tools also can be used.

# PROTECT™

Retention Strap  
UK Design Reg No. 355854

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ SOFT LSF POLYMERIC LINER PROTECTS CABLE SHEATH
- ▶ SUITABLE FOR USE IN BETWEEN VULCAN+ CLEATS, REDUCING THE AMOUNT OF FIXED CLEATS WHILST ENSURING SHORT CIRCUIT PROTECTION
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FOR STRAP SIZE DETAILS CONTACT ELLIS

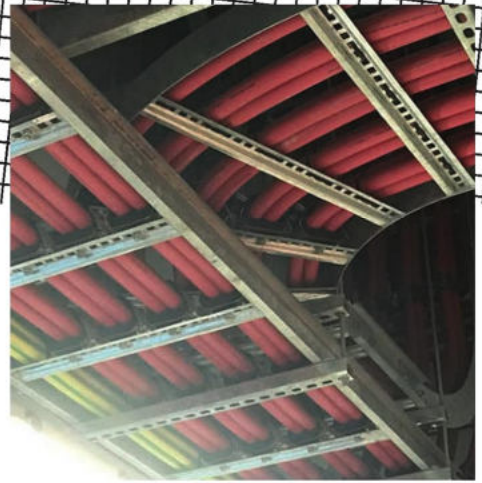


## TESTING SUMMARY

Protect has been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	N/A
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS ≥16% CHROMIUM
IMPACT RATING	6.3.5	-	REFER TO ELLIS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	133kA (REPORT No. PDL-18.071)  CABLE OD= Ø36mm

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.



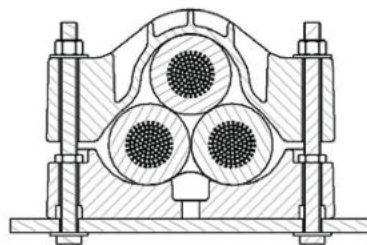
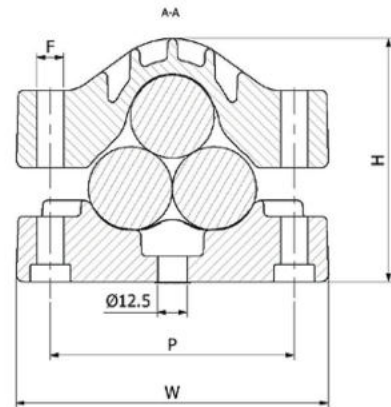
# TRIDENT<sup>®</sup>

Polymeric Trefoil Cleat

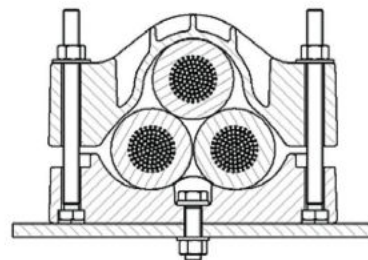


- ▶ MANUFACTURED AS STANDARD IN A HIGH STRENGTH LSF GLASS FILLED NYLON
- ▶ SINGLE OR TWO BOLT CLEAT FIXING OPTIONS
- ▶ SHAPING OF THE CLEAT ENSURES CABLES ARE HELD IN A TREFOIL FORMATION ACROSS THE RANGE
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FIXINGS ARE NOT SUPPLIED AS STANDARD BUT CAN BE PROVIDED ON REQUEST

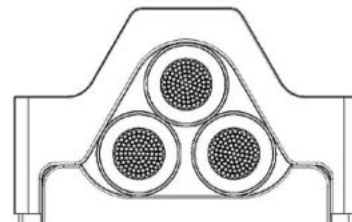
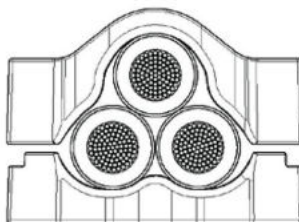
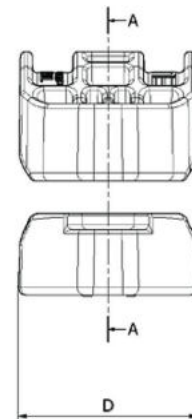
PART NO.	CABLE RANGE		DIMENSIONS (mm)					WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	D	P	F	
TR24-29	24	29	122	91	77	92.5	M10	360
TR27-32	27	32	126	95	77	98.5	M10	370
TR30-36	30	36	134	104	77	104.5	M10	383
TR34-41	34	41	144	112	77	114.5	M10	485
TR39-47	39	47	156	124	77	126.5	M10	568
TR45-54	45	54	172	138	77	142.5	M10	666
TR52-62	52	62	190	153	77	160.5	M10	793
TR60-72	60	72	215	177	98	182	M12	1100
TR69-83	69	83	238	198	98	205	M12	1300



FIXING OPTION 1: 2 x M10/M12 FIXINGS



FIXING OPTION 2: 1 X M12 FIXING

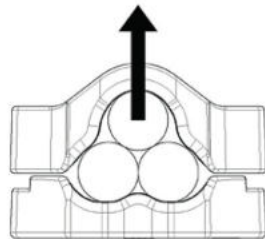


SHAPING OF THE TRIDENT CLAMPS ENSURES CABLES ARE MAINTAINED IN A TRUE TREFOIL FORMATION ACROSS ITS RANGE TAKE, UNLIKE SIMILAR POLYMERIC CLAMPS ON THE MARKET.

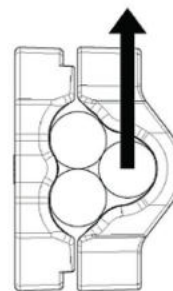
## TESTING SUMMARY

Trident Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.2	NON-METALLIC	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS
CORROSION RESISTANCE	6.5.2	N/A	N/A
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	1500
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 2250N VERTICAL - 2250N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	134kA (REPORT No. PDL-18.071.6) CABLE OD= $\varnothing 36mm$
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	94kA (REPORT No. PDL-18.071.5) CABLE OD= $\varnothing 36mm$



LATERAL LOAD 'VERTICAL' DIRECTION



LATERAL LOAD 'HORIZONTAL DIRECTION'

# COLOSSUS™

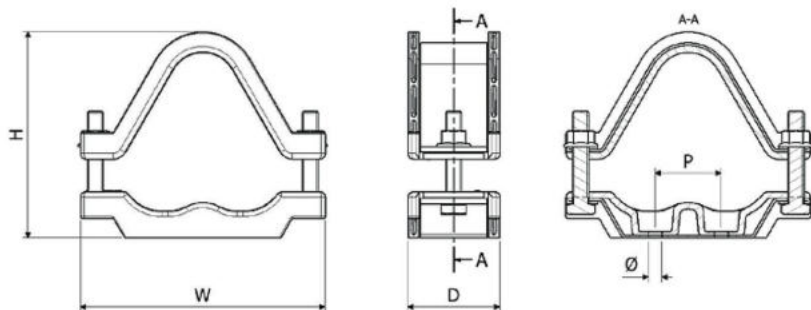
Community Design  
Reg. No. 001927583

- ▶ 316L STAINLESS STEEL FRAME AND FIXINGS
- ▶ LSF POLYMERIC BASE AND TOP MOULDING PROTECTS THE CABLE SHEATH
- ▶ OPTIONAL SADDLED BASE AVAILABLE FOR LARGE CLEAT SPACING APPLICATIONS
- ▶ COLOSSUS RANGE CAN ACCOMMODATE TREFOIL CABLES FROM Ø24MM TO Ø170MM ACROSS 14 SIZES
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914



PART NO.	CABLE RANGE		DIMENSIONS (mm)				FIXING HOLES (D1 & D2)	WEIGHT (g)
	MIN Ø (mm)	MAX Ø (mm)	W	H	D	P		
COL24-29	24	29	128	87	60	25	2 x M10 + M12	604
COL27-32	27	32	133	92	60	25	2 x M10 + M12	623
COL30-36	30	36	137	101	60	25	2 x M10 + M12	639
COL34-41	34	41	146	110	60	25	2 x M10 + M12	690
COL39-47	39	47	157	122	60	25	2 x M10 + M12	734
COL45-54	45	54	171	141	70	50	2 x M10	913
COL52-62	52	62	185	156	70	50	2 x M10	974
COL60-72	60	72	204	176	70	50	2 x M10	1063
COL69-83	69	83	225	202	100	75	2 x M12	1590
COL79-95	79	95	247	225	100	75	2 x M12	1700
COL91-109	91	109	273	253	100	120	2 x M12	1900
COL105-126	105	126	306	286	150	120	2 x M12	3030
COL122-146	122	146	345	324	150	150	2 x M12	3270
COL142-170	142	170	390	371	150	150	2 x M12	3680

A SADDLED BASE IS AVAILABLE ON REQUEST.



## TESTING SUMMARY

Colossus Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMAMENT APPLICATION	6.2	°C	-40 to +60
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS $\geq$ 16% CHROMIUM
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq$ 30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	170kA (REPORT No. PDL-18.122)  CABLE OD= $\varnothing$ 36mm
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	150kA (REPORT No. PDL-16.164.2)  CABLE OD= $\varnothing$ 36mm
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 7.8M INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	104kA (REPORT No. ZKU-12-179) CABLE OD= $\varnothing$ 70mm  (WITH PROTECT STRAPS EVERY 1.3m - BASED ON IEC61914:2009)

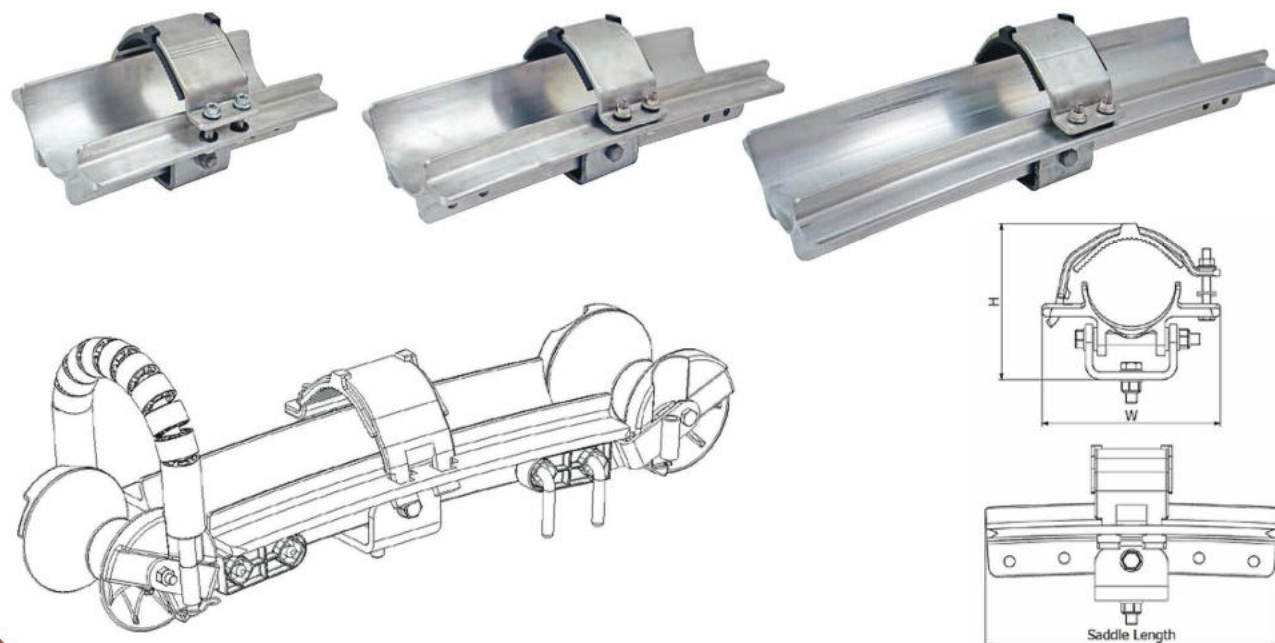
# CENTAUR<sup>®</sup>

Cable Saddle, UK Patent App. No. 0805128.6  
 European Patent No. 1973211, US Patent No. 8398033  
 Community Design Registration No. 000749999

- ▶ CURVED SADDLE CLEAT TO SUIT SAGGED CABLE INSTALLATIONS
- ▶ PIVOT POINTS ALLOW THE SADDLE TO PARTIALLY ROTATE UP AND DOWN AND LEFT TO RIGHT ACROSS ITS LENGTH
- ▶ HINGED CABLE STRAP EASES INSTALLATION
- ▶ CABLE ROLLERS CAN BE POSITIONED AT THE ENDS OF THE SADDLE FOR CABLE PULLING AS AN OPTIONAL EXTRA
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914



PART NO.	CABLE RANGE		DIMENSIONS (mm)			
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	SADDLE LENGTH	BASE FIXING TYPE
CS100-112	100	112	244	205	400, 600 or 800	1 x M16
CS108-122	108	122	244	212	400, 600 or 800	1 x M16
CS120-132	120	132	244	221	400, 600 or 800	1 x M16
CS128-142	128	142	244	233	400, 600 or 800	1 x M16
CS140-152	140	152	272	240	400, 600 or 800	1 x M16
CS150-162	150	162	272	253	400, 600 or 800	1 x M16





## TESTING SUMMARY

Centaur cable saddles have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' As IEC 61914 is part of the low voltage directive it is not possible to follow the standard exactly and thus deviations have been made in areas. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	UV RESISTANT	METALLIC FRAME SHIELDS ALL POLYMER COMPONENTS.
CORROSION RESISTANCE	6.5.2.2	REFER TO ELLIS	-
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CENTAUR CLEATS AT 8.4M WITH STRAPS AT MIDPOINTS	163kA (REPORT No. KEMA-313-08) PHASE SPACING = 800mm

### PROJECT SPECIFIC DESIGNS:

Centaur can be adapted to suit specific project requirements, as such can alter the design to suit certain load or functionality requirements. Please contact us for further details.



This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

# CENTAUR<sup>®</sup> INTERMEDIATE STRAP

Aluminium cable spacer

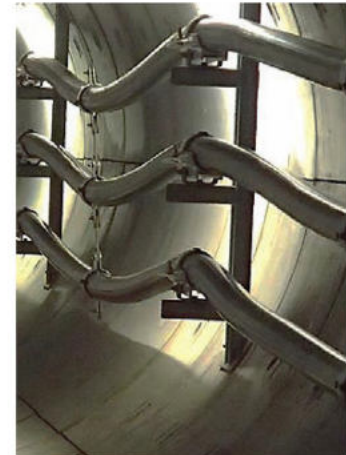
- ▶ DESIGNED TO RESTRAIN CABLES DURING A SHORT CIRCUIT FAULT AND MAINTAIN PHASE SPACING UNDER NORMAL OPERATING CONDITIONS
- ▶ MANUFACTURED IN 6000 SERIES ALUMINIUM
- ▶ TYPICAL SIZES RANGE FROM  $\varnothing 100$  -  $\varnothing 162$ MM HOWEVER SPECIALS CAN BE PROVIDED ON REQUEST
- ▶ EACH CLAMP CAN PIVOT ABOUT THE JOINING BAR TO ACCOMMODATE FOR DIFFERENTIAL CABLE MOVEMENT. FIXED VERSIONS CAN BE SUPPLIED ON REQUEST.
- ▶ SHORT CIRCUIT TESTED BASED ON IEC 61914



TYPICAL INSTALLATION, PHOTO TAKEN AT A SHORT CIRCUIT TESTING EVENT AT KEMA LAB, ARNHEM NL.



BALFOUR BEATTY - POWER TRANSMISSION AND DISTRIBUTION ON THE LONDON POWER TUNNELS



SPECIAL VERSIONS CAN BE SUPPLIED ON REQUEST



## SHORT CIRCUIT TESTING

CENTAUR INTERMEDIATE STRAP HAS BEEN SHORT CIRCUIT TESTED TO THE FOLLOWING PARAMETERS, CONSULT TEST REPORT NUMBER KEMA 313-08 FOR MORE DETAIL:

- CABLE =  $\varnothing 140$ mm
- CENTAUR SADDLES EVERY 8.4m WITH INTERMEDIATE STRAPS AT MIDPOINTS
- PEAK CURRENT = 163KA

## TESTING SUMMARY

Centaur cable saddles have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' As IEC 61914 is part of the low voltage directive it is not possible to follow the standard exactly and thus deviations have been made in areas. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMAMENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	UV RESISTANT	METALLIC FRAME SHIELDS ALL POLYMER COMPONENTS.
CORROSION RESISTANCE	6.5.2.2	REFER TO ELLIS	-
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CENTAUR CLEATS AT 8.4M WITH STRAPS AT MIDPOINTS	117kA (REPORT No. KEMA- 313-08)  CABLE = $\varnothing 103mm$

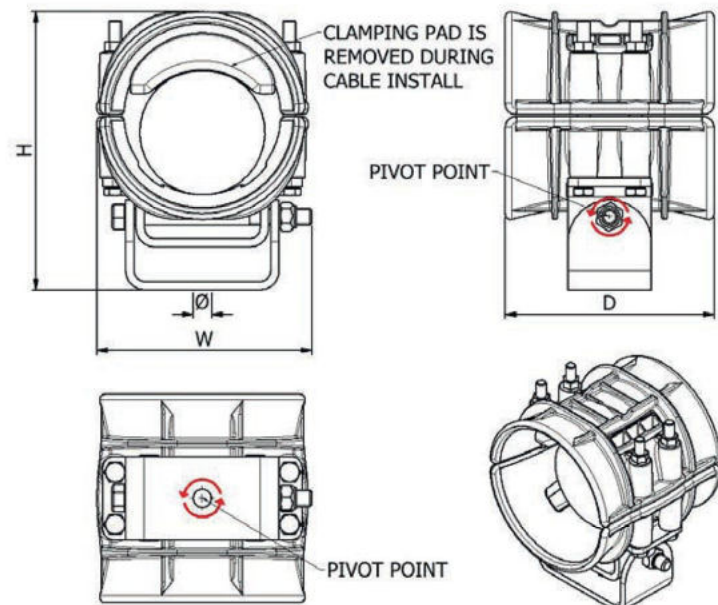
# CABLE GUIDE CLAMP™

UK (2514384), EUROPEAN (2806198)  
and US (9,404,605) Patent

- ▶ FULLY GIMBALED CLAMP IS DESIGNED TO ROTATE UNDER CABLE PULLING FORCES
- ▶ CLAMPING PAD IS REMOVED FOR CABLE PULLING AND RE-INSTALLED TO CLAMP THE CABLE ONCE IT IS IN POSITION
- ▶ CONSTRUCTED FROM HIGH STRENGTH V0 GLASS FILLED NYLON AND GALVANISED STEEL COMPONENTS
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ INSTALLATION ANIMATION AVAILABLE ON THE VIDEOS SECTION OF OUR WEBSITE



PART NO.	CABLE RANGE		DIMENSIONS (mm)				WEIGHT (kg)
	MIN $\phi$	MAX $\phi$	W	H	D	$\phi$ FIXING HOLES	
CGC100-112-G	100	112	185	260	200	1 x M16	5.2
CGC110-122-G	110	122	185	255	200	1 x M16	5.2
CGC120-135-G	120	135	203	281	200	1 x M16	5.5
CGC130-145-G	130	145	203	283	200	1 x M16	5.5
CGC140-160-G	140	160	262	324	250	1 x M16	6.25
CGC150-170-G	150	170	262	324	250	1 x M16	6.25



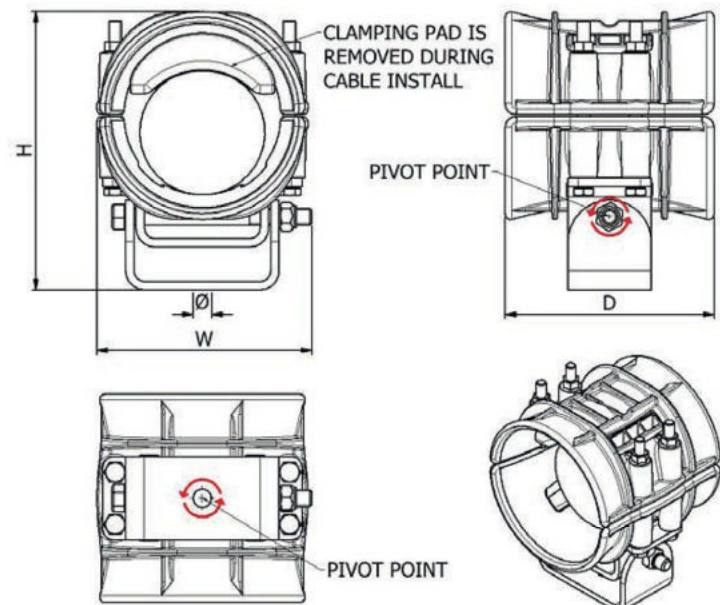
# CABLE GUIDE CLAMP™

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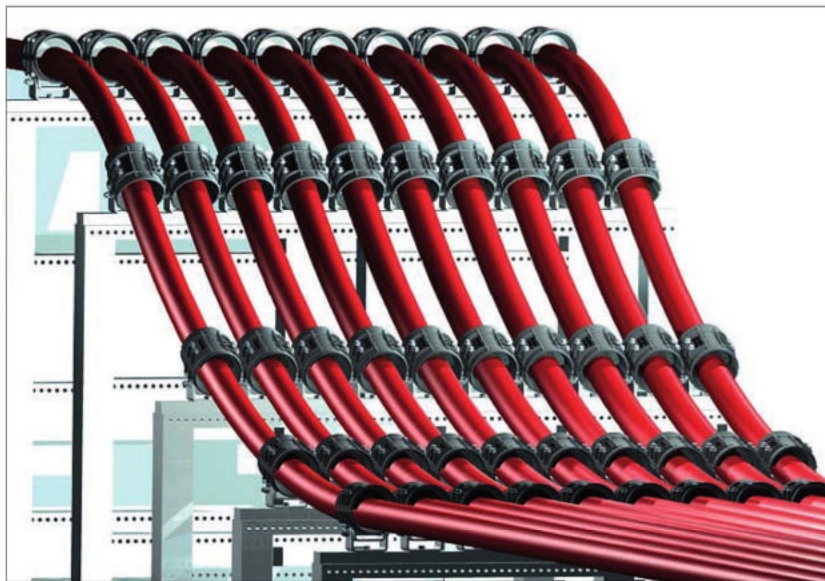
PART NO.	CABLE RANGE		DIMENSIONS (mm)				WEIGHT (kg)
	MIN $\phi$	MAX $\phi$	W	H	D	$\phi$ FIXING HOLES	
CGC100-112-G	100	112	185	260	200	1 x M16	5.2
CGC110-122-G	110	122	185	255	200	1 x M16	5.2
CGC120-135-G	120	135	203	281	200	1 x M16	5.5
CGC130-145-G	130	145	203	283	200	1 x M16	5.5
CGC140-160-G	140	160	262	324	250	1 x M16	6.25
CGC150-170-G	150	170	262	324	250	1 x M16	6.25



## TESTING SUMMARY

Cable Guide Clamp has been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. As IEC 61914 is part of the low voltage directive it is not possible to follow the standard exactly and thus deviations have been made in areas. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
CORROSION RESISTANCE	6.5.2.2	HIGH	192H SALT SPRAY TEST - ISO 9227
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 1M INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	114kA (REPORT No. PDL- 15.025.1)  CABLE OD= $\varnothing 117mm$  PHASE SPACING = 200mm  (BASED ON IEC61914:2009)



A computer simulation of the Cable Guide Clamp installed on a wind farm substation in the North Sea. Actual image unavailable due to reasons of confidentiality.

# ATLAS™

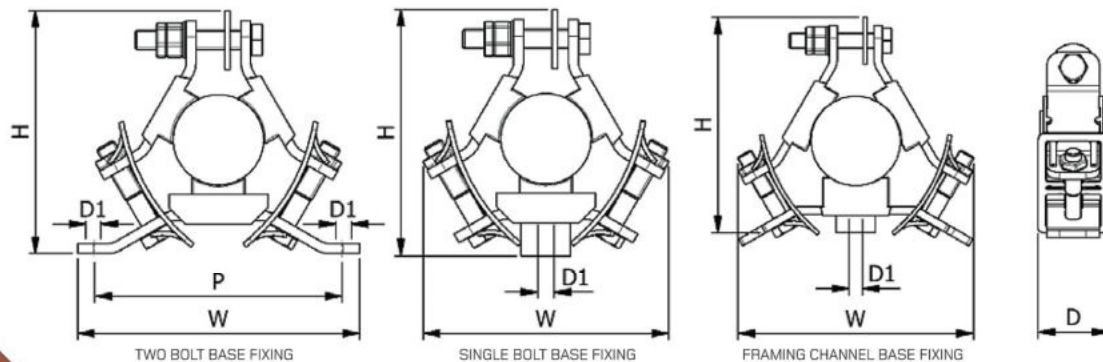
Galvanized Steel Cable Cleats  
Patent No. UK Patent GB 228 4444

- ▶ GALVANISED STEEL FRAME WITH LSF POLYMERIC PADS TO PROTECT THE CABLE SHEATH
- ▶ CAN BE FIXED USING ONE BOLT, TWO BOLTS OR A FRAMING CHANNEL FIXING
- ▶ AVAILABLE FOR TREFOIL OR SINGLE CABLE APPLICATIONS
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914



## SELECTION TABLE FOR TREFOIL FORMATIONS

PART NO.	CABLE RANGE	DIMENSIONS (mm)													WEIGHT (g)
		TWO BOLT BASE FIXING					SINGLE BOLT BASE FIXING				FRAMING CHANNEL BASE FIXING				
		W	H	D	P	FIXING HOLES (D1)	W	H	D	FIXING HOLES (D1)	W	H	D	FIXING HOLES (D1)	
AR2-A31-XX	24-26	170	121	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A32-XX	26-30	170	122	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A33-XX	30-35	170	133	54	150	2 x M10	157	141	54	1 x M10	157	136	54	1 x M10	970
AR2-A34-XX	35-40	170	134	54	150	2 x M10	158	142	54	1 x M10	158	137	54	1 x M10	930
AR3-A35-XX	40-45	198	158	54	175	2 x M10	185	165	54	1 x M10	185	160	54	1 x M10	1200
AR3-A36-XX	45-50	198	160	54	175	2 x M10	187	167	54	1 x M10	187	162	54	1 x M10	1200
AR4-A37-XX	50-55	214	174	54	200	2 x M10	204	182	54	1 x M12	204	177	54	1 x M12	1300
AR4-A38-XX	55-60	214	179	54	200	2 x M10	210	187	54	1 x M12	210	182	54	1 x M12	1300
AR4-A39-XX	60-66	214	185	54	200	2 x M10	217	193	54	1 x M12	217	188	54	1 x M12	1300
AR5-A61-XX	66-71	250	225	54	225	2 x M10	254	225	54	1 x M12	254	220	54	1 x M12	1800
AR5-A62-XX	71-76	250	226	54	225	2 x M10	255	226	54	1 x M12	255	221	54	1 x M12	1800
AR5-A63-XX	76-82	250	230	54	225	2 x M10	260	230	54	1 x M12	260	225	54	1 x M12	1800
AR8-A64-XX	82-92	285	250	54	225	2 x M10	N/A				N/A				2100
AR8-A65-XX	92-102	285	250	54	225	2 x M10	N/A				N/A				1900



# ATLAS™

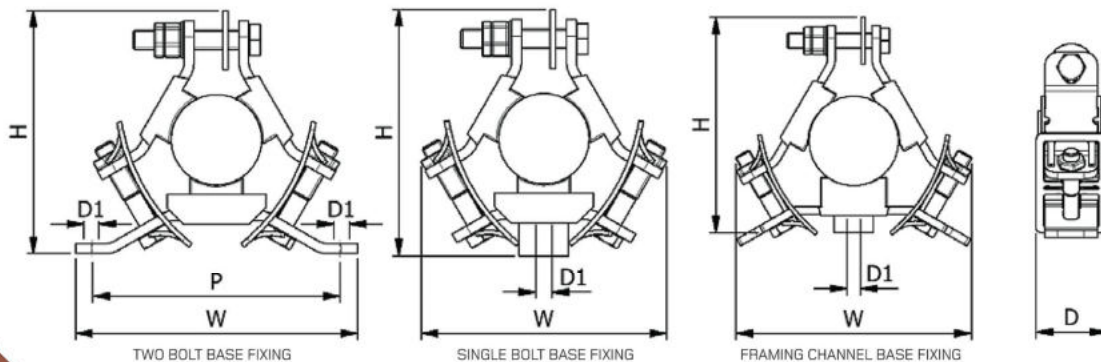
Galvanized Steel Cable Cleats  
Patent No. UK Patent GB 228 4444

- ▶ GALVANISED STEEL FRAME WITH LSF POLYMERIC PADS TO PROTECT THE CABLE SHEATH
- ▶ CAN BE FIXED USING ONE BOLT, TWO BOLTS OR A FRAMING CHANNEL FIXING
- ▶ AVAILABLE FOR TREFOIL OR SINGLE CABLE APPLICATIONS
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914



## SELECTION TABLE FOR TREFOIL FORMATIONS

PART NO.	CABLE RANGE	DIMENSIONS (mm)													WEIGHT (g)
		TWO BOLT BASE FIXING					SINGLE BOLT BASE FIXING				FRAMING CHANNEL BASE FIXING				
		W	H	D	P	FIXING HOLES (D1)	W	H	D	FIXING HOLES (D1)	W	H	D	FIXING HOLES (D1)	
AR2-A31-XX	24-26	170	121	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A32-XX	26-30	170	122	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A33-XX	30-35	170	133	54	150	2 x M10	157	141	54	1 x M10	157	136	54	1 x M10	970
AR2-A34-XX	35-40	170	134	54	150	2 x M10	158	142	54	1 x M10	158	137	54	1 x M10	930
AR3-A35-XX	40-45	198	158	54	175	2 x M10	185	165	54	1 x M10	185	160	54	1 x M10	1200
AR3-A36-XX	45-50	198	160	54	175	2 x M10	187	167	54	1 x M10	187	162	54	1 x M10	1200
AR4-A37-XX	50-55	214	174	54	200	2 x M10	204	182	54	1 x M12	204	177	54	1 x M12	1300
AR4-A38-XX	55-60	214	179	54	200	2 x M10	210	187	54	1 x M12	210	182	54	1 x M12	1300
AR4-A39-XX	60-66	214	185	54	200	2 x M10	217	193	54	1 x M12	217	188	54	1 x M12	1300
AR5-A61-XX	66-71	250	225	54	225	2 x M10	254	225	54	1 x M12	254	220	54	1 x M12	1800
AR5-A62-XX	71-76	250	226	54	225	2 x M10	255	226	54	1 x M12	255	221	54	1 x M12	1800
AR5-A63-XX	76-82	250	230	54	225	2 x M10	260	230	54	1 x M12	260	225	54	1 x M12	1800
AR8-A64-XX	82-92	285	250	54	225	2 x M10	N/A				N/A				2100
AR8-A65-XX	92-102	285	250	54	225	2 x M10	N/A				N/A				1900





## SELECTION TABLE FOR SINGLE FORMATIONS

PART NO.	CABLE RANGE	DIMENSIONS (mm)																
		TWO BOLT BASE FIXING					SINGLE BOLT BASE FIXING				FRAMING CHANNEL BASE FIXING			WEIGHT (g)				
		W	H	D	P	FIXING HOLES (D1)		W	H	D	FIXING HOLES (D1)		W		H	D	FIXING HOLES (D1)	
AR2-A11-XX	38-41	170	128	54	150	2 x M10		144	136	54	1 x M10		144	131	54	1 x M10		950
AR2-A12-XX	41-47	170	129	54	150	2 x M10		144	136	54	1 x M10		144	131	54	1 x M10		930
AR2-A13-XX	47-55	170	140	54	150	2 x M10		157	147	54	1 x M10		157	142	54	1 x M10		940
AR2-A14-XX	55-63	170	141	54	150	2 x M10		158	148	54	1 x M10		158	143	54	1 x M10		930
AR3-A15-XX	63-70	198	164	54	175	2 x M10		185	172	54	1 x M10		185	167	54	1 x M10		1200
AR3-A16-XX	70-79	198	166	54	175	2 x M10		187	173	54	1 x M10		187	168	54	1 x M10		1200
AR4-A17-XX	79-87	214	180	54	200	2 x M10		204	188	54	1 x M12		204	183	54	1 x M12		1300
AR4-A18-XX	87-95	214	186	54	200	2 x M10		210	193	54	1 x M12		210	188	54	1 x M12		1300
AR4-A19-XX	95-104	214	192	54	200	2 x M10		217	199	54	1 x M12		217	197	54	1 x M12		1300
AR5-A51-XX	104-112	250	231	54	225	2 x M10		254	231	54	1 x M12		254	226	54	1 x M12		1700
AR5-A52-XX	112-120	250	232	54	225	2 x M10		255	232	54	1 x M12		255	227	54	1 x M12		1700
AR5-A53-XX	120-130	250	237	54	225	2 x M10		260	237	54	1 x M12		260	232	54	1 x M12		1700

For full part number please replace 'XX' with the following.:

TB = TWO BOLT BASE FIXING

SB = SINGLE BOLT BASE FIXING

FC = FRAMING CHANNEL BASE FIXING



## TESTING SUMMARY

Atlas Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq$ 30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	120kA (REPORT No. PDL-18.122.7) CABLE OD= $\varnothing$ 36mm

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

## SELECTION TABLE FOR SINGLE FORMATIONS

PART NO.	CABLE RANGE	DIMENSIONS (mm)																
		TWO BOLT BASE FIXING					SINGLE BOLT BASE FIXING				FRAMING CHANNEL BASE FIXING			WEIGHT (g)				
		W	H	D	P	FIXING HOLES (D1)		W	H	D	FIXING HOLES (D1)		W		H	D	FIXING HOLES (D1)	
AR2-A11-XX	38-41	170	128	54	150	2 x M10		144	136	54	1 x M10		144	131	54	1 x M10		950
AR2-A12-XX	41-47	170	129	54	150	2 x M10		144	136	54	1 x M10		144	131	54	1 x M10		930
AR2-A13-XX	47-55	170	140	54	150	2 x M10		157	147	54	1 x M10		157	142	54	1 x M10		940
AR2-A14-XX	55-63	170	141	54	150	2 x M10		158	148	54	1 x M10		158	143	54	1 x M10		930
AR3-A15-XX	63-70	198	164	54	175	2 x M10		185	172	54	1 x M10		185	167	54	1 x M10		1200
AR3-A16-XX	70-79	198	166	54	175	2 x M10		187	173	54	1 x M10		187	168	54	1 x M10		1200
AR4-A17-XX	79-87	214	180	54	200	2 x M10		204	188	54	1 x M12		204	183	54	1 x M12		1300
AR4-A18-XX	87-95	214	186	54	200	2 x M10		210	193	54	1 x M12		210	188	54	1 x M12		1300
AR4-A19-XX	95-104	214	192	54	200	2 x M10		217	199	54	1 x M12		217	197	54	1 x M12		1300
AR5-A51-XX	104-112	250	231	54	225	2 x M10		254	231	54	1 x M12		254	226	54	1 x M12		1700
AR5-A52-XX	112-120	250	232	54	225	2 x M10		255	232	54	1 x M12		255	227	54	1 x M12		1700
AR5-A53-XX	120-130	250	237	54	225	2 x M10		260	237	54	1 x M12		260	232	54	1 x M12		1700

For full part number please replace 'XX' with the following.:

TB = TWO BOLT BASE FIXING

SB = SINGLE BOLT BASE FIXING

FC = FRAMING CHANNEL BASE FIXING



## TESTING SUMMARY

Atlas Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq$ 30s	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	120kA (REPORT No. PDL-18.122.7)  CABLE OD= $\varnothing$ 36mm

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

# VARI-CLEAT™

Stainless Steel and Aluminium Cable Cleats  
Patent No. UK Patent GB 226 1014

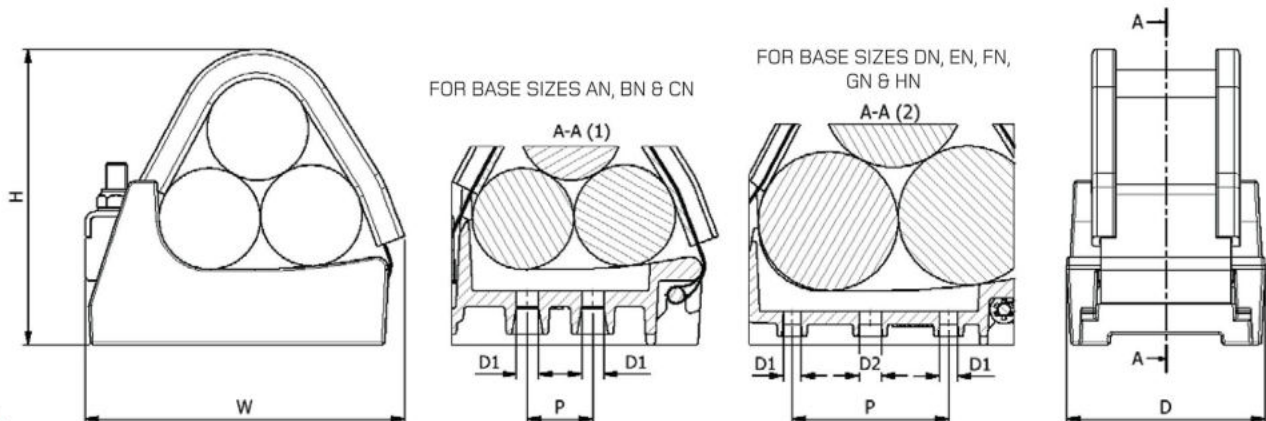
- ▶ 316L STAINLESS STEEL STRAP AND FIXINGS WITH A CAST ALUMINIUM BASE
- ▶ CAPTIVE CLOSURE FIXINGS FOR FAST INSTALL
- ▶ MULTI-CABLE BUNDLE OPTIONS AVAILABLE ON REQUEST
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914



## TESTING SUMMARY

Vari-Cleat has been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA LINERED	TEST DATA NO LINER
CLEAT TYPE	6.1.3	COMPOSITE	-	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60	-40 to +90
IMPACT RATING	6.3.4	VERY HEAVY	PASS	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS	N/A
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS	
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS	
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	110kA (REPORT No. PDL-18.071.3) (PART NO. - VC-BN4-BN0) CABLE OD= $\varnothing 36mm$	



PART NO.	CABLE RANGE WITHOUT LINER		CABLE RANGE SINGLE WITH LINER		DIMENSIONS (mm)				FIXING HOLES (D1 & D2)	WEIGHT (g)
	TREFOIL	SINGLE	TREFOIL	SINGLE	W	H	D	P		
VC-AN1-XXX	21-24	36-43	19-22	31-38	82	80	74	25	2 x M8	373
VC-AN2-XXX	22-26	41-48	21-24	36-43	82	84	74	25	2 x M8	373
VC-AN3-XXX	24-28	44-51	23-26	39-46	83	88	74	25	2 x M8	373
VC-AN4-XXX	26-30	49-54	25-29	44-51	86	92	74	25	2 x M8	373
VC-BN1-XXX	29-33	51-59	27-31	46-54	97	94	74	25	2 x M8	430
VC-BN2-XXX	30-35	55-63	29-33	50-58	97	97	74	25	2 x M8	430
VC-BN3-XXX	32-37	60-68	30-36	55-63	100	101	74	25	2 x M8	430
VC-BN4-XXX	34-38	64-70	33-38	59-68	104	105	74	25	2 x M8	430
VC-CN1-XXX	37-42	68-76	35-40	63-71	117	105	76	25	2 x M8	490
VC-CN2-XXX	39-44	72-81	37-42	67-76	117	109	76	25	2 x M8	490
VC-CN3-XXX	42-47	76-85	39-45	71-80	118	115	76	25	2 x M8	490
VC-CN4-XXX	44-48	81-87	42-47	76-86	124	121	76	50	2 x M8	490
VC-DN1-XXX	47-53	86-96	47-51	81-91	138	126	78	50	2 x M8 + 1 x M10	610
VC-DN2-XXX	50-56	91-100	49-54	86-95	141	132	78	50	2 x M8 + 1 x M10	610
VC-DN3-XXX	54-59	96-105	52-57	91-100	147	138	78	50	2 x M8 + 1 x M10	610
VC-DN4-XXX	56-60	101-106	55-60	96-106	153	144	78	75	2 x M8 + 1 x M10	610
VC-EN1-XXX	59-63.5	105-112	58-62	100-107	163	147	80	75	2 x M8 + 1 x M10	730
VC-EN2-XXX	62-67	111-118	61-66	106-113	167	154	80	75	2 x M8 + 1 x M10	730
VC-EN3-XXX	65-70	118-125	64-69	113-120	174	160	80	75	2 x M8 + 1 x M10	730
VC-EN4-XXX	68-74	125-132	67-73	120-127	181	167	80	75	2 x M8 + 1 x M10	730
VC-FN1-XXX	71-76	125-140	69-74	120-135	187	170	82	90	3 x M12	880
VC-FN2-XXX	74-80	132-145	72-78	128-140	194	177	82	90	3 x M12	880
VC-FN3-XXX	78-84	139-152	76-82	134-147	201	185	82	90	3 x M12	880
VC-FN4-XXX	82-88	148-160	80-86	143-155	210	193	82	90	3 x M12	880
VC-GN1-XXX	84-91	145-160	82-89	140-155	217	197	82	114	3 x M12	970
VC-GN2-XXX	88-95	155-170	86-93	150-165	225	205	82	114	3 x M12	970
VC-GN3-XXX	92-99	165-180	90-97	160-175	233	213	82	114	3 x M12	970
VC-GN4-XXX	96-103	175-190	94-101	170-185	240	221	82	114	3 x M12	970
VC-HN1-XXX	98-106	170-190	96-104	165-185	247	229	84	136	3 x M12	1170
VC-HN2-XXX	102-110	180-200	100-108	175-195	255	237	84	136	3 x M12	1170
VC-HN3-XXX	106-114	190-205	104-112	185-200	263	245	84	136	3 x M12	1170
VC-HN4-XXX	110-118	200-215	108-116	195-210	271	252	84	136	3 x M12	1170

**SUFFIX 1**

- A - No Liner
- B - Lined

**SUFFIX 2  
(CAST BASE FINISH)**

- N - Natural
- P - Polyester Black
- K - Kevlar

**SUFFIX 3**

- 0 - Standard Holes

**PART NO. EXAMPLE:**

VC-CN2 WITH A LINER AND NATURAL BASE FINISH  
= VC-CN2-BN0



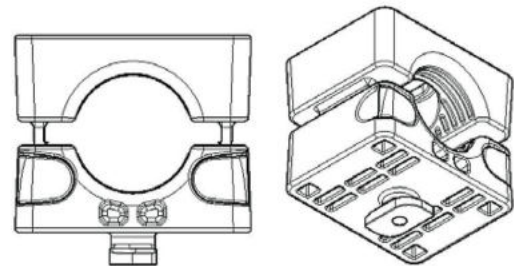
# NO BOLTS CLEAT™

Patent Pending  
(Application Number 1804174.9)

- ▶ FULLY POLYMERIC CONSTRUCTION ELIMINATES THE RISK OF SNAGGING CABLE ON FIXING BOLTS
- ▶ TOOLLESS DESIGN ALLOWS FOR FAST INSTALLATION
- ▶ PRODUCT CAN BE STACKED THREE CLAMPS HIGH USING TWIST FOOT FEATURE
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914



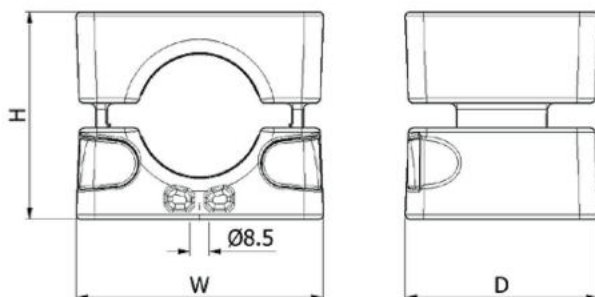
PART NO.	CABLE RANGE	DIMENSIONS (mm)			FIXING HOLES	WEIGHT (g)
		W	H	D		
NBC18-22	18 - 22	109	91	90	1 x M8	830
NBC20-26	20 - 26	109	91	90	1 x M8	815
NBC24-30	24 - 30	109	91	90	1 x M8	808
NBC28-34	28 - 34	109	91	90	1 x M8	801
NBC32-39	32 - 39	109	91	90	1 x M8	792
NBC37-47	37 - 47	109	91	90	1 x M8	758
NBC45-55*	45 - 55	109	91	85	1 x M8	675



NOTE: THE CLEAT RANGE IS COVERED BY A SET OF INSERTS THAT SIT INSIDE THE MAIN BODY, THEREFORE ALL OUTSIDE DIMENSIONS ARE THE SAME. \*NBC45-55 DOES NOT USE INSERTS.

FOR THE TWIST FOOT VERSION ADD A 'TF' SUFFIX E.G. NBC18-22TF

PADS NO.	ELLIS PART NO.
0111/120321	NBC18-22TF (for 18-22mm cables)
0111/120322	NBC20-26TF (for 20-26mm cables)
0111/120323	NBC24-30TF (for 24-30mm cables)
0111/120324	NBC28-34TF (for 28-34mm cables)
0111/120325	NBC32-39TF (for 32-39mm cables)
0111/120133	NBC37-47TF (for 37-47mm cables)
0111/120134	NBC45-55TF (for 45-55mm cables)



PRODUCT CAN BE STACKED A MAXIMUM OF THREE HIGH BY USING THE TWIST FOOT VARIANT. THIS VERSION LOCKS INTO THE RECESS PROVIDED IN THE TOP OF THE CLAMPS.

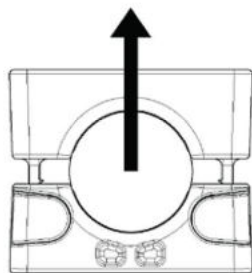
DUE TO TOLERANCES OF STANDARD UNISTRUT STYLE PROFILE, RECOMMEND USING FIXINGS TO FASTEN THE CLAMP TO THE CHANNEL.

## TESTING SUMMARY

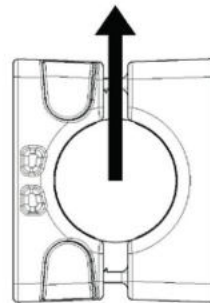
No Bolts Cleat has been tested in line with the International Standard of 'Cable Cleats for Electrical Installations' IEC 61914: 2015. Typical results below:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.2	POLYMERIC	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	101kA (REPORT No. PDL- 16.106)  PHASE SPACING = 110mm CABLE OD= $\varnothing 36mm$
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	71kA (REPORT No. PDL-16.106)  TESTED IN STACKED FORMATION  PHASE SPACING = 75mm CABLE OD= $\varnothing 36mm$

\*TESTING CARRIED OUT ON NBC45-55 ONLY



LATERAL LOAD 'VERTICAL' DIRECTION



LATERAL LOAD 'HORIZONTAL' DIRECTION

NO BOLTS CLEAT IS A NETWORK RAIL APPROVED PRODUCT. EXAMPLE PADS NUMBER (NBC45-55): 011/120134

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

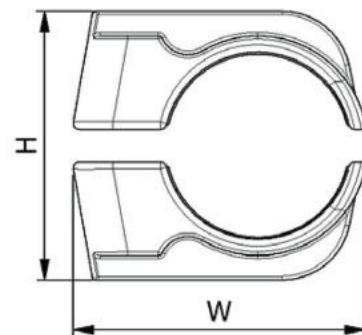
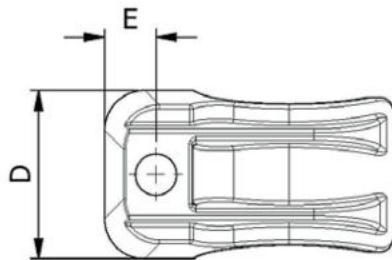
# 1A CABLE CLAMPS

Cast aluminium clamp

- ▶ 1 HOLE CLAMP CAST IN LM6 ALUMINIUM
- ▶ ACCOMODATES  $\varnothing 10\text{MM}$  -  $\varnothing 57\text{MM}$  CABLES ACROSS 10 SIZES
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FIXINGS ARE NOT SUPPLIED AS STANDARD BUT CAN BE MADE AVAILABLE ON REQUEST



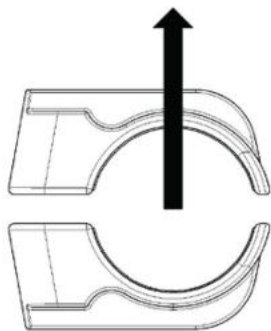
PART NO.	CABLE RANGE (mm)		DIMENSIONS (mm)				FIXING HOLES	WEIGHT (g)
	MIN	MAX	W	H	D	E		
1A-10N	10	13	37.8	30.0	41.4	10.2	1 x M10	43
1A-11N	13	16	41.2	33.0	41.4	10.4	1 x M10	52
1A-12N	16	19	44.3	36.0	41.4	10.7	1 x M10	61
1A-13N	19	23	48.2	40.0	41.4	10.9	1 x M10	68
1A-14N	23	27	52.2	44.0	41.4	11.3	1 x M10	78
1A-15N	27	32	57.1	49.0	41.4	11.6	1 x M10	85
1A-16N	32	38	63.1	55.0	41.4	12.1	1 x M10	97
1A-17N	38	46	71.3	66.0	41.4	12.9	1 x M10	121
1A-18N	46	51	77.3	73.0	41.4	13.5	1 x M10	155
1A-19N	51	57	83.2	78.0	41.4	13.9	1 x M10	171



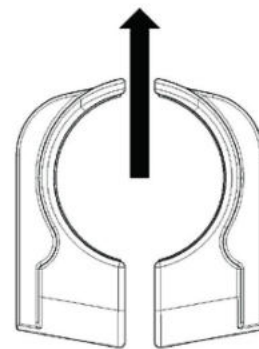
## TESTING SUMMARY

1A Clamps have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.2	METALLIC	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +90
CORROSION RESISTANCE	6.5.2	HIGH	ALUMINIUM IS NON-FERROUS
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	N/A
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 600MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	70.8kA (REPORT No. PDL-15.025.2)  (IEC 61914:2009) PHASE SPACING = 100mm CABLE OD= $\varnothing 39mm$



LATERAL LOAD 'VERTICAL' DIRECTION



LATERAL LOAD 'HORIZONTAL' DIRECTION



# 2A CABLE CLAMPS

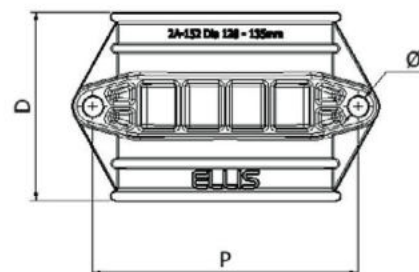
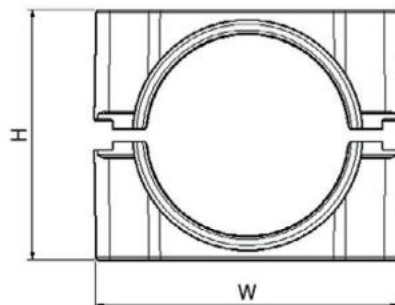
Cast aluminium clamp

- ▶ 2 HOLE CLAMPS CAST IN LM6 ALUMINIUM
- ▶ ROBUST DESIGN OFFERS GOOD RESISTANCE TO CABLE FORCES
- ▶ CLAMPING RANGE OF  $\phi 32 - \phi 168$ MM ACHIEVED ACROSS 18 SIZES
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FIXINGS ARE NOT SUPPLIED AS STANDARD BUT CAN BE SUPPLIED ON REQUEST



PART NO.	CABLE RANGE		LINER THICKNESS (mm)	CABLE RANGE WITH LINER		DIMENSIONS (mm)					WEIGHT (g)	AXIAL LOAD	LATERAL LOAD - HORIZONTAL	LATERAL LOAD - VERTICAL
	MIN $\phi$ (mm)	MAX $\phi$ (mm)		MIN $\phi$ (mm)	MIN $\phi$ (mm)	W	H	D	P	$\phi$				
2A-07N	38	46	3	32	40	94	48	49	68	2 x M10	174	800N	12.5kN	25kN
2A-08N	46	51	3	40	45	104	54	49	79	2 x M10	214	800N	12.5kN	25kN
2A-09N	51	57	3	45	51	105	61	49	79	2 x M10	224	800N	12.5kN	25kN
2A-10N	57	64	3	51	58	105	68	49	79	2 x M10	234	800N	12.5kN	25kN
2A-11N	64	70	3	58	64	133	74	64	106	2 x M10	360	800N	12.5kN	25kN
2A-1200N	70	76	3	64	70	133	80	64	106	2 x M10	376	800N	12.5kN	25kN
2A-1201N	76	83	3	70	77	133	87	64	106	2 x M10	388	800N	12.5kN	25kN
2A-1202N	83	90	3	77	84	133	94	64	106	2 x M10	392	800N	12.5kN	25kN
2A-131N	90	97	4	82	89	154	101	76	126	2 x M10	520	800N	12.5kN	25kN
2A-132N	97	105	4	89	97	154	109	76	126	2 x M10	524	800N	12.5kN	25kN
2A-141N	105	112	4	97	104	165	118	76	135	2 x M10	590	800N	12.5kN	25kN
2A-142N	112	120	4	104	112	173	124	76	143	2 x M10	642	800N	12.5kN	25kN
2A-151N	120	128	5	110	118	196	148	125	168	2 x M12	1700	5.5kN	20kN	50kN
2A-152N	128	135	5	118	125	203	158	125	176	2 x M12	1840	5.5kN	20kN	50kN
2A-161N	135	144	5	125	134	222	168	150	190	2 x M16	2633	6kN	35kN	60kN
2A-162N	144	152	5	134	142	232	179	150	200	2 x M16	2856	6kN	35kN	60kN
2A-171N	152	160	5	142	150	242	190	150	210	2 x M16	3089	6kN	35kN	60kN
2A-172N	160	168	5	150	158	252	201	150	220	2 x M16	3332	6kN	35kN	60kN

FOR THE LINERED VERSION ADD 'L' AS A SUFFIX TO THE PART NO. E.G. '2A-07NL'.

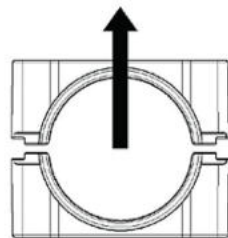


## TESTING SUMMARY

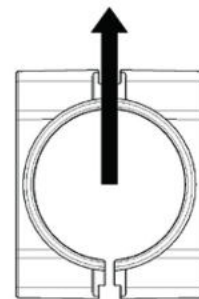
2A Clamps have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1, 6.1.3	METALLIC	-
TEMP. FOR PERMAMENT APPLICATION	6.2	°C	-40 to +90
UV RESISTANCE	6.5.1.2	N/A	-
CORROSION RESISTANCE	6.5.2.2	HIGH	ALUMINIUM IS NON-FERROUS
IMPACT RATING	6.35	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	N/A
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO THE DATA TABLE OPPOSITE
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO THE DATA TABLE OPPOSITE
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	183kA (REPORT No. PDL-18.071.1)  CABLE OD= $\varnothing 36mm$ PHASE SPACING = 100MM
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 1M INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	113kA (REPORT No. PDL-15.025.1)  CABLE OD= $\varnothing 117mm$ PHASE SPACING = 200MM

The test data provided above is for the standard version only, for test data with the liner option please contact Ellis.



LATERAL LOAD 'VERTICAL' DIRECTION



LATERAL LOAD 'HORIZONTAL DIRECTION'

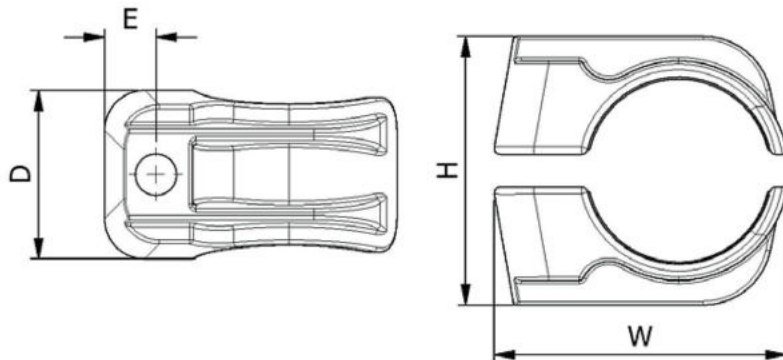
# 1F CABLE CLAMPS

UK Design Reg. No: 355854

- ▶ 1 HOLE CLAMPS MANUFACTURED IN LSF NYLON OR STANDARD POLYPROPYLENE
- ▶ ACCOMODATES  $\varnothing 10\text{MM}$  -  $\varnothing 57\text{MM}$  CABLES ACROSS 10 SIZES
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FIXINGS ARE NOT SUPPLIED AS STANDARD BUT CAN BE MADE AVAILABLE ON REQUEST



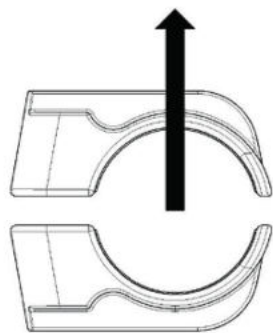
PART NO.	MATERIAL SUFFIX	CABLE RANGE DIA (mm)	DIMENSIONS (mm)				FIXING HOLES	PACK QTY	WEIGHT (g)		
			W	H	D	E			B	LSF	LUL
1F-10	B/LSF/LUL	10-13	37.8	27.0	41.4	10.2	1 X M10	100	14.6	19.6	23.8
1F-11	B/LSF/LUL	13-16	41.2	30.0	41.4	10.4	1 X M10	100	17.0	23.0	27.7
1F-12	B/LSF/LUL	16-19	44.3	33.0	41.4	10.7	1 X M10	100	19.6	26.4	32.0
1F-13	B/LSF/LUL	19-23	48.2	36.0	41.4	10.9	1 X M10	100	22.4	30.2	36.5
1F-14	B/LSF/LUL	23-27	52.2	40.0	41.4	11.3	1 X M10	100	25.8	34.6	42.0
1F-15	B/LSF/LUL	27-32	57.1	44.0	41.4	11.6	1 X M10	100	29.2	39.0	47.6
1F-16	B/LSF/LUL	32-38	63.1	49.0	41.4	12.1	1 X M10	100	34.2	46.2	55.7
1F-17	B/LSF/LUL	38-46	71.3	58.0	41.4	12.9	1 X M10	50	47.8	64.0	77.9
1F-18	B/LSF/LUL	46-51	77.3	67.0	41.4	13.5	1 X M10	50	54.0	73.2	88.0
1F-19	B/LSF/LUL	51-57	83.2	72.0	41.4	13.9	1 X M10	50	59.0	80.4	96.2



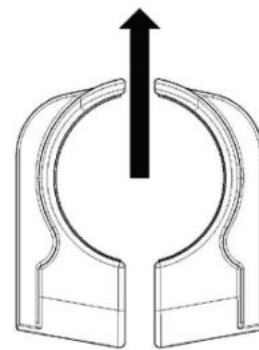
## TESTING SUMMARY

1F Clamps have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA	
			LSF	B
CLEAT TYPE	6.1.2	POLYMERIC	-	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60	-40 to +40
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS	PASS
IMPACT RATING	6.3.5	VERY HEAVY	REFER TO ELLIS	REFER TO ELLIS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS	NOT COMPLIANT
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	10.4kA (REPORT No. PDL-17.137.2) (IEC 61914:2015) PHASE SPACING = 100mm CABLE OD= Ø36mm	NOT SHORT CIRCUIT TESTED



LATERAL LOAD 'VERTICAL' DIRECTION



LATERAL LOAD 'HORIZONTAL DIRECTION'

### APPROVALS:

THE LUL VERSION OF THE 1F ONE HOLE CABLE CLAMPS ARE COMPLIANT WITH THE REQUIREMENT OF LONDON UNDERGROUND STANDARD 1-085. PRODUCT REGISTER NO. 363.

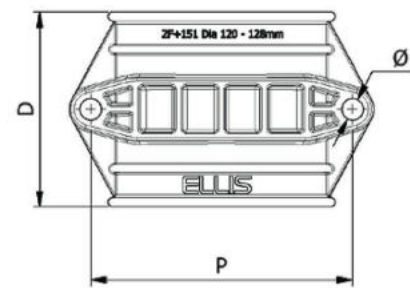
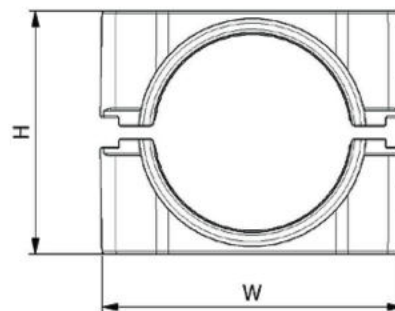
# 2F+ CABLE CLAMPS

UK Design Reg. No: 355854

- ▶ 2 HOLE CLAMPS MANUFACTURED IN LSF NYLON OR STANDARD POLYPROPYLENE
- ▶ ROBUST DESIGN OFFERS GOOD RESISTANCE TO CABLE FORCES
- ▶ CLAMPING RANGE OF  $\phi 32 - \phi 168\text{MM}$  ACHIEVED ACROSS 18 SIZES
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FIXINGS ARE NOT SUPPLIED AS STANDARD BUT CAN BE SUPPLIED ON REQUEST
- ▶ OPTIONAL LSF POLYMERIC LINER AVAILABLE



PART NO.	MATERIAL SUFFIX	CABLE RANGE DIA (mm)	LINER THICKNESS	RANGE TAKE WITH LINER	DIMENSIONS (mm)				FIXING HOLES	PACK QTY	WEIGHT (g)		
					W	H	D	E			B	LSF	LUL
2F+07	B/LSF/LUL	38-46	3	32-40	92	60	54	68	2 X M10	25	73.0	91.0	119.0
2F+08	B/LSF/LUL	46-51	3	40-45	103	71	54	79	2 X M10	25	80.9	109.9	132.0
2F+09	B/LSF/LUL	51-57	3	45-51	103	76	54	79	2 X M10	25	95.0	119.0	155.0
2F+10	B/LSF/LUL	57-64	3	51-58	103	82	54	79	2 X M10	25	89.1	122.5	156.5
2F+11	B/LSF/LUL	64-70	3	58-64	130	89	54	106	2 X M10	10	116.0	157.3	189.0
2F+1200	B/LSF/LUL	70-76	4	62-68	128	95	75	104	2 X M10	10	160.1	190.0	285.0
2F+1201	B/LSF/LUL	76-83	4	68-75	135	100	75	111	2 X M10	10	174.0	206.5	309.8
2F+1202	B/LSF/LUL	83-90	4	75-82	143	108	75	119	2 X M10	10	188.3	228.6	342.9
2F+131	B/LSF/LUL	90-97	5	80-87	165	115	100	138	2 X M12	5	335.5	423.0	634.5
2F+132	B/LSF/LUL	97-105	5	87-95	171	122	100	144	2 X M12	5	355.1	440.6	660.9
2F+141	B/LSF/LUL	105-112	5	95-102	178	130	100	151	2 X M12	5	382.4	509.9	764.9
2F+142	B/LSF/LUL	112-120	5	102-110	187	138	125	160	2 X M12	5	495.6	622.0	933.0
2F+151	B/LSF/LUL	120-128	5	110-118	196	148	125	168	2 X M12	5	536.8	715.7	1073.5
2F+152	B/LSF/LUL	128-135	5	118-125	203	158	125	176	2 X M12	5	578.9	771.9	1157.9
2F+161	B/LSF/LUL	135-144	5	125-134	222	168	150	190	2 X M16	5	831.3	1108.4	1662.7
2F+162	B/LSF/LUL	144-152	5	134-142	232	179	150	200	2 X M16	5	902.3	1203.1	1804.6
2F+171	B/LSF/LUL	152-160	5	142-150	242	190	150	210	2 X M16	5	976.2	1301.6	1952.4
2F+172	B/LSF/LUL	160-168	5	150-158	252	201	150	220	2 X M16	5	1052.1	1402.9	2104.3



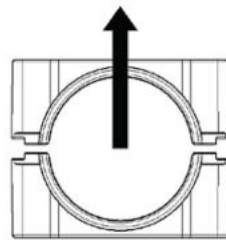
A CLAMP MANUFACTURED IN LONDON UNDERGROUND APPROVED MATERIAL CAN BE SUPPLIED ON REQUEST. CONTACT US FOR FURTHER DETAILS.

## TESTING SUMMARY

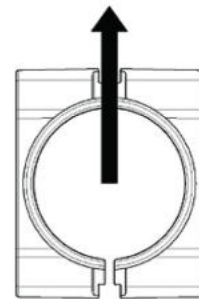
2F+ Clamps have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1, 6.1.3	POLYMERIC	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	LSF: -40 to +60 B: -40 to +40
UV RESISTANCE	6.5.1.2	XENON ARC METHOD A	PASS
IMPACT RATING	6.35	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	LSF: PASS B: NOT COMPLIANT
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO THE DATA TABLE OPPOSITE
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO THE DATA TABLE OPPOSITE
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	2F+07LSF CLEATS AT 600MM INTERVALS (WITHSTANDING ONE SHORT CIRCUIT)	80.2kA (REPORT No. PDL-17.137.3)  CABLE OD= $\varnothing 36mm$ PHASE SPACING = 100mm
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	2F+142LSF CLEATS AT 1M INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	113kA (REPORT No. PDL-17.137.3) (BASED ON IEC 61914: 2009)  CABLE OD= $\varnothing 117mm$ PHASE SPACING = 200mm

The test data provided above is for the standard version only, for test data with the liner option please contact Ellis.



LATERAL LOAD 'VERTICAL' DIRECTION



LATERAL LOAD 'HORIZONTAL DIRECTION'

### LONDON UNDERGROUND

The LUL version of 2F+ Clamps are compliant with the requirements of LUL-1085. Product register number 364.

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

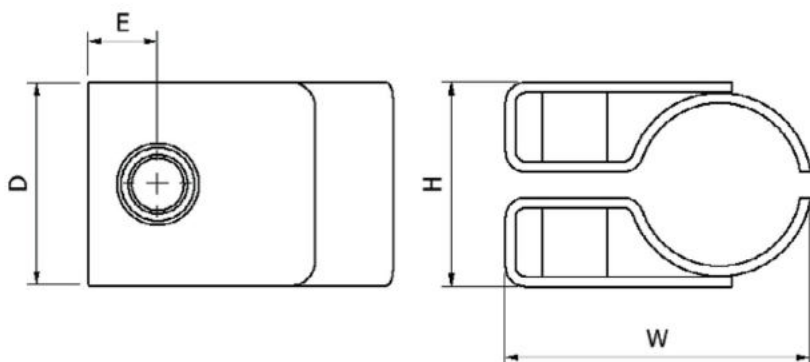
# PHOENIX<sup>®</sup>

Fire Rated Cable Clamps  
Community Design Reg No. 000355854-0002

- ▶ METALLIC FRAME IS DESIGNED FOR THE INSTALLATION OF FIRE PROTECTION RATED CABLES.
- ▶ TESTED FOR FIRE RESISTANCE IN ACCORDANCE WITH BS 5839-1.
- ▶ AVAILABLE IN 12 SIZES TO SUIT  $\phi$ 10MM TO  $\phi$ 74MM CABLE
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ MARINE GRADE STAINLESS STEEL FRAME ENSURES PERFORMANCE IN THE HARSHTEST OF ENVIRONMENTS
- ▶ FIXINGS NOT SUPPLIED AS STANDARD BUT ARE AVAILABLE ON REQUEST



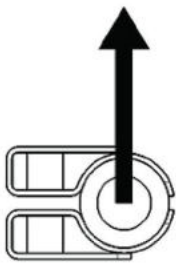
PART NO.	CABLE RANGE		DIMENSIONS (mm)					WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	D	P	F	
1FP-10SS	10	13	40	21	40	13.7	1 x M10	91
1FP-11SS	13	16	44	24	40	13.7	1 x M10	106
1FP-12SS	16	19	47	27	40	13.7	1 x M10	113
1FP-13SS	19	23	51	31	40	13.7	1 x M10	125
1FP-14SS	23	27	55	35	40	13.7	1 x M10	139
1FP-15SS	27	32	60	40	40	13.7	1 x M10	153
1FP-16SS	32	38	66	46	40	13.7	1 x M10	174
1FP-17SS	38	46	74	54	40	13.7	1 x M10	201
1FP-18SS	46	51	80	59	40	13.7	1 x M10	225
1FP-19SS	51	57	85	64	40	13.7	1 x M10	242
1FP-20SS	57	65	93	73	40	13.7	1 x M10	265
1FP-21SS	65	74	98	82	40	13.7	1 x M10	293



## TESTING SUMMARY

Phoenix Cleats have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.1	METALLIC	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1	N/A	-
CORROSION RESISTANCE	6.5.2.2	HIGH	316L STAINLESS STEEL HAS 16% CHROMIUM
IMPACT RATING	6.3.4	HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	NO CONTRIBUTION TO FIRE	METALLIC
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	45
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	HORIZONTAL - 350N VERTICAL - 350N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	31kA (REPORT No. PDL-17.137.1)  CABLE OD= Ø36mm Phase Spacing = 100mm



LATERAL LOAD  
'VERTICAL'  
DIRECTION



LATERAL LOAD  
'HORIZONTAL'  
DIRECTION'



Phoenix clips have been  
fire tested in accordance  
with BS 5839-1: 2017.

### APPROVALS:

#### LONDON UNDERGROUND

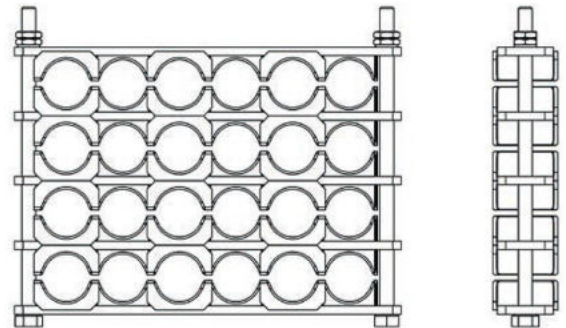
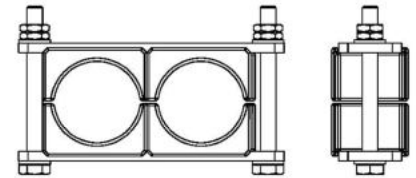
Phoenix Cable Clamps are compliant with the requirements of LUL-1085. Product register number 1661.



# MATRIX™

A Flexible Solution for Multiple Cables

- ▶ CLEAT DESIGN ALLOWS FOR MULTIPLE CABLES TO BE ASSEMBLED IN A MATRIX STYLE WITHIN ONE CLEAT
- ▶ GALVANISED STEEL FRAME AND FIXINGS
- ▶ SOFT LSF POLYMERIC PADS PROTECT CABLE SHEATH
- ▶ SHORT CIRCUIT AND MECHANICALLY TESTED TO IEC 61914
- ▶ FOR FRAME CONFIGURATION DETAILS CONTACT ELLIS



## TESTING SUMMARY

Matrix has been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

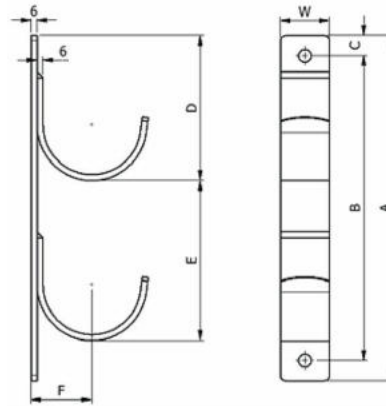
PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA
CLEAT TYPE	6.1.3	COMPOSITE	-
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-40 to +60
UV RESISTANCE	6.5.1.2	REFER TO ELLIS	-
IMPACT RATING	6.3.5	VERY HEAVY	PASS
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME $\geq 30s$	PASS
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	REFER TO ELLIS
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	REFER TO ELLIS
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.4, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	91.3kA (REPORT No. PDL-18.071.2) PHASE SPACING = $\varnothing 45mm$ (MC-4x1-037-G)

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

# MK2 CABLE HANGER

Mild steel cable hanger

- ▶ **ROUNDED CORNERS REDUCE SNAGGING POINTS**
- ▶ **SPIN GALVANISED (55MICRON OR 150MICRON THICKNESS) TO BS EN ISO 1461**
- ▶ **6MM THICK HANGER AND BACK PLATE**
- ▶ **WIDE RANGE OF SIZES AVAILABLE**
- ▶ **CUSTOM DESIGNS AVAILABLE**
- ▶ **CURVED BACK PLATE TO SUIT TUNNEL WALLS AVAILABLE**
- ▶ **FOR SINGLE HOOKS REFER TO ELLIS**



PART NO.	CABLE $\phi$ (mm)	NO. OF HOOKS	DIMENSIONS (mm)							W	FIXING HOLES $\phi$ (mm)	WEIGHT (g)	SWL* (kg)
			A	B	C	D	E	F					
CH1W1	Up to 50	1	145	105	20	105	n/a	37	40	11	500	200	
CH2W1	Up to 50	2	235	195	20	105	90	37	40	11	900	200	
CH3W1	Up to 50	3	325	285	20	105	90	37	40	11	1300	200	
CH4W1	Up to 50	4	415	375	20	105	90	37	40	11	1700	200	
CH5W1	Up to 50	5	505	465	20	105	90	37	40	11	2100	200	
CH6W1	Up to 50	6	595	555	20	105	90	37	40	11	2500	200	
CH1W2	51-75	1	170	130	20	130	n/a	50	50	13	820	250	
CH2W2	51-75	2	295	255	20	130	125	50	50	13	1480	250	
CH3W2	51-75	3	420	380	20	130	125	50	50	13	2240	250	
CH4W2	51-75	4	545	505	20	130	125	50	50	13	2980	250	
CH5W2	51-75	5	670	630	20	130	125	50	50	13	3710	250	
CH6W2	51-75	6	795	755	20	130	125	50	50	13	4440	250	
CH1W3	76-100	1	185	145	20	145	n/a	62	50	13	980	250	
CH2W3	76-100	2	345	305	20	145	160	62	50	13	1900	250	
CH3W3	76-100	3	505	465	20	145	160	62	50	13	2820	250	
CH4W3	76-100	4	665	625	20	145	160	62	50	13	3600	250	
CH5W3	76-100	5	825	785	20	145	160	62	50	13	4660	250	
CH6W3	76-100	6	985	945	20	145	160	62	50	13	5600	250	

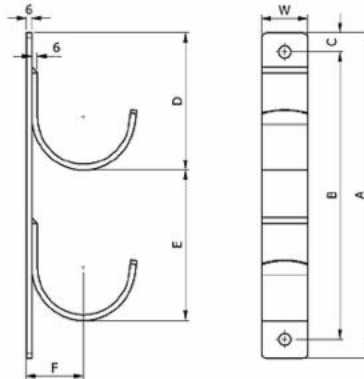
\* Load Capacity: Brackets with multiple hook configurations are designed to operate with all hooks carrying their maximum load. As standard, parts are spin galvanised to BS EN 1461 (55 $\mu$ m), thicker galvanising options are available on request. Dimensions are provided with a tolerance, refer to detailed drawings for details.

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.

# CONVEX CABLE HANGER

Registered design 6254645

- ▶ ROUNDED CORNERS REDUCE SNAGGING POINTS
- ▶ CONVEX CABLE HANGER PROFILE REDUCES THE RISK OF CABLE DAMAGE AND FACILITATES CABLE SAG
- ▶ SPIN GALVANISED (55MICRON OR 150MICRON THICKNESS) TO BS EN ISO 1461
- ▶ WIDE RANGE OF SIZES AVAILABLE
- ▶ CUSTOM DESIGNS AVAILABLE
- ▶ CURVED BACK PLATE TO SUIT TUNNEL WALLS AVAILABLE
- ▶ SAME STRENGTH AS MK2 HANGER BUT REDUCED 5MM THICK HANGER (BACKPLATE 6MM)
- ▶ BESPOKE DESIGNS AND CONFIGURATIONS CAN BE OFFERED



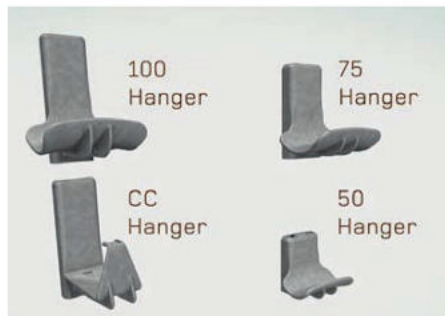
PART NO.	CABLE $\phi$ (mm)	NO. OF HOOKS	DIMENSIONS (mm)						FIXING HOLES $\phi$ (mm)	WEIGHT (g)	SWL* (kg)	
			A	B	C	D	E	F				
CH1W1-C	Up to 50	1	145	105	20	105	n/a	37	40	11	490	200
CH2W1-C	Up to 50	2	235	195	20	105	90	37	40	11	890	200
CH3W1-C	Up to 50	3	325	285	20	105	90	37	40	11	1270	200
CH4W1-C	Up to 50	4	415	375	20	105	90	37	40	11	1670	200
CH5W1-C	Up to 50	5	505	465	20	105	90	37	40	11	2070	200
CH6W1-C	Up to 50	6	595	555	20	105	90	37	40	11	2460	200
CH1W2-C	51-75	1	170	130	20	130	n/a	50	50	13	750	250
CH2W2-C	51-75	2	295	255	20	130	125	50	50	13	1390	250
CH3W2-C	51-75	3	420	380	20	130	125	50	50	13	2050	250
CH4W2-C	51-75	4	545	505	20	130	125	50	50	13	2690	250
CH5W2-C	51-75	5	670	630	20	130	125	50	50	13	3340	250
CH6W2-C	51-75	6	795	755	20	130	125	50	50	13	3990	250
CH1W3-C	76-100	1	185	145	20	145	n/a	62	50	13	870	250
CH2W3-C	76-100	2	345	305	20	145	160	62	50	13	1670	250
CH3W3-C	76-100	3	505	465	20	145	160	62	50	13	2490	250
CH4W3-C	76-100	4	665	625	20	145	160	62	50	13	3290	250
CH5W3-C	76-100	5	825	785	20	145	160	62	50	13	4100	250
CH6W3-C	76-100	6	985	945	20	145	160	62	50	13	4900	250

\* Load Capacity: Brackets with multiple hook configurations are designed to operate with all hooks carrying their maximum load. As standard, parts are spin galvanised to BS EN 1461 (55 $\mu$ m), thicker galvanising options are available on request.

# PEGASUS<sup>®</sup> HANGER

Modular Cable Hanger System  
Patent No. 1507738.1

- ▶ COMPOSITE CABLE HANGER SYSTEM: POLYMER HANGER AND ENCLOSED CORROSION RESISTANT ALUMINIUM SPINE
- ▶ UPTO 50% LIGHTER THAN CONVENTIONAL STEEL SYSTEM, IMPROVES INSTALLATION TIME BY REDUCING INSTALLER FATIGUE
- ▶ WILL NOT RUST OR CORRODE
- ▶ INSULATING HANGER WITH EXCELLENT DIELECTRIC PROPERTIES, NO EARTH BONDING OR GROUNDING REQUIRED
- ▶ CURVED PROFILE HANGER DESIGN ALLOWS NATURAL SAG
- ▶ MULTIPLE COMBINATIONS OF HANGERS AVAILABLE, CURVED CONFIGURATION TO SUIT TUNNEL WALLS ALSO AVAILABLE
- ▶ AVAILABLE IN LUL 1-085 LSF MATERIAL FOR INDOOR APPLICATIONS OR UV STABILISED MATERIAL FOR EXTERNAL APPLICATIONS
- ▶ CURVED BACK PLATE TO SUIT TUNNEL WALLS AVAILABLE



Hanger	SWL kg
100	60
75	45
50	45
CC	25

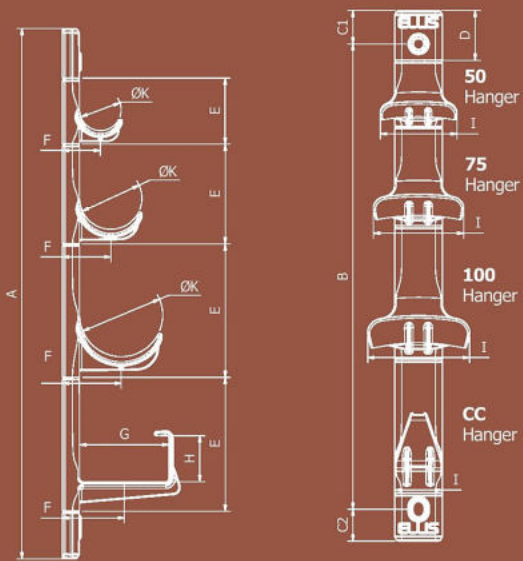


\* Load Capacity: Brackets with multiple hook configurations are designed to operate with all hooks carrying their maximum load. Dimensions are provided with a tolerance, refer to detailed drawings for details.

This information is subject to change without notice. The information provided has been generated in laboratory conditions, as such results in use may vary.



Part No.	Ways	Dimensions (mm)											Fixing Holes Diameter	Pack Qty.	Modular Weight L	Weight kg	SWL kg
		A	B	C1	C2	D	E	F	G	H	I	K					
PG050-1	1	197	121	40	38	60	-	46	-	-	92	Ø50	M12	1	0.16	0.3	45
PG050-2	2	276	200	40	38	60	79	46	-	-	92	Ø50	M12	1	0.16	0.46	90
PG050-3	3	355	279	40	38	60	79	46	-	-	92	Ø50	M12	1	0.16	0.62	135
PG050-4	4	434	358	40	38	60	79	46	-	-	92	Ø50	M12	1	0.16	0.78	180
PG050-5	5	513	437	40	38	60	79	46	-	-	92	Ø50	M12	1	0.16	0.94	225
PG050-6	6	592	516	40	38	60	79	46	-	-	92	Ø50	M12	1	0.16	1.1	270
PG075-1	1	237	161	40	38	60	-	58	-	-	108	Ø75	M12	1	0.25	0.39	45
PG075-2	2	357	281	40	38	60	120	58	-	-	108	Ø75	M12	1	0.25	0.64	90
PG075-3	3	476	400	40	38	60	120	58	-	-	108	Ø75	M12	1	0.25	0.89	135
PG075-4	4	595	519	40	38	60	120	58	-	-	108	Ø75	M12	1	0.25	1.14	180
PG075-5	5	714	638	40	38	60	120	58	-	-	108	Ø75	M12	1	0.25	1.39	225
PG075-6	6	834	758	40	38	60	120	58	-	-	108	Ø75	M12	1	0.25	1.64	270
PG100-1	1	279	203	40	38	60	-	71	-	-	122	Ø100	M12	1	0.41	0.55	60
PG100-2	2	440	364	40	38	60	161	71	-	-	122	Ø100	M12	1	0.41	0.96	120
PG100-3	3	600	524	40	38	60	161	71	-	-	122	Ø100	M12	1	0.41	1.37	180
PG100-4	4	760	684	40	38	60	161	71	-	-	122	Ø100	M12	1	0.41	1.78	240
PG100-5	5	921	845	40	38	60	161	71	-	-	122	Ø100	M12	1	0.41	2.19	300
PG100-6	6	1085	1009	40	38	60	161	71	-	-	122	Ø100	M12	1	0.41	2.6	360
PGCC-1	1	279	203	40	38	60	-	74	107	55	57	-	M12	1	0.31	0.45	25
PGCC-2	2	440	364	40	38	60	161	74	107	55	57	-	M12	1	0.31	0.76	50
PGCC-3	3	600	524	40	38	60	161	74	107	55	57	-	M12	1	0.31	1.07	75
PGCC-4	4	760	684	40	38	60	161	74	107	55	57	-	M12	1	0.31	1.38	100
PGCC-5	5	921	845	40	38	60	161	74	107	55	57	-	M12	1	0.31	1.69	125
PGCC-6	6	1085	1009	40	38	60	161	74	107	55	57	-	M12	1	0.31	2	150



**PEGASUS IS A MODULAR SYSTEM  
AND CAN BE SUPPLIED IN ANY CONFIGURATION**

PART NUMBERS FOR SPECIAL CONFIGURATIONS CAN BE WORKED OUT AS FOLLOWS:

Example: Part Number for product shown would be:  
PG 50-1/75-1/100-1/CC-1

PG defines the product as Pegasus

The size and number of hangers is then listed as shown, starting from the top

Any number of hangers can be specified in any order

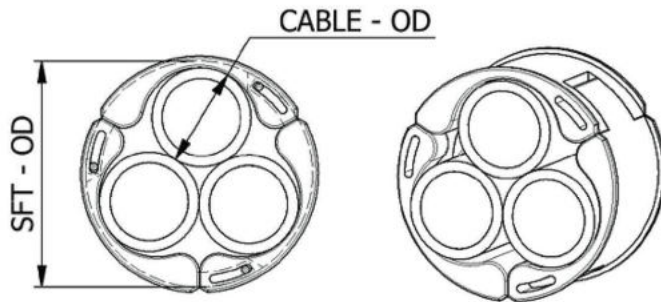
Standard material is suitable for tunnel applications, for UV stabilised material add -UV to part#

Standard product is straight but can be supplied curved, for curved option add -C to end of part

# TRIPLEX CABLE SURROUND

UK (2514384), EUROPEAN (2806198)  
and US (9,404,605) Patent

- ▶ TRIPLEX CABLE SURROUND OVERCOMES THE TWIST IN TRIPLEX CABLE TO ALLOW THE CABLE TO BE CLEATED AT ANY POINT ALONG ITS LENGTH
- ▶ ADAPTOR MANUFACTURED IN A LSF V0 POLYMER
- ▶ CAN BE USED WITH EMPEROR SINGLE, VULCAN+, 2F+ AND 2A CLEATS
- ▶ REFER TO INDIVIDUAL PRODUCT DATA SHEETS FOR PERFORMANCE TO IEC 61914
- ▶ SOLD SEPERATLEY TO THE CLEATS AS STANDARD BUT CAN BE PROVIDED ASSEMBLED INSIDE THE CLEAT ON REQUEST



PART NO.	CABLE RANGE		DEPTH (mm)	WEIGHT (g)
	MIN	MAX		
SFT26	24	28	62	67.3
SFT31 / SFT2F+31	28	34	62 / 84	87 / 125
SFT36 / SFT2F+36	33	39	62 / 84	113 / 160
SFT43 / SFT2F+43	39	47	62 / 109	140 / 272
SFT51 / SFT2F+51	47	55	62 / 134	212 / 447

**NOTE:**  
SFT2F+XX part numbers refer to a deeper SFT+ moulding to be used with 2F+ and 2A clamps, see page 2 for more detail.

NOTE: 'CABLE RANGE' REFERS TO THE OUTSIDE DIAMETER THE INDIVIDUAL CABLES INSIDE THE TRIPLEX BRAID

CABLE CLEAT SELECTION DETAIL FOR CLEATS TO BE USED WITH THE TRIPLEX CABLE SURROUND

CABLE OD (mm)	SFT OD (mm)	ADAPTOR TYPE	VULCAN+	EMPEROR	2F + CLAMP	2A CLAMP
24	56	SFT26	VRT+03	ES51-59	2F+09	2A-09
25	58	SFT26	VRT+03	ES51-59	2F+10	2A-10
26	59	SFT26	VRT+03	ES51-59	2F+10	2A-10
27	61	SFT26	VRT+04	ES58-66	2F+10	2A-10
28	63	SFT26	VRT+04	ES58-66	2F+10	2A-10
28	64	SFT31	VRT+05	ES58-66	2F+11	2A-11
29	66	SFT31	VRT+05	ES65-73	2F+11	2A-11
30	68	SFT31	VRT+05	ES65-73	2F+11	2A-11
31	70	SFT31	VRT+06	ES65-73	2F+1200	2A-1200
32	71	SFT31	VRT+06	ES65-73	2F+1200	2A-1200
33	73	SFT31	VRT+06	ES65-73	2F+1200	2A-1200
34	75	SFT31	VRT+06	ES73-85	2F+1200	2A-1200
33	76	SFT36	VRT+06	ES73-85	2F+1201	2A-1201
34	78	SFT36	VRT+06	ES73-85	2F+1201	2A-1201
35	80	SFT36	VRT+07	ES73-85	2F+1201	2A-1201
36	82	SFT36	VRT+07	ES73-85	2F+1201	2A-1201
37	83	SFT36	VRT+07	ES73-85	2F+1202	2A-1202
38	84	SFT36	VRT+07	ES73-85	2F+1202	2A-1202
39	86	SFT36	VRT+08	ES84-94	2F+1202	2A-1202
39	88	SFT43	VRT+08	ES84-94	2F+1202	2A-1202
40	89.5	SFT43	VRT+08	ES84-94	2F+1202	2A-1202
41	93	SFT43	VRT+08	ES84-94	2F+131	2A-131
42	94	SFT43	VRT+09	ES84-94	2F+131	2A-131
43	95	SFT43	VRT+09	ES94-118	2F+131	2A-131
44	97	SFT43	VRT+09	ES94-118	2F+131	2A-131
45	99	SFT43	VRT+10	ES94-118	2F+132	2A-132
46	102	SFT43	VRT+10	ES94-118	2F+132	2A-132
47	104.5	SFT43	VRT+11	ES94-118	2F+132	2A-132
47	105	SFT51	VRT+11	ES94-118	2F+132	2A-132
48	107	SFT51	VRT+11	ES94-118	2F+141	2A-141
49	110	SFT51	VRT+12	ES94-118	2F+141	2A-141
50	112	SFT51	VRT+12	ES94-118	2F+141	2A-141
51	114	SFT51	VRT+12	ES94-118	2F+142	2A-142
52	117	SFT51	VRT+12	ES94-118	2F+142	2A-142
53	119.5	SFT51	VRT+13	ES118-130	2F+142	2A-142
54	121	SFT51	VRT+13	ES118-130	2F+151	2A-151
55	123.5	SFT51	VRT+13	ES118-130	2F+151	2A-151

\*\*\*FOR PART NUMBERS IN RED THE WIDER SFT2F+ NEEDS TO BE USED TO SUIT THE INCREASED DEPTHS OF THE CLAMPS\*\*\*

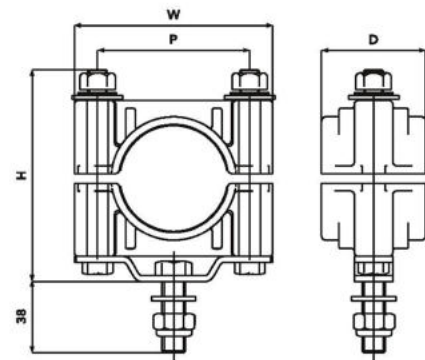
# SINGLE BOLT FIXING CLAMP

Polymer clamp on steel bracket

- ▶ HEAVY DUTY FIXING BRACKET ALLOWS POLYMERIC 2 HOLE CLAMPS TO BE FIXED ON A SINGLE BOLT
- ▶ CLAMP CAN BE SUPPLIED IN LSF NYLON OR STANDARD POLYPROPYLENE
- ▶ ADAPTOR BRACKET IS MANUFACTURED IN ZINC PLATED MILD STEEL
- ▶ HEADS OF FIXING BOLTS ARE WELDED CAPTIVE TO EASE INSTALL
- ▶ FOR CLAMP PERFORMANCE TO IEC 61914 REFER TO ELLIS



PART NO.	CLAMP MATERIAL SUFFIX	CABLE RANGE (mm)	DIMENSIONS (mm)			WEIGHT (g)	
			W	H	D	B	LSF
2FAS+08	B or LSF	46-51	103	110	54	353.9	382.9
2FAS+09	B or LSF	51-57	103	110	54	368	392
2FAS+10	B or LSF	57-64	103	110	54	362.1	395.5
2FAS+11	B or LSF	64-70	130	143	54	433	474.3
2FAS+1200	B or LSF	70-76	128	143	75	477.1	507
2FAS+1201	B or LSF	76-83	135	148	75	491	523.5
2FAS+1202	B or LSF	83-90	143	156	75	505.3	545.6



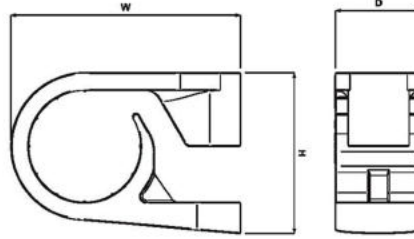
**PART NO. EXAMPLE:**

For a single bolt fixing 2F+11 clamp in LSF nylon use the part number:2FAS+11+LSF.



# INDUSTRIAL CABLECLAMP

Manufactured as standard in Black LLDPE (B) or in a London Underground Approved Material (LUL).  
Used to fix power cables in indoor and outdoor applications.

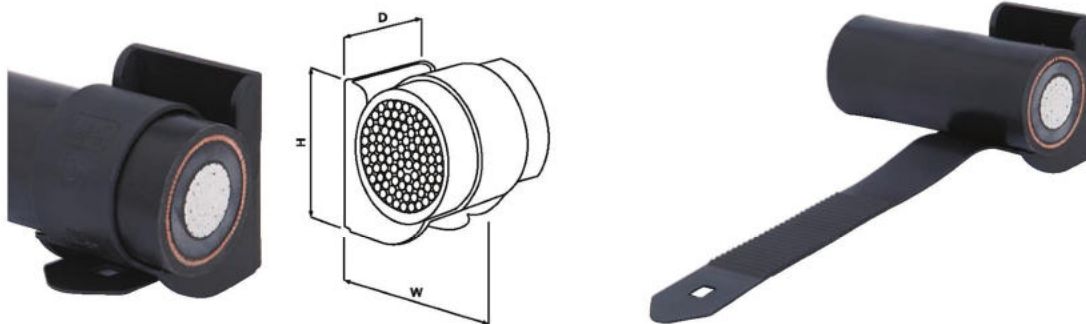


Part No.	Cable Range		Dimensions mm				Fixing Holes	Pack Qty	SWL kgf	Weight g	
	LLDPE	LUL	Min Dia. mm	Max Dia. mm	W	H				D	LLDPE
17-01B	17-01LUL	10	15	27.8	17.6	12	1 x M4	100	18	2.0	3.5
17-02B	17-02LUL	12	17	32.0	20.8	14	1 x M4	100	24	3.3	5.4
17-03B	17-03LUL	15	20	37.1	25.3	16	1 x M4	100	32	5.2	8.6
17-04B	17-04LUL	18	24	41.0	29.6	18	1 x M4	100	39	7.3	12.2
17-05B	17-05LUL	22	29	52.1	35.4	20	1 x M6	50	52	11.2	18.6
17-06B	17-06LUL	26	34	58.2	40.9	22	1 x M6	50	66	16.5	27.9
17-07B	17-07LUL	32	42	69.3	49.2	25	1 x M6	25	79	25.6	42.9
17-08B	17-08LUL	39	51	81.7	58.5	26	1 x M6	25	93	36.2	60.1

The LUL version of this clamp is compliant with the requirement of London Underground Standard 1-085. Product Register No. 365.

# ELITE RANGE-TAKER CABLECLAMP

Manufactured as standard in Black Polypropylene (B), White Polypropylene (W) or Black Flame Retardant VO Zero Halogen Phosphorus-Free Nylon (LSF). The clamp incorporates a fully releasable strap allowing ease of re-installation. Used to fix power cables in indoor and outdoor applications.



Part No.	Material Suffix	Cable Range		Dimensions mm			Fixing Holes	Pack Qty	Weight g	
		Min Dia. mm	Max Dia. mm	W	H	D			B/W	LSF
15-1	B,W or LSF	9.5	16.0	27.0	37.0	25.0	1 x M6	100	6.0	8.0
15-2	B,W or LSF	15.0	25.0	36.0	37.0	32.0	1 x M6	50	8.0	10.9
15-3	B,W or LSF	23.0	37.0	48.0	48.0	36.0	1 x M6	50	15.0	18.1
15-4	B,W or LSF	34.0	52.0	63.0	65.0	40.0	1 x M6	25	20.0	25.5

# EARTHING STRIP CLIP

Manufactured as standard in Black Polypropylene (B) or Grey Flame Retardant Polypropylene (FR) Used to fix PVC coated, bare copper or aluminium strip.



## IMPERIAL SIZES

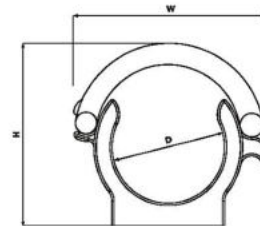
Part No.	Material Suffix	Strip Size inches	Hold Off inches	Length inches	Fixing Holes (slotted) inches	Pack Qty	Weight g
60-04	B or FR	1 x 1/8	5/16	2	7/16 x 5/16	100	12
60-05	B or FR	1 1/4 x 1/8	3/8	2 5/8	7/16 x 5/16	100	21
60-06	B or FR	1 1/4 x 3/16	5/16	2 5/8	7/16 x 5/16	100	20
60-08	B or FR	1 1/2 x 3/16	5/16	2 5/8	7/16 x 5/16	100	20
60-10	B or FR	1 1/2 x 1/8	3/8	2 5/8	7/16 x 5/16	100	20
60-15	B or FR	2 x 1/8	1/4	3 1/8	7/16 x 5/16	100	24
60-26	B or FR	1 x 1/8	3/4	2 1/8	7/16 x 5/16	100	16
60-27	B or FR	1 x 3/16	5/8	2 1/8	7/16 x 5/16	100	16
60-28	B or FR	1 1/2 x 3/16	5/8	2 7/8	7/16 x 5/16	100	25
60-32	B or FR	1 1/4 x 1/4	5/8	3	7/16 x 5/16	100	25
60-34	B or FR	1 1/2 x 1/8	3/4	3	7/16 x 5/16	100	25
60-36	B or FR	1 1/2 x 1/4	5/8	3	7/16 x 5/16	100	24
60-37	B or FR	1 1/2 x 3/8	3/8	2 7/8	7/16 x 5/16	100	23
60-38	B or FR	1 3/4 x 1/8	3/4	3 3/8	7/16 x 5/16	100	27
60-39	B or FR	1 3/4 x 1/4	5/8	3 3/8	7/16 x 5/16	100	27
60-40	B or FR	2 x 1/8	3/4	3 3/8	7/16 x 5/16	100	30
60-42	B or FR	2 x 1/4	5/8	3 3/8	7/16 x 5/16	100	25
60-44	B or FR	2 x 3/8	3/8	3 3/8	7/16 x 5/16	100	24

## METRIC SIZES

Part No.	Material Suffix	Strip Size mm	Hold Off mm	Length mm	Fixing Holes (slotted) mm	Pack Qty	Weight g
70-04	B or FR	20 x 4	17	55	11 x 8	100	15
70-06	B or FR	20 x 6	16	55	11 x 8	100	16
70-07	B or FR	25 x 6	16	55	11 x 8	100	14
70-08	B or FR	50 x 4	18	87	11 x 8	100	28
70-09	B or FR	40 x 6	16	87	11 x 8	100	28
70-10	B or FR	50 x 6	15	87	11 x 8	100	26
70-11	B or FR	40 x 4	18	87	11 x 8	100	28
70-12	B or FR	50 x 10	11	87	11 x 8	100	24
70-14	B or FR	60 x 6	18	97	11 x 8	100	31
70-16	B or FR	80 x 6	19	118	11 x 8	50	41

# CABLE CONDUIT CLIP

Manufactured as standard in Black Nylon, this surface mounted Conduit Clip comes complete with a captive mounted over-strap. Used to fix conduit in indoor and outdoor applications.



Part No.	Material Suffix	D mm	H mm	W mm	Fixing Holes mm	Stand off	Pack Qty	Weight g
CC20B	B or W	20	35	35	4	5	100	8.8
CC25B	B or W	25	40	40	4	5	100	10.6

# FRAMING CHANNEL ACCESSORIES

## FRAMING CHANNEL END CAPS

Manufactured as standard in Black or White Polypropylene (PP), Black or White LDPE (PE) or Nylon (LSF). The EC version is a spring fit whilst the 'Gripper' version has fins which bend and deform into the channel. There is provision to incorporate the customers logo. Also available to order in other colours.

Part No.	Description	Size mm	Material Suffix	Colour	Pack Qty	Weight g
91-ECLB	'EC' type channel end cap	41 x 41	PP	Black	100	7.3
91-ECLW	'EC' type channel end cap	41 x 41	PP	White	100	7.3
91-ECSB	'EC' type channel end cap	41 x 21	PP	Black	100	3.2
91-ECSW	'EC' type channel end cap	41 x 21	PP	White	100	3.2
91-JGLB	'Gripper' type channel end cap	41 x 41	PE	Black	100	9.4
91-JGLW	'Gripper' type channel end cap	41 x 41	PE	White	100	9.4
91-JGSB	'Gripper' type channel end cap	41 x 21	PE	Black	100	4.4
91-JGSW	'Gripper' type channel end cap	41 x 21	PE	White	100	4.4
91-JGLLSF	'Gripper' type channel end cap	41 x 41	LSF	Black	100	9.4
91-JGSLSF	'Gripper' type channel end cap	41 x 21	LSF	Black	100	4.4



## BUTTERFLY CLIP

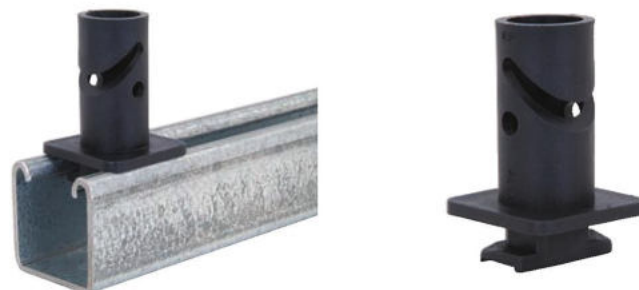
Manufactured as standard in Black Nylon, the butterfly clip snaps into 41mm wide framing channel. It will accommodate a cable tie of up to 10mm in width (not included). Used to allow cables to be strapped at right angles to the channel.



Part No.	Material Suffix	Pack Qty	Weight g
91-BC	NY	100	3.8

## THERMAL SPACER

Manufactured as standard in Black Polypropylene. A slotted hole is also provided for running heat detection cable. Used to ensure separation of the cable on cable ladder, framing channel and ladder rungs with reduced return flanges.



Part No.	Height Above Ladder Rung	Material Suffix	Pack Qty	Weight g
91-TSL1	75mm	PP	100	19.5
91-TS75	50mm	PP	100	14.7

# FRAMING CHANNEL ACCESSORIES

## FRAMING CHANNEL WASHER

Manufactured as standard in the materials shown this washer is recommended for use when our range of 2F+ clamps are fitted to framing channel.

Part No.	Size	Material Suffix	Hole Size mm	Pack Qty	Weight g
91-WZ	40 x 40	Mild Steel Zinc Plated	10	100	33
91-WZ-X	40 x 40	Mild Steel Zinc Plated	12	100	33
91-W-2	40 x 40	A2 Stainless Steel	10	100	34
91-W-4	40 x 40	A4 Stainless Steel	12	100	34
91-WG	40 x 40	Mild Steel Galvanised	10	100	37



## CHANNEL NUTS

Manufactured as standard in Bright Zinc Plated Mild Steel.

Part No.	Material Suffix	Pack Qty	Weight g
0F-M10-CN00-Z	M10 Channel Nut (long spring)	100	38
0F-M10-CN01-Z	M10 Channel Nut (short spring)	100	37
0F-M10-CN02-Z	M10 Channel Nut (no spring)	100	36



## INSULATION PLATE

Manufactured as standard in Black Polypropylene or Black Flame Retardant V0 Zero Halogen Phosphorus-Free UV Stabilised Nylon (LSF), this insulation plate can be used to provide a barrier where galvanic reaction may occur between dissimilar metals, e.g. when installing stainless steel cleats onto galvanised steel channel.

Part No.	Material Suffix	Pack Qty	Weight g
91-IP	B	100	5
91-IP 12	B/LSF	100	5
91-IP-1	B/LSF	100	5
91-IP-2	B/LSF	100	5
91-IP-3	B/LSF	100	5



## TRUNKING ADAPTOR

Manufactured as standard in Black Polypropylene (B) or Nylon (LSF), this adaptor can be used to fit one hole and two hole cable clamps when cables are being installed parallel to the trunking.

Part No.	Material Suffix	Pack Qty	Weight g
91-TA	B	100	5.3
91-TA	LSF	100	7.1



# SPECIALIST CABLE FIXINGS FOR UTILITIES



## SINGLE WAY FIXING CABLE CLEAT

Manufactured as standard in Black Polypropylene (B) and Grey Flame Retardant Polypropylene (FR) or Black Acetal (A). A robust cleat used for securing armoured power cables.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
10-034	B or FR	9.0	3	200	0.8
10-042	B or FR	10.6	4	200	1.9
10-046	B or FR	11.7	4	200	2.8
10-053	B or FR	13.5	4	200	2.8
10-056	B or FR	14.2	4	200	3.1
10-061	B or FR	15.5	4	200	3.1
10-065	B or FR	16.5	4	200	4.8
10-072	B or FR	18.2	4	200	4.2
10-083	B or FR	21.1	6	100	7.7
10-098	B or FR	24.8	6	100	6.4
10-106	B or FR	27.0	6	100	7.5
10-120	A	31.0	6	50	15.8
10-138	A	35.0	6	50	23.0



## SINGLE WAY HEAVY DUTY RADIUSED POLE CLEAT

Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant VO Zero Halogen Phosphorus-Free UV Stabilised Nylon (LSF). A curved robust cleat used for securing power cables on 200mm diameter wooden electricity supply poles.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
35-04	B	27.6	8	100	13.0
35-06	B	31.2	8	100	12.0
35-065	B	33.5	8	100	18.5
35-07	B	36.0	8	100	14.0
35-08	B	37.8	8	100	16.0
35-10	B	41.5	8	100	26.0
35-12	B	44.6	8	100	25.0
35-22	B	49.2	8	100	23.0
35-26	B	53.5	8	50	25.0
35-30	B	56.6	8	50	27.0
35-34	B	61.6	11	50	53.0
35-42	B	72.5	11	25	84.0



## TWO WAY SINGLE FIXING CABLE CLEAT

Manufactured as standard in Black Polypropylene (B) and Grey Flame Retardant Polypropylene (FR). A robust cleat used for securing two armoured power cables on flat surfaces.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
2W37	B	9.4	4	100	2.2
2W42	B or FR	10.6	4	100	3.3
2W46	B or FR	11.7	4	100	3.6
2W53	B or FR	13.5	4	100	4.0
2W56	B or FR	14.2	4	100	5.0



## THREE & FOUR WAY DOUBLE FIXING CABLE CLEAT

Manufactured as standard in Black Polypropylene (B) and Grey Flame Retardant Polypropylene (FR). A robust cleat used for securing three or four armoured power cables on flat surfaces.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
3W46	B or FR	11.7	4	200	8.7
3W56	B or FR	14.2	4	200	9.3
4W10	B	4 x 15	4	100	9.5



## TWO WAY HEAVY DUTY RADIUSED POLE CLEAT

Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant VO Zero Halogen Phosphorus-Free UV Stabilised Nylon (LSF). A curved robust cleat used for securing two power cables on 200mm diameter wooden electricity poles.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
2WP04	B	11.7	4	100	6.1
2WP06	B	13.2	4	100	5.4
2WP10	B	16.5	4	100	6.5
2WP15	B	19.1	8	100	7.3

# SPECIALIST CABLE FIXINGS FOR UTILITIES



## THREE WAY HEAVY DUTY RADIUSED POLE CLEAT

Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant V0 Zero Halogen Phosphorus-Free UV Stabilised Nylon (LSF). A curved robust cleat used for securing three power cables on 200mm diameter wooden electricity supply poles.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
3WP04	B	11.7	6.35	200	8.0
3WP06	B	13.2	6.35	200	8.2
3WP10	B	16.5	6.35	200	9.8
3WP15	B	19.2	6.35	200	12.5
3WP20	B	21.7	6.35	200	13.7
3WP2	B	15.0	6.35	200	10.7
3WN05	B	24.0	6.35	200	11.9



## TWO WAY CLEAT AND SPACER

Manufactured as standard in Black Polypropylene (B) and Grey Flame Retardant Polypropylene (FR). Used for mounting power cables to poles and flat surfaces. A spacer is available to facilitate the stacking of the cleat

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
E272	B or FR	11.1-19.1	10.0	50 pairs	22.7
E272S	B or FR	11.1-19.1	10.0	50	15.1
E273	B or FR	6.35-12.0	6.63	50 pairs	11.4
E273S	B or FR	6.35-12.0	6.63	50	7.2

S = Spacer



## CABLE TIE BASE

Manufactured in Nylon (NY). Used to accommodate a cable tie of up to 10mm in width (not included)

Part No.	Material Suffix	Fixing Holes mm	Pack Qty	Weight g
115-001	NY	6	100	2.5



## UNIVERSAL CLEAT

Manufactured as standard in Black Polypropylene (B). Used for stacking cables vertically or horizontally using a framework system. More detail can be supplied on request

Part No.	Material Suffix	Cable Dia. mm	Pack Qty	Weight g
30U-1	B	23.8-38.1	50 pairs	89



## SINGLE WAY SNAP ON SADDLE CLIP

Manufactured as standard in Black Polypropylene (B) and Grey Flame Retardant Polypropylene (FR). Used for mounting cables and pipes on flat surfaces also providing clearance between the cable or pipe and the mounting surface.

Part No.	Material Suffix	Cable Dia. mm	Fixing Holes mm	Pack Qty	Weight g
90-M095	B or FR	9.5	3.75	500	1.8
90-M120	B or FR	12.0	3.75	500	2.4
90-01	B or FR	12.7	3.75	500	2.2
90-02	B or FR	15.0	3.75	500	2.4
90-03	B or FR	17.5	4.0	500	3.3
90-075	B or FR	19.0	4.0	500	3.6
90-04	B or FR	23.0	4.0	500	3.2
90-04.1	B or FR	24.2	4.0	500	3.1
90-05	B or FR	25.4	4.0	500	4.3
90-06	B or FR	27.5	5.0	500	5.3
90-07	B or FR	31.7	5.0	200	6.8
90-08	B or FR	34.0	5.0	200	6.7
90-09	B or FR	38.1	5.0	100	6.8
90-10	B or FR	42.0	5.0	200	8.7
90-11	B or FR	42.6	5.0	200	9.5
90-12	B or FR	44.4	5.0	100	7.4
90-13	B or FR	48.7	5.0	200	10.4
90-14	B or FR	53.9	5.0	100	14.4
90-143	B or FR	55.0	6.0	100	26.3
90-15	B or FR	60.5	6.0	100	25.8
90-19	B or FR	75.0	7.5	50	40.8
90-24++	B	88.9	10.0	25	70.7
90-S	B	Saddle Clip Spacer*			1.2

++ This item is supplied with a base plate.

\* Spacer suitable for use with all saddle clips (except part no 90-24).

Provides additional separation of the cable or pipe from the mounting surface of approximately 12.5mm.



## ABC WALL CLEAT

Manufactured as standard in Black Polypropylene (B). Used as a simple solution to the fixing of vertical and horizontal serial bundled cable to walls and other surfaces. (Tested to ESI Standards 43-14.)

Part No.	Material Suffix	A mm	H mm	D mm	Fixing Holes mm	Pack Qty	Weight g
115-010	B	10	47	31	6	100	12
115-050	B	50	59	37	6	100	27
115-100	B	100	72	43	6	25	54
115-125	B	125	80	48	6	25	74

Please note: These clamps are available in 4 stand off variants denoted by 'A'.

# JOINTERS' TOOLS

## CABLE CORE TWISTERS

Manufactured in Acetal (International Orange). Used to manipulate bare or insulated cable cores and to align the cores prior to jointing.

Complies with the Dielectric testing of IEC 60900-1



### 3 CORE

Part No.	Cores	Core Range Size mm²	Pack Qty	Weight g
110-95C	3	70 Bare x 95 Bare	10	54
110-X01C	3	95 Bare x 95 Ins	10	51
110-120C	3	70 Bare x 120 Bare	10	51
110-120IC	3	70 Ins x 120 Ins	10	49
110-X06C	3	120 Bare x 120 Ins	10	48
110-X07C	3	185 Bare x 185 Ins	10	148
110-240C	3	185 Bare x 240 Bare	10	146
110-300C	3	185 Bare x 300 Bare	10	147
110-300IC	3	185 Ins x 300 Ins	10	139
110-X08C	3	300 Bare x 300 Ins	10	138
110-X09C	3	70 Bare x 70 Ins	10	53
110-X10C	3	95 Bare x 185 Bare	10	154
110-X11C	3	95 Ins x 185 Ins	10	149

### 3 & 4 CORE

Part No.	Cores	Core Range Size mm²	Pack Qty	Weight g
110-X03C	3 & 4	3C 95 Ins x 4C 95 Ins	10	50
110-X04C	3 & 4	3C 185 Ins x 4C 185 Ins	10	145
110-X05C	3 & 4	3C 300 Ins x 4C 240 Ins	10	135
110-X12C	3 & 4	3C 300 Bare x 4C 300 Bare	10	141
110-X13C	3 & 4	3C 300 Ins x 4C 300 Ins	10	134

### 4 CORE

Part No.	Cores	Core Range Size mm²	Pack Qty	Weight g
110-41C	4	95 Bare x 95 Ins	10	51
110-42C	4	185 Ins x 240 Ins	10	142
110-43C	4	185 Bare x 240 Bare	10	150
110-44C	4	185 Ins x 300 Ins	10	141
110-48C	4	120 Ins x 185 Ins	10	150
110-X02C	4	185 Bare x 300 Bare	10	146
110-X14C	4	95 Bare x 185 Bare	10	155
110-X15C	4	95 Ins x 185 Ins	10	149
110-X16C	4	95 Ins stranded x 95 Ins solid	10	51
110-X17C	4	300 Ins stranded x 300 Ins solid	10	140



## CABLE CORE FORMER

Manufactured in Nylon. Used to hold the cores of a three core cable apart whilst a joint is being made. The central hole provides a facility for positioning a mastic bung.

Part No.	Core Separation Distance mm	Pack Qty	Weight g
120-F	32 - 58	10	44.1

# JOINTERS' TOOLS

## CABLE CORE GUARD

Manufactured in Nylon (International Orange). Used to provide separation between a cable core which is being cut and neighbouring cores.

Part No.	Nominal Lift mm	Pack Qty	Weight g
120-CG1C	23	10	57



## CABLE CORE STRIPPER

Manufactured in a Polymeric material. Used to remove insulation and sheathing from live armoured power cables. The tool has an exceptionally strong, tough blade and a unique handle moulded in a softer plastic which provides a cushion effect when a hammer is used to initiate a cut in the cable sheath.

Part No.	Nominal Lift mm	Pack Qty	Weight g
120-CS	90	10	183



Complies with the Dielectric testing of IEC 60900-1

## CABLE CORE WEDGE

Manufactured in Nylon (International Orange). Used to prise apart and to separate the cores of cables.

Part No.	Length mm	Width mm	Nominal Lift mm	Pack Qty	Weight g
110-1NYC	150	25	15	10	41
110-2NYC	225	25	25	10	65
110-3NYC	225	25	38	10	89
110-4NYC	150	13	25	10	32



## CABLE CORE SPREADER

Manufactured in Nylon. Used to hold apart the cores of a cable when jointing cables.

Part No.	Core	Core Range Size mm <sup>2</sup>	Pack Qty	Weight g
120-VNY	3	240 - 300	100	45
120-WNY	3	185	100	38
120-YNY	3	95 - 150	100	30
120-ZNY	3	95	100	24
120-UNY	4	Universal	100	37
120-15	4	Universal	100	10
120-20	4	Universal	100	12





# LADDER ADAPTORS

- ▶ ADAPTORS TO FIT ELLIS CLEATS TO WIDE RANGE OF LADDER
- ▶ STAINLESS STEEL CONSTRUCTION
- ▶ SUPPLIED WITH FIXINGS
- ▶ AVAILABLE WITH M10 OR M12 FIXINGS

PART NO.	TO SUIT LADDER
KIT0008-M12	1" SQUARE, M10 FIXING
KIT0012	23-27MM ROUND, M10 FIXING
KIT0020	21 X 17MM OVAL, M10 FIXING
KIT0039	1.5" X 0.375" RECTANGULAR, M10 FIXING
KIT0041-M10	1.125" X 0.75" RECTANGULAR, M10 FIXING
KIT0041-M12	1.125" X 0.75" RECTANGULAR, M12 FIXING
KIT0042-M10	1.5" X 0.5" RECTANGULAR, M10 FIXING
KIT0042-M12	1.5" X 0.5" RECTANGULAR, M12 FIXING
KIT0043-M10	41 X 21MM RECTANGULAR, M10 FIXING
KIT0045	1.0" ROUND, M10 FIXING
KIT0046-M10	1.5"X1.0" RECTANGULAR, M10 FIXING
KIT0046-M12	1.5"X1.0" RECTANGULAR, M12 FIXING
KIT0047-M10	27MM ROUND X 23MM FLAT D RUNG, M10 FIXING
KIT0047-M12	27MM ROUND X 23MM FLAT D RUNG, M12 FIXING

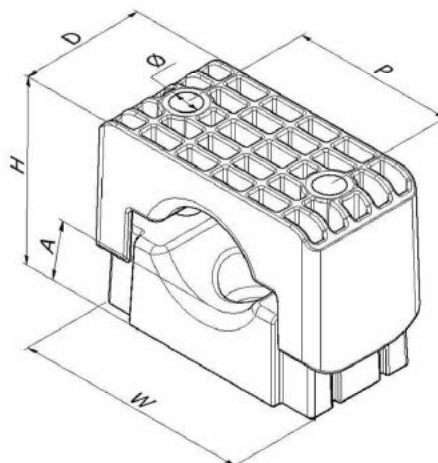
FOR FULL DETAIL DIMENSIONS REFER TO OUR DRAWING 5553

# DATA SHEET

## SOLUS CLAMP

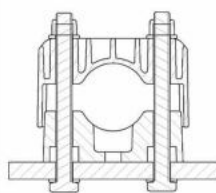
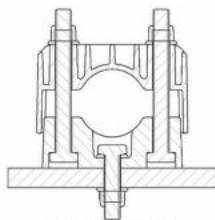
DESIGN REG NUMBER: D030165EM

- MANUFACTURED IN A HIGH STRENGTH HEAT STABILISED LOW SMOKE ZERO HALOGEN GLASS REINFORCED POLYAMIDE MATERIAL
- SINGLE OR DOUBLE BOLT FIXING OPTIONS
- RANGE ACOMODATES  $\phi 19 - \phi 75$ MM CABLES
- SUITABLE FOR INDOOR AND OUTDOOR USE
- SHORT CIRCUIT AND MECHANICALLY TESTED IN ACCORDANCE TO IEC 61914



PART NO.	CABLE RANGE		LINER SIZE (mm)	CABLE RANGE WITH LINER		DIMENSIONS (mm)						WEIGHT (g)
	MIN $\phi$ (mm)	MAX $\phi$ (mm)		MIN $\phi$ (mm)	MAX $\phi$ (mm)	W	H	D	A	P	$\phi$	
SL25-38GFN	25	38	3	19	32	100	80	60	24	60	M12	290
SL36-52GFN	36	52	3	30	46	116	95	77	24	75	M12	370
SL49-75GFN	49	75	3	43	69	138	124	77	26	95	M12	493

NOTE: FOR CLAMP WITH LINER ADD 'L' SUFFIX E.G. SL25-38GFNL.

POLYMERIC LINER  
CAN BE SUPPLIEDDOUBLE FIXING  
STYLESINGLE FIXING  
STYLE

# DATA SHEET

## SOLUS CLAMP

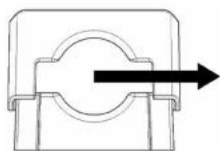
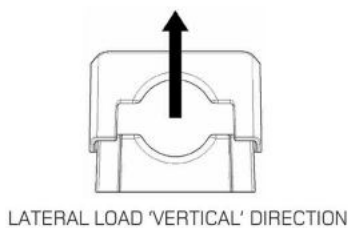
### TESTING SUMMARY

Solus Clamps have been tested in line with the International Standard 'Cable Cleats for Electrical Installations' IEC 61914:2015. Typical results are detailed below, please note that these testing values are maximums and safety factors appropriate to your application should be used:

PROPERTY	CLASSIFICATION CLAUSE IEC 61914	UNITS / CLASSIFICATION	TEST DATA	
			DOUBLE FIXING	SINGLE FIXING
CLEAT TYPE	6.1.2	NON-METALLIC	-	
TEMP. FOR PERMANENT APPLICATION	6.2	°C	-60 to +120	
IMPACT RATING	6.3.5	VERY HEAVY	PASS	
FLAME PROPAGATION TEST	10.0, 10.1	APPLICATION TIME ≥30s	PASS (ALSO UL94 V0 COMPLIANT)	
AXIAL LOAD RATING	6.4.3, 9.4	NEWTONS (N)	600N	1000N
LATERAL LOAD RATING	6.4.2, 9.3	NEWTONS (N)	VERTICAL - 7000N HORIZONTAL - 3000N	VERTICAL - 4500N HORIZONTAL - 2000N
RESISTANCE TO ELECTROMECHANICAL FORCE (SHORT CIRCUIT TESTING)	6.4, 6.4.5, 9.5	CLEATS AT 300MM INTERVALS (WITHSTANDING MORE THAN ONE SHORT CIRCUIT)	129kA (REPORT No. PDL-21-085.02)  CABLE OD = Ø36mm PHASE SPACING = 125mm	-

NOTE: THE WITH LINER VERSION HAS A LOWER RATING TO THE STANDARD VERSION AS FOLLOWS:

- 1) TEMPERATURE RANGE OF -60 to +85°C.
- 2) AXIAL PERFORMANCE LOWER THAN STANDARD VERSION, CONTACT ELLIS.



PRODUCT CAN BE STACKED FLAT USING  
HEX RECESS ON BASE OF PRODUCT -  
REFER TO INSTALLATION INSTRUCTIONS