



Holding Power

Ellis design and manufacture solutions for cabling environments globally.

With 50 years of innovation and testing behind us, we are recognised as the world's leading supplier of safety critical electrical cable cleats. Every day, vital operations and services such as the channel tunnel rail link, nuclear power plants and oil rigs rely on our products to keep them running safely.

Holding Power is our guarantee that Ellis cable cleats will contain short circuit forces – protecting your people, power and plant. Without fail.

Tested to Perfection

Since the birth of the company, we've been working with independent test houses to raise safety standards within the industry.

We understand the science behind the appropriate standards, but we know that results from short-circuit testing are what really counts. Testing is the only way to prove that a cleat will do its job.

We undertake regular testing in accordance with the international standard IEC61914:2009, and the results show that our products

exceed industry requirements. This uncompromising quality and our 'safety first' culture, guarantees you protection.

We're more than happy to make available reports and video footage from our tests.

Trust Ellis

Our focus is on specialist cable cleats, pure and simple. No other company offers a wider range and no other company puts as much time and effort into testing and developing cleats. We have earned the reputation of being the industry experts.

And that's the level of assurance you need when the safety of your people and your company is on the line. We provide failsafe devices that are fit for purpose and last a lifetime.

When it's needed, you can trust our cleats to perform.

Innovation with Insight

Innovative product design and development is our passion. At the heart of this is listening to our customers, so we work to anticipate your future requirements. On top of this, the knowledge we gain from testing means there is robust science behind our new product development – not just ideas.

Precision Engineering

Ellis products are precision manufactured and immensely strong. So as you would expect, we're committed to investing in new technology and have a state of the art production facility where rapid prototyping and bespoke solutions are the norm.



Emperor

Max S/C Test Level	Cleat Spacing
156kA	600mm
195kA	300mm
235kA	225mm



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

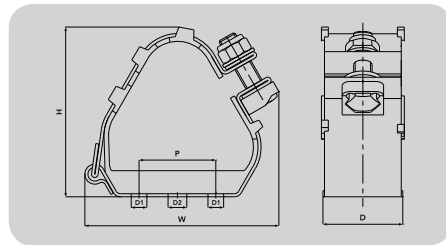
When you need cleats that withstand the highest levels of short-circuit.

The Emperor range offers the ultimate protection against the harshest conditions, and its unique design means it can be quickly installed. Manufactured in Type 316L stainless steel, Emperor cleats are available in multiple sizes with range-taking capability, to suit trefoil or single cables.

To protect and cushion the cables during short circuit conditions, the cleat is supplied with an integral Low Smoke and Fume Polymeric liner and base pad.

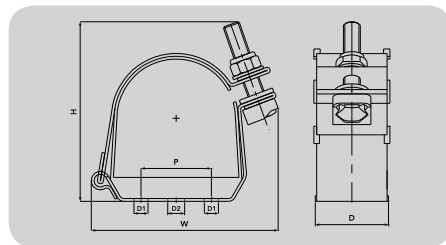
We recommend that the Emperor is fixed using either two 10mm bolts, or a single 12mm bolt (not supplied but available as extras). Alternative bolt recommendations on request. For a more economical installation, cleats can be spaced more widely, with a retention strap fitted in between.

(See page 13 for details)



SELECTION TABLE FOR TREFOIL CABLE APPLICATION

Part No.	Cable Range		Dimensions mm					Weight g
	Min dia. mm	Max dia. mm	W	H	D	P	Fixing Holes	
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



SELECTION TABLE FOR SINGLE CABLE APPLICATION

Part No.	Cable Range		Dimensions mm					Weight g
	Min dia. mm	Max dia. mm	W	H	D	P	Fixing Holes	
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	75	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

Special options:
Other sizes available on request.



(American Bureau of Shipping)
Type Approval.



London Underground

Emperor Cable Cleats are compliant with the requirement of London Underground Standard 1-085. Product Register No. 362.



Vulcan +

Max S/C Test Level	Cleat Spacing
104kA	600mm
132kA	300mm



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

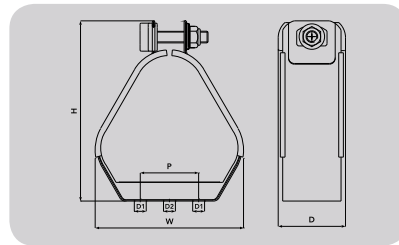
When you need cleats that withstand moderate levels of short-circuit.

Our Vulcan+ cleats have a unique compact design so they can be easily installed, even when space is limited. Vulcan+ cleats are available in multiple sizes with range-taking capability, to suit trefoil, single, quad or bundled cables.

Manufactured in Type 316L stainless steel, Vulcan offer excellent protection against the harshest environmental conditions. To protect and cushion the cables during short-circuit conditions, the cleat comes with an integral Low Smoke and Fume Zero Halogen Polymeric liner and base pad.

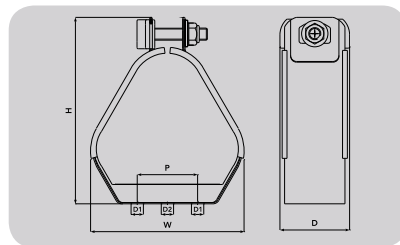
We recommend fixing VRT+ using one 10mm bolt for sizes 00 to 09, and one or two 10mm bolts for sizes 10 to 20. For VRQ+ use one 10mm bolt for sizes 01 to 06, and one or two 10mm bolts for sizes 07 to 09 (not supplied but available as extras). Alternative bolt recommendations on request. For a more economical installation, cleats can be spaced more widely, with a retention strap fitted in between.

(See page 13 for details)



SELECTION TABLE FOR TREFOIL AND SINGLE CABLE APPLICATION

Part No.	Trefoil Cable Range		Single Cable Range		Dimensions mm					Weight g
	Min Dia. mm	Max Dia. mm	Min Dia. mm	Max Dia. mm	W	H	D	P	Fixing Holes	
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	150	170	215	240	54	75	3 x M10	646



SELECTION TABLE FOR QUAD CABLE APPLICATION

Part No.	Quad Cable Range		Dimensions mm					Weight g
	Min Dia. mm	Max Dia. mm	W	H	D	P	Fixing Holes	
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	32	80	128	54	n/a	1 x M10	318
VRQ+04	33	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



Vulcan VR T+ Cable Cleats are compliant with the requirement of London Underground Standard 1-085. Product Register No. 361.



Alpha



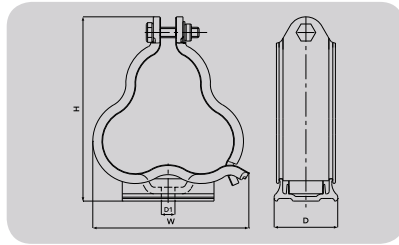
Max S/C Test Level	Cleat Spacing
72kA	600mm
96kA	300mm

Aluminium Trefoil Cleats
Patent No.
UK Patent GB 240 5900

A new, stronger alternative to the traditional aluminium cleat.

Manufactured in extruded aluminium (6000 series) to BS EN 755. Our Alpha cleats are even more robust than our original trefoil cast cleats. Alpha cleats come with easy one bolt fixing and zinc plated steel closing fasteners.

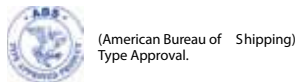
Alpha cleats are available with two base options: Aluminium or Polymer. The polymeric base can be used to prevent galvanic corrosion, where this could be a problem.



Part No.	Part No.	Trefoil Cable Range		Dimensions mm			Fixing Holes	Weight g		
		Aluminium base	LSF Zero Halogen base	Min dia. mm	Max dia. mm	W			H	D
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



Special options:
 Single versions available to specific cable diameters.
 Polyester coating and alternative fasteners are available on request.



The Alpha Cable Cleats are compliant with the requirement of London Underground Standard 1-085. Product Register No. 360.



Vari-cleat



Max S/C Test Level	Cleat Spacing
101kA	600mm

Stainless Steel and Aluminium Cable Cleats

Patent No.

UK Patent GB 226 1014

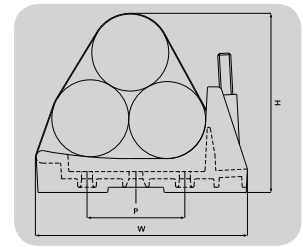
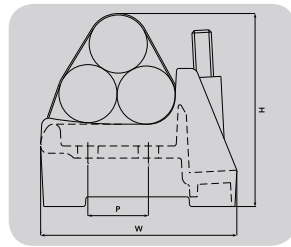
When you need compact cleats where the base can be fixed before the cables are in position

Vari-cleats withstand moderate levels of short-circuit and have a separate over-strap that can be installed once your cables are in position. Available for trefoil, single or bundled cables, Vari-cleats come in over 30 sizes with range-taking capability.

The patented design includes a base cast in aluminium (optional polyester or Kelvar coatings are available on request). The over-strap is manufactured from Type 316L stainless steel (a silicone Low Smoke and Fume liner is available on request).

We recommend Vari-cleats are fixed using either 8mm, 10mm or 12mm bolts (not supplied but available as extras). Alternative bolt recommendations on request. For a more economical installation, cleats can be spaced more widely with a retention strap fitted in between.

(See page 13 for details)



Base Sizes A N, B N & C N

Base Sizes D N, EN, FN, GN & H N

SELECTION TABLE FOR SINGLE AND TREFOIL CABLE APPLICATION

Part No. - Suffix (See below)	Cable Range No Liner		Cable Range with Liner		Dimensions mm				Fixing Holes	Weight g
	Trefoil dia. mm	Single dia. mm	Trefoil dia. mm	Single dia. mm	W	H	D	P		
VC-AN1-	21-24	36-43	19-22	31-38	82	80	74	25	2 x M8	373
VC-AN2-	22-26	41-48	21-24	36-43	82	84	74	25	2 x M8	373
VC-AN3-	24-28	44-51	23-26	39-46	83	88	74	25	2 x M8	373
VC-AN4-	26-30	49-54	25-29	44-51	86	92	74	25	2 x M8	373
VC-BN1-	29-33	51-59	27-31	46-54	97	94	74	25	2 x M8	430
VC-BN2-	30-35	55-63	29-33	50-58	97	97	74	25	2 x M8	430
VC-BN3-	32-37	60-68	30-36	55-63	100	101	74	25	2 x M8	430
VC-BN4-	34-38	64-70	33-38	59-68	104	105	74	25	2 x M8	430
VC-CN1-	37-42	68-76	35-40	63-71	117	105	76	25	2 x M8	490
VC-CN2-	39-44	72-81	37-42	67-76	117	109	76	25	2 x M8	490
VC-CN3-	42-47	76-85	39-45	71-80	118	115	76	25	2 x M8	490
VC-CN4-	44-48	81-87	44-48	76-86	124	121	76	50	2 x M8	490
VC-DN1-	47-53	86-96	47-51	81-91	138	126	78	50	2 x M8 + 1 x M10	610
VC-DN2-	50-56	91-100	49-54	86-95	141	132	78	50	2 x M8 + 1 x M10	610
VC-DN3-	54-59	96-105	52-57	91-100	147	138	78	50	2 x M8 + 1 x M10	610
VC-DN4-	56-60	101-106	55-60	96-106	153	144	78	75	2 x M8 + 1 x M10	610
VC-EN1-	59-63	105-112	58-62	100-107	163	147	80	75	2 x M8 + 1 x M10	730
VC-EN2-	62-67	111-118	61-66	106-113	167	154	80	75	2 x M8 + 1 x M10	730
VC-EN3-	65-70	118-125	64-69	113-120	174	160	80	75	2 x M8 + 1 x M10	730
VC-EN4-	68-74	125-132	67-73	120-127	181	167	80	75	2 x M8 + 1 x M10	730
VC-FN1-	71-76	125-140	69-74	120-135	187	170	82	90	3 x M12	880
VC-FN2-	74-80	132-145	72-78	128-140	194	177	82	90	3 x M12	880
VC-FN3-	78-84	139-152	76-82	134-147	201	185	82	90	3 x M12	880
VC-FN4-	82-88	148-160	80-86	143-155	210	193	82	90	3 x M12	880
VC-GN1-	84-91	145-160	82-89	140-155	217	197	82	114	3 x M12	970
VC-GN2-	88-95	155-170	86-93	150-165	225	205	82	114	3 x M12	970
VC-GN3-	92-99	165-180	90-97	160-175	233	213	82	114	3 x M12	970
VC-GN4-	96-103	175-190	94-101	170-185	240	221	82	114	3 x M12	970
VC-HN1-	98-106	170-190	96-104	165-185	247	229	84	136	3 x M12	1170
VC-HN2-	102-110	180-200	100-108	175-195	255	237	84	136	3 x M12	1170
VC-HN3-	106-114	190-205	104-112	185-200	263	245	84	136	3 x M12	1170
VC-HN4-	110-118	200-215	108-116	195-210	271	252	84	136	3 x M12	1170

Suffix 1	Suffix 2	Suffix 3
A No liner B Lined C Heavy Duty No liner D Heavy Duty Lined	N Natural P Polyester - Black K Kelvar C Kelvar & Flange Nut	0 Standard Holes



Special options:
Cleats for multi-cable bundles available on request.



Atlas

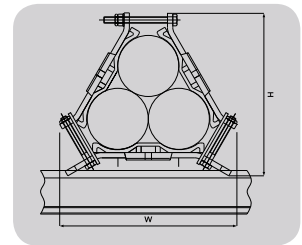
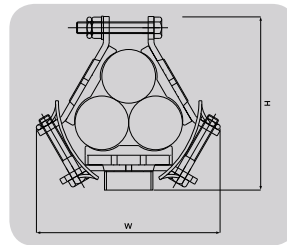
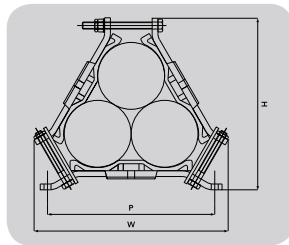


Max S/C Test Level	Cleat Spacing
112kA	750mm

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

When you need cleats that withstand high levels of short-circuit, and that have more fixing options.

Atlas cable cleats are available for trefoil and single cable applications and can be fixed using one bolt, two bolts or a framing channel fixing. Manufactured in galvanised steel, Atlas cleats are supplied with a stainless steel top bolt to eliminate eddy currents. To protect and cushion the cables during short circuit conditions, the cleat comes with integral Low Smoke and Fume Zero Halogen Polymeric pads. For Atlas Intermediate Strap type AS please contact our sales office.



SELECTION TABLE FOR TREFOIL CABLE APPLICATION

Part No.	Cable Dia Range mm	Dimensions mm												Weight g	
		Two Bolt					Single Bolt				Framing Channel				
		W	H	D	P	Fixing Holes	W	H	D	Fixing Holes	W	H	D		Fixing Holes
AR2-A31-	24-26	170	121	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A32-	26-30	170	122	54	150	2 x M10	144	130	54	1 x M10	144	125	54	1 x M10	930
AR2-A33-	30-35	170	133	54	150	2 x M10	157	141	54	1 x M10	157	136	54	1 x M10	970
AR2-A34-	35-40	170	134	54	150	2 x M10	158	142	54	1 x M10	158	137	54	1 x M10	930
AR3-A35-	40-45	198	158	54	175	2 x M10	185	165	54	1 x M10	185	160	54	1 x M10	1200
AR3-A36-	45-50	198	160	54	175	2 x M10	187	167	54	1 x M10	187	162	54	1 x M10	1200
AR4-A37-	50-55	214	174	54	200	2 x M10	204	182	54	1 x M12	204	177	54	1 x M12	1300
AR4-A38-	55-60	214	179	54	200	2 x M10	210	187	54	1 x M12	210	182	54	1 x M12	1300
AR4-A39-	60-66	214	185	54	200	2 x M10	217	193	54	1 x M12	217	188	54	1 x M12	1300
AR5-A61-	66-71	250	225	54	225	2 x M10	254	225	54	1 x M12	254	220	54	1 x M12	1800
AR5-A62-	71-76	250	226	54	225	2 x M10	255	226	54	1 x M12	255	221	54	1 x M12	1800
AR5-A63-	76-82	250	230	54	225	2 x M10	260	230	54	1 x M12	260	225	54	1 x M12	1800
AR8-A64-	82-92	285	250	54	225	2 x M10	N/A			N/A				2100	
AR8-A65-	92-102	285	250	54	225	2 x M10	N/A			N/A				1900	



SELECTION TABLE FOR SINGLE CABLE APPLICATION

Part No.	Cable Dia Range mm	Dimensions mm												Weight g	
		Two Bolt					Single Bolt				Framing Channel				
		W	H	D	P	Fixing Holes	W	H	D	Fixing Holes	W	H	D		Fixing Holes
AR2-A11-	38-41	170	128	54	150	2 x M10	144	136	54	1 x M10	144	131	54	1 x M10	950
AR2-A12-	41-47	170	129	54	150	2 x M10	144	136	54	1 x M10	144	131	54	1 x M10	930
AR2-A13-	47-55	170	140	54	150	2 x M10	157	147	54	1 x M10	157	142	54	1 x M10	940
AR2-A14-	55-63	170	141	54	150	2 x M10	158	148	54	1 x M10	158	143	54	1 x M10	930
AR3-A15-	63-70	198	164	54	175	2 x M10	185	172	54	1 x M10	185	167	54	1 x M10	1200
AR3-A16-	70-79	198	166	54	175	2 x M10	187	173	54	1 x M10	187	168	54	1 x M10	1200
AR4-A17-	79-87	214	180	54	200	2 x M10	204	188	54	1 x M12	204	183	54	1 x M12	1300
AR4-A18-	87-95	214	186	54	200	2 x M10	210	193	54	1 x M12	210	188	54	1 x M12	1300
AR4-A19-	95-104	214	192	54	200	2 x M10	217	199	54	1 x M12	217	197	54	1 x M12	1300
AR5-A51-	104-112	250	231	54	225	2 x M10	254	231	54	1 x M12	254	226	54	1 x M12	1700
AR5-A52-	112-120	250	232	54	225	2 x M10	255	232	54	1 x M12	255	227	54	1 x M12	1700
AR5-A53-	120-130	250	237	54	225	2 x M10	260	237	54	1 x M12	260	232	54	1 x M12	1700

To order please add fixing suffix:

Two Bolt - TB Single Bolt - SB Framing Channel - FC

ELLIS

FlexiStrap



Intermediate Short Circuit Strap
Patent Applied for:
GB1000963.7

Retain ultimate protection when
your cleats are widely spaced.

Immensely strong intermediate straps
that can be used on trefoil cables with
our Vulcan+ and Emperor cleats, for a
more cost effective solution. Available
in a standard or heavy duty form, the
FlexiStrap is manufactured from Type
316L stainless steel, and can withstand
the highest levels of short-circuit.

The unique registered design is easy
to use and can be rapidly installed.
In its standard form (SD), FlexiStrap
would typically be paired with Vulcan+
cleats and is installed by wrapping the
strap twice around the cables. In its
heavy duty form (HD), FlexiStrap would
typically be paired with Emperor cleats
and is installed by wrapping the strap
three times around the cables. You will
need to specify if you want SD or HD
when you order.

FlexiStrap has been short-circuit tested
in accordance with IEC 61914:2009.
We can supply it with or without a
Low Smoke and Fume Zero Halogen
Polymeric liner. However, if it needs to
comply with the standard, it must have
this liner.

FlexiStrap can be installed with a
standard 1/4 " or 6mm ratchet handle
and a 10mm spanner.

We provide a proprietary drive socket
along with the straps.



STANDARD DUTY (SD)

Part No.	Trefoil Cable Formation		Weight g
	Min Dia mm	Max Dia mm	
FS24-34SD	24	34	131
FS30-41SD	30	41	144
FS37-47SD	37	47	155
FS43-54SD	43	54	168
FS50-60SD	50	60	180
FS56-67SD	56	67	193
FS63-73SD	63	73	204
FS69-80SD	69	80	217
FS72-85SD	72	85	226
FS82-95SD	82	95	245
FS92-105SD	92	105	264
FS102-115SD	102	115	282
FS112-125SD	112	125	301
FS122-135SD	122	135	319
FS132-145SD	132	145	338
FS-T001-4	Special Drive Socket		

HEAVY DUTY (HD)

Part No.	Trefoil Cable Formation		Weight g
	Min Dia mm	Max Dia mm	
FS24-34HD	24	34	165
FS30-41HD	30	41	185
FS37-47HD	37	47	202
FS43-54HD	43	54	221
FS50-60HD	50	60	238
FS56-67HD	56	67	258
FS63-73HD	63	73	275
FS69-80HD	69	80	294
FS72-85HD	72	85	308
FS82-95HD	82	95	336
FS92-105HD	92	105	364
FS102-115HD	102	115	392
FS112-125HD	112	125	420
FS122-135HD	122	135	448
FS132-145HD	132	145	476
FS-T001-4	Special Drive Socket		

FlexiStrap is available with or without a Polymeric LSF liner. If a liner is required add suffix L to the part number.

Sample Part number - Trefoil Strap 24 to 34mm Standard Duty with liner F S24-34 SDL.

All Straps are 50mm wide.

Flexi Strap can also be used to contain bundles of cable.

Please contact our sales office with details of your particular requirement.



Phoenix[®]

Max S/C Test Level	Cleat Spacing
60kA	600mm

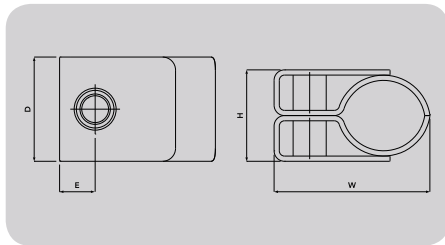


Fire Rated Cable Clamps
Community Design Reg No.
000355854-0002

When you need cable clamps that are fireproof, corrosion resistant and easy to fit.

The Phoenix range is specifically designed for the installation of Fire Protection (FP) rated cables. Precision engineered from Type 316L stainless steel with single bolt fixing, Phoenix Cable Clamps are available in 11 sizes to suit single cables from 10mm to 65mm in diameter.

To prove their fire resistance these cleats were used to secure a fire rated cable during a series of tests in accordance with BS 5839-1:2002, Section 26.2d. The cleats successfully supported the cable during the test and the performance was as expected given the physical characteristics of 316L stainless steel at elevated temperatures. We would be happy to supply you with a copy of the test report and data sheet.



Part No.	Cable range Dia. mm	Dimensions mm				Fixing Holes	Weight g
		W	H	D	E		
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





Centaur®

Max S/C Test Level	Cleat Spacing
64kA RMS 1sec	8.4m
163 kA Peak	



Cable Saddle

When you need a short-circuit tested product to secure large diameter insulated HV cables, used in Power Transmission Systems – typically 275kV to 400kV.

Centaur® cable saddles are designed to support cables with diameters from 100mm to 162mm, from support steelwork at centres of up to 8.4m.

Centaur consists of an extruded and pressed aluminium saddle and a hinged aluminium overstrap. The curvature of the saddle accommodates the thermal expansion of the cable and the ends of the saddle are flared so that the cable never comes into contact with a sharp edge under any circumstances. The overstrap incorporates a Low Smoke Zero Halogen Polymeric liner, which cushions the cable in the event of a short-circuit. All the fixing bolts are in Type 316L stainless steel. To eliminate the possibility of galvanic corrosion all dissimilar metals are isolated from each other by injection moulded separation washers. Centaur saddles are available in lengths of 400, 600 and 800mm to allow for different cable diameters and mounting centres. Centaur can be supplied with a variety of rigid or flexible mounting arrangements.



UK Patent App. No. 0805128.6, European Patent App. No. 08250959.7,
US Patent App. No. 12/052,614, Community Design Registration No. 000749999

Part No.	Cable range Dia. mm	Length of Cable Saddle
CS100-112/400	100-112	400mm
CS108-122/400	108-122	
CS120-132/400	120-132	
CS128-142/400	128-142	
CS140-152/400	140-152	
CS148-162/400	148-162	



CS100-112/600	100-112
CS108-122/600	108-122
CS120-132/600	120-132
CS128-142/600	128-142
CS140-152/600	140-152
CS148-162/600	148-162



CS100-112/800	100-112
CS108-122/800	108-122
CS120-132/800	120-132
CS128-142/800	128-142
CS140-152/800	140-152
CS148-162/800	148-162



Matrix



The Matrix cable cleat provides a space saving solution to the problems of cleating multiple cable runs to cable ladder or steel frameworks. The cleat is made to order as a special to suit particular applications and any number of rows and columns can be accommodated.

The steel frameworks can be supplied in hot dipped galvanised steel or Type 316L stainless steel. The plastic cable support pads are produced in low smoke and fume Zero Halogen Polymeric material.

Please contact us for further details.

ProTect

Max S/C Test Level	Cleat/ Strap Spacing
136kA	300mm

Retention Strap
UK Design Reg No.
355854

Pro Tect cable straps are available for trefoil cable applications, when you need to withstand the highest levels of short-circuit.

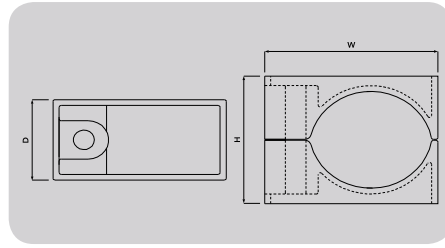
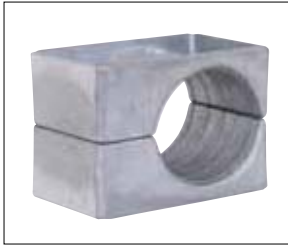
The unique registered design means they can be quickly installed. The frame, manufactured from Type 316L stainless steel, offers the ultimate protection against the harshest environmental conditions. The frame is tightened and locked using a combination of an M10 set screw and flanged nut in A4 stainless steel, and a screw head retainer in Low Smoke and Fume (LSF) Zero Halogen Nylon.

They are available with or without an integral LSF Polymeric liner. Please contact us for further details.



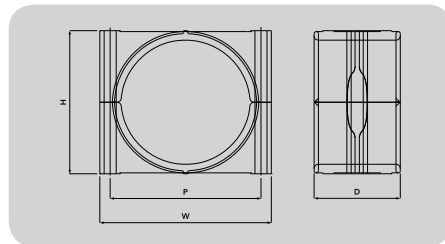
One & Two Hole Cableclamps - Aluminium

Manufactured as standard in plain LM6 aluminium to BS 1490. Used to fix power cables in dry industrial or outdoor unpolluted applications, the product can be epoxy coated for use in harsh environments, such as sea air conditions.



ONE HOLE CABLE CLAMP

Part No.	Cable Range		Dimensions mm			Fixing Holes	Pack Qty	Item Weight g
	Min dia mm	Max dia mm	W	H	D			
1G-11N	13	16	44	34	43	1 x M10	50	80
1G-12N	16	19	48	36	43	1 x M10	50	91
1G-13N	19	22	50	38	43	1 x M10	50	98
1G-14N	22	26	53	40	43	1 x M10	50	100
1G-15N	26	33	59	44	43	1 x M10	25	120
1G-16N	33	39	65	50	43	1 x M10	25	132
1G-17N	39	45	71	56	43	1 x M10	25	152
1G-18N	45	51	78	63	43	1 x M10	25	168
1G-19N	51	58	84	73	43	1 x M10	10	202
1G-20N	58	65	91	80	43	1 x M10	10	189
1G-21N	65	71	97	89	43	1 x M10	10	253



TWO HOLE CABLE CLAMP

Part No.	Cable Range		Dimensions				Fixing Holes	Pack Qty	Item Weight g
	Min dia mm	Max dia mm	W	H	D	P			
2G-09N	51	57	96	68	49	76	2 x M10	25	208
2G-10N	57	64	96	75	49	76	2 x M10	25	220
2G-11N	64	70	134	84	64	114	2 x M10	10	376
2G-1200N	70	76	134	90	64	114	2 x M10	10	392
2G-1201N	76	83	142	96	64	114	2 x M10	10	451
2G-1202N	83	89	142	102	64	114	2 x M10	5	550
2G-131N	89	95	154	114	76	126	2 x M10	5	650
2G-132N	95	101	154	120	76	126	2 x M10	5	750
2G-141N	101	108	169	134	76	140	2 x M10	5	1100
2G-142N	108	114	169	140	76	140	2 x M10	5	1450

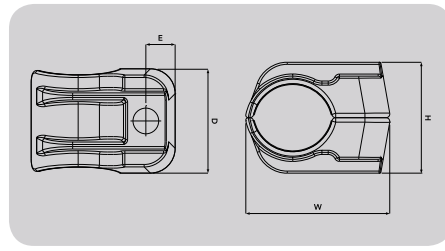
Specials: For cable diameters above 114mm please contact our sales office

One & Two Hole Cableclamps- Non Metallic

UK Design Reg. No:
355854

Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant V0 Zero Halogen Phosphorus Free Nylon (LSF) or to special order in a London Underground Approved Material (LUL).

Used to fix power cables in indoor and outdoor applications.

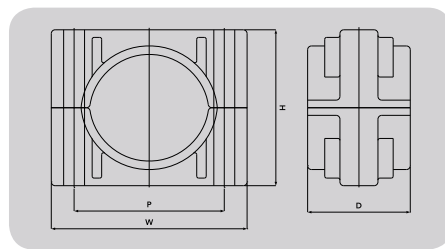


ONE HOLE CABLE CLAMP

Part No.	Material Suffix	Cable Dia Range 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



The LUL version of the 1F One Hole Cableclamps are compliant with the requirement of London Underground Standard 1-085. Product Register No. 363.



Max S/C Test Level (Multi-core Cable)	Cleat Spacing
76kA	600mm

TWO HOLE CABLE CLAMP

Part No.	Material Suffix	Cable Dia Range mm	Dimensions				Fixing Holes	Pack Qty	Weight g		
			W	H	D	P			B	LSF	LUL
2F-07	B/LSF/LUL	38-46	92	60	54	68	2 x M10	25	73.0	91.0	119.0
2F-08	B/LSF/LUL	46-51	103	71	54	79	2 x M10	25	80.9	109.9	132.0
2F-09	B/LSF/LUL	51-57	103	76	54	79	2 x M10	25	95.0	119.0	155.0
2F-10	B/LSF/LUL	57-64	103	82	54	79	2 x M10	25	89.1	122.5	156.5
2F-11	B/LSF/LUL	64-70	130	89	54	106	2 x M10	15	116.0	157.3	189.0
2F-1200	B/LSF/LUL	70-76	130	95	54	106	2 x M10	15	124.0	167.3	202.0
2F-1201	B/LSF/LUL	76-83	130	100	54	106	2 x M10	10	126.0	170.0	205.0
2F-1202	B/LSF/LUL	83-90	130	108	54	106	2 x M10	10	128.0	172.0	208.0
2F-131	B/LSF/LUL	90-97	150	115	54	126	2 x M10	5	152.0	208.0	248.0
2F-132	B/LSF/LUL	97-105	150	122	54	126	2 x M10	5	156.0	208.0	254.0
2F-141	B/LSF/LUL	105-112	161	130	54	135	2 x M10	5	179.5	238.8	292.2
2F-142	B/LSF/LUL	112-120	169	138	54	143	2 x M10	5	193.5	261.0	315.4
2F-151	B/LSF/LUL	120-128	177	148	54	151	2 x M10	5	212.2	280.0	346.0
2F-152	B/LSF/LUL	128-135	185	158	54	158	2 x M10	5	228.5	304.4	372.4

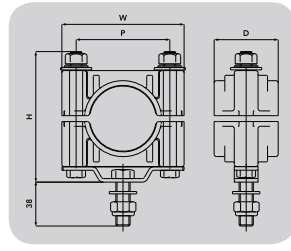
Please note:

These cable clamps now replace our previous 1H & 2H versions, however the H range can still be supplied on special request to complete ongoing contracts.



The LUL version of the 2F One Hole Cableclamps are compliant with the requirement of London Underground Standard 1-085. Product Register No. 364.

Heavy Duty Single Bolt Fixing Cableclamp



Manufactured as standard in Black Polypropylene (B) or Black Flame Retardant V0 Zero Halogen Phosphorus Free Nylon (LSF). Supplied together with a Zinc passivated mild steel support bracket that enables larger cables to be fixed with one inclusive single 12mm bolt.

Used to fix power cables in indoor and outdoor applications.

Part No.	Material Suffix	Support Bracket Material	Cable Dia Range mm	Dimensions mm				Weight g	
				W	H	D	E	B	LSF
2FAS-08	B or LSF	Y	46-51	103.0	110.0	54.0	38.0	353.9	382.9
2FAS-09	B or LSF	Y	51-57	103.0	110.0	54.0	38.0	368.0	392.0
2FAS-10	B or LSF	Y	57-64	103.0	110.0	54.0	38.0	362.1	395.5
2FAS-11	B or LSF	Y	64-70	130.0	143.0	54.0	38.0	433.0	474.3
2FAS-1200	B or LSF	Y	70-76	130.0	143.0	54.0	38.0	441.0	484.3
2FAS-1201	B or LSF	Y	76-83	130.0	143.0	54.0	38.0	443.0	487.0
2FAS-1202	B or LSF	Y	83-90	130.0	143.0	54.0	38.0	445.0	489.0

Triplex Cable Surround

Max S/C Test Level (within 2F Clamps)	Cleat Spacing
76kA	600mm

Tested in line with EN 50368:2003

Patent No.
UK Patent GB 238 9970

Manufactured as standard in a LSF Zero Halogen Polymeric material. Used within a single cable cleat to secure triplex cable (three single core cables which are spirally twisted together), it overcomes the twist in the cable so allowing the cable to be cleated at any point along its length.



Part No.	Triplex Cable Range		Depth mm	Weight g
	Min dia. mm	Max dia. mm		
SFT31	28	34	62	87.0
SFT36	33	39	62	113.4
SFT43	39	47	62	140.0
SFT51	47	55	62	212.3





Bespoke solutions and products

We understand that different markets and varying situations demand different solutions. And as problem solvers, we thrive on new challenges. So when our standard product range isn't quite what you need, we can still help.

Most requested

Our customers often require help with the following.

- Mounting products onto a non-standard structure.
- Manufacturing products in a non-standard format or size.
- Specialist surface treatments, such as painting, plating, or galvanizing.
- Developing a completely bespoke product.

We are well placed to meet these, and many other, requirements.

Specialist applications

Just like our standard products, our bespoke solutions are designed to withstand the toughest conditions, and can be made for specialist environments such as:

- high shock load
- high or low temperature
- a large temperature range
- tunnel (including railway)
- unusual or aggressive corrosion
- fire.

The market sectors we work with

A range of industries call upon our expertise, including:

- Power generation and distribution
- Transportation
- Water and other utilities
- Oil and gas (onshore and offshore)
- Defence
- Government agencies
- Construction
- Telecoms and data
- Original Equipment Manufacturers (OEMs).

State of the art facilities

The new technology and rapid prototyping processes that we have adopted, mean that unique designs can be produced surprisingly quickly and economically, even in relatively small quantities.

Our facilities mean we can undertake a variety of work for your company: 3D CAD design, toolmaking, injection moulding, CNC machining, metal presswork, welding, and a range of testing (tensile, compression, fatigue, contribution to fire, impact, corrosion and short-circuit.)

The highest quality materials

We use the most robust materials to develop bespoke solutions that you can rely on; typically stainless steel (316L but also super duplex), mild steel, extruded and die cast aluminium, as well as thermoplastic polymer.



Standard Emperor products modified to suit 2,4 and 6 cable applications.

Standard Emperor product fitted with a universal base clamp designed to retrofit to three different undrilled ladder rung designs.

$$F_t = 0.17 \times i_p^2 / S$$

Short Circuits and Short Circuit Testing

During the design of an electrical installation, cable size will be specified and the maximum anticipated short circuit load will be calculated. Using this data, the force between the conductors in the event of a short circuit can be calculated and the correct cleats at the appropriate spacing can be determined.

Each range of cleats has different features and benefits and mechanical strength varies from product to product. Once the forces between the conductors in the event of a short circuit have been calculated and a cleat has been selected, the spacing is calculated for that specific cleat. If the cleat type is changed, the spacing must be recalculated for the new cleat's mechanical strength.

The only way to be able to guarantee the performance of a particular type of cleat is by subjecting it to a short circuit test. We know from experience that a cleat may withstand a certain mechanical load when subjected to a simple tensile test but it may fail when subjected to the same load in a short circuit because of the dynamic forces involved.

IEC 61914:2009 provides a method for cable cleats to be short circuit tested

so that results for different types of cleats can be compared.

It is up to the cable cleat manufacturer to determine the fault level at which they wish to test their cleat. However, the cable must be unarmoured single core 600V/1000V stranded copper conductor cable and the testing assembly must be in accordance with the requirements of the standard.

For a range of cleats to be classified under the Standard at a particular fault level, it must undergo one or two short circuit tests depending on classification and afterwards:

- There shall be no failure that will affect the intended function of holding the cable in place.
- The cable cleats and intermediate restraints, if used, shall be intact with no missing parts (minor deformation is acceptable).
- There shall be no cuts or damage visible to the outer sheath of the cable caused by the cleats or intermediate restraints.

IEC 61914:2009 also provides formulae to enable the theoretical forces between conductors in the event of a short circuit to be calculated.

For a three phase short circuit with the cables in a trefoil configuration the maximum force on the conductor is:

$$F_t = 0.17 \times i_p^2 / S$$

Where:

F_t is the maximum force on the cable conductor (N/m)

i_p is the peak short circuit current (kA)

S is the centre to centre distance between the conductors, which equals the cable diameter in trefoil cable configurations (m)

When comparing short circuit test results for trefoil cleats, the fault level, cleat spacing and cable diameter must be known. It can only be said that a given cleat has specific short circuit withstand at a given cleat spacing for a specific cable diameter.

Ellis Patents Ltd has carried out over two hundred short circuit tests at independent test laboratories in the UK, Holland, Germany, Russia and the USA. Test certificates are available for all Ellis fault rated products. Technical advice regarding recommended cleat type and spacing for specific electrical installations is available on request.

