

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Cable Cleats**

with type designation(s)
Cable Cleat

Issued to

Ellis Patents Limited
RILLINGTON, Malton North Yorkshire, United Kingdom

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Material **Metallic**
Suitable for open deck **Yes**

Issued at **Høvik** on **2018-04-18**

This Certificate is valid until **2022-12-31**.

DNV GL local station: **Newcastle-upon-Tyne**

for **DNV GL**

Approval Engineer: **Marta Alonso Pontes**

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Andreas Kristoffersen
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

Cable cleats for fixing of cables onboard mobile offshore units and ships.

I) EMPEROR

Classification	According to IEC 61914: 2009
Material	Composite – Polymer + SS316L
Max and min	-40 to +60°C
Resistance to impact	Very Heavy
Resistance to electromechanical forces	Lateral and axial retention, withstanding more than one short circuit.
Resistance to corrosion	High
Needle flame test	> 120 s
Axial Movement test	650 N

a) Single

Part. No.	Cable diameter (mm)	Dimensions (mm)*			
ES32-39	32-39	91	89	54	25
ES 37-45	37-45	96	93	54	25
ES 44-52	44-52	99	98	54	25
ES 51-59	51-59	103	102	54	25
ES 58-66	58-66	109	101	54	25
ES 65-73	65-73	111	103	54	25
ES 73-85	73-85	135	112	54	50
ES 84-94	84-94	135	135	54	50
ES 94-118	94-118	160	150	54	50
ES 118-130	118-130	175	160	54	75
ES 127-150	127-150	180	180	54	75

* For detailed information wrt. dimensions, please see manufacturer drawing

b) Trefoil

Part. No.	Cable diameter (mm)	Dimensions (mm)*			
ER 19-23	19-23	96	83	54	25
ER 23-28	23-28	96	83	54	25
ER 27-32	27-32	97	88	54	25
ER 30-35	30-35	99	91	54	25
ER 33-38	33-38	103	95	54	25
ER 36-42	36-42	124	100	54	50
ER 40-46	40-46	125	106	54	50
ER 44-50	44-50	130	117	54	50
ER 48-55	48-55	132	121	54	50
ER 51-58	51-58	136	128	54	50
ER 55-62	55-62	160	135	54	25
ER 59-66	59-66	163	143	54	75
ER 63-70	63-70	166	151	54	75
ER 67-74	67-74	169	158	54	75
ER 71-78	71-78	172	165	54	75
ER 74-82	74-82	177	171	54	75
ER 77-85	77-85	183	177	54	75

Part. No.	Cable diameter (mm)	Dimensions (mm)*			
ER 82-88	82-88	191	187	54	75
ER 88-96	88-96	207	203	54	75
ER 96-103	96-103	221	218	54	75
ER103-111	103-111	237	235	54	75
ER111-119	111-119	253	250	54	75
ER119-128	119-128	265	275	54	75

* For detailed information wrt. dimensions, please see manufacturer drawing

Ipk	Min. cleat distances
≤ 195 kA	0.3 m
≤ 156 kA	0.6 m

For other cleat distances please contact the manufacturer.

II) VULCAN

Classification	According to IEC 61914: 2009
Material	Composite – Polymer + SS316L
Max and min	-40 to +60°C
Resistance to impact	Very Heavy
Resistance to electromechanical forces	Lateral and axial retention, withstanding more than one short circuit.
Resistance to corrosion	High
Needle flame test	> 120 s
Axial load test	3000 N (trefoil), 5830 (single)

Part. No.	Cable diameter (mm)	Cable diameter (mm)	Dimensions * (mm)			
	Trefoil	Single	W	H	D	P
VRT+00	19-24	30-42	60	93	54	n/a
VRT+01	23-28	38-50	63	98	54	n/a
VRT+02	27-32	43-58	72	106	54	n/a
VRT+03	30-35	49-64	79	112	54	n/a
VRT+04	33-38	55-70	85	118	54	n/a
VRT+05	36-42	58-75	96	125	54	n/a
VRT+06	40-46	63-84	105	133	54	n/a
VRT+07	44-50	73-90	112	140	54	n/a
VRT+08	48-55	83-100	121	149	54	n/a
VRT+09	51-58	86-104	126	154	54	50
VRT+10	55-62	88-110	134	162	54	50
VRT+11	59-66	90-115	143	170	54	50
VRT+12	63-70	100-125	152	177	54	75
VRT+13	67-74	107-132	161	185	54	75
VRT+14	71-78	120-145	169	192	54	75
VRT+15	74-82	125-150	176	199	54	75
VRT+16	77-85	132-153	183	205	54	75
VRT+17	81-89	136-156	190	216	54	75
VRT+18	85-93	139-159	200	225	54	75
VRT+19	89-97	142-162	200	235	54	75

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Certificate No: **TAE00002R5**

Part. No.	Cable diameter (mm)	Cable diameter (mm)	Dimensions * (mm)			
VRT+20	93-101	150-170	215	240	54	75

* For detailed information wrt. dimensions, please see manufacturer drawing

I _{pk}	Min. cleat distances
≤ 132 kA	0.3 m
≤ 104 kA	0.6 m

For other cleat distances please contact the manufacturer.

Application/Limitation

To be installed in accordance with the manufacturer's instructions and DNV GL rules.
Suitable for open deck.

Type Approval documentation

Tests carried out

Type tests according to IEC 61914:2009

Marking of product

Manufacturer name - Type designation - product identification

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE