



Certificate No:
TAE00004NR

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Cable Cleats

with type designation(s)

Trefoil Cable Cleats Series FF-Txx and Single Cable Cleats Series FF-Sxx

Issued to

Zhejiang Fengfan Cable Fittings Co. Ltd.
Shaoxing City, Zhejiang, China

is found to comply with

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

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Material	Composite
Suitable for open deck	Yes

Issued at **Høvik** on **2023-02-21**

This Certificate is valid until **2028-02-20**.

for **DNV**

DNV local unit: **Ningbo FIS**

Approval Engineer: **Carsten Hunsalz**

Frederik Tore Elter
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2022-12

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Product description

Classification	According to IEC 61914
6.1 Material	Composite (Stainless steel 316L + low smoke halogen free plastic)
6.2 Max and min temperature	-40 to +60°C
6.3 Resistance to impact	Very Heavy
6.4 Resistance to electromechanical forces	
6.4.2 With lateral retention	Average 25kg
6.4.3 With axial retention	Three Mandrels: Average 55kg One Mandrel: Average 25kg
6.4.4 Resistance to electromechanical forces	withstanding one short circuit for 180 kA, Cleat distance 0,3 m
6.4.5 Resistance to electromechanical forces	withstanding more than one short circuit for 125 kA, Cleat distance 0,6 m
6.5.1 Resistance to UV light	Resistant to ultraviolet light
6.5.2 Resistance to corrosion	Resistance to corrosion
6.6 Electromagnetic compatibility	Not liable to inductive heating

Trefoil Cable Cleats Series

No	Part. No.	Frame Material	Cable diameter (mm)	Dimensions (mm)	
				H	W
1	FF-T1823	SS316L	Φ18-23	79	82
2	FF-T2328	SS316L	Φ23-28	84	93
3	FF-T2732	SS316L	Φ27-32	91	99
4	FF-T3035	SS316L	Φ30-35	96	103
5	FF-T3338	SS316L	Φ33-38	101	107
6	FF-T3642	SS316L	Φ36-42	107	113
6	FF-T4046	SS316L	Φ40-46	114	119
8	FF-T4450	SS316L	Φ44-50	121	126
9	FF-T4855	SS316L	Φ48-55	129	137
10	FF-T5158	SS316L	Φ51-58	134	143
11	FF-T5562	SS316L	Φ55-62	141	152
12	FF-T5966	SS316L	Φ59-66	148	161
13	FF-T6370	SS316L	Φ63-70	155	169
14	FF-T6774	SS316L	Φ67-74	161	178
15	FF-T7178	SS316L	Φ71-78	168	186
16	FF-T7482	SS316L	Φ74-82	175	195
17	FF-T7785	SS316L	Φ77-85	180	202
18	FF-T8288	SS316L	Φ82-88	185	208
19	FF-T8896	SS316L	Φ88-96	199	225
20	FF-T96103	SS316L	Φ96-103	210	240
21	FF-T103111	SS316L	Φ103-111	224	258
22	FF-T111119	SS316L	Φ111-119	237	275
23	FF-T119128	SS316L	Φ119-128	253	295

Single Cable Cleats Series

No	Part. No.	Frame Material	Cable diameter (mm)	Dimensions (mm)	
				H	W
1	FF-S3239	SS316L	Φ32-39	74	81
2	FF-S3745	SS316L	Φ37-45	77	88
3	FF-S4452	SS316L	Φ44-52	83	94
4	FF-S5159	SS316L	Φ51-59	87	102
5	FF-S5866	SS316L	Φ58-66	91	110
6	FF-S6573	SS316L	Φ65-73	97	116
7	FF-S7385	SS316L	Φ73-85	101	131
8	FF-S8494	SS316L	Φ84-94	110	140
9	FF-S94118	SS316L	Φ94-118	134	163
10	FF-S118130	SS316L	Φ118-130	146	175
11	FF-S127150	SS316L	Φ127-150	166	195

I _{pk}	Cleat distances	Cable O.D.	Number of short circuit
180 kA	0.3M	φ35mm	withstanding one short circuit
125 kA	0.6M	φ35mm	withstanding more than one short circuit

Application/Limitation

To be installed in accordance with the manufacturer's instructions and DNV rules.

Suitable for open deck.

Type Approval documentation

Tests carried out

Type tests according to IEC 61914:2021

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