

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A and B Penetration

with type designation(s)

Multi Cable Transits - Fire Stop: CFS-T SS, CFS-T SSF, CFS-T SSR, CFS-T SSR/R30, CFS-T RR, CFS-T RRS

Issued to

Hilti AG
Schaan, Liechtenstein

is found to comply with

DNV GL rules for classification – Ships

DNV GL offshore standards

DNV GL class programme DNVGL-CP-0165 – Type approval – Cable and pipe penetrations

Application :

Approved for use as cable penetration system for ship cables in class A-60 steel bulkheads and decks.

For further details see Application/Limitations on page 4 of this certificate.

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

Issued at **Hamburg** on **2019-02-11**

This Certificate is valid until **2024-02-10**.

DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Carsten Hunsalz**

.....
Arne Schaarmann
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

Multi Cable Transits - Fire Stop: CFS-T SS, CFS-T SSF, CFS-T SSR, CFS-T SSR/R30, CFS-T RR, CFS-T RRS

consisting of steel frames / sleeves:

- SS series: welded frame, in rectangular or rounded design
- SSF series: modified SS frame with butt-welded base flange, overall width 60 mm, in rectangular or rounded design
- SL series: welded sleeves, in round design
- SLF series: modified SL sleeve with butt-welded base flange, overall width 60 mm, in round design

Bolted or welded to the steel division (deck or bulkhead) and filled with a fire resistant, halogen-free elastomeric rubber.

A-60 Bulkhead penetration:

Fitted symmetrically, exposed or unexposed in the bulkhead.

Installation details according drawing No.

CFS-T_SSF001/004/006/009/011/014, CFS-T_SS002/003/005/007/008/010/012/013/015,
CFS-T_SSR/R30_016 to 027, CFS-T_SSR_028 to 039,
CFS-T_RR001/002/003/004/005, CFS-T_RRS001/002/003/004/005,

Application Bulkhead	Frame/Sleeve Size min.	Frame/Sleeve Size max.	Minimum filling rate (%)	Maximum filling rate (%)	Coaming position in bulkhead	Cables- Maximum Diameter (mm)
CFS-T SS	2x1	8x1	0	100	symmetrically, exposed or unexposed	80
CFS-T SSF	2x1	8x1	0	100	exposed or unexposed	80
CFS-T SS, CFS-T SSF multiple frames	4+4x1 or 4x2	8+8x2 or 8x5	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR	4x1	8x1	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR multiple frames	4+4x1 or 4x2	8+8x2 or 8x5	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR/R30	2x1	8x1	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR/R30 multiple frames	4+4x1 or 4x2	8+8x2 or 8x5	0	100	symmetrically, exposed or unexposed	80

Application Bulkhead	Frame/Sleeve Size	Frame/Sleeve Size	Minimum filling rate	Maximum filling rate	Coaming position in	Cables- Maximum
----------------------	-------------------	-------------------	----------------------	----------------------	---------------------	-----------------

Job Id: **262.1-011881-4**
 Certificate No: **TAF000012B**

	min.	max.	(%)	(%)	bulkhead	Diameter (mm)
CFS-T RR	50mm Ø	200mm Ø	0	100	symmetrically, exposed or unexposed	66
CFS-T RRS	50mm Ø	100mm Ø	0	100	symmetrically, exposed or unexposed	38

Optional: CFS-T EMC sealing solution

A-60 Deck penetration:

Fitted symmetrically, exposed or unexposed in the bulkhead.

Installation details according drawing No.

CFS-T_SSF001/002/006/009/010/014/017/018/022-D,
 CFS-T_SS003/004/005/007/008/011/012/013/015/016/019/020/021/023/024-D,
 CFS-T_SSR/R30_025-D to 039-D, CFS-T_SSR_040-D to 054-D,
 CFS-T_RR001-D to 008-D, CFS-T_RRS001-D to 008-D

Application Bulkhead	Frame/Sleeve Size min.	Frame/Sleeve Size max.	Minimum filling rate (%)	Maximum filling rate (%)	Coaming position in bulkhead	Cables-Maximum Diameter (mm)
CFS-T SS	2x1	8x1	0	100	symmetrically, exposed or unexposed	80
CFS-T SSF	2x1	8x1	0	100	exposed or unexposed	80
CFS-T SS, CFS-T SSF multiple frames	4+4x1 or 4x2	8+8x2 or 8x5	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR	4x1	8x1	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR multiple frames	4+4x1 or 4x2	8+8x2 or 8x5	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR/R30	2x1	8x1	0	100	symmetrically, exposed or unexposed	80
CFS-T SSR/R30 multiple frames	4+4x1 or 4x2	8+8x2 or 8x5	0	100	symmetrically, exposed or unexposed	80

Application Bulkhead	Frame/Sleeve Size min.	Frame/Sleeve Size max.	Minimum filling rate (%)	Maximum filling rate (%)	Coaming position in bulkhead	Cables-Maximum Diameter (mm)
CFS-T RR	50mm Ø	200mm Ø	0	100	symmetrically, exposed or	66

Job Id: **262.1-011881-4**
Certificate No: **TAF000012B**

					unexposed	
CFS-T RRS	50mm Ø	100mm Ø	0	100	symmetrically, exposed or unexposed	38

Optional: CFS-T EMC sealing solution

Application/Limitation

Approved for use as a cable penetration system in class A-60 steel bulkheads and decks. Other applications are subject to case-by-case approval. Approved for use in class A-0, A-15 and A-30 when the penetration system is insulated as A-60. In addition the division is to be insulated with A-60 insulation at least 200 mm around the penetration.

Pressure tests for rectangular frames listed in tables of page 2, 3 and 4 (except EMC Modules).

Approved for air tightness up to a design pressure of 0.1 MPa (1 bar), test pressure - 0.15 MPa (1.5 bar)

Approved for water tightness up to a design pressure of 0.3 MPa (3 bar), test pressure - 0.45 MPa (4.5 bar)

Penetration systems are not to be used for penetrating boundaries of tanks.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Test Reports A60 Fire Class No.:

P 474-17-530-2 dated 2018-04-25, P 1139-17-530-1 dated 2018-05-29, P 1139-17-530-3 dated 2018-06-11, P 1139-17-530-2 dated 2018-06-05, P 474-17-530-1 dated 2018-04-24, P 1139-17-530-4 dated 2018-06-18, 19039A dated 2018-06-21, 19040A dated 2018-06-21, 19041A/B dated 2018-06-28, 19210A dated 2018-08-07

Installation drawings No.:

Bulkhead, dated 2018-11-19

CFS-T_SSF001/004/006/009/011/014, CFS-T_SS002/003/005/007/008/010/012/013/015,
CFS-T_SSR/R30_016 to 027, CFS-T_SSR_028 to 039,
CFS-T_RR001/002/003/004/005, CFS-T_RRS001/002/003/004/005,

Deck, dated 2018-11-19

CFS-T_SSF001/002/006/009/010/014/017/018/022-D,
CFS-T_SS003/004/005/007/008/011/012/013/015/016/019/020/021/023/024-D,
CFS-T_SSR/R30_025-D to 039-D, CFS-T_SSR_040-D to 054-D,
CFS-T_RR001-D to 008-D, CFS-T_RRS001-D to 008-D

Pressure tests: Hilti Test Report No. WGT CFS-T-291018-01 dated 2018-10-29
WGT CFS-T-070219-01 dated 2019-02-07

Job Id: **262.1-011881-4**
Certificate No: **TAF000012B**

Tests carried out

Fire Test acc. 2010 FTP Code, Annex 1: Part 3, IMO Resolution MSC.307(88)
Pressure tests with water and gas according to DNVGL-CP-0165 ch. 4.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the products listed in this certificate are in accordance with Transport Canada's requirements.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNVGL-CP-0338 Section 4.