Certificate No:
TAF00001GY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A and B Penetration

with type designation(s)
Multi Pipe Transits - Fire Stop: CFS-T SS, CFS-T SSF, CFS-T SSR, CFS-T SSR/R30, CFS-T RR

Issued to
Hilti AG
Schaan, **Liechtenstein**

is found to comply with
DNV GL rules for classification – Ships
DNV GL class programme DNVGL-CP-0165 – Type approval – Cable and pipe penetrations
DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations

Application :

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

Issued at **Hamburg** on **2021-06-04**
This Certificate is valid until **2026-06-03**.
DNV local station: **Essen**

Approval Engineer: **Hagen Markus**

for **DNV**

Olaf Drews
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.

Product description

CFS-T Packing System

Pipe penetration system consisting of rectangular shaped frames with fire resistant CFS-T squared basic pipe modules, adapter modules, core modules and filler modules all halogen-free elastomeric rubber.

Accessories

Wedge compression kit, metallic anchor plate, fixing anchor plate, module squeezer, wedge puller and lubricant HILTI CFS-T LUB.

CFS-T RR Plug seal

Pipe penetration system consisting of circular sleeve of types CFS-T SL/SLF with an elastic, halogen-free, red coloured, flame resistant synthetic rubber HFE insert with square packing space for squared
CFS-T modules.
Compression function by tensioning bolts and plates made from galvanized steel or A4 stainless steel.

Frame Types[1]	Frame Sizes and types
CFS-T SS CFS-T SSF CFS-T SSR/30 CFS-T SSR	Grouped rectangular frames in nominal sizes 6 and 8. Made of carbon steel (primer coated) or stainless steel. Bolted or welded to the division. Minimum frame depth of 60mm.
CFS-T RR	Single circular plugs in nominal sizes 50, 70, 100, 125, 150 and 200. Circular sleeve[1] , bolted or welded to the division. Module System length is 60mm.

Notes
[1] Minimum wall thickness of 3 mm.

Reference HILTI product catalogue “HILTI Expert Solutions for the most demanding Applications – Transit System for cables and pipes”.

Application/Limitation

The pipe penetration systems CFS-T Packing System and CFS-T RR Plug seal are approved for installation in steel bulkheads and decks of Class A-60. Penetrations containing both cables and pipes shall be avoided.
For application on A-0, A-15 and A-30 divisions, the penetration system shall be insulated as approved for class A-60.
The penetrated division is to be insulated as for A-60 at least 200 mm around the penetration. Other applications are subject to case-by-case approval.
The insulation material used has to be type approved.

Water - and Gas tightness

Not tested.

Filling rates

Minimum filling Rate 0%: no pipe installed - all modules are empty.
Maximum filling rates as follows:

Frame / Plug	Max Filling Rate %
RR50	65
RR200	61
SS/SSF-6x5	46
SS/SSF-8x5	36
SS/SSF-8+8x2	46

Overview range of application

Division	Pipe material	Frame types	Penetration position	Media pipe Outer diameter
Deck	Carbon, Stainless Steel	CFS-T Rectangular 6x5, 8x5 CFS-T Rectangular 8+8x2 Multi pipe penetration	General Exposed / Non exposed	12 up to 60,3mm
	Copper			15 up to 28mm
	Carbon, Stainless Steel	CFS-T RR 50 – 200 Single pipe penetration	General Exposed side / Non exposed / Symmetrically	12 up to 60,3mm
	Copper			15 up to 28mm
Bulkhead	Carbon, Stainless Steel	CFS-T Rectangular 6x5, 8x5 CFS-T Rectangular 8+8x2 Multi pipe penetration	General Exposed / Non exposed	12 up to 60,3mm
	Copper			15 to 28mm
	Carbon, Stainless Steel	CFS-T RR 50 – 200 Single pipe penetration	General Exposed side / Non exposed / Symmetrically	12mm
	Copper			15 up to 28mm

Installation

The installation and insulation of the HILTI Packing System is to be carried out according to the following drawings.

Installation drawings

A-60, Bulkhead-Steel

Drawing Title	Drawing	Frame type
Penetration Type Size CFS-T SSF - 8x5	CFS-T_SSF004_P	Bolted or welded exposed / non-exposed
	CFS-T_SSF005_P	Welded exposed/ non-exposed
	CFS-T_SSF006_P	Welded symmetrically
Penetration Type Size CFS-T SSF - 8+8x2	CFS-T_SSF007_P	Bolted or welded exposed / non-exposed
	CFS-T_SSF008_P	Welded exposed/ non-exposed
	CFS-T_SSF009_P	Welded symmetrically
Penetration Type Size CFS-T SSR/R30 - 8x5	CFS-T_SSR/R30_012_P	Welded exposed/ non-exposed
	CFS-T_SSR/R30_013_P	Welded symmetrically
Penetration Type Size CFS-T SSR/R30 – 8+ 8x2	CFS-T_SSR/R30_014_P	Welded exposed/ non-exposed
	CFS-T_SSR/R30_015_P	Welded symmetrically
Penetration Type Size CFS-T SSR - 8x5	CFS-T_SSR_018_P	Welded exposed/ non-exposed
	CFS-T_SSR019_P	Welded symmetrically
Penetration Type Size CFS-T SSR – 8+ 8x2	CFS-T_SSR_020_P	Welded exposed/ non-exposed
	CFS-T_SSR_021_P	Welded symmetrically
Penetration Type Size CFS-T RR 50-200	CFS-T_RR001_P	Bolted or welded exposed / non-exposed
	CFS-T_RR002_P	Welded exposed/ non-exposed
	CFS-T_RR002_P	Welded symmetrically

Installation drawings
A-60, Deck-Steel

Drawing Title	Drawing	Frame type
Penetration Type Size CFS-T SSF - 8x5	CFS-T_SSF004-D_P	Bolted or welded exposed
	CFS-T_SSF005-D_P	Welded exposed
	CFS-T_SSF006-D_P	Welded symmetrically
Penetration Type Size CFS-T SSF - 8+8x2	CFS-T_SSF007-D_P	Bolted or welded exposed
	CFS-T_SSF008-D_P	Welded exposed
	CFS-T_SSF009-D_P	Welded symmetrically
Penetration Type Size CFS-T SSR/R30 - 8x5	CFS-T_SSR/R30_012-D_P	Bolted or welded exposed
	CFS-T_SSR/R30_013-D_P	Welded symmetrically
Penetration Type Size CFS-T SSR/R30 – 8+ 8x2	CFS-T_SSR/30_014-D_P	Bolted or welded exposed
	CFS-T_SSR/30_015-D_P	Welded symmetrically
Penetration Type Size CFS-T SSR - 8x5	CFS-T_SSR_018-D_P	Welded exposed
	CFS-T_SSR_019-D_P	Welded symmetrically
Penetration Type Size CFS-T SSR/R30 – 8+ 8x2	CFS-T_SSR_020-D_P	Bolted or welded exposed
	CFS-T_SSR_021-D_P	Welded symmetrically
Penetration Type Size CFS-T RR 50-200	CFS-T_RR001-D_P	Bolted or welded exposed
	CFS-T_RR002-D_P	Welded exposed
	CFS-T_RR003-D_P	Welded symmetrically

Installation instructions
For the welding of frames and sleeves the “HILTI – WELDING GUIDELINE” is to be observed.
The installing of the system is specified in the catalogue “ HILTI Expert Solutions for the most demanding Applications – Transit System for cables and pipes”.

Each pipe penetration system is to be supplied with its actual manual for installation and use.

Marking of product
To ensure traceability of the product to this type approval certificate

Scope	Examples		
	Packaging unit	Frames, Sleeves	Individual modules
Manufacturer name, trademark	HILTI	HILTI	No marking. Modules coloured red
Type designation, Size	CFS-T RR-50 GS	Frames CFS-T- SS-4x5 MSP Sleeves CFS-T – SLF 150 MSP	

Tests carried out
- Fire tests according to IMO Res.MSC.307(88)-(2010 FTP Code)
- IMO MSC.1/Circ.1488

Type Approval documentation

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNVGL-CP-0338, Sec.4.

End of certificate