DNV·GL

Certificate No:
TAE0000272

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Heating Cable

with type designation(s)
FREEZSTOP REGULAR FSR

Issued to
Heat Trace Ltd.
Frodsham CHESHIRE, United Kingdom

is found to comply with
DNV GL 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 GL.

Type	Rated voltage (V)	Temp. class (°C)	Power [W/m] @ref. temp.	Suitable for Hazardous areas
FREEZSTOP REGULAR FSR	0-277	85 (T6 up to 31W/m)	10/17/25/31 @ 10C	Yes
FREEZSTOP REGULAR FSR	0-277	135 (T4 above 31W/m)	40 @ 10C	Yes

Issued at **Høvik** on **2017-08-23**
This Certificate is valid until **2022-08-22**.
DNV GL local station: **Manchester**

Approval Engineer: **Ivar Bull**

for **DNV GL**

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.

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Product description

FREEZSTOP REGULAR Self-Regulating Heating Cable for frost protection or temperature maintenance in gas dangerous areas.

Conductors:	2 parallel bus wires: Stranded metallic conductor
Heating Conductor Element:	Inherently temperature-safe self-regulating matrix.
Insulation:	TPE
Braid:	Aluminum sheath or braid of tinned copper or nickel plated copper
Sheath:	TPE/PE/PVDF/MFA/PFA

Maximum continuous exposure temperature (Power ON or Power OFF): 85ºC.

Type designation	Supply voltage (V)	Nominal Output at 10 °C (W/m)	Type Self regulating / Constant power
10 FSR	110-277	10	Self regulating
17 FSR	110-277	17	Self regulating
25 SFR	110-277	25	Self regulating
31 FSR	110-277	31	Self regulating
40 FSR	110-277	40	Self regulating

The equipment is designed to be connected to a supply by suitable certified cable entries and junction boxes in accordance with the manufacturers installation instructions. Termination can be made using any suitably certified type termination kit which fully isolate, insulate and seal the conductive cores.

Manufactured by

Heat Trace Ltd.
Helsby, Frodsham, Cheshire, WA6 0DJ, England.

Application/Limitation

References to Ex-certifications in this type approval is for information only.
Installation has to be done in accordance with installation instruction.
The minimum installation temperature of the heating cables is -40°C.

Type Approval documentation

Marking of product

HEAT TRACE -Type designation – Gas Marking - Power output at nominal voltage – serial number

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 shall 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