DNV·GL

Certificate No:
**TAE00001JW**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Termination and Joint for Cable**

with type designation(s)
**HFT-A, HFT-A-GS, HFT-333,**

Issued to
## 3M Nederland B.V. (Vestiging Amersfoort)
**Amersfoort Utrecht, Netherlands**

is found to comply with
**Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**

## Application :

**For protection/insulation and color coding of cables and wires. Max 1000 V.**

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

This Certificate is valid until **2021-12-21**.

Issued at **Høvik** on **2016-12-22**

for **DNV GL**

DNV GL local station: **Rotterdam**

Approval Engineer: **Ivar Bull**

**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.


© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id:
Certificate No: **TAE00001JW**

## Product description

Heat Shrink Tubing with type designations HFT-A, HFT-A-GS and HFT-333.

**HFT-A**

Base Material: Polyolefin
Sizes: 3/64, 1/16, 3/32, 1/8, 3/16, 1/4, 3/8, 1/2, 3/4, 1, 1 1/2, 2, 3, 4 inches
1,2, 1,6, 2,4, 3,2, 4,9, 5,3, 6,4, 6,7, 7,0, 9,5, 12,7, 19,0, 25,4, 38,0, 52,0, 76,0, 102,0, 127,0 mm
Colors: Red, blue, yellow, white, black, brown, green, violet, orange, gray, Green, yellow striped
Shrink ratio: 2:1

**HFT-A-GS**

Base Material: Polyolefin
Sizes: 1/8, 3/16,1/4, 3/8, 1/2, 3/4, 1, 1 1/5 inches
3,2, 4,8, 6,4, 9,5, 12,7, 19,0, 25,4, 38,0 mm
Colors: Green, yellow striped
Shrink ratio: 2:1

**HFT-333**

Base Material: Polyolefin
Sizes: 1,5-0,5, 3-1, 6-2, 9-3, 12-4, 18-6, 24-8, 39-13 mm
Colors: red, blue, yellow, white, black, brown, green, violet, orange, gray, Green, yellow striped
Shrink ratio: 3:1

### Application/Limitation

| | |
|---|---|
| Voltage: | max 1000V. |
| Operating temperature: | -35°C to 135°C, |
| Environmental: | RoHS compliant or not. |
| Storage temperature: | -5°C to +25°C. |

### Type Approval documentation

### Tests carried out

Product tested according relevant parts of IEC 60684-2

### Marking of product

3M – Product type – size – Lot. No.

## 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