DNV·GL

Certificate No:
TAE00002Y6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Termination and Joint for Cable

with type designation(s)
MDT FS-Series Heat Shrinkable Fire Resistant Tubing Kits

Issued to
3M Korea Ltd.
SEOUL, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

For splicing of fire resistant power cables. Voltage: Max. 1000 V.

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2018-06-30**
This Certificate is valid until **2023-06-29**.
DNV GL local station: **Seoul**

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

Fire Resistant Heat Shrinkable Tubing Kit for splicing of non-shielding solid dielectric copper or aluminium power cables. Each kit contains required materials to construct 1, 2, 3 or 4 core splice. MDT-FS series comes with a factory applied sealant.

Product name		Range (mm^2)	Inner Insulator		Outer Jacket		Max Connector Lenght
			Length (mm)	Quantity	Length (mm)	Quantity	
1 Core	MDT-FS11	1,5-16	120	1	150	1	52 mm Max.
	MDT-FS12	25-500	170	1	250	1	150 mm Max.
	MDT-FS13	500-1500	200	1	300	1	200 mm Max.
2 Core	MDT-FS21	1,5-16	120	2	340	1	52 mm Max.
	MDT-FS22	25-120	170	2	460	1	100 mm Max.
	MDT-FS23	150-300	200	2	510	1	140 mm Max.
3 Core	MDT-FS31	1,5-16	120	3	340	1	52 mm Max.
	MDT-FS32	25-120	170	3	460	1	100 mm Max.
	MDT-FS33	150-300	200	3	510	1	140 mm Max.
4 Core	MDT-FS41	1,5-16	120	4	340	1	52 mm Max.
	MDT-FS42	25-120	170	4	460	1	100 mm Max.
	MDT-FS43	150-300	200	4	510	1	140 mm Max.

Standard Color: Black

Application/Limitation

Voltage: Max. 1000 V.
Installation instruction shall follow each kit.
Installation to be performed according to manufacturer's instructions.

Type Approval documentation

Tests carried out

Tensile Strength, Heat Aging, Heat Shock, Dielectric Strength, Volume Resistivity, Corrosive Effect, Water Absorbtion, Fungus resistance. Fire resistance referred to IEC 60331-21. Smoke Density Test. Halogen content test.

Marking of product

Wrappage has label with information containing:
3M SPLICING KIT – MDT-FSxx – Cross sectional area [mm^2] - Max 1000V – 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 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