DNV·GL

Certificate No:
TAE000032U

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Power Cable

with type designation(s)
FR-DEYCY & FR-TEYCY & FR-DEYCYE & FR-5EYCY & FR-FEYCYE & FR-DEYCYS & FR-TEYCYS

Issued to
TMC Co., Ltd
Cheonan-si, Chungcheongnam-do, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60092-353 (2016-09)

Application :

General power and lighting. Fire resistant. Low temperature.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.
Rated voltage (kV) 0.6/1
Temp. class (°C) 90

Issued at **Busan** on **2018-08-10**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Seoul**

Approval Engineer: **Dong Ho Park**

for **DNV GL**

Michael Jost Auf der Stroth
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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Job Id: **262.1-016552-2**
Certificate No: **TAE000032U**

Product description

Type: FR-DEYCY & FR-TEYCY & FR-DEYCYE & FR-5EYCY & FR-FEYCYE & FR-DEYCYS & FR-TEYCYS
Construction:

Conductors:	Tinned, stranded copper class 2
Core insulation:	Mica tape + HEPR
Screen:	AL/PS Tape + Drain wire (S type only)
Inner sheath:	PVC(ST2)
Metal covering:	Galv. Steel wire braid
Outer sheath:	PVC(ST2)

Number of cores x conductor cross-section
mm^2
FR-DEYCY/ FR-DEYCYS*
2 x 1.5*
2 x 2.5*
2 x 4*
2 x 6*
2 x 10
2 x 16
2 x 25
2 x 35
2 x 50
2 x 70
2 x 95
2 x 120

Number of cores x conductor cross-section
mm^2
2 x 150
2 x 185
FR-TEYCY/ FR-TEYCYS*
3 x 1.5*
3 x 2.5*
3 x 4*
3 x 6*
3 x 10
2 x 16
3 x 25
3 x 35
3 x 50
3 x 70

Number of cores x conductor cross-section
mm^2
3 x 95
3 x 120
3 x 150
3 x 185
FR-DEYCYE
2 x 1.5 + E
2 x 2.5 + E
2 x 4 + E
2 x 6 + E
2 x 10 + E
2 x 16 + E
2 x 25 + E
2 x 35 + E
2 x 50 + E

Number of cores x conductor cross-section
mm^2
2 x 70 + E
2 x 95 + E
2 x 120 + E
2 x 150 + E
2 x 185 + E
FR-5EYCY
5 x 1.5
5 x 2.5
5 x 4
FR-FEYCYE
4 x 1.5 + E
4 x 2.5 + E
4 x 4 + E

*) indicate applicable size.

Application/Limitation

This type of cable is fire resistant in accordance with IEC Publication 60331.

Type Approval documentation

Tests carried out

Type test according to IEC 60092-350 & 360, IEC60332-1, IEC 60331-21, IEC 60331-1/-2, ASTM D470, CSA C22.2 No. 0.3 &38 (Cold bend/ impact -30°C), Crushing resistant test and paint resistant test

Marking of product

Rating-Type-Size-Standard-TMC-Year-Length
EX) 0.6/1KV FR-DEYCY 50SQMMX2C IEC60092-350 IEC60331-1 (120) TMC 2014 0001M

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) and selected type tests (ref. to applicable class programs) checked (if not available these tests 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