

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Data transmission cables and systems**

with type designation(s)

**Unarmoured coaxial cables MG RG58, MG RG59, MG RG213, MG RG214, MG RG11, MG RG6**

Issued to

**TELDOR Cables & Systems Ltd.  
Israel, Israel**

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.**Issued at **Høvik** on **2017-07-12**for **DNV GL**This Certificate is valid until **2022-06-11**.DNV GL local station: **Haifa**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.



## Product description

Coaxial cables.

Construction / Characteristics	RG58	RG59	RG213	RG214	RG6	RG11
<b>Impedance (nominal)</b>	50 Ohm	75 Ohm	50 Ohm	50 Ohm	75 Ohm	75 Ohm
<b>Inner Conductor type</b>	Annealed tinned / Bare Copper	Annealed tinned / Bare Copper	Annealed tinned / Bare Copper	Silver plated Copper	Copper Clad	Annealed tinned / Bare Copper
<b>Conductor construction</b>	19x0.18mm / solid 0.9mm	Stranded or Solid 0.57mm	7x0.75mm	7x0.75mm	0.72+0.025 mm Solid	7x0.4mm
<b>Insulation material</b>	PE	PE	PE	PE	PE	PE
<b>Insulation diameter (nominal)</b>	2.95mm	3.71mm	7.24mm	7.24mm	4.57mm	7.24mm
<b>Shield</b>	Braided annealed tinned / bare copper	Braided annealed tinned / bare copper	Braided annealed tinned / bare copper	Silver plated Copper / Braided annealed tinned / bare copper	Aluminum Braid + Al/PE/Al tape	Braided annealed tinned / bare copper
<b>Shield/Braid conductor</b>	0.127mm	0.160mm	0.18mm	0.16mm	--	0.16mm
<b>Jacket / sheath material</b>	SHF1/SHF2/S HF2-MUD	SHF1/SHF2/S HF2-MUD	SHF1/SHF2/SHF2-MUD	SHF1/SHF2/SHF2-MUD	SHF1/SHF2/SHF2-MUD	SHF1/SHF2/SHF2-MUD
<b>Jacket/sheath diameter (nominal)</b>	4.95mm	6.15mm	10.3mm	10.8mm	7.0mm	10.3mm

Outer sheath: SHF1, SHF2 or SHF2 MUD, single or double layer

## Application/Limitation

The requirements of SOLAS Amendments Chapter II-1, Part D, Reg. 45, 5.2 (provision to be taken to limit Fire Propagation along Bunches of Cables or Wires) are fulfilled without any additional measures.

Temperature window:

Operation : -40°C to +85 °C

Installation: -15°C to +50°C

## Type Approval documentation

Datasheets and Test reports See approval letter MCANO381/IVABU/262.1-025553-J-10.

## Tests carried out

Standard	Release	General description	Limitation
IEC 60096-0-1	2012	Radio frequency cables part 0-1: Guide to design of detail specifications – Coaxial cables	
IEC 60092-360	2014-04	Electrical installations in ships - Part 360: Insulating and sheathing materials for shipboard and offshore units, power, control, instrumentation and telecommunication cables.	

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IEC 60332-3-22	2009-02	Tests on electric and optical fibre cables under fire conditions – Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category A	Bunch test Category A
IEC 60332-3-24	2009-02	Tests on electric and optical fibre cables under fire conditions – Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables – Category C	Bunch test Category C
IEC 60754-1	2011-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen:
IEC 60754-2	2011-11	Test on gases evolved during combustion of materials from cables – Determination of the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 61034-1/2	2005-04	Measurement of smoke density of cables burning under defined conditions – Test apparatus, procedure and requirements	Low smoke
NEK 606 Ed. 4	2009-05	Cables for offshore installations. Halogen-free and/or mud resistant. Technical specification.	Mud resistance test: IRM903 100°C 7d. Calcium Bromide 70°C 56d or Carbo Sea 70°C 56d.

## Marking of product

TELDOR MG RG type, Impedance, Type P/N, Jacket type, meter mark –IEC 60332-22 or IEC 60332-2-24 – LOT No.

Family	TYPE	Flame Rating	Options
MG	RG58 RG59 RG213 RG214 RG11 RG6	A=IEC60332-3-22 (Cat.A) C=IEC60332-3-24 (Cat.C)	XX Alpha numeric



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### **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