



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	B.V. Twentsche Kabelfabriek Spinnerstraat 15 7480 AA HAAKSBERGEN The Netherlands
PLACE OF PRODUCTION	Spinnerstraat 15 7480 AA HAAKSBERGEN The Netherlands
DESCRIPTION	- CU conductor, XLHF FR with mica tape insulated and SHF 1 sheathed - CU conductor, XLHF FR with mica tape insulated, copper wire braid and SHF 1 outer sheathed..
TYPE	- CS90 mbzh MarineLine HALOGEN FREE 0,6/1kV, type YZp X-FR - CS90 mbzh MarineLine HALOGEN FREE 0,6/1kV, type YOZp X-FR - CS90 mbzh MarineLine HALOGEN FREE 0,6/1kV, type YOZp X-FR EMC - CS90 mbzh MarineLine+ HALOGEN FREE 0,6/1kV, type YZp X-FR - CS90 mbzh MarineLine+ HALOGEN FREE 0,6/1kV, type YOZp X-FR - CS90 mbzh MarineLine+ HALOGEN FREE 0,6/1kV, type YOZp X-FR EMC - CS90 mbzh MarineFlex HALOGEN FREE 0,6/1kV, type YZp X-FR - CS90 mbzh MarineFlex HALOGEN FREE 0,6/1kV, type YOZp X-FR - CS90 mbzh MarineFlex HALOGEN FREE 0,6/1kV, type YOZp X-FR EMC

Certificate No. 17/30012

Issue Date 03 May 2017

Expiry Date 01 January 2022

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H.L. Reekers
Lloyd's Register EMEA
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APPLICATION Fixed power, lighting wiring for Marine and Offshore installation.

RATINGS

<u>No. of Cores</u>	<u>Cross Section Area (mm²)</u>
1, 2, 3, 4, 5	1, 1.5, 2.5, 4, 6, 10, 16, 25, 35, 50, 70 95, 120, 150, 185, 240, 300.
6 to 37	1, 1.5, 2.5
Note: for MarineLine+ till 7	As above
Note: for MarineFlex till 7	As above

Voltage rating : 0,6/1kV
Maximum rated conductor temp. : 90 °C

STANDARDS

<u>Construction</u>	: according IEC 60092-350 and 60092-353
<u>Conductor</u>	: stranded copper to IEC 60228 < 35 mm ² class 2 round, > 35 mm ² class 2 Sector shaped. For MarineLine+ class 2 round. For MarineFlex class 5 round.
<u>Insulation</u>	: MICA tape with overlap over copper conductor to IEC 60331-1/2 : XLHF FR (HF90) to IEC 60092-351
<u>Inner sheath</u>	: - <6 cores foil, > 6 cores foil. For MarineLine+ HFFR filler. For MarineFlex HFFR filler
<u>Braiding</u>	: copper wire braiding. For EMC types copper wire braid + CU/PET Tape
<u>Outer Sheath</u>	: SHF 1 to IEC 60092-359
<u>Flame Retardant</u>	: to IEC 60332-3 Cat. A IEC 60332-1
<u>Halogen-acid content</u>	: to IEC 60754-1
<u>Smoke Density</u>	: to IEC 61034
<u>Fire Resistant</u>	: to IEC 60331-1/2:2009

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"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

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