



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAE000048W**  
Revision No:  
**1**

**This is to certify:**  
that the **Low Voltage Cable**

with type designation(s)  
**MarineCom YOZc X-FRSW 250 V,**  
**Marine2Com YOZ2c X-FRSW 250 V,**  
**MarineCom+ YOZc X-FRSW 250 V,**  
**Marine2Com+ YOZ2c X-FRSW 250 V**

issued to  
**B.V. Twentsche Kabelfabriek**  
**Haaksbergen, Netherlands**

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

## Application:

**Control and instrumentation. Fire resistant water spray/water jet.**  
**Products approved by this certificate are accepted for installation on all vessels classed by DNV.**

Type	Rated voltage (V)	Temp. class (°C)
<b>MarineCom YOZc X-FRSW 250 V</b>	<b>250</b>	<b>90</b>
<b>Marine2Com YOZ2c X-FRSW 250 V</b>	<b>250</b>	<b>90</b>
<b>MarineCom+ YOZc X-FRSW 250 V</b>	<b>250</b>	<b>90</b>
<b>Marine2Com+ YOZ2c X-FRSW 250 V</b>	<b>250</b>	<b>90</b>

Issued at **Høvik** on **2026-03-05**

This Certificate is valid until **2031-03-05**.

for **DNV**

DNV local unit: **Netherlands CMC**

Approval Engineer: **Ivar Bull**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.



Standard	Release	General description	Limitation
IEC 60754-1	2019-11	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content	Low Halogen: <0,5% Halogen
IEC 60754-2	2019-11	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity	Halogen free: pH > 4,3 Conductivity < 10µS/mm
IEC 60684-2	2025-05	Flexible insulating sleeving – Part 2: Methods of test Clause 47.1 Methods of determination of low levels of chlorine, and/or Bromine and/or iodine Clause 47.2 Methods of determination of low levels of fluorine	HCl + HBr + HJ max 0,5% [0,014% can be detected]  HF max 0,1% [0,02% can be detected]
IEC 61034-1/2	2019-11	Measurement of smoke density of cables burning under defined conditions – Part 1: Test apparatus Part 2: Test procedure and requirements	Low smoke Light transmittance >60%

### Marking of product

{Length} 0000 TKF - MarineCom YOZc X-FRSW or Marine2Com YOZ2c X-FRSW or MarineCom+ YOZc X-FRSW or Marine2Com+ YOZ2c X-FRSW 250V -Size +90 ° C - LSHF - IEC 60092-376, 60332-22 – IEC 60331-2 [180 min] /EN50200 Annex E or IEC 60331-1/ [180 min] BS8491 - {Batch}

### 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