# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
**MEDB00008EE**

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

## This is to certify:

**That the Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies and compensators**

with type designation(s)
**Trale® EN 853 2SN / SAE 100 R2AT, Trale® EN 857 1SC, Trale® EN 853 1SN / SAE 100 R1AT, Trale® EN 857 2SC, Trale® EN 856 4SP, Trale® EN 856 4SH, EN 857 2SNK Trale® GOLD**

Issued to
**DISTRIBUIDORA INTERNACIONAL CARMEN, S.A.U. (DICSA)**
**Zaragoza**, **Spain**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2023/1667,**
**item No. MED/3.15c. SOLAS 74 as amended, Regulation II-2/4 & X/3 and 2000 HSC Code 7 & 10 and IMO MSC/Circ.1120**

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-11-09**.

Issued at **Høvik** on **2023-11-10**

DNV local unit:
**Area NB/CMC Iberia**

Approval Engineer:
**Maheshraja Venkatesan**

Notified Body
No.: **0575**

for **DNV AS**

**Sverre Olav Bergli**
**Head of Notified Body**

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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 300,000 USD.

## Product description

7 different types of non-metallic hose assemblies (Trale® / TrΔle®) with permanently fitted 'DICSA' couplings with testing standards conforming to:

- **ISO 15540:2016** - Fire resistance of hose assemblies- Test methods
- **ISO 15541:2016** - Fire resistance of hose assemblies - Requirements for the test bench

1. **TrΔle® (or) TrΔle® GOLD EN 853 1SN / SAE 100 R1AT (SEL: FORCESTREAM 1AT)**
   Hoses designed and constructed according to SAE 100R1 AT from SAE J517/ EN 853 1SN:
   Tube : synthetic rubber resistant to hydraulic oil
   Reinforcement : one braid of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather.

2. **TrΔle® (or) TrΔle® GOLD EN 853 2SN / SAE 100 R2AT (SEL: FORCESTREAM 2AT)**
   Hoses designed and constructed according to SAE 100R2 AT from SAE J517/ EN 853 2SN:
   Tube : synthetic rubber resistant to hydraulic oil
   Reinforcement : two braids of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather.

3. **TrΔle® (or) TrΔle® GOLD EN 857 1SC (SEL: FORCESTREAM 1SC)**
   Hoses designed and constructed according to EN 857 1SC:
   Tube : synthetic rubber resistant to cold and hot water with usual cleaning agents
   Reinforcement : one braid of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather

4. **TrΔle® (or) TrΔle® GOLD EN 857 2SC (SEL: FORCESTREAM 2SC)**
   Hoses designed and constructed according to EN 857 2SC:
   Tube : synthetic rubber resistant to mineral, vegetable and hydraulic oil
   Reinforcement : two braids of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather

5. **EN 857 2SNK TrΔle® (or) TrΔle® GOLD (SEL:SUPERSTREAM 2K)**
   Hoses constructed according to EN 853 2SN:
   Tube : synthetic rubber resistant to hydraulic oil
   Reinforcement : two braids of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather

6. **TrΔle® (or) TrΔle® GOLD EN 856 4SP / SAE 100 R9R-R10 (SEL: POWERSTREAM 4SP)**
   Hoses designed and constructed according to EN 856 4SP:
   Tube : synthetic rubber resistant to mineral, vegetable and hydraulic oil
   Reinforcement : four braids of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather

7. **TrΔle® (or) TrΔle® GOLD EN 856 4SH (SEL: POWERSTREAM 4SH)**
   Hoses designed and constructed according to EN 856 4SH:
   Tube : synthetic rubber resistant to mineral, vegetable and hydraulic oil
   Reinforcement : four braids of steel wire
   Cover : synthetic rubber resistant to oil, abrasion and weather

Hose Manufacturer
SEL Polimer Kaucuk San.ve Paz. A.S., Istanbul, Turkey

Coupling Manufacturer
DISTRIBUIDORA INTERNACIONAL CARMEN, S.A.U. (DICSA), Zaragoza, Spain

Material of construction for couplings
Grade 1.0737 from EN 10277-3 or AISI 316L

## Application/Limitation

The hose assemblies are approved to be used in fuel oil systems with maximum working pressures as below:

| Nominal size, ID | | | Maximum Working Pressure (bar) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SAE | inch | DN | 1SN | 2SN | 1SC | 2SC | 4SP | 4SH | 2SNK |
| -04 | ¼" | 6 | 225 | 400 | 225 | 400 | - | - | 450 |
| -05 | 5/16" | 8 | 215 | 350 | 215 | 350 | - | - | 420 |
| -06 | 3/8" | 10 | 180 | 330 | 180 | 330 | 445 | - | 385 |
| -08 | ½" | 12 | 160 | 275 | 160 | 275 | 415 | - | 345 |
| -10 | 5/8" | 16 | 130 | 250 | 130 | 250 | 350 | - | 290 |
| -12 | ¾" | 19 | 105 | 215 | 105 | 215 | 350 | 420 | 280 |
| -16 | 1" | 25 | 88 | 165 | 88 | 165 | 280 | 380 | 200 |
| -20 | 1 ¼" | 31 | 63 | 125 | - | - | - | 325 | - |
| -24 | 1 ½" | 38 | 50 | 90 | - | - | - | 290 | - |
| -32 | 2" | 51 | 40 | 78 | - | - | - | 250 | - |

**Coupling configurations**

| Nominal size, ID | | | Carbon steel fittings (Ferrule designation) | | | |
|---|---|---|---|---|---|---|
| SAE | inch | DN | 1SN/2SN/2SC/2SNK | 1SC | 4SP | 4SH |
| -04 | ¼" | 6 | DI221200400 | SC21120400 | DI122400400 | - |
| -05 | 5/16" | 8 | DI221200501 | SC21120500 | - | - |
| -06 | 3/8" | 10 | DI221200600 | SC21120600 | DI122400600 | - |
| -08 | ½" | 12 | DI221200800 | SC21120800 | DI122400800 | - |
| -10 | 5/8" | 16 | DI221201000 | SC211201000 | DI122401000 | - |
| -12 | ¾" | 19 | DI221201200 | SC211201200 | DI122401200 | A610101200 |
| -16 | 1" | 25 | DI221201600 | SC211201600 | DI122401600 | A610101600 |
| -20 | 1 ¼" | 31 | DI221202000 | - | - | A610102000 |
| -24 | 1 ½" | 38 | DI221202400 | - | - | A610102400 |
| -32 | 2" | 51 | DI221203200 | - | - | A610103200 |

| Nominal size, ID | | | Stainless steel fittings (Ferrule designation) | | | |
|---|---|---|---|---|---|---|
| SAE | inch | DN | 1SN/2SN/2SC/2SNK | 1SC | 4SP | 4SH |
| -04 | ¼" | 6 | ZPF221200400 | ZSC21120400 | ZPF122400400 | - |
| -05 | 5/16" | 8 | ZPF221200500 | ZSC21120500 | - | - |
| -06 | 3/8" | 10 | ZPF221200600 | ZSC21120600 | ZPF122400600 | - |
| -08 | ½" | 12 | ZPF221200800 | ZSC21120800 | ZPF122400800 | - |
| -10 | 5/8" | 16 | ZPF221201000 | ZSC21121000 | ZPF122401000 | - |
| -12 | ¾" | 19 | ZPF221201200 | ZSC21121200 | ZPF122401200 | ZA610101200 |
| -16 | 1" | 25 | ZPF221201600 | ZSC21121600 | ZPF122401600 | ZA610101600 |
| -20 | 1 ¼" | 31 | ZPF221202000 | - | - | ZA610102000 |
| -24 | 1 ½" | 38 | ZPF221202400 | - | - | ZA610102400 |
| -32 | 2" | 51 | ZPF221203200 | - | - | ZA610103200 |

## Type Examination documentation

## Tests carried out

Fire test according to ISO15540/15541

## Marking of product

As a minimum, the final product to be marked with at least the following particulars:

- Manufacturer's name or trademark
- Specification or hose name
- Hose size and type designation

- Date of manufacture
- Mark of conformity according to Article 10 of the Council Directive 2014/90/EU

Mark of Conformity may only be affixed to the product when the corresponding certification related to production-control phase module (D, E, or F) is valid.