

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Swage type couplings**with type designation(s)
Marinepress

Issued to

RACCORDERIE METALLICHE S.P.A.
Campitello di Marcaria, MN, Italy

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints**Application :****Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV GL.****Temperature range:** **Dependent on rubber sealings, see certificate**
Max. working press.: **16 bar (max 7 bar for flammable fluids and steam service)**
Sizes: **Ø15 - Ø108**This Certificate is valid until **2025-07-21**.Issued at **Høvik** on **2020-09-10**for **DNV GL**DNV GL local station: **Italy/Malta CMC**Approval Engineer: **Mehdi Rowshan**

Zeinab Sharifi
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.

Job Id: **262.1-017820-4**
Certificate No: **TAP000007B**
Revision No: **2**

Product description

Cupronickel press fit tube fittings, with internal elastomer sealing rings.

Sizes: D15, D18, D22, D28, DN35, DN42, DN54, DN76.1, D88.9, D108

Materials:

Fitting and Pipe:

CuproNickel: WL 2.1972 – CuNi10Fe1.6Mn according to DIN86019

Sealing rings: EPDM/ NBR-HNBR/ FKM/ MVQ

Fire tested type: With MVQ (red) and FKM sealing ring.

Application/Limitation

Approved for Class III piping systems in the following systems:

- Flammable fluids (flash point $\leq 60^{\circ}\text{C}$)
 - Cargo oil lines ⁽³⁾
 - Crude oil washing lines ⁽³⁾
 - Vent lines ⁽²⁾
- Inert gas
 - Water seal effluent lines
 - Scrubber effluent lines
 - Main Lines ⁽³⁾
 - Distribution lines ⁽³⁾
- Flammable fluids (flash point $> 60^{\circ}\text{C}$)
 - Cargo Oil lines ⁽³⁾
 - Fuel oil lines ⁽²⁾
 - Lubricating oil lines ⁽²⁾
 - Hydraulic oil ⁽²⁾
 - Thermal oil ⁽²⁾
- Sea water
 - Cooling water system ⁽¹⁾
 - Tank cleaning services
 - Ballast system ⁽¹⁾
 - Bilge lines ⁽¹⁾
 - Fire mains and water spray
 - Foam system ⁽²⁾
 - Sprinkler system ⁽²⁾ (wet and dry)
 - Non-essential systems
- Fresh water
 - Cooling water system ⁽¹⁾
 - Condensate return ⁽¹⁾
 - Non-essential system
- Sanitary/drains/scuppers
 - Deck drains (internal) ⁽⁴⁾
 - Sanitary drains
 - Scuppers and discharge (overboard)
- Sounding/vent
 - Water tanks/Dry spaces
 - Oil tanks (f.p. $> 60^{\circ}\text{C}$) ⁽²⁾
- Miscellaneous
 - Starting/Control air ⁽¹⁾
 - Service air (non-essential)
 - Brine
 - CO2 system ⁽¹⁾
 - Steam

¹⁾ Inside machinery spaces of category, A - only approved fire-resistant types.

²⁾ Approved fire-resistant types except in cases where such mechanical joints are installed on exposed open decks, as defined in SOLAS II-2/Reg. 9.2.3.3.2.2(10) and not used for fuel oil lines.

³⁾ Only in pump rooms and open decks - only approved fire-resistant types.

⁴⁾ Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Temperature limitation for elastomer sealing rings:

Type of Elastomer	Temperature range
EPDM Black	-20 to +120 °C
NBR/HNBR yellow	-20 to +70 °C
FKM green	-20 to +220 °C
MVQ red	-55 to +180 °C

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Maximum design temperature for fuel oil, lubricating oil and flammable hydraulic oil is +60°C

Maximum working pressure 7 bar for flammable fluids and steam.

The components are to be mounted according to manufacturer's instructions.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer.

Type Approval documentation

The approval is based on the following documentation :

Brochure "MarinePres Cupro"

Brochure "Materials"

Brochure "Application of mechanical joint"

Drawing index (Ref. 262.1-009860-1 J.No.13)

Technical spec. cqmp027-01-CuNi-EM1 REVA

Fire test report 2020CS01679-1 to 8 GBR ECB

Fire test report 1420.21S0182/13 dated 24.10.2013

Drawing no: 683015000CN, dated: 02/03/2010

Drawing no: 683035000CN, dated: 02/03/2010

Drawing no: 683076000CN, dated: 02/03/2010

Drawing no: 683108000CN, dated: 02/03/2010

Drawing no: 11501525VS, dated: 28/08/2018

Drawing no: 11503530VS, dated: 28/08/2018

Drawing no: 11507770VM, dated: 30/07/2013

Drawing no: 11510909VM, dated: 30/07/2013

Marinepres vibration pulsation pressure PN16, report no. 1102526 (001/002) to 1102528 (001/002)

Renewal burst test report RP 016-20, dated 28.04.2020

Tests carried out

Leakage test, vibration test, burst pressure test, pull-out test and fire test

Marking of product

For traceability to this type approval the products are to be marked with:

- Manufacturer's name or trademark
- Type designation and dimension

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNVGL-CP-0338.