

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pipe System with Couplings**with type designation(s)
RM DRAIN

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:** 0°C to +120°C**Max. pressure:** +0.5 bar (without socket clamps) / vacuum pressure: 0.97 bar**Design:** Slip typeIssued at **Høvik** on **2018-01-25**This Certificate is valid until **2023-01-24**.for **DNV GL**DNV GL local station: **Milan**Approval Engineer: **Adel Samiei**

Marianne Spæren Marveng
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

Pipes with slip-on fittings (slip type), made of stainless steel AISI 316L with EPDM o-rings

Fitting configurations: 802, 803, 804/87, 804/45, 804/30, 804/15, 805/T, 805/87, 805/45, 805/30, 805/15, 806, 807, 807/R, 808/87, 808/45, 809, 810, 811/87, 811/45, 812, 813, 814/87, 814/45, 815/87, 816/45, 817, 818, 819/000, 819/001, 819/002, 819/004, 820/S, 821/PN16, 822/PN6, 822/PN16

Application/Limitation

The pipe system may be used for vacuum sanitary discharge systems above freeboard deck and in enclosed spaces below.

Pipe penetrations through watertight bulkheads, fire bulkheads or shell plating shall be approved in each separate case. When penetrating a watertight bulkhead there shall be remotely operated valves secured to each bulkhead. The valves and control system shall be located outside the damage zone of the ship.

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.

The piping system is subject to a hydraulic pressure test to 1.5 times maximum allowable working pressure after assembly on board.

Nominal diameter of pipe :

Nominal size	Wall thickness of pipe	Max working pressure	Burst pressure
DN40	1 mm	0.5 bar	2 bar
DN50	1 mm	0.5 bar	2 bar
DN65	1.25 mm	0.5 bar	2 bar
DN80	1.25 mm	0.5 bar	2 bar
DN100	1.25 mm	0.5 bar	2 bar

The listed pressures are without socket clamp.

Type Approval documentation

Tests carried out

Burst test, vacuum test, leakage test

Marking of product

For traceability to this type approval the pipe system is to be marked with:

- Manufacturers name or trade mark
- Type designation

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.