

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Pipe System with Couplings**with type designation(s)
NUMEPRESSIssued to
ISOTUBI, S.L.
Castellbisbal Barcelona, Spainis 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: 16 bar
Design: Pipe system with presscouplings.Issued at **Høvik** on **2018-01-18**for **DNV GL**This Certificate is valid until **2022-12-31**.DNV GL local station: **Barcelona**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

Stainless steel welded tubes (TIG welding) according to EN 10312

Austenitic stainless steel: 1.4301/1.4401/1.4404

Outside Diameter (mm)	15	18	22	28	35	42	54	76,1	88,9	108
Wall thickness (mm)	1	1	1,2	1,2	1,5	1,5	1,5	2	2	2

Stainless steel welded tubes (TIG welding) according to EN 10217-7

Austenitic stainless steel: 1.4301/1.4401/1.4404

Outside Diameter (mm)	13,5	17,2	21,3	26,7	33,4	42,4	48,3	60,3
Wall thickness (mm)	1,6	1,6	1,6	1,6	1,6	1,6	1,6	1,6

Press fittings with o-ring seal

- Austenitic stainless steel: 1.4401/1.4404

O-ring: EPDM or FKM

Outside Diameter (mm)	15	18	22	28	35	42	54	76,1	88,9	108
Wall thickness (mm)	1,5	1,5	1,5	1,5	1,5	1,5	1,5	2	2	2

Outside Diameter (mm)	13,5	17,2	21,3	26,7	33,4	42,4	48,3	60,3
Wall thickness (mm)	1,6	1,6	1,6	1,6	1,6	1,6	1,6	1,6

- Duplex Stainless steel: 1.4462

O-ring: EPDM or FKM

Outside Diameter (mm)	15	18	22	28	35	42	54
Wall thickness (mm)	1,5	1,5	1,5	1,5	1,5	1,5	1,5

Coupling configurations:

Slip coupling, 90°Elbow, 90°Elbow one plain end, 45°Elbow, 45°Elbow one plain end, 90°Female angle adaptor, 90°Male angle adaptor, 90°Female elbow with wall plate, 90°Elbow with plain ends, Valve connector with a swivel nut, Female tee threaded adaptor, Male female reducer, Reducing tee, Equal tee, Female adaptor, Male adaptor, Flanged adapter, Pre-formed pipebridge, Plug, Air tube pipebridge, Pipebridge, Three pieces adaptor, Female pipebridge, Female connector, Male connector, Press flanged adapters, Flexible tube, Equal or reduced cross

Application/Limitation

The pipe system may be used for non class piping systems on board DNV GL classed vessels.

The piping system shall not penetrate enclosed spaces below the freeboard deck (e.g. watertight bulkheads or fire bulkheads). 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 approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer.

The piping system has to be subjected to a hydraulic pressure test to 1.5 times maximum allowable working pressure after assembly on board.

The piping system shall not be subject to pressure below atmospheric or vacuum condition.

Products covered by this certificate (sizes DN15 to DN54 both including) have been successfully passed the fire test as per ISO19921/2.

Type Approval documentation

Manufacturer's catalogue 20147-January

Burst pressure test witnessed by DNV surveyor dated 2009-12-02



Job Id: **262.1-026761-1**
Certificate No: **TAP000014Y**

Pull-out test report number 24446.09 dated 2009-09-24
Vibration and impulse test report carried out in May & July 2009
ABS fire test reports HG2928221 on sizes DN 15, DN25 & DN54
Renewal burst pressure test report – witnessed by DNV GL surveyor dated 2017-12-21

Tests carried out

Burst, vibration, pressure pulsation, pull-out, fire test

Marking of product

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

- Manufacturer's name or trade mark.
- Type designation
- Size

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.