



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-13263
This Certificate consists of 3 pages

This is to certify that the
Pipe System with Couplings
with type designation(s)
Chibro Pressfitting


Manufactured by
CHIBRO SPA
MONTANO LUCINO CO, Italy

is found to comply with
Det Norske Veritas' Rules for Classification of Ships
Offshore Standard DNV-OS-D101, Marine and Machinery Systems and Equipment
Det Norske Veritas' Standards for Certification 2.9 No. 5-792.20

Application
The piping system may be used in: Potable and domestic cold and hot water. Fresh water for main and aux. machinery. Hot and chilled water for air-cond. Sprinkler systems (wet and dry). Condensate. Compressed air for deck services and pneumatic control.

Temperature range:	-20 to 120°C
Max. pressure:	16 bar
Design:	Pipes and pressfitting system

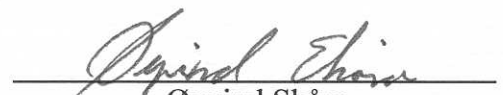
Place and date
Høvik, 2009-09-01
for DET NORSKE VERITAS AS


Helge Drange
Head of Section



Local Office
DNV Milan

This Certificate is valid until
2013-06-30


Øyvind Skåra
Surveyor

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: P-13263
File No.: 791.10
Job No.: 262.1-008134-1

Product description

Stainless steel pipes and press fittings with o-ring seal

Material:

Austenitic Stainless steel : AISI 316L (WNo. 1, 4401 acc. UNI EN 10088)
O-ring : EPDM

Sizes: OD 15, 18, 22, 28, 35, 42, 54, 76, 1, 88, 9 and 108 mm

Fitting combinations:

Sleeve with stop	Tee with female threaded branch
Slip Sleeve	Adapter female threaded
90° FF and MF elbow R=1,5 D	Adapter male threaded
60° FF and MF elbow R=1,5D	Union -MM Nipple -MF Adaptor
45° FF and MF elbow R=1,5D	90° angle adapter female threaded
30° FF and MF elbow R=1,5D	90° angle adapter male threaded
15° FF and MF elbow R=1,5D	90° angle adapter male threaded
90° FF and MF elbow R=1 D	3-way elbow with wall flange
60° FF and MF elbow R=1 D	Plug
45° FF and MF elbow R=1 D	Flanged sleeve NP 6 and NP 10/16
30° FF and MF elbow R=1 D	Collars for loose flanges NP 6 and NP 10/16
Overrun Crossover	Crosses
Reducer	MM and MF extended pipe penetration
MM 90° Bent Pipe	Manifold
Tee	Fitting connections for valves (valves not incl.)
Reduced tee	

Application/Limitation

The fittings are only to be used together with "Chibro Pressfitting" pipes.

The piping system can not be used:

- through ballast or fuel oil tanks.
- as air, overflow and sounding pipes for structural tanks.

For penetrating enclosed spaces below the freeboard deck (e.g. watertight- or fire bulkheads) only the "bulkhead penetration" coupling may be used.

No product certificate will be required.

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.



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Type Approval documentation

- Manufacturers Cat. "Chibro Pressfitting-Supply Programme", CH2010 Dec. 2008
- Manuf. Cat. "Chibro Pressfitting-Spec. and Inst. Guidelines", CH2000 March 2009
- CETENA S.p.A Test report: "Vibration Test Measurements on PCS coupling system-Chibro", report no. 7487 dated February 2001
- Manufacturers test report Protoc. n. 0134/Comm/1/PM/rb dated 2000-12-19
- DNV Survey Report MIL20010209 dated 2001-03-23
- Drawings: 2.30.348.003/4 dated 20/10/00
- DNV Survey Report MIL-08-2217-2 dtd. 2009-08-31

Tests carried out

Vibration, leakage, fire and vacuum tests

Burst tested to:

Pipe diam.	15 mm	18 mm	22 mm	28 mm	35 mm	42 mm	54 mm	76 mm	89 mm	108 mm
Burst pressure	240 bar	240 bar	135 bar	135 bar	100 bar	100 bar	100 bar	66 bar	66 bar	66 bar

Marking of product

For traceability with this type approval the fittings are at least to be marked with:

- Manufacturers name or trademark
- Type designation and size

Certificate retention survey

For retention of the Type Approval, a DNV Surveyor shall perform a survey - every second year and before the expiry date of this certificate - to verify that the conditions for the type approval are complied with and to witness burst testing on samples of fittings selected at random from stock or from the running production.

END OF CERTIFICATE