

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings, Bite and Compression Type

with type designation(s)

B7 - 24° Bite and compression coupling

Issued to

CAST S.p.A.
Volpiano, TO, Italy

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems

DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021

DNV class programme DNV-CP-0185 – Type approval – Mechanical joints

Application :

Product(s) approved by this certificate is/are accepted for installation on vessels classed by DNV.

Temperature range: Carbon steel -40°C to +120°C; Stainless steel -60°C to +200°C

Max. working press.: 160 bar to 800 bar (See page 3)

Sizes: DN6 to DN42 (See page 3)

Issued at **Høvik** on **2022-06-07**

for **DNV**

This Certificate is valid until **2027-06-06**.

DNV local station: **Italy/Malta CMC**

Approval Engineer: **Andreas Hansen**

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.

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

24° bite and compression pipe couplings with type B7 metal to metal sealing ring, constructed according to DIN 2353 / ISO 8434-1.

Component	Material	Standard
Connector body	Carbon steel 11SMnPb37/30, 11SMn37/30, 28SMnPb28 (PR60), 36SMnPb14, C15, C35, C35R	ISO 683-4, ISO 683-3, ISO 683-1
	Stainless steel 1.4571, 1.4404, 1.4401	EN 10088-3
Nut	Carbon steel 11SMnPb37/30, 11SMn37/30, C4C, C10C, C35, C43, C45	ISO 683-4, EN 10263-1, ISO 683-1
	Stainless steel 1.4571, 1.4404, 1.4401, 1.4307, 1.4301	EN 10088-3
Cutting ring	Carbon steel 11SMnPb37/30, 11SMn37/30	ISO 683-4
	Stainless steel 1.4571, 1.4404, 1.4401	EN 10088-3

Manufacturing location:

Cast S.p.A.
Via Regione Gamna 3, Casalgrasso
CN, Italy

Application/Limitation

Couplings covered by this certificate are approved to be used in class I, II, and III piping systems according to the latest requirements of governing rules in following applications:

<p>Flammable fluids (flash point $\leq 60^{\circ}\text{C}$)</p> <ul style="list-style-type: none"> - Cargo oil lines³⁾ - Crude oil washing lines³⁾ - Vent lines²⁾ <p>Flammable fluids (flash point $\geq 60^{\circ}\text{C}$)</p> <ul style="list-style-type: none"> - Cargo oil lines³⁾ - Fuel oil lines²⁾ - Lubrication oil lines²⁾ - Hydraulic oil²⁾ - Thermal oil²⁾ <p>Sounding/vent</p> <ul style="list-style-type: none"> - Water tanks/dry spaces - Oil tanks (flash point $> 60^{\circ}\text{C}$)²⁾ <p>Fresh water</p> <ul style="list-style-type: none"> - Cooling water system¹⁾ - Condensate return¹⁾ - Non-essential system 	<p>Inert gas</p> <ul style="list-style-type: none"> - Water seal effluent lines - Scrubber effluent lines - Main lines³⁾ - Distribution lines³⁾ <p>Sanitary/drains/scuppers</p> <ul style="list-style-type: none"> - Deck drains (internal)⁴⁾ - Sanitary drains - Scuppers and discharge (overboard) <p>Miscellaneous</p> <ul style="list-style-type: none"> - Starting/control air¹⁾ - Service air (non-essential) - Brine - CO₂ system¹⁾ - Steam
<p>1) Inside machinery spaces of category A – only approved fire resistant types.</p> <p>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.</p> <p>3) Only in pump rooms and open decks – only approved fire resistant types.</p> <p>4) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.</p>	

Materials chosen for the specific system shall be suitable for the intended medium and environmental conditions.

Pipe minimum wall thickness shall be as per DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [1.2.1]. Requirements for pipe material are further defined in DNV-RU-SHIP Pt.4 Ch.6 Sec.2 [1.8.1].

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

Couplings covered by this certificate shall not be installed in systems subject to pressure below atmospheric or vacuum conditions.

Maximum allowable working pressure:

Material	Series	Pipe OD [mm]	Max pressure [bar]	Material	Series	Pipe OD [mm]	Max pressure [bar]
Carbon steel	L	6	500	Stainless steel	L	6	315
		8				8	
		10				10	
		12	400			12	
		15				15	
		18				18	
		22	250			22	160
		28				28	
		35				35	
		42				42	
	S	6	800		S	6	630
		8				8	
		10				10	
		12	630			12	
		14				14	
		16				16	400
		20	420			20	
		25				25	
		30				30	
		38				38	315

At elevated temperatures the maximum pressure shall be reduced as per factors in DNV-CP-0185 Sec.2 [Table 1].

Type Approval documentation

Document no.	Title	Rev.	Date
-	CAST B7 Catalogue	-	-
V.d.P. No. 03/22	Burst pressure test report, witnessed by DNV	-	2022-02-21
V.d.P. No. 04/21	Repeated assembly and tightness tests	-	2021-05-19
V.d.P. No. 04/21	Pressure pulsation and vibration tests	-	2021-06-21
V.d.P. No. 04/21	Pull-out tests	-	2021-04-27
V.d.P. No. 04/21	Burst pressure test report	-	2021-05-25
N.2021CS011899/1	Fire resistance test report DN06	-	2021-05-19
N.2021CS011899/2	Fire resistance test report DN10	-	2021-05-19
N.2021CS011899/3	Fire resistance test report DN12	-	2021-05-19
N.2021CS011899/4	Fire resistance test report DN18	-	2021-05-19
N.2021CS011899/5	Fire resistance test report DN22	-	2021-05-19
N.2021CS011899/6	Fire resistance test report DN42	-	2021-05-19
N.2021CS011899/7	Fire resistance test report DN06	-	2021-05-19
N.2021CS011899/8	Fire resistance test report DN10	-	2021-05-19
N.2021CS011899/47	Fire resistance test report DN12	-	2021-06-01
N.2021CS011899/10	Fire resistance test report DN20	-	2021-05-20
N.2021CS011899/11	Fire resistance test report DN38	-	2021-05-20
N.2021CS011899/12	Fire resistance test report DN06	-	2021-05-20
N.2021CS011899/34	Fire resistance test report DN06	-	2021-06-01
N.2021CS011899/13	Fire resistance test report DN12	-	2021-05-20
N.2021CS011899/35	Fire resistance test report DN12	-	2021-06-10
N.2021CS011899/14	Fire resistance test report DN18	-	2021-05-21
N.2021CS011899/36	Fire resistance test report DN18	-	2021-06-10
N.2021CS011899/15	Fire resistance test report DN22	-	2021-06-10
N.2021CS011899/37	Fire resistance test report DN22	-	2021-06-10
N.2021CS011899/16	Fire resistance test report DN28	-	2021-06-10
N.2021CS011899/38	Fire resistance test report DN28	-	2021-06-10
N.2021CS011899/17	Fire resistance test report DN42	-	2021-06-10
N.2021CS011899/39	Fire resistance test report DN42	-	2021-06-10
N.2021CS011899/18	Fire resistance test report DN06	-	2021-06-10
N.2021CS011899/40	Fire resistance test report DN06	-	2021-06-10
N.2021CS011899/19	Fire resistance test report DN12	-	2021-06-10
N.2021CS011899/41	Fire resistance test report DN12	-	2021-06-10

Document no.	Title	Rev.	Date
N.2021CS011899/20	Fire resistance test report DN20	-	2021-06-10
N.2021CS011899/42	Fire resistance test report DN20	-	2021-06-10
N.2021CS011899/48	Fire resistance test report DN25	-	2021-08-26
N.2021CS011899/49	Fire resistance test report DN25	-	2021-08-26
N.2021CS011899/22	Fire resistance test report DN38	-	2021-06-10
N.2021CS011899/44	Fire resistance test report DN38	-	2021-06-10

Tests carried out

Tightness, repeated assembly, burst pressure, pull-out, fire resistance, and combined vibration and pressure pulsation tests.

Marking of product

For traceability to this type approval, each fitting is to be marked with:

- Manufacturer's name or trademark
- Size

Periodical assessment

For retention of the Type Approval, a DNV 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 DNV-CP-0338.