

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP0000087
Revision No:
4

This is to certify:

that the **Pipe Couplings, Bite and Compression Type**

with type designation(s)
DK DIN Bite Type - Tube Fitting

issued to
DK-Lok Corporation
Gimhae-si, Gyeongsangnam-do, Korea, Republic of

is found to comply with
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
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: -60 °C to +400 °C (see cert.)
Max. working press.: Depending on size, see certificate.
Sizes: See certificate

Issued at **Høvik** on **2026-02-10**

This Certificate is valid until **2031-02-09**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Tobias Berntsen**

for **DNV**



Digitally Signed By:
Bosman van der Merwe
Location: **DNV Høvik, Norway**

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 USD 300 000.

Product description

Bite type tube fittings for DIN2353 LL, L and S series:

Fitting materials	Brass	CuZn35Ni2(2.0540) DIN 17660
	Stainless steel	X6CrNiMoTi12 (1.4516) EN10028-7 ASTM A479 Type316
Elastomer materials	Buna-N	Nitrile
	Viton	DIN 17660 FKM (VITON)

Application/Limitation

Couplings covered by this certificate shall not be used in system subject to pressure below atmospheric or vacuum condition.

The approval is only valid when the couplings are assembled with tubing of correct temper and tolerances as recommended by the manufacturer. These couplings should not be used on tubes in cold fabricated (hard temper) conditions.

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

Maximum working pressure and sizes:

Series	Brass		Stainless steel	
	Size (mm)	Pressure (bar)	Size (mm)	Pressure (bar)
LL	4 - 12	30	4 - 8	100
L	6 - 18	94.5	6 - 15	250
	-	-	18 - 22	160
	22 - 42	48	28 - 42	100
S	6 - 14	189	6 - 14	630
	16 - 30	189	16 - 25	400
	38	94.5	30-38	315

Mechanical joints covered by this certificate may be used in piping classes I, II and III in below applications:

Systems ⁷⁾		Classification of Piping system	Approved fire resistant type ⁵⁾	Non-fire resistant type ⁶⁾
Flammable fluids (flash point ≤ 60 °C)				
1.	Cargo oil lines	dry	+	+ ¹⁾
2.	Crude oil washing lines	dry	+	+ ¹⁾
3.	Vent lines	dry	+	+ ²⁾
Inert gas				
4.	Water seal effluent lines	wet	+	NP
5.	Scrubber effluent lines	wet	+	NP
6.	Main lines	dry	+	+ ¹⁾
7.	Distribution lines	dry	+	+ ¹⁾
Flammable fluids (flash point > 60 °C)				
8.	Cargo oil lines	dry	+	+ ¹⁾
9.	Fuel oil lines	wet	+	+ ²⁾
10.	Lubricating oil lines	wet	+	+ ²⁾
11.	Hydraulic oil	wet	+	+ ²⁾
12.	Thermal oil	wet	+	+ ²⁾
Seawater ⁸⁾				
13.	Bilge lines	dry/wet	+	+ ³⁾
14.	Water filled fire extinguishing systems, e.g. sprinkler systems	wet	+	+ ²⁾

Systems ⁷⁾		Classification of Piping system	Approved fire resistant type ⁵⁾	Non-fire resistant type ⁶⁾
15.	Non water filled fire extinguishing systems, e.g. foam, drencher systems	dry/wet	+	+ ²⁾
16.	Fire main (not permanently filled)	dry/wet	+	+ ²⁾
17.	Ballast system	wet	+	+ ³⁾
18.	Cooling water system	wet	+	+ ³⁾
19.	Tank cleaning services	dry	+	+
20.	Non-essential systems	dry, dry/wet, wet	+	+
Fresh water				
21.	Cooling water system	wet	+	+ ³⁾
22.	Condensate return	wet	+	+ ³⁾
23.	Non-essential systems	dry, dry/wet, wet	+	+
Sanitary/drains/scuppers				
24.	Deck drains (internal)	dry	+ ⁴⁾	+ ⁴⁾
25.	Sanitary drains	dry	+	+
26.	Scuppers and discharge (overboard)	dry	+	+
Sounding/vent				
27.	Water tanks/dry spaces	dry/wet	+	+
28.	Oil tanks (f.p > 60 °C)	dry	+	+ ²⁾
Miscellaneous				
29.	Starting/control air	dry	+	+ ³⁾
30.	Service air (non-essential)	dry	+	+
31.	Brine	wet	+	+
32.	CO ₂ system (outside protected space)	dry	NP	NP
33.	CO ₂ system (inside protected space)	dry	NP	NP
34.	Steam	wet	+	+
Abbreviations				
+ Application permitted (with limitations, if any, as in the footnotes below)				
NP Application not permitted				
Footnotes				
1) Not permitted when mechanical joints are installed in pump rooms and open decks.				
2) Not permitted 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) Not permitted when mechanical joints are installed in machinery spaces of category A.				
4) Permitted only above bulkhead deck of passenger ships and freeboard deck of cargo ships.				
5) <i>Approved fire-resistant types</i> as per this certificate are those mechanical joints made of carbon or stainless-steel grades constructed without non-metallic/ elastomeric seals				
6) <i>Non-fire resistant types</i> as per this certificate are those mechanical joints comprising of non-metallic/elastomeric seals.				
7) Pipe minimum wall thickness shall be as per DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [1.2.1] depending on the intended application.				
8) Mechanical joints made of austenitic stainless steel grades covered by this certificate are not approved for use in stagnant sea water conditions.				

Temperature range:

Brass -60 °C to 175 °C
 Stainless steel -60 °C to 400 °C

Couplings with seals on non-metallic material:

NBR Nitrile rubber -35 °C to 100 °C
 FKM Viton -25 °C to 200 °C
 PTFE Teflon -60 °C to 240 °C

At elevated temperature the maximum working pressure shall be reduced using the reduction factors according to DNV-CP-0185 Sec.2 [Table 1].

Type Approval documentation

<u>Document no.</u>	<u>Rev.</u>	<u>Title</u>
TAJD-251217-001	1	TEST Report for TA Renewal, dated 2021-02-25, 2025-12-17
TAJD-251217-002	1	TEST Report for TA Renewal
-	-	DK DIN Bite Type Tube Fitting for DIN 2353/ISO 8434-1 No. 04-03 June 2015
TAJD-251222-001	1	TEST Report for TA Renewal
TAJD-201027-001	1	TEST REPORT
-	-	Manufacturer's test reports: DIN 2353 Bite Type fitting test reports, dated 21-07-2011
-	-	Report TLN25-1108001, TLN25-1108002, TLN25-1108003, dated 2011-08-31
-	-	Test reports SS316, carbon steel and brass, dated 2012-09-20, 2012-10-05, 2012-10-16, dated 2012-10-24, 2012-11-02, 2013-01-07, 2013-01-17, 2013-05-30, 2013-06-03, 2013-06-07

Tests carried out

Leakage test, repeated assembly test, burst pressure test, pull-out test, vibration test, pressure pulsation test

Marking of product

For traceability to this type approval, each coupling is at least to be marked with:

- Manufacturer's name:
- Type designation
- Size

Periodical assessment

The certificate is only valid if required periodical assessments are carried out with satisfactory results.

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.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

Manufactured by:

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