Certificate No:
TAP00002CK

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe Couplings, Bite and Compression Type

with type designation(s)
COMPRESSION COUPLINGS - L-SERIES and S-SERIES, Made of CARBON STEEL and STAINLESS STEEL

Issued to
CONEXA GmbH Präzisionsarmaturen
Hann. Münden, **Germany**

is found to comply with
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

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

Temperature range:	**-20°C to 120°C**
Max. working press.:	**up to 630 bar**
Sizes:	**for pipe outside diameter 6 mm to 42 mm**

Issued at **Hamburg** on **2021-05-20**
This Certificate is valid until **2026-05-19**.
DNV local station: **Hamburg**

Approval Engineer: **Thilo Pabst**

for **DNV**

Olaf Drews
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

Compression couplings (body, nut) with 24° seal cone according DIN EN ISO 8434-1,
made of carbon steel galvanized (marking: CN) and stainless steel 1.4571 / AISI 316 Ti (marking: C).
Series L (**L**eicht / light) and Series S (**S**chwer / heavy) with metallic seal.

Cutting rings

Form D - metallic sealing ring - 24° cone end, for carbon steel (CN) and stainless steel (C)
Form DPR - metallic sealing ring - 24° cone end, for carbon steel (CN) and stainless steel (C)

Nuts

CN-M - for carbon steel (CN)
C-M - stainless steel (C)

Fittings

As specified in the CONEXA product Catalogue 1.1. - Pipe Connections from steel and stainless steel

Scope

This type approval includes compression couplings with 24° seal cone and metallic sealing as specified in this certificate. Reference CONEXA product catalogue: 1.1. - Pipe Connections from steel and stainless steel.

Not included are all other products and compression couplings with standard threads according DIN, ISO, EN or ANSI/ASME.

Technical data

Sizes / pressure ranges[1]

Carbon Steel (CN)			
Light Series (L)		**Heavy Series (S)**	
Pipe O.D. [mm]	Nominal Pressure [bar]	Pipe O.D. [mm]	Nominal Pressure [bar]
6 to 18	315	6 to 14	630
22 to 42	160	16 to 30	400
--	--	38	315

Stainless Steel (C)			
Light Series (L)		**Heavy Series (S)**	
Pipe O.D. [mm]	Nominal Pressure [bar]	Pipe O.D. [mm]	Nominal Pressure [bar]
6 to 18	315	6 to 14	630
22 to 42	160	16 to 30	400
--	--	38	250

Note1: Individual nominal pressures of the fittings accordance to catalogue 1.1. - Pipe Connections from steel and stainless steel has to be observed.

Materials / pipes[2,3,4]

Carbon Steel (CN)
Union incl. nut: Carbon steel acc. to DIN 3859-1, Table 2. e.g. 1.0501 (C35), 1.0503 (C45), 1.0401 (C15)
Pipe material/standard: Precision steel pipes acc. to EN 10305-4; Carbon steel 1.0715 (11SMn30) or 1.0718 (11SMnPb30)

Stainless Steel (C)
Union incl. nut: Stainless acc. to DIN 3859-1, Table 2. e.g. 1.4571 / AISI 316 Ti or equivalent.
Pipe material/standard: Precision stainless pipes acc. to EN 10088; Stainless steel 1.4571 / AISI 316 Ti or equivalent.

Note2: For the selection of the tubes and detailed material designation refer to catalogue 1.1. - Pipe Connections from steel and stainless steel.
Note3: Pipes wall thickness acc DNV GL Rules Ship: Part 4 Chapter 6 Section 9_1.3.3 Table 2 (steel) and Table 3 (stainless steel), respectively. Tubing of correct temper and tolerances as recommended by the manufacturer shall be used.
Note4: The standard stainless steel materials 1.4571, 1.4404 or 1.4401 and Brass are not approved for application in sea water systems or unprotected installation on the open deck.

Temperature range

Carbon-/ stainless steel: - 20°C up to + 120°C

For service temperatures above 50°C (stainless steel) the reductions in pressure specified in the CONEXA product catalogue is to be observed.

APPLICATION/LIMITATION

This fitting system is type approved for application in pipe class I, II and III-piping systems, as specified in DNV GL Ship Rules Pt. 4, Ch. 6, Sec. 9 - Table 9 and 10, metallic sealing.

Limitation:

- Combination of both materials (e.g. carbon steel pipes and stainless steel unions and vice versa) is not approved
- acc DNVGL Rules Ship: Part 4 Chapter 6
  - Pipes wall thicknesses to be observed (Section 9)
  - Couplings are not approved through tank walls, watertight decks and bulkheads. For application through fire divisions a separate type approval is required. (Section 3)
  - Pipe couplings with parallel thread are not approved for pipe class I and II. (Section 9) Tapered or parallel thread is not approved for toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
  - The standard stainless steel materials 1.4404, 1.4571 or 1.4401 and Brass are not approved for application in sea water systems or unprotected installation on the open deck. (Section 2)

Assembling and Installation:

For the selection of the pipe unions for the corresponding service in view of temperature and pressure and the right installation as well as assembling , the instructions specified in the CONEXA product Catalogue 1.1. – “Pipe Connections from steel and stainless steel” in the actual valid version are to be observed.

RESPONSIBILITIES

The company CONEXA GmbH Präzisionsarmaturen, 34346 Hann. Münden (Germany) takes the responsibility that the design and the production of the products is in compliance with the Rules, Standards and/or Regulations listed on page 1 of this certificate.

Production places: 34346 Hann. Münden (Germany)
09827 Königsee (Germany)

TYPE APPROVAL DOCUMENTATION

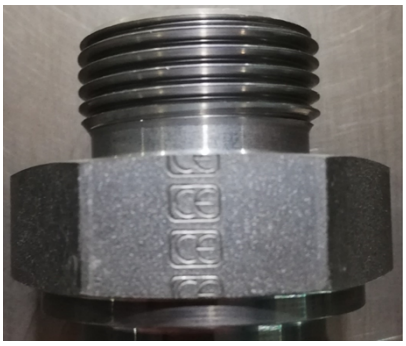
TESTS CARRIED OUT

Following tests acc. IACS P2.11. and CP-0185 carried out:

- Repeated assembly test,
- Static gas pressure test,
- Vacuum test,
- Tightness test,
- Burst pressure test,
- Combined pressure pulsation and vibration test,
- Pull-out test

MARKING OF PRODUCT

For traceability of products, marking shall be legible and indelible.
Products are to be marked at least as follows:

Scope	Example
- Manufacturer's name or trademark (CE in box – label/short sign CONEXA) - Type designation acc product catalogue - 1.1. Pipe Connections from steel and stainless steel (page 7)	Marking sample 

PERIODICAL ASSESSMENT

A condition for retention of the type approval certificate in its validity period is that periodical assessments are successfully carried out. The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered. Regulations for the periodical assessment of the type approval certificate are to be find in the DNVGL Class Programme CP-0338.

It is further to be noted that the Society shall be informed of any:

- Modifications to the product which are liable to affect its characteristics and functions, as originally specified and tested;
- Shifting of the production site and additional production site.

If such notifications are not made, the validity of the type approval certificate terminates.

END OF CERTIFICATE