

TYPE APPROVAL CERTIFICATE

Certificate No:
TAP00001SZ
Revision No:
8

This is to certify:

That the Pipe Couplings, Bite and Compression Type

with type designation(s)
GS, GRS, GES, GÜS, GAIS, TRS, BS, GLS, GSS, SVS

Issued to

Wieland Eucaro GmbH
BREMEN, Germany

is found to comply with
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 all vessels classed by DNV.

Temperature range: up to 100°C
Max. working press.: see page 2
Sizes: 8mm up to 38mm

Issued at **Hamburg** on **2026-04-28**

This Certificate is valid until **2031-04-17**.

DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Christof Kotzmann-Bendrien**



for **DNV**

This document has been digitally signed and will
therefore not have handwritten signature

Sven Klinger
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.

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Product description

Compression couplings – Bite type, with metallic seal.

Overview components

Component	Material designation	Design standards
Wedge Rings	CuAl10Ni5Fe4	Eucaro EHN 9413/200, WL 2.1972, EN 12163
Fitting body	CUNi10Fe1,6Mn	
Nut	Brass	EN 12163
Tubes ^{1,2}	CuNi10Fe1,6Mn	DIN 86019
Size range Pipe outer diameter O.D. (mm)	8 10 10,3(1/8") 12 13,7(1/4") 15 16 17,1(3/8") 18 20 21,3(1/2") 22 25 26,7(3/4") 28 30 33,4(1") 35 38	
Nominal pressure PN (bar)	25 bar up to size 30 10 bar up to size 38	
Temperature range	Up to 100°C	

Notes

¹ For selection of the tubes DIN 86019 is to be observed.

² Tube wall thickness acc. to DNV Ship Rules Pt.4, Ch.6, Section 9, Tables 3 and 4. Regarding material certificates refer Section 2, Table 3.

Fitting types

Designation	Drawing	Type
Straight fitting	EHN 9510/100, EHN 9510/110, EHN 9510/120	GS, GRS
Male stud connector	EHN 9510/150, EHN 9510/160	GES, GÜS
Tube to female	EHN 9510/250, EHN 9510/260	GAIS
T-fitting	R20/9510/300, EHN 9510/320	TRS
Elbow-fitting	R20/9510/500, EHN 9510/510	BS
Weld straight fitting	EHN 9510/450	GSS
Socketweld fitting	EHN 9510/400	GLS
Bulkhead fitting (screwed)	EHN 9510/200, EHN 9510/210	SVS

Bulkhead fitting

Coupling types with type designation SVS are not approved through tank walls, watertight decks and bulkheads. For application through fire divisions a separate type approval is required.

Weld fitting

For application in pipe class II piping systems the Rules Pt.4, Ch. 6 – Sec. 10 are to be observed.

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Application / Limitation

The pipe fittings are type approved for application in piping systems with static load and included in pipe class II and III as follows:

Piping systems
Fuel -, lubricating and hydraulic oil
Distilled water, fresh and sea water
Bilge and ballast water
Grey water
Fire-fighting water

Selection of materials

It shall be noted that the selection of the materials considers the applicable service condition with respect to type of media, flow velocity, media temperature etc. and installation area of the piping system.

In particular, the resistance to corrosion, erosion, oxidation and other deterioration during projected service life are to be considered.

Reference is made to DNV Rules Pt.4, Ch.6 – Section 2 – Materials.

Assembling and Installation

For the assembling and installation, the EUCARO instruction “Double Wedge Ring Unions Assembly Instruction” is to be observed.

Type Approval documentation

Test reports

- IMA Dresden, test report no.: K169/18, 2019-01-24
- IMA Dresden, test report no.: K083/20, 2021-01-25

Drawings

- Type GS - EHN 9510/100 T01 – Verschraubung, 2004-01-12
- Type GRS - EHN 9510/100 T02 – Verschraubung, 2005-08-03
- Type GRS - EHN 9510/100 T03 – Verschraubung, 2005-08-03
- Type GS - EHN 9510/110 T01 – Verschraubung, 2019-10-19
- Type GRS - EHN 9510/110 T02 – Verschraubung, 2020-04-27
- Type GES - EHN 9510/150 T01 – Einschraub-Verschraubung, 2005-08-10
- Type GÜS - EHN 9510/150 T03 – Einschraub-Verschraubung, 2003-10-27
- Type GÜS - EHN 9510/150 T04 – Einschraub-Verschraubung, 2003-10-16
- Type GES - EHN 9510/160 T01 – Einschraub-Verschraubung, 2020-04-14
- Type GÜS - EHN 9510/160 T03 – Einschraub-Verschraubung, 2020-05-07
- Type GAIS - EHN 9510/250 T01 – Aufschraub-Verschraubung, 2005-10-11
- Type GAIS - EHN 9510/250 T02 – Aufschraub-Verschraubung, 2005-10-11
- Type GAIS - EHN 9510/260 T01 – Aufschraub-Verschraubung, 2020-04-14
- Type TRS - R20/9510/300 – T-Verschraubung, 2019-06-19
- Type TRS - EHN 9510/320 T01 – T-Verschraubung, 2020-04-22
- Type BS - R20/9510/500 – Winkel-Verschraubung, 2019-06-24
- Type BS - R20/9510/510 T01 – Winkel-Verschraubung, 2020-04-23
- Type GSS - EHN 9510/450 T01 – Schweiß-Verschraubung, 2005-12-08
- Type GLS - EHN 9510/400 T01 – Löt-Verschraubung, 2005-10-10
- Type SVS - EHN 9510/200 T01 – Schottverschraubung, 2005-09-02
- Type SVS - EHN 9510/210 T01 – Schottverschraubung, 2020-10-26
- Parts list - EHN 9510, 2019-03-05

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Miscellaneous

- Renewal Assessment Report dated 2026-03-10
- DNVGL Assessment report of production place "Eucaro Buntmetall GmbH, Bremen", 2019-02-06
- Material test certificate 3.1 acc. to EN 10204:2004 for material CuNi10Fe1,6Mn, issued by Buntmetall Amstetten.
- Eucaro standard EHN 9413/200, WL 2.1972
- Double Wedge Ring Unions Assembly Instruction
- ISO 9001:2015 certificate issued by QS Zürich AG.

Tests carried out

Repeated Assembly Test, Tightness Test Gas, Tightness Test Fluid, Burst Pressure, Pull-out Test, Vibration Test

Marking of product

Component	Scope	Example
Fitting body	Manufacturer short sign, Material designation, dimension, type of fitting, fastening torque	WEC – CuNi10Fe1,6Mn-30x1,5-GS – 60Nm
Wedge ring 1	No marking	--
Wedge ring 2	No marking	--
Nut	No marking	--

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 Type Approval are complied with. Refer to DNV-CP-0338, Sec.4.

The certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

End of Certificate