



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAP000015A**  
Revision No:  
**2**

## This is to certify:

that the Pipe System with Couplings

with type designation(s)  
**MegaPress CuNi 90/10**

issued to

**Viega GmbH & Co. KG**  
**Attendorn, Germany**

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:

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

**Temperature range:** 23°F to +284°F (-5°C to +140°C) for FKM  
14°F to +230°F (-10°C to +110°C) for EPDM

**Max. pressure:** 1/2" to 3": 1,6 MPa (232 psi)  
4": 1,25 MPa (181 psi)

**Design:** Compression coupling - Press type

Issued at **Hamburg** on **2024-05-13**

This Certificate is valid until **2029-05-12**.

for **DNV**

DNV local unit: **Essen**

Approval Engineer: **Christian Kaemmer**

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.



Form code: TA 251

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## Product description

### MegaPress CuNi 90/10:

Megapress fittings consisting of a sleeve (basic component), grip ring, separator ring, sealing element. The grip ring with bidirectional teeth grip the outer surface of the pipe and locks the fitting to the pipe. The constant compression produces a positive, nondetachable mechanical joint.

The fittings are to be assembled by a pressing tool

- Pressgun 6 / Pressgun 6 with Press Booster and Ridgid RP350 / Ridgid RP350 with Booster
- or according to Viega documentation

## Materials and fitting sizes

System	Material designation pipe and fitting		Pipe & Fitting size [mm] / [inch]	Soft seal
<b>MegaPress CuNi 90/10</b>	Pipe	Seamless copper nickel tubes as per ASTM B466/B466M or MIL-T-16420K(SH) "Class200"	21,3mm / ½" up to 114,3mm / 4"	FKM EPDM
	Fitting	WL 2.1972.11 / CuNi10Fe1,6Mn Grip ring: Stainless Steel 420 Separator ring: AISI 304 / 1.4301 XL-Separator ring: PBT		

## Type-approved minimum-pipe-wall-thickness & pipe outer diameter

<b>Pipe outer diameter [mm]</b>	21,3	26,7	33,4	42,2	48,3	60,3	73,0	88,9	114,3
<b>Pipe outer diameter [inch]</b>	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"
<b>Pipe Wall Thickness [mm], minimum as per ASTM B466 "Regular"</b>	2,79	2,79	3,3	3,56	3,81	3,81	5,08	5,59	6,10
<b>Pipe Wall Thickness [mm], minimum as per MIL-T-16420K(SH) "Class200"</b>	1,65	1,65	1,65	1,83	1,83	2,11	2,11	2,41	2,77

## Production place

Viega Supply Chain GmbH & Co. KG, Viega Str. 1, 99518 Großheringen, Germany

## Responsibility

The company Viega GmbH & Co. KG Attendorn takes the responsibility for the design and the production procedures with relation to ensuring continued consistent production of the type approved products.

Reference DNV CP-0338 Type approval scheme, Section 4.

## Application / Limitation

The Viega MegaPress CuNi 90/10 press fitting system is type approved for installation in piping systems of pipe class III. Fire resistance type.

Approved fire endurance test condition is: "30 min wet" or "Fire endurance test not required".  
 Appropriate Notes 1) to 5) – Fire resistance capability are to be observed.

Reference DNV-Rules "Ships" Pt.4 Ch.6 Section 9 – 5.2 "Pipe couplings other than flanges"  
 Compression coupling – Press type; Table 8, 9 and 10.

**Approved applications:**

Piping systems		Classification of pipe system	Fire endurance test condition	Notes
<b>Flammable fluids (flash point ≤ 60°C)</b>				
1	Cargo oil lines	dry	30 min /dry	1)
2	Crude oil washing lines	dry		1)
3	Vent lines	dry	30 min /dry	3)
<b>Inert gas</b>				
4	Water seal effluent lines	wet	30 min wet	none
5	Scrubber effluent lines	wet		none
6	Main lines	dry	30 min dry	1)
7	Distribution lines	dry		1)
<b>Flammable fluids (flash point &gt; 60 °C)</b>				
8	Cargo oil lines	dry	30 min dry	1)
9	Fuel oil lines	wet	30 min wet	3)
10	Lubricating oil lines	wet		3)
11	Hydraulic oil	wet		3)
12	Thermal oil	wet		3)
<b>Seawater</b>				
13	Bilge lines	dry/wet	8 min dry+22 min wet	4)
14	Water filled fire extinguishing systems (e.g., fire main, sprinkler)	wet	30 min wet	3)
15	Non water filled fire extinguishing systems, e.g., foam, drencher systems	dry/wet	8 min dry+22 min wet	3)
16	Fire main (not permanently filled)	dry/wet	8 min dry+22 min wet	3)
17	Ballast systems	wet	30 min wet	4)
18	Cooling water systems	wet	30 min wet	4)
19	Tank cleaning services	dry	Fire endurance test not required	none
20	Non-essential systems	wet, dry/wet, dry		none
<b>Fresh water</b>				
21	Cooling water systems (ensuring main function)	wet	30 min wet	4)
22	Condensate return systems	wet	30 min wet	4)
23	Non-essential piping systems, e.g. cooling water for air condition, sanitary, technical water systems.	wet, dry/wet, dry	Fire endurance test not required	none
<b>Sanitary/drains/scuppers</b>				
24	Deck drains (internal)	dry	Fire endurance test not required	5)
25	Sanitary drains	dry		none
26	Scuppers and discharge (overboard)	dry		none
<b>Sounding/vent</b>				
27	Water tanks/dry spaces	dry/wet	Fire endurance test not required	none
28	Oil tanks (flash point > 60 °C)	dry		3)
<b>Miscellaneous</b>				
30	Service air piping systems (non-essential), e.g., breathable sounding system	dry	Fire endurance test not required	none
31	Brine	wet	Fire endurance test not required	none
34	Steam	wet		none

**Footnotes - Fire resistance capability**

- 1) Fire endurance test shall be applied when mechanical joints are installed in pump rooms and open decks.
- 3) 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.
- 4) Fire endurance test shall be applied when mechanical joints are installed in machinery spaces of category A.

**Footnotes - General:**

- 5) Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

Pipes with lower pipe wall thickness than minimum pipe wall thickness<sup>1</sup> may be used for the following applications:

- Sanitary piping systems such as potable water supply (hot and cold), grey and black water
- Heating systems, non-essential
- Drainage piping systems (not related to main function, i.e. ensuring stability)
- Technical water systems, service air (not related to main function, i.e. ensuring propulsion)
- Cooling water for air conditioning of accommodation spaces
- Fire extinguishing systems listed in table on page 3
- Non-essential systems
- Vacuum lines

**Note 1)** Minimum pipe wall thicknesses specified in DNV-Rules "Ships" Pt. 4 Ch.6 Sec. 9, Table 1 "pipes of copper and copper alloys"

### **Selection of materials**

It shall be noted that the selection of the materials considers the intended service condition and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration during intended service life. Reference is made to DNV Rules "Ships" Pt.4, Ch.6 – Section 2 – Materials.

### **Bulkhead and Deck Penetration**

Pipe penetration through watertight bulkheads or decks as well as through fire divisions shall be type approved unless the penetration pipe is welded into the bulkhead/deck.

Refer to DNV Rules "Ships" Pt.4, Ch.6 Section 3 – 1.4 Fittings on watertight bulkheads.

**Pipe fittings where pressure-tight joints are made on the threads** are limited in the application as follows:

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. Refer to DNV Rules "Ships" Pt.4 Ch.6 – Section 9 – 5.2.6.

### **Type Approval documentation**

**Tests carried out**

**Marking of product**

For traceability to this type approval the products are to be marked with

	<b>Scope</b>	<b>Example</b>
<b>Fittings</b>	Manufacturer	Viega
	Viega Logo	Viega Logo
	Outer diameter O.D. (mm)	1/2
	Batchnumber	XXXXXX
	Sealing Element	FKM or EPDM

	<b>Material</b>	<b>Colour</b>
<b>Sealing</b>	FKM	Matt black
	EPDM	Shiny black

**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 the Class Programme DNV-CP-0338, Sec.4.