



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAP00002H5
Revision No:
1

This is to certify:

that the **Pipe System with Couplings**

with type designation(s)
Temponox

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 rules for classification – Naval vessels
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: -40°C up to +140°C (see page 2)
Max. pressure: 1,6 MPa (16 bar)
Design: Compression Coupling - Press type

Issued at **Hamburg** on **2025-04-07**

This Certificate is valid until **2027-11-06**.

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 USD 300 000.

Product description

Pipe system consisting of Viega-fittings and metallic pipes assembled by dedicated pressing tools. The fitting with SC-Contur provides a visual indication of a non-pressed fitting.

The constant compression produces a positive, nondetachable mechanical joint. Integral with synthetic sealing element.

The fittings are to be assembled by a pressing tool

- Pressgun 6 and Ridgid RP350
- or according to Viega documentation

Temponox: Pipe O.D. 15 mm up to 54 mm
Temponox XL: Pipe O.D. 76,1 mm up to 108 mm
 "XL" indicates large sizes 76,1 mm up to 108 mm

System	Press-Fitting Material	Pipe Material
Temponox	Stainless Steel 1.4301 / 1.4306	1.4520 (X2CrTi17) acc. to DIN EN 10312
Temponox XL		

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

Pipe outer Diameter [mm]	15,0	18,0	22,0	28,0	35,0	42,0	54,0	76,1	88,9	108,0
Pipe Wall Thickness [mm], minimum	1,0	1,0	--	--	1,5	1,5	--	--	--	--

Note: "-" pipes lower pipe wall thickness than minimum pipe wall thickness.

Pipes with lower pipe wall thickness may be used for non-essential applications see page 5.

Temperature range

Sealing material (Ring gasket)	EPDM	FKM	HNBR
Temperature range	-10°C / +110°C	-5°C / +140°C	-40°C / +82°C

At elevated temperatures the maximum working pressure is to be reduced:

Temperature	Factor Stainless steel
50°C	0.95
100°C	0.85
100°C - 140°C	0.77

Production place

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

Responsibility

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 Temponox, Temponox XL press fitting systems are type-approved for pipe class III-piping systems. Fire resistance type. Type of mechanical joint: Compression coupling – Press type. Refer to DNV Rules "Ships" Pt.4, Ch.6, Sec. 9 – Table 8, 9 and 10.

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

Approved applications

Piping systems		Classification of pipe system	Fire endurance test condition	Notes
Flammable fluids (flash point ≤ 60 °C)				
1	Cargo oil lines	dry	30 min dry	1)
2	Crude oil washing lines	dry		1)
3	Vent lines	dry		3)
Inert gas				
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)
Flammable fluids (flash point > 60 °C)				
8	Cargo oil lines	dry	30 min dry	1) 7)
9	Fuel oil lines	wet	30 min wet	3) 7)
10	Lubricating oil lines	wet		3) 7)
11	Hydraulic oil	wet		3) 7)
12	Thermal oil	wet		3) 7)
Seawater				
13	Bilge lines	dry/wet	8 min dry+22 min wet	4) 8)
14	Water filled fire extinguishing systems (e.g., fire main, sprinkler)	wet	30 min wet	3) 8)
15	Non water filled fire extinguishing systems, e.g., foam, drencher systems	dry/wet	8 min dry+22 min wet	3) 8)
16	Fire main (not permanently filled)	dry/wet	8 min dry+22 min wet	3) 8)
17	Ballast systems	wet	30 min wet	4) 8)
18	Cooling water systems	wet	30 min wet	4) 8)
19	Tank cleaning services	dry	Fire endurance test not required	8)
20	Non-essential systems	wet, dry/wet, dry		8)
Fresh water				
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	6)
Sanitary/drains/scuppers				
24	Deck drains (internal)	dry	Fire endurance test not required	5)
25	Sanitary drains	dry		none
26	Scuppers and discharge (overboard)	dry		none
Sounding/vent				
27	Water tanks/dry spaces	dry/wet	Fire endurance test not required	none
28	Oil tanks (flash point > 60 °C)	dry		3)
Miscellaneous				
29	Starting/control air	dry	30 min dry	4)
30	Service air piping systems (non-essential), e.g., breathable sounding system	dry	Fire endurance test not required	none
31	Brine	wet		8)
32	CO ₂ system (outside protected space)	dry	30 min dry	none
33	CO ₂ system (inside protected space)	dry		none
34	Steam	wet	Fire endurance test not required	none

Notes - 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.

Notes - General:

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

Notes – Product-related:

- 6) not approved for potable water
- 7) max. 7 bar
- 8) not Type Approved, but CuNiFe systems like Viega “Seapress or Megapress CuNi 90/10” may be considered.

Pipes with nominal size 22, 28, 54, 76.1, 88.9, 108.0 mm = (Pipes with lower pipe wall thickness than minimum pipe wall thickness¹⁾ may be used for the following applications:

- Domestic warm water heating
- Fresh water cooling
- Service Air
- Glycol up to max. concentration 50 %
- Non-essential systems, technical water systems /
Water-Urea solution up to +40°C and 1,0 MPa and a maximum permissible concentration of 40%.

Note 1) Minimum pipe wall thickness specified in DNV-Rules “Ships” Pt. 4 Ch.6 Sec. 9, Table 3 “pipes of stainless steel”.

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

Marking	Example
Manufacturer’s name	Viega
Brown rectangle	Not for potable water

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNV-CP-0338, Sec.4.

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