



TYPE APPROVAL CERTIFICATE
No. MAC305820XG

This is to certify that the product identified below is in compliance with the regulations herewith specified.

<i>Description</i>	Metal-plastic composite pipes and metal fittings "Multilayer pipes with Silicone Bronze fittings"
<i>Type</i>	Raxofix Pipes and Fittings
<i>Applicant</i>	VIEGA GmbH & Co. KG Viega Platz 1 57439 Attendorn GERMANY
<i>Manufacturer</i>	VIEGA GmbH & Co. KG
<i>Place of manufacture</i>	Viega Platz 1 57439 Attendorn GERMANY
<i>Reference standards</i>	Part C, Chapter 1 Appendix 3 of RINA Rules

Issued in **HAMBURG** on **November 30, 2020**. This Certificate is valid until **November 29, 2025**



RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

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Catalogue titled Raxofix with SC-Contur and approved under RINA drawing No. HMMC-18121
 Installation Guide for Raxofix System (Enclosed in HMMC-18121)
 SKZ Test report No. 213035/20 III (Enclosed in HMMC-18121)
 KIWA Examination Report No. LC17868 Reference No. 1911011052-1 (Enclosed in HMMC-18121)
 IMA DRESDEN Test Report No. V189/20 (Enclosed in HMMC-18121)

Technical Characteristic:Multilayer pipes with Relative Fittings PE-RT/Al/PE-RT:

Pipe Types	PE-RT/Al/PE-RT						
Nominal Internal Pressure	PN16					PN12,5	
Size Range DN	DN12	DN15	DN20	DN25	DN32	DN40	DN50
Dimension D x Wall thck. (mm)	16 x 2,2	20 x 2,8	35 x 2,7	32x 3,2	40 x 3,5	50 x 4,0	63 x 4,5
Nominal Ext. Pressure rating	Up to 4 bar						
Temperature range acc. ISO21003	0°C up to 80°C						

Press Fittings	
Material Body	Silicon bronze
Types	Couplings, T-Pieces, Bends, Adapters/-bends and connecting fittings (press fitting - screwed connection), Socket plugs, Caps.
Nominal external pressure rating	Up to 4 bar
joining techniques	Press fittings
Temperature range acc ISO21003	0°C up to 80°C

Working Conditions:

According to standard ISO 21003 series- Multilayer piping system for hot and cold-water installation buildings.

Classes	Class 1	Class 2	Class 4	Class5
pressure	10 bar	10 bar	10 bar	10 bar
temperature	60°C	70°C	60°C	80°C
application	Hot water supply	Hot water supply	Underfloor Heating and Low Temperature radiators	High temperature radiators



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Raxofix Pipes and Fittings

Application/Limitation:

The Raxofix piping System is type approved for application in piping systems in accordance with RINA Pt. C, CH 1, Sec 10 & RINA Pt C. CH 1, App 3.

Reference heading to table 1	item	Piping system
Freshwater	23	Non-essential systems -Potable water generation and treatment systems -Potable hot and cold water, wash water systems -Cooling and heating system of AC system
Sanitary, drains and scuppers	22	Condensate return -Condensate from AC system
Miscellaneous	30	Service air (not-essential)

Acceptance Conditions:

This product passing through hazardous areas is to be electrically conductive according to Pt C, Ch 1, App 3 [2.3.3] of RINA Rules.

This product passed the low flame spread test according to ASTM D 635 Class HB, so it is suitable to be installed in places where this characteristic is required, according to Pt C, Ch 1, App 3 [2.3.2] of RINA Rules.

Remarks:

The installation on board of the piping system is to be carried out in accordance with the instructions of the manufacturer and of the RINA Rules as applicable.

Joining techniques are to be in accordance with the manufacturer's installation guidelines.

Where pipes pass through "A" and "B" class divisions, arrangements are to be made to ensure that fire endurance is not impaired. These arrangements are to be tested in accordance with "Recommendations for Fire Test Procedures for "A" and "B" and "F" Bulkheads" (IMO Resolution A.753(18) as amended).

In case of ships flying EC flag, the bulkhead penetrations are to be Certified in accordance with 96/98/EC directive on marine equipment (as amended) (MED).

When the piping pierces watertight bulkheads or decks, the watertight integrity of the bulkhead or deck is to be maintained. If the bulkhead or deck is also a fire division and destruction of plastic pipes in case of fire may cause the inflow of liquid from tanks, a metallic shut-off valve operable from above the freeboard deck is to be fitted at the bulkhead or deck.

For systems connected to the hull, requirements of Pt C, Ch 1, App 3 [3.7.2] of RINA Rules are to be complied with. Pipes and fittings are to be permanently marked in compliance with Pt C, Ch 1, App 3 [2.1.2] of RINA Rules.

Before installation on board, pipes and fittings are to be tested by the manufacturer as per Pt C, Ch 1, App 3 [4.2] of RINA Rules and after installation on board, according to Pt C, Ch 1, App 3 [4.3] of RINA Rules.

The installation on board ships being built according to the RINA Rules for the Construction and Classification of High Speed Crafts" is subject to the satisfactory outcome of tests foreseen by IMO Resolution A.753(18).

HAMBURG November 30, 2020

