

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pipe System with Couplings

with type designation(s)
Mapress CuNiFe

Issued to

Geberit International AG
Jona, SG, Switzerland

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints

Application :

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

Temperature range: Refer to certificate.

Max. pressure: Up to 16 bar. Refer to certificate

Design: Compression coupling - press type

Issued at **Hamburg** on **2018-08-03**

This Certificate is valid until **2023-08-02**.

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Hagen Markus**

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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.



Job Id: **262.1-000263-5**
Certificate No: **TAP00001CB**

Product description

The Mapress CuNiFe press fitting system consist of press fittings with O-ring seal and pipes.

Size range and Materials

Material designation	Fitting sizes	Soft seal	Pipe dimension standard
Pipes and Fittings			
CuNi10Fe1,6Mn acc. to 2.1972	15, 22, 28, 35, 42, 54, 76.1, 88.9, 108	FKM CIIR (Butyl)	GEBERIT System pipes ¹

Notes

¹ Refer to Geberit My Catalogue, 2018.

Production places

Geberit Mapress GmbH, 40764 Langenfeld, Germany
Geberit Ozorkow Sp. Z o.o. , Poland.

Responsibility

The company Geberit International AG takes the responsibility that both the design and the production is in compliance with the Rules, Standards and/or Regulations listed on page 1 of this certificate.

Nominal pressures and Pressing equipment

			Pressing equipment ¹	
O.D. mm	DN	PN ¹	Machines	Tool
15	12	16	Compatibilities [2], [2XL], [3])	Geberit Jaws
22	20			
28	25			
35	32			
42	40	13	HCPS	Geberit Collars
54	50			
76.1	65			
88.9	80			
108	100			

Notes

¹ according to the Geberit "Technical Information Compatible Pressing Tools", valid at the date of installation.

Temperature range

Sealing Material	Temperature range ¹
FKM	-25°C up to +180°C
CIIR (Butyl)	-30°C up to +120°C

Notes

¹ Temperature limits acc. to pipe class III are to be observed

Application

The Mapress CuNiFe piping systems is type approved for application in piping systems of pipe class III as listed in the below "Application table".

Type of mechanical joint: Compression coupling – press type – fire resistant type.
Refer to DNV GL Rules Pt.4, Ch.6, Section 9 – Table 10, 11 and 12.

Application table

Systems			Note	Systems			Note
Flammable fluids (Flash point ≤ 60 °C)				Fresh water			
1	Cargo oil lines		+	21	Cooling water system		+
2	Crude oil washing lines		+	22	Condensate return		+
3	Vent lines		+	23	Non-essential system		+
Inert gas				Sanitary/Drains/Scuppers			
4	Water seal effluent lines		+	24	Deck drains (internal)		+ ⁵
5	Scrubber effluent lines		+	25	Sanitary drains		+
6	Main lines		+	26	Scuppers and discharge (overboard)		+
7	Distribution lines		+				
Flammable fluids (Flash point > 60°C)				Sounding/ vent			
8	Cargo oil lines		+	27	Water tanks/Dry spaces		+
9	Fuel oil lines		+	28	Oil tanks (flash point > 60°C)		+
10	Lubrication oil lines		+				
11	Hydraulic oil		+				
12	Thermal oil		+				
Sea Water				Miscellaneous			
13	Bilge lines		+	29	Starting/control air		+
14	Water filled fire extinguishing systems, e.g. sprinkler systems		+	30	Service air (non-essential)		+
15	Non water filled fire extinguishing systems, e.g. foam, drencher systems		+	31	Brine		+
16	Fire main (not permanently filled)		+	32	Steam		+
17	Ballast system		+	33	Exhaust gas cleaning systems for the reduction of SOx Water supply/discharge – systems. Non-essential.		+
18	Cooling water system		+				
19	Tank cleaning services		+				
20	Non-essential system		+				

Notes

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

Minimum pipe wall thickness

For application in piping systems subject to main class, main function respectively, the minimum wall thickness of the pipes shall be in compliance with the applicable Rules. Refer to Rule Pt.1, Ch.1, Sec.1.

Example

For application in piping systems as listed in Pt.4, Ch.6 Piping Systems, Section 1 - Table 2, the minimum wall thicknesses of pipes shall be acc. to Section 9 – Table 2 and 4.

In addition Rule requirements according to additional class notation or specific ship type are to be observed.

Undersized pipe wall thickness may be accepted for:

- Sanitary piping systems such as potable water supply (hot and cold), grey and black water
- 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

Limitations

Press fitting systems are not approved for:

- installation in ballast tanks or fuel oil tanks
- air overflow and sounding pipes of structural tanks
- penetrating enclosed spaces below the freeboard deck (e.g. watertight - or fire bulkheads)

For the following fittings limitations as specified in the Rules Pt.4, Ch.6 are to be observed:

Geberit Mapress CuNiFe flanged stub plain end for loose flange

This type of fitting is not approved for steam and flammable fluids.

Pipe connectors 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 DNVGL Rules, Pt.4, Ch.6 – Section 9 – 5.2.6.

Overview of pipe connectors with limitations

Type	Name
Adapter with male and female thread	Straight adapter
	90° adapter
	Adapter union

With respect to installation and application limitation for press-fittings refer to DNV GL Rules Pt.4, Ch. 6, Section 9, 5.2 Pipe couplings other than flanges.

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 DNVGL Rules Pt.4, Ch.6 – Section 2 – Materials.

Penetration of fire divisions and water tight bulkheads and decks

For penetration of pipes through fire divisions and watertight bulkhead and decks type approved penetrations are to be used.

Penetration of pipes with undersized wall thickness shall be approved in each separate case.



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Type Approval documentation

Tests carried out

Marking of product

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

Pipes	Marking scope	Example
	Manufacturers mark	Geberit Mapress
	Manufacturing date and shift	060201-II
	Manufacturers mark	Eucaro 10
	Melt number acc. to 3.1 Accepted	325420
	Outer pipe diameter and wall thickness	54 x 1.5
	CuNi10Fe1,6Mn	Material designation
Fittings	The pressing indicator indicates unpressed connections.	Black pressing indicator (CuNiFe)
	Geberit Mapress Logo	
	Outer diameter (mm)	28
	Production code	F
Sealing	Material	Colour
	FKM	Blue, Red
	CIIR	black

Periodical assessment

For retention of the type approval certificate periodical assessments shall be carried out at production places by DNV GL surveyor.

The objective of the periodical assessment is to verify that the design and production conditions for the type approval have not been altered.

Main scope of the assessment:

- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type approval certificate, performance and range of application
- verification of the product marking

In addition to the above at renewal assessment burst pressure tests on selected sizes are to be carried out. Periodical assessment is to be performed after 2 years and after 3.5 years. Prior to renewal of the certificate a renewal assessment will be performed.

End of certificate