

TYPE APPROVAL CERTIFICATE
No. MAC072107CS/001



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

<i>Description</i>	Plastic pipes and fittings not fire resistant
<i>Type</i>	Geberit HDPE pipes and fittings
<i>Applicant</i>	GEBERIT MARKETING E DISTRIBUZIONE SA VIA GERRE CH6928 MANNO SWITZERLAND
<i>Manufacturer</i>	GEBERIT MARKETING E DISTRIBUZIONE SA
<i>Place of manufacture</i>	VIA GERRE CH6928 MANNO SWITZERLAND
<i>Reference standards</i>	Part C, Chapter 1 Appendix 3 of RINA Rules 2007

Issued in **Genoa** on **June 20, 2007**. This Certificate is valid until **June 19, 2012**


RINA

Francesco Sciacca

This certificate consists of this page and 1 enclosure

This certificate annuls and replaces the previous certificate MAC/47701/1/TO/02

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Geberit HDPE pipes and fittings



Reference documents:

Geberit PE product data I-173 03.00

Product details:

Pipes diameters (mm): 32, 40, 50, 63, 75, 90, 110, 125, 160

Fittings:

- access pipe with oval access cover
- adapter in PE with female thread
- adapter in PE with male thread
- bend 90° with long radius
- bend 135°
- branch fitting 91,5°
- concentric reducer
- electroweld sleeve coupling
- flange adapter

Working Conditions:

Working pressure according to the following Table:

Operating Temperature	20°C	30°C	40°C
Max. Working Pressure	1.0 bar	0.8 bar	0.5 bar

Maximum external pressure according to the following Table:

Pipes diameters (mm)	32, 40, 50, 63	75, 90, 110, 125	163
Max. External Pressure	1 bar	0.4 bar	0.7 bar

Fields of application:

Scupper, deck drains, sanitary drains and scrubber effluent lines for location where no fire endurance test is required according to Tab.1 of Pt C, Ch 1, App 3 of RINA Rules.

Acceptance Conditions:

This product is not electrically conductive. The passage of these pipes through hazardous areas is not permitted.

This product passed the flame spread test, 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.

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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).

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 4.2 and after installation on board, according to 4.3 of Pt C, Ch 1, App 3.

The installation on board ships built according to the "Rules for the construction and classification of high speed crafts" of RINA is subject to the satisfactory outcome of tests foreseen by IMO Resolution A.753(18).

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Genoa June 20, 2007

