



Germanischer Lloyd

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. 24 910 - 05 HH

Company George Fischer Sloane, Inc.
7777 Sloane Drive
Little Rock, AR 72206-3872, USA

Product Description THERMOPLASTIC PIPES AND FITTINGS

Type PIPES: +GF+ FUSEAL SEA DRAIN
FITTINGS: +GF+ FUSEAL II (SEA DRAIN)

Environmental Category None

Technical Data / Range of Application TECHNICAL DATA (continued on page 2)
Non-pressure system
Size Range: 11/2" to 6"
Max. allowable temperature: 80 [°C], for short intervals up to 100 [°C]
Pipes: Schedule 40, Group 1, Flame-Retardant Polypropylene Pipes [PPFR], Bluish Color
Fittings: Fuseal II, Flame-Retardant Polypropylene [PPFR], tees, bends, reducers, wyes, adapters, couplings, caps, bushings, expansion joints, flanges, fusion collars
Connection: Electrofusion Process
RANGE OF APPLICATION
The above mentioned pipes and fittings may be used according to their suitability in non-essential and non-pressure systems for fresh and sea water, including black & grey water sanitary drains internal, scuppers & discharges overboard, sounding / air and venting of water tanks / dry spaces etc. taking into account the IMO Res. 753 (18), Appendix 4, as far as applicable.

Test Standard • IMO Resolution A.753 (18) except fire endurance, toxicity and smoke generation test. Flame spread test acc. to ASTM D 635-91.

Documents • Test reports
• Technical Manual for "+GF+ Fuseal / PPro-Seal", Edition 2002

Remarks • For the use on passenger vessels national regulations may have to be observed.

Valid until 2010-02-02

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File No. II.C.04

Hamburg, 2005-02-03

Germanischer Lloyd

G. Hölzer
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This certificate is issued on the basis of "Regulations for the Performance of Type Tests, Part 0, Procedure".



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TECHNICAL DATA

• Pressure classes (internal pressure)

Pressure rating up to 1,76 bar intermittent (drainage) with 25 % loading, as calculated from the tested lowest burst pressure of 102 psi.

• Pressure capacity (external pressure)

External Pressure (vacuum) rating up to 10 in-Hg i.e., approx. 30% vacuum (where 0 in-Hg=atmospheric and 29.92 in-Hg absolute vacuum)

MARKING

Product shall be marked with manufacturer's name; +GF+, USA and Type designation; FUSEAL and/or as given below:
Pipes: +GF+ Fuseal PPFR110 F1412 USA, Fittings: +GF+ (or GSR) PPFR USA, Collars: +GF+ (or GSR) PPFR USA

INSTALLATION

The installation of the piping system is to be carried out in accordance with the instructions of the manufacturer and the installation requirements of the IMO Resolution respectively.

LIMITATIONS

The use of the products outside the range of application underlies the special consideration by Germanischer Lloyd in each individual case.

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