

# Type Approval Certificate

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

<b>Manufacturer</b>	<b>George Fischer Harvel</b>
<b>Address</b>	7777 Sloane Drive, Little Rock, AR, 72206, United States of America
<b>Place of Production</b>	George Fischer Harvel 7777 Sloane Drive, Little Rock, AR, 72206, United States of America
<b>Type</b>	Plastic Pipes
<b>Description</b>	Plastics Pipes, Thermoplastic
<b>Trade Name</b>	+GF+ Fuseal and +GF+ Seadrain White
<b>Application</b>	0' grade non-fire endurance type as permitted by the Rules / Regulations for the following: Non-essential and non-pressure systems for Fresh water & Sea water, black and grey water sanitary drains (internal), scuppers & discharges (overboard), sounding/air pipes for water tanks/dry spaces. In maritime applications on open deck and within tanks, cofferdams, void spaces, pipe tunnel and ducts.
<b>Specified Standard</b>	Lloyds Register Rules and Regulations for Classification of Ships 2019 Lloyds Register Rules and Regulations for Classification of Special Service Craft 2019. Pipes tested to Low flame Spread performance in accordance with ASTM D635-(HB)
<b>Ratings</b>	1.5 to 6 Inches 1 bar MAWP and 25 in-Hg vacuum up to 80 degree C
<b>Additional Tests</b>	Low flame Spread performance in accordance with ASTM D635

1330 Enclave Parkway, Houston, Texas, 77077,  
United States of America

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**Gopal Nair**

Americas Design Appraisal Manager to  
Lloyd's Register Quality Assurance Inc  
A member of the Lloyd's Register Group

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## Other Conditions

1. The piping system has not met fire endurance requirements of IMO Resolution 753(18).
2. The piping system is not tested with respect to Toxicity and Smoke Generation as stated in IMO Resolution A.753(18) -Guidelines for the Application of Plastic Pipes on Ships - (adopted on 4 November 1993) and amended by Resolution MSC.313(88).
3. Pipes are non-conductive type and should be not be used on hazardous areas.
4. The installation should be in accordance with Lloyd's Register Rules and any limitations contained in Part 5, chapter 12 section 5 and table 12.5.1 and IMO resolution A753(18) as amended by MSC 313(88) for the specified applications.
5. Pipes are not to be used in potable water systems.
6. The use of plastic piping should be in agreement with the flag administration.
7. Where the pipes penetrate the fire divisions, the integrity of the fire division should be maintained in accordance with the Rules/Regulations/ Statutory Instruments.
8. Where the pipes penetrate the water tight bulkheads the integrity of the bulkhead(s)division should be maintained in accordance with the Rules/ Regulations/Statutory Instruments.
9. All bonding and joining procedures for installation should be as per the approved procedures from George Fischer Harvel LLC.
10. The personnel training and qualification for bonding / joining should be in agreement with George Fischer Harvel LLC

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Quality Assurance Inc of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. 05/60003(E2)-02 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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