

Marine Exhaust Pipe: Maintaining Integrity in event of fire



Armatec's standard marine exhaust tubing and WhispaPipe factory insulated marine exhaust tubing have been tested to and passed tests specified by "IMO Resolution A.753(18), Appendix 2". This test requires the water filled pipe to maintain its structural integrity for at least 30 minutes in the event of a fire. The testing institute was SP Fire Technology of Sweden.



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Fire Endurance Test of plastic pipe according to IMO Resolution A.753(18), Appendix 2

(3 appendices)

Products

According to the client:

Plastic pipe systems called "Whispa Pipe" and "Single layer FRP Pipe". The "Whispa Pipe" has a nominal outer diameter of 185 mm and a nominal inner diameter of 153 mm giving a wall thickness of 16 mm. The "Single layer FRP Pipe" has a nominal outer diameter of 165 mm and a nominal inner diameter of 153 mm giving a wall thickness of 6 mm. The nominal working pressure of the pipes are 1-3 bar.

Manufacturer

Armatec Environmental Ltd, New Plymouth, New Zealand.

Purpose of test

Basis for fire technical classification.

Sampling

The samples were delivered by the client. It is not known to SP, Fire Technology if the products received are representative of the mean production characteristics.

The samples were received September 29, 2010 at SP, Fire Technology.

Test Procedure

Test method for fire endurance testing of water-filled plastic piping (Level 3), IMO Resolution A.753(18), Appendix 2, clause 4.

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Test results

The test results are given in appendix 1 - 2. Photographs are given in appendix 3.

The tests were performed on material conditioned for more than 48 hours at 23 ± 2 °C and (50 ± 5) % relative humidity.

The test results relate only to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Criteria

To meet "Fire Endurance level 3" according to IMO Resolution A.753(18), clause 2.2.1.2.3 and Appendix 2, clause 4, no leakage from the sample(s) should occur except that slight weeping through the pipe wall may be accepted when tested during 30 minutes.

After termination of the burner regulation test, the test sample, together with fire-protective coating, if any, should be allowed to cool to ambient temperature and then tested to the rated pressure of the pipes as defined in paragraphs 2.1.2.2 and 2.1.3.2 of IMO Resolution A.753(18). The pressure should be held for a minimum of 15 minutes without significant leakages, i.e. not exceeding 0.2 l/min.

Assessment

The tested plastic piping systems called "Whispa Pipe" and "Single layer FRP Pipe" meet the criteria mentioned above and is evaluated up to the rated pressure of 3 bar.

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Appendices

- 1 Test results, Whispa Pipe
- 2 Test results, Single layer FRP Pipe
- 3 Photographs