

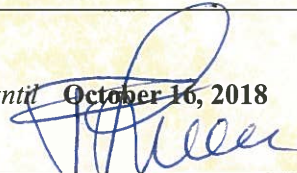


TYPE APPROVAL CERTIFICATE
No. MAC240013CS/001

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

<i>Description</i>	Plastic pipes and fittings
<i>Type</i>	Wavin smartFIX System
<i>Applicant</i>	WAVIN ITALIA SPA VIA BOCCALARA, 24 45030 SANTA MARIA MADDALENA (RO) ITALY
<i>Manufacturer</i>	WAVIN GMBH KUNSTSTOFF-ROHRSYSTEME
<i>Place of manufacture</i>	INDUSTRIESTRASSE 20 D-49767 TWIST GERMANY
<i>Reference standards</i>	Parte C, Capitolo 1, Appendice 3 delle Norme RINA

Issued in **Genoa** on **October 17, 2013**. This Certificate is valid until **October 16, 2018**



RINA Services S.p.A.
Francesco Sciacca

This certificate consists of this page and 1 enclosure



TYPE APPROVAL CERTIFICATE

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Wavin smartFIX System

Reference documentation :

Wavin "System Data Sheet" (January 2012)

Test Report 25/09/2013 (Burst test) by Wavin Italia SpA

Test Report No. 2013CS012839 (Flame spread) by RINA Laboratory

Materials:

Pipe: Inner layer Polyethylene (PE-Xc), aluminium and outer layer of PE-RT

Fittings: Body made of polyphenylene sulphone (PPSU). cap made of glass filled polyamide. Transition fittings are made from zinc-free (DZR) brass.

Thermic characteristic :

Wavin "System Data Sheet" (January 2012)

Dimension:

Nominal diameter (ND) and thickness are indicated in the follow table:

ND (mm)	16	20	25
Thickness (mm)	2	2.25	2.5

Design pressure

Design pressure (DP) and relevant working temperature are indicated in the follow:

Temperature [°C]	Pressione di progetto [bar]
60	8
95	6

Applicable range :

Sanitary system, heating system and conditioning system where low flame attitude characteristic is required like indicated in para. 2.3.2 of Part C, Cap, 1, App. 3 of RINA Rules 2013.

Marking:

Pipes and fittings are to be marked in accordance with Para. 2.1.2 of Part C, Cap, 1, App. 3 of RINA Rules 2013.

Place of manufacturing :

- *Pipe:*

"Wavin MPC Multilayer pipe Company SP.Z.O.O."
PECZ 59 - 57- 100
Strzelin
Poland

- *Fittings:*

"Wavin GMBH Kunststoff-Rohrsysteme"
Industriestrasse 20 - D-49767
Twist
Germany



CERTIFICATO DI OMOLOGAZIONE DI TIPO

N. MAC240013CS/001

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Wavin smartFIX System

Remarks:

Installation on board is to be carried out in accordance with Manufacturer instruction .

Before installation on board, all components are to be tested by the Manufacturer in accordance with Para. 4.2 and after installation on board in accordance with Para. 4.3 of App. 3.

Installation on board of ships built in accordance with RINA "Rules for Classification of High Speed Craft" is subordinated to the full compliance to the requirement of IMO Resolution A.753(18).

Genoa October 17, 2013

