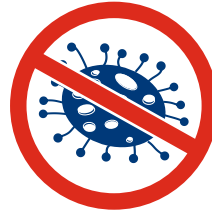


# MULTILAYER PIPE PE100 WITH MICROBIOLOGICAL PROTECTION FOR WATER DISTRIBUTION

MODERN TECHNICAL IDEA



ANTIFUNGAL  
PRODUCT



ANTIBACTERIAL  
PRODUCT



**inGremio**<sup>®</sup>

## PIPES FOR WATER SUPPLY NETWORKS PE 100

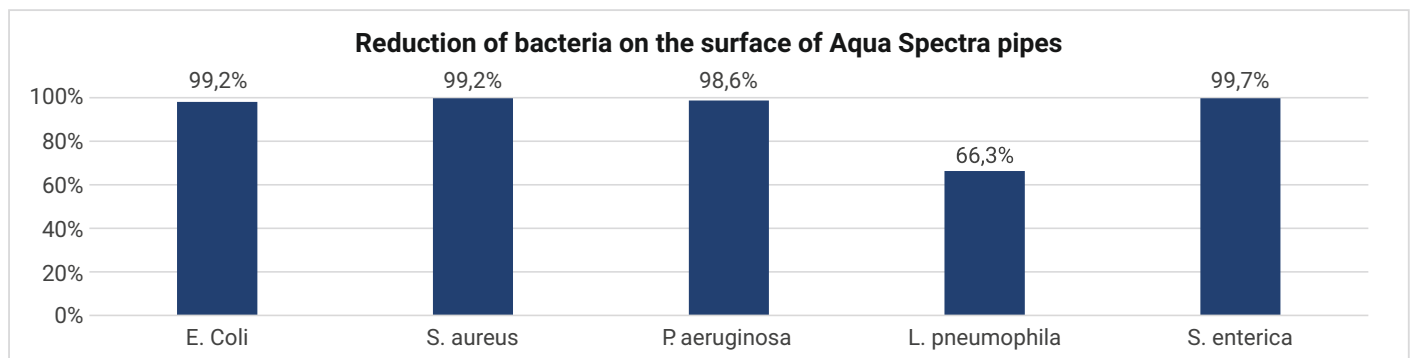
Ingreccio Aqua Pipe and Ingreccio Aqua Spectra polyethylene pipes are designed for the construction of water supply and sewage networks, and are also used in industrial networks where there is a need to transport chemicals. The pipes can be manufactured as single or double-layer in PE100 material and with increased strength parameters in PE100 RC polyethylene. The use of a higher strength material allows the technical requirements of PAS 1075:20009-04 (Publicly Available Specification) to be met. It is a set of recommendations, requirements and tests that prove resistance to the effects of possible scratches and point loads that may arise as a result of the construction, or rehabilitation, of networks without the use of bedding and backfilling and by traditional and trenchless methods. Microbial-protected pipes for liquid transfer are also available in polypropylene (PP) and polyvinyl chloride (PVC).

In the case of Aqua Spectra pipes, the inner wall is made entirely of antibacterial and antifungal material, which protects the pipes from being colonised by micro-organisms that are undesirable and dangerous to humans. The material used was developed by Ingreccio and is protected by patents. It was created in cooperation with scientific centres in the course of a research project, during which high effectiveness for different types of bacteria and fungi was confirmed.

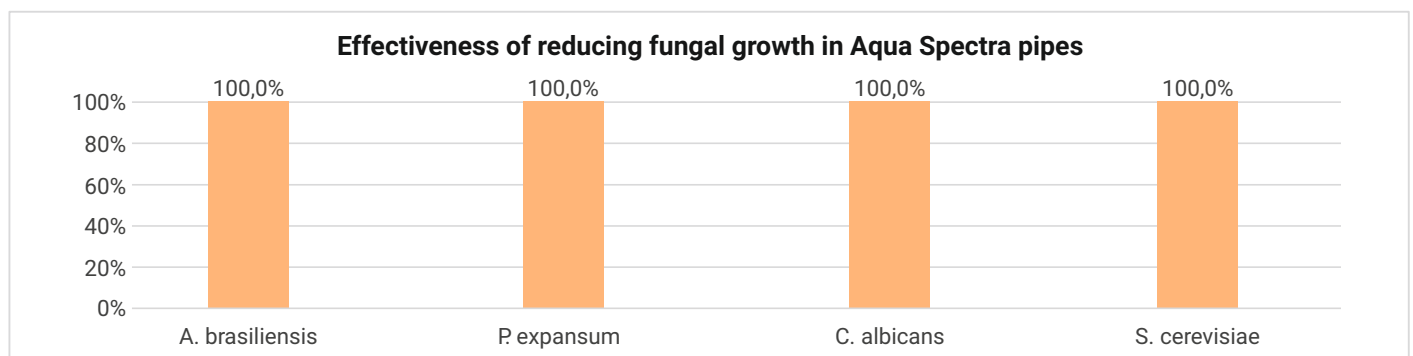
The material contains silver, copper and other microbiologically active compounds in the polymer matrix so that they do not undergo migration, ionisation and elution. The virtual absence of antimicrobially active compounds migration from the polymer has been confirmed in the laboratory tests that were performed in significantly more aggressive environments compared to the ones in water supply systems. The substances used ensure in practice an indefinite bactericidal and fungicidal effect and prevent the formation of defensive mechanisms by bacteria and fungi regardless of air temperature and humidity. Thanks to the Spectra microbiological protection, the fundamental advantage of Aqua Spectra pipes is the lack of structures that could indicate the formation of a biofilm, which was confirmed during laboratory tests.

The composition of the materials used is entirely safe for people, animals and plants. Moreover, all materials used are approved for food contact.

Ingreccio Aqua Pipe and Ingreccio Aqua Spectra are characterised by excellent mechanical properties and high impact strength. The use of high-end materials from reputable suppliers allows us to meet all quality standards. The use of a smooth internal surface minimises resistance to water flow.



Test of antibacterial properties of the polymer material in a 24h test. The graph shows the degree of bacterial reduction after 24h of contact with the Aqua Spectra sample.



Test of fungistatic properties of the polymeric material in a 28-day test. The presented values may include a deviation resulting from the applied measurement method (0.1%).

The implementation of an original, patented method of determining the dispersion of microbiologically active components in the polymer allows for immediate verification of the presence of active substances, their dispersion and concentration in the plastic. Microbiologically active substances have been enriched with a marker that, when illuminated with UV light, will fluoresce in blue. To assess the dispersion of the microbiologically active additive in the plastic, it is necessary to check whether the fluorisation is uniform - ideally the dispersion of the additive in the mass of the plastic should be uniform. The finer the surface dispersion of the microbiologically active substance, the better the microbiological protection. Thanks to Spectra's fluorising properties, it is easy to assess the product for the application of microbiological protection.



Ingremio Aqua and Ingremio Aqua Spectra polyethylene pipes come in a wide range of diameters. They are manufactured in the size ranges SDR 11, SDR 17 in diameters from 32 to 160 mm.

### AVAILABLE AQUA PIPES DIAMETERS

Nominal outside diameter [mm]	SDR 11	SDR 17
	Nominal wall thickness [mm]	
32	3,0	2,0
40	3,7	2,4
50	4,6	3,0
63	5,8	3,8
75	6,8	4,5
90	8,2	5,4
110	10,0	6,6
125	11,4	7,4
140	12,7	8,3
160	14,6	10,3





# CONTACT

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