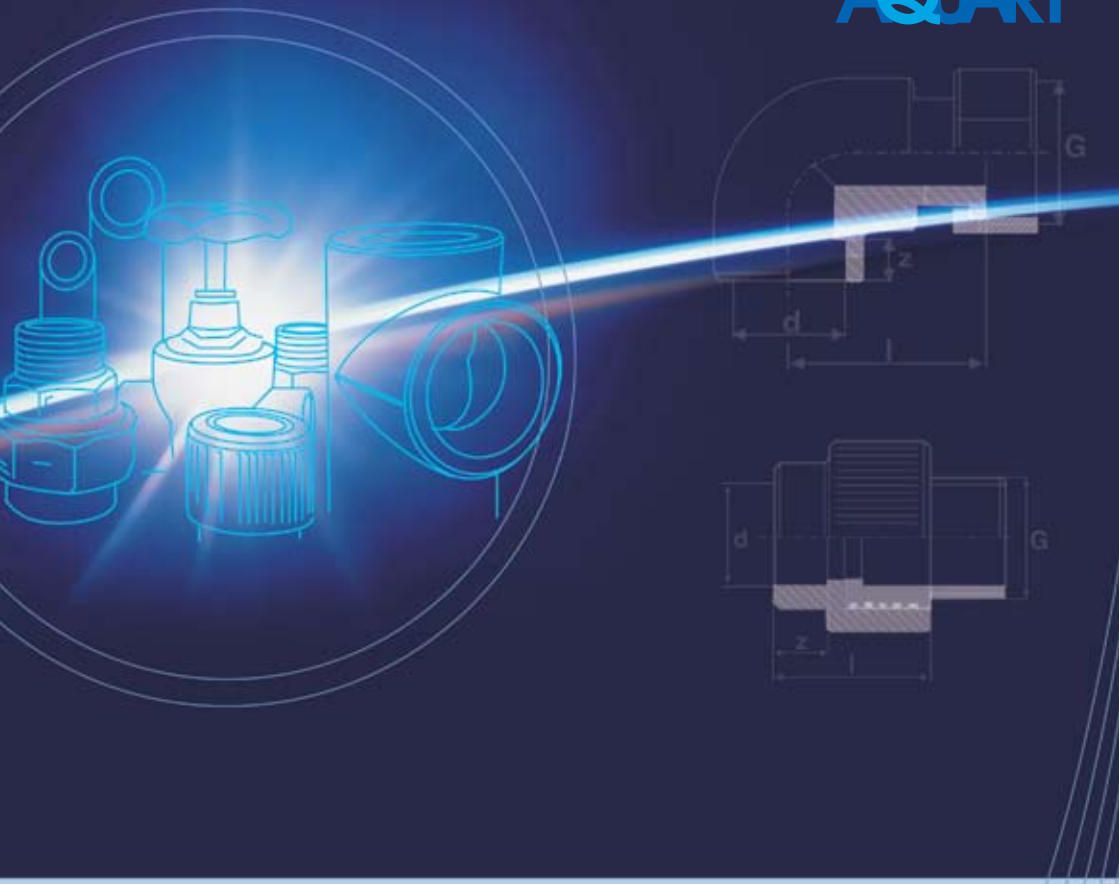
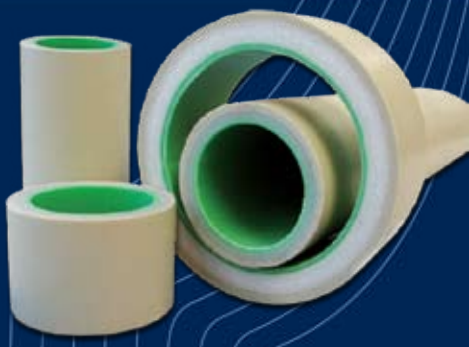
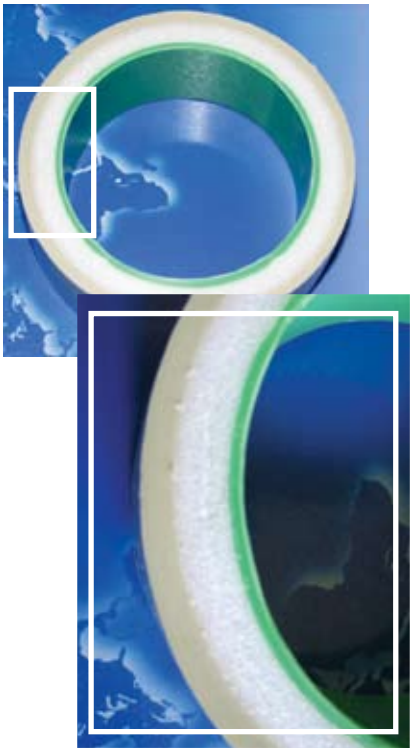


AQUART ®
PPR-FB-PPR composite pipes with fiberglass middle layer

The new AQUART® pipes are composed of three layers: the inner and the outer layers consist of polypropylene PPR with specific components, the layer of glass fiber is between them.



The outer layer is made of PPR polypropylene and pipes can be combined with the help of ordinary welding equipment. It also contains specific additives that make the pipes Ultra-violet resistant.



The middle layer of the new AQUART® pipes is made of composite material – polypropylene PPR and FB–glass fiber. Thanks to such compound combination all the characteristics of the new AQUART® pipes – mechanical resistibility, hot and cold temperature resistibility - have been improved.

In particular, the problem of linear expansion has been solved: it is 4.5 times lower than that of ordinary polypropylene pipes. The glass fiber layer serves an oxygen barrier which makes it possible to use new AQUART® pipes in individual heating systems instead of reinforced pipes.

The third, inner pipe layer is made of polypropylene (PPR), which guarantees the compliance with the sanitary norms in using the pipes in water supply systems.

Particular features

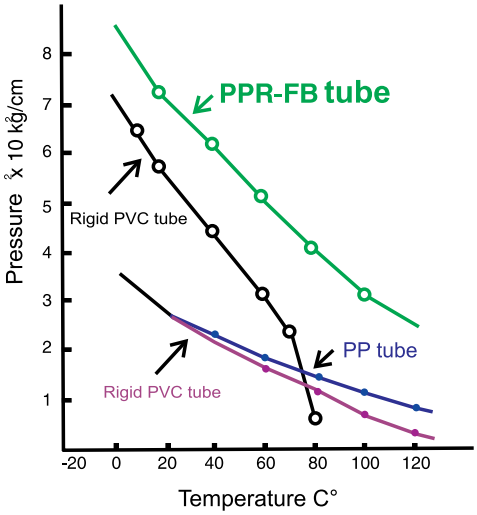
The sizes of the new AQUART® pipes are the same as of the usual polypropylene pipes (See Table 1).

Table 1

Outer Diameter d, mm		20	25	32	40	50	63	75	90	110
Inner diameter	S4 (PN1.6)	2.3	2.8	3.6	4.5	5.6	7.1	8.4	10.1	12.3
	S3.2 (PN2.0)	2.8	3.5	4.4	5.5	6.9	8.6	10.3	12.3	15.1
	S2.5 (PN2.5)	3.4	4.2	5.4	6.7	8.3	10.5	12.5	15	18.3

New AQUART® pipes installation does not differ from the installation of polypropylene pipes – the same equipment and skills are required. New AQUART® pipes are produced in China, on one of the plants of AQUART® Group.

At present time pipes PN-16, PN-20, PN-25 with diameters from 20 to 63 are presented.



1. *Improved mechanical resistibility.*

The essential difference of the new pipes is their good mechanical resistibility even under high temperatures. On the diagram below you see the advantages of the new pipes over the pipes of other materials – PPR-FB-PPR pipes can bear much higher pressures, and with the growth of temperatures this ability does not decrease so sharply as with other types of pipes.

2. *Improved pressureresistance*

Scientific tests have proved that PPR-FB-PPR pipes reveal high pressure resistance and the coefficient of resistance is 25% higher than of ordinary polypropylene pipes.

Such peculiarity makes it possible to use the new pipes much longer and to install them outside the buildings.

AQUART®

AQUART® PPR-FB-PPR composite pipes with fiberglass middle layer

3. Better thermal resistance .

The new PPR-FB-PPR pipes can stand the rise of temperature up to 145”C, which is 30 degrees higher than with ordinary polypropylene pipes. This quality meets the American standard ASTM D-646 Lab. Such a variety of working temperatures makes it possible to use the new pipes in hot countries, as well as in countries with cold climate.

4. Ultra-violet protection.

Specific additives included into polypropylene in the process of extrusion protect the outer layer from ultra-violet radiation; ordinary polypropylene pipes lack this feature.

Such peculiarity makes it possible to use the new pipes much longer and to install them outside the buildings.

5. Low thermal expansion coefficient.

Thermal expansion coefficient of this pipe is 4 times lower than that of ordinary PPR pipes.

Material	PPR–FB	PVC	PP	PE	Reinforced polymers	Steel
Coefficient of therm.expans 10^{-5} sm/sm/°C	2.4	7	11	12	1.5	1.2
Density	1.05	1.4	0.91	0.95	1.7	7.5

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