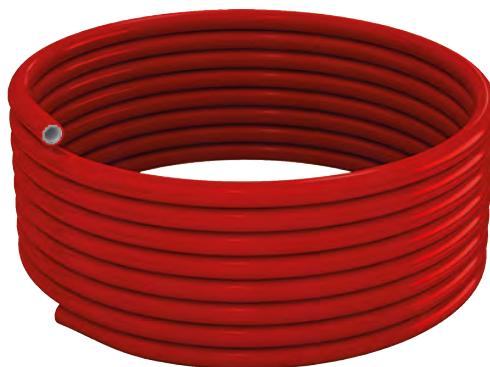


PEX-a pipes with anti-oxygen barrier

Datasheet
0771EN  10/2022



R996G

➤ Versions and product codes

Pipe rolls

PRODUCT CODE	SIZE [mm]	PACK [m]	PIPE COLOR
R996GY012	16x2	240	Red
R996GY021		100	
R996GY022	17x2	240	
R996GY023		600	
R996GY032	20x2	240	
R996GY033		500	

➤ Dati tecnici

- Application classes (EN ISO 15875): 4, 5
- Not suitable for the transport of domestic water
- Density at 23 °C: > 0,938 g/cm³
- Breaking elongation: > 400 %
- SKZ certified

For each application classes, maximum usage pressure can be evinced from the table below:

SIZE	CLASS 4	CLASS 5
16 x 2,0	10 bar	8 bar
17 x 2,0	10 bar	8 bar
20 x 2,0	8 bar	6 bar

- All pipes are suitable for carrying water for a period of 50 years at a temperature of 20 °C and an operating pressure of 10 bar.
- All heating systems shall use as transfer fluid only water or treated water.

TEST	STANDARD	REQUIRED	NOMINAL	FREQUENCY
Resin				
MFR	ASTM / D1238 / ISO 1133	1,7 - 2,3	1,9	Every batch
Density	ASTM / D1505 / ISO 1183	926 kg/m3	955 kg/m3	Every batch
Water content	ASTM / D6869 / ISO 15512	< 0,1 %	< 0,1 %	Every batch
Master batch				
Melt flow rate (MFR)	ASTM / D1238	1,0 - 3,0	1,61	Every batch
Carbon black content CBC	ASTM / D4218	2,0 - 2,6	2,4	Every batch
Pipe				
Density	DIN 53455	938 kg/m3	938 kg/m3	-
Cross linking degree	ISO 10147	70%	80%	At least twice a batch
Elongation at break	ISO 6259-1 / ISO 6259-3	350%	> 400 %	Every batch
Tensile strenght (at 20 °C)	DIN 53455	19 N/mm2	> 19 N/mm2	At least twice a batch
% Carbon black	ISO 6964	-	Special formulation	-
Resistance to weathering	ISO 14531-1, annex C	a) thermal stability b) 95 °C hydrostatic strenght c) elongation at break	Comply	Type test
Longitudinal reversion	ISO 2505	< 3 %	< 2,5 %	Every batch
Stabilizers migration	NCh2086	At least 50 % of a virgin sample	> 50 %	Once per year
Oxidative induction time (OT)	EN 728 / ISO TR 10837	> 20 minutes at 200 °C	> 40 minutes at 200 °C	Every batch
Oven aging 160 °C	ATEC	After 100 h, at least 50 % elongation compare to virgin material	After 100 h, 90 % elongation compare to virgin material	Twice a week
Thermal stability at 110 °C	AS2492 / DIN 16892	8760 h	> 10000 h	Once per year
Pent test	ASTM F876	100 h	> 100 h	Once per year
Squeeze of	ISO 14531	1000 h (pre cooling at -50 °C)	> 1000 h	Type test
RCP	ISO 14531	lc/dn ≤ 4,7; at -50 °C	lc/dn ≤ 0,2; at -50 °C	Type test
Impact strenght (at 20 °C)	DIN 53453	no failure	no failure	Type test
Moisture absorption (at 20 °C)	-	0,01 mg/4d	< 0,01 mg/4d	Type test
Oxygen permeability (at 80 °C) for pipe with anti oxygen barrier	DIN 4726	< 0,1 gm/m3 x day	0,02	Annually

► Pipe laying

For the laying operations of PEX-a pipes, it is necessary to follow some simple practical rules concerning the choice of the fittings, the respect of the minimum radius of curvature and the protection from the sun rays and from possible fortuitous damages.

- The connection to distribution manifolds and to the system terminals shall be made by means of Giacomini's adaptors for synthetic pipes.
- In order to make a correct connection, it is essential to cut off the pipes with tools that can make a clean cut without deburring and perpendicular to its axis.
- During the pipe laying operations, it is necessary making curvatures with a minimum radius equal to five times the external diameter of the pipe itself. After the pipe laying, it is opportune making a pressure test of the system, in order to underline immediately possible fluid losses.
- In case of radiant panel systems, the laying of the pipe covering shall occur with care, by paying attention not to scratch the pipes with spatulas or crush them in the passages with wheel barrow.
- The pipes must not remain exposed for long time to the sun radiations or to fluorescent lamps. Keep the coils that are not used in the suitable boxes, to avoid that the ultraviolet rays will alter the chemical and physical features.
- In case of radiant panel systems, it is good to lay over the pipes a foundation of 3 cm at least, to avoid cracks due to thermal expansion.
- While crossing possible expansion joints, it is important to protect the pipe with a protecting covering in order to avoid excessive mechanical stress.

► Precautions

The use of R996G pipes requires the observance of some prescriptions, needed to guarantee the life time and the functional character.

- Store the pipes in the appropriate packaging, by avoiding their direct exposition to sun rays, and in covered and dry places to prevent damages to the boxes caused by the humidity.
- Prevent the pipes from coming into contact with sharp bodies able to scratch and trigger carving phenomenon – pay particular care during the installation and transport phases.
- Prevent icing inside the pipes and in the packaging, because the expansions due to the state change could cause cracking.
- Prevent the pipe from coming into contact with open flames or other heat sources, that could provoke melting, even partial.
- If a fixing to electrically welded networks is needed, use plastic material instead of metallic bands, to avoid damages to the pipes.
- Prevent the contact with chemical solvents or paints that can damage the pipes.

► Warranty

All products and components supplied by Giacomini S.p.A. are subjected to the European norms in force as regards to guarantee and responsibility (1994/44/CE Directive, 2001/95/CE Directive and CEE 85/374).

The guarantee is not valid in the following cases:

- 1) if the working conditions are different from those prescribed;
- 2) if the pipes are used to distribute fluids, that are not compatible with the material;
- 3) if the installation instructions are not scrupulously followed
- 4) if at the installation time, during the laying phase or at the pressure testing of the system, the pipe shows visually perceivable defects caused by accidental factors;
- 5) if the pipe is installed by using components not produced by Giacomini S.p.A., or in any case different from the permitted ones.

➤ Classification of working conditions (EN ISO 15875)

The performance specifications for pipe-based systems complying with EN ISO 15875 are specified for a project with a 50-year operational life.

RANGE OF APPLICATION	WORKING TEMPERATURE T_D [°C]	DURATION OF T_D [years]	MAX WORKING TEMPERATURE T_{MAX} [°C]	DURATION OF T_{MAX} [years]	FAILURE TEMPERATURE T_{MAL} [°C]	DURATION OF T_{MAL} [h]
CLASS 4 Floor heating and low-temperature systems	20	2,5	70	2,5	100	100
	+	+				
	40	20				
	+	+				
CLASS 5 Radiator heating and high-temperature systems	60	25	90	1	100	100
	+	+				
	60	25				
	+	+				
	80	10				

- Working temperature (T_D): working temperature provided for the range of application, expressed in °C.
- Max. working temperature (T_{MAX}): the working temperature highest value, allowed only for a short period of time.
- Failure temperature (T_{MAL}): the highest temperature possible when control systems fail (the time allowed for this value is 100 h over 50 years of uninterrupted operation).

➤ Product specifications

R996G

PEX-a pipes with external anti-oxygen barrier. Application classes (En 15875): 4, 5 (radiant floor heating and low temperature systems and radiator heating and high-temperature systems). Not suitable for the transport of domestic water. Red pipe colour. Density at 23 °C: > 0,938 g/cm³. Breaking elongation: > 400 %. SKZ certified.

⚠ Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

♻ Package Disposal. Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

ℹ Additional information. For more information, go to giacomini.com or contact our technical assistance service. This document provides only general indications. Giacomini S.p.A. may change at any time, without notice and for technical or commercial reasons, the items included herewith. The information included in this technical sheet do not exempt the user from strictly complying with the rules and good practice standards in force.

♻ Product Disposal. Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.