

PVC pressure pipe

The characteristics described in this document are used by H. Weterings Plastics B.V. during the manufacture of PVC pressure pipes. These are unplasticized polyvinyl chloride (PVC-U) pipes that are used for conveying water and other liquids.



PVC pressure pipes are strong, durable, and resistant, which makes them especially suitable for conveying liquids with pressures of up to 20 bar. When professionally installed, PVC pressure pipes will last for decades and there will be no migration of harmful substances. In addition, PVC pressure pipes from Weterings do not contain any heavy metals and after installation are completely recyclable at the end of their lifespan.



Unplasticized PVC is used in the manufacture of our pressure pipes.

Installation of our PVC pipes is quick and convenient using the adhesive sockets on the pipes. These sockets ensure the quality of the adhesive connection is ideal because Weterings Plastics manufactures its pipes starting at a diameter of 63mm with a bevel on both the inside of the adhesive socket and on the spigot end.

Composition

Unplasticized polyvinyl chloride K67 (PVC-U) is alloyed with a calcium zinc stabilizer and filler. Therefore, our PVC-pipe doesn't contain any lead.

PVC pipe is considered a sustainable product by Weterings Plastics. The reason is the long lifetime and good conditions for reprocessing after that. In addition, the chlorination of polyethylene is a solution to process waste from the production of aluminium in a responsible manner.

Colour

Pressure tubes are fitted with an iron grey pigment, impenetrable to light. Upon request, almost all RAL colours can be manufactured by approximation. As a minimum purchase the content of one mixer 1600kg applies. Also upon request, multilayer pipes are manufactured in various colours.

Property	Value	Unit
Density	1.4	g/cm ³
Softening point	80	°C
Linear expansion coefficient	0.06 – 0.08	mm/°C.m
Elongation at break	>80	%
Tensile strength 1 hour	42	N/mm ²
Tensile strength 50 years	25	N/mm ²
Permissible wall stress (ISO)	10	N/mm ²
Change in length, load at nominal pressure	1.1	mm/m

Shock resistance

To guarantee sufficient resistance to external shocks and impacts under normal conditions of use, the pipes undergo a test in accordance with NEN-EN 744 and ISO 3127.

Pressure resistance

To guarantee sufficient resistance to internal water pressure under normal operating conditions, the pipes undergo a test in accordance with NEN-EN 921 and ISO 1167.

Chemical resistance

PVC is resistant to most acids, salt solutions, water-soluble compounds and alkalis.

PVC is not resistant to aromatic and chlorinated hydrocarbons. More specifically, avoid contact with: acetone, acetic acid, benzene, benzole, bromine, chlorine, chloroform, ether, naphthalene, oleum, nitric acid, toluene, tetrachlorethylene, trichloroethene, xylene, and sulphuric acid.

UV resistance

Because of the influence of light PVC pipe can discolour. Scientific studies show that ultraviolet light discolours PVC and that also other material properties are affected, but in most cases does not have any significant effects.

Product line

PVC pressure pipes are available in diameters ranging from 10 mm to 160 mm and with pressure ratings ranging from 7.5 to 20 bar (PN). There is a difference in pressure ratings and performance when the pipes have adhesive sockets (Socket) or not (Smooth). Standard pipe length is 500 cm (including adhesive socket).

Pipe mm	PN 7.5 SDR 26		PN 10 SDR 21		PN 12.5 SDR 17		PN 16 SDR 13.6		PN 20 SDR 11	
	Socket	Smooth	Socket	Smooth	Socket	Smooth	Socket	Smooth	Socket	Smooth
Ø 16			S	P					S	P
Ø 20			V	P			V	P		
Ø 25			S	P	P	P	S	P		
Ø 32			S	P	S	P	S	P		
Ø 40	S	P	S	P	S	P	S	S		
Ø 50	S	P	S	S	S	P	S	S		
Ø 63	S	P	S	S	S	P	S	S		P
Ø 75	S	P	S	S	S	P	S	S	P	P
Ø 90	S	P	S	S	S	P	S	S	P	P
Ø 110	S	P	S	S	S	P	S	S		P
Ø 125	S	P	S	S	S	P	S	S		P
Ø 160	S	P	S	S	S	P	S	S		P
Ø 200	P	P	S	S	P	P	P	P		

I = in stock product, P = produced on receipt of customer order, minimum purchase and delivery time by request.

Dimensions and tolerances

External diameter	Tolerance
Ø 10 to Ø 63	-0 + 0.2
Ø 75 to Ø 125	-0 + 0.3
Ø 140 to Ø 160	-0 + 0.4

Length	Tolerance
all pipe lengths	-0 + 20

Bell-end length	min	max
pipe Ø 16, Ø 20, Ø 25, and Ø 32	30	40
pipe Ø 40, and Ø 50	40	50
pipe Ø 63	50	70
pipe Ø 75	60	80
pipe Ø 90	70	90
pipe Ø 110	80	100
pipe Ø 125	90	110
pipe Ø 160	110	130
pipe Ø 200	130	155



Dimensions in millimetres

Packaging

The preferred way to ship PVC pipes is in packages. This is the best way to preserve quality during transportation and storage. The package dimensions for each product are given below.

Pipe mm	Number layers items	Classification		Quantity items/package	Dimensions	
		uneven items/layer	even items/layer		breadth cm	height cm
Ø 16	17	65	64	1097	112,5	33
Ø 20	17	52	51	876	112,5	39
Ø 25	22	41	40	891	111	57
Ø 32	17	31	30	519	107,5	57
Ø 40	13	25	24	319	108,5	55
Ø 50	11	20	19	215	107,5	57
Ø 63	9	16	15	140	109	59
Ø 75	8	13	12	100	105	62
Ø 90	6	11	10	63	106	57
Ø 110	5	9	8	43	106	58
Ø 125	5	8	7	38	107,5	65
Ø 160	4	6	5	22	103	67
Ø 200	3	5	4	14	107	63

Small quantities can also be packaged in bundles.

Pipe mm	Layers items	Classification items/layer	Quantity Items/bundle
Ø 10			50
Ø 12			50
Ø 14			50
Ø 16	7	6/7/8/9/8/7/6	51
Ø 20	7	5/6/7/8/7/6/5	44
Ø 25	5	4/5/6/5/4	24
Ø 32	5	3/4/5/4/3	19
Ø 40	3	3/4/3	10
Ø 50	3	3/4/3	10

Identification

At a spaced distance of ± 1 m: production code (ID/tracking), dimensions, and pressure rating according to ISO 1452-2. A sticker is attached to packaging units listing the dimensions, pipe length, number of lengths, number of meters.



Instructions for use

When working with the PVC pipes manufactured by H. Weterings Plastics B.V., employees should be familiar with the appropriate installation methods used for this type of product. Applicable local and national laws and regulations must be observed. Before installation, ensure that the PVC pipe is suited to the intended application. This should include visually checking the product for defects. Do not use pipes that are unsuitable or have external defects. Installation should be carried out in a manner that avoids damage, defects, or permanent deformations.

Storage

Store the pipes in a dry and shady location. Do not allow the pipes to be exposed to extreme temperatures or temperature changes. Prevent the pipes from becoming contaminated.

Gluing instructions for socket-spigot connection:

Preparation:

For optimum adhesion, the parts to be bonded must be clean, dry, and free from grease.

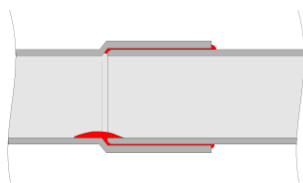
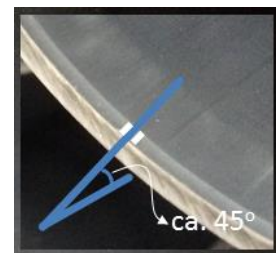
Gluing:

Only glue when the temperature is above 5°C and humidity is below 70%.

For a diameter of up to 50 mm, use SABA 914. For 63 mm and greater, use SABA S3.

Apply a thin layer of glue on the inside of the socket. Use firm lengthwise strokes to apply plenty of glue to the pipe-end/spigot. Slide the glued parts into each other without twisting or prizing. Fasten the connection together until the glue has set. Remove any excess glue. Wait at least 15 minutes before handling the glued parts.

Pipes manufactured by Weterings Plastics have an unique bevel on the bell side of the pipe, so that glue is distributed evenly and creates a better connection (see figure).



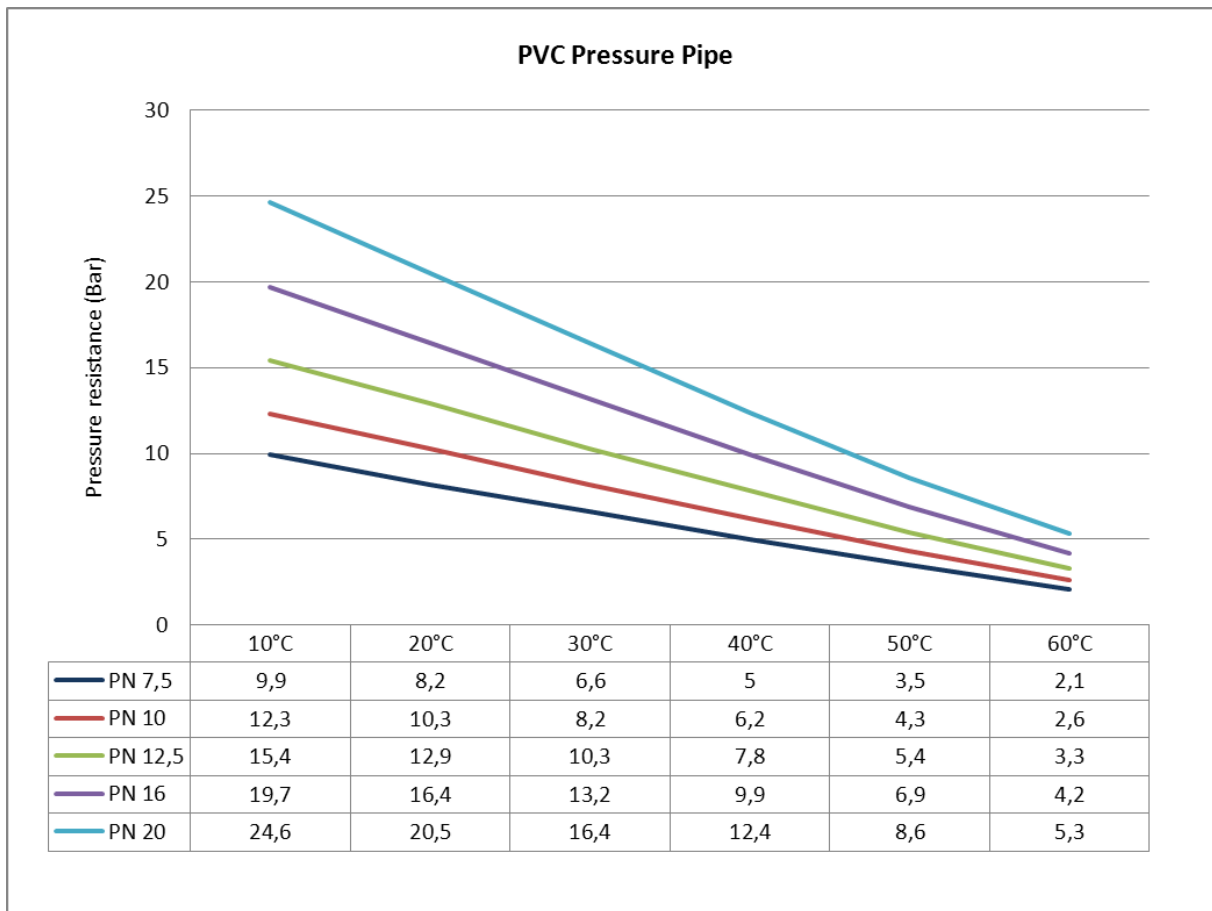
NOTE: Excess use of glue and/or using an incorrect gluing technique can cause puddles of glue to form in the pipe (see diagram). Puddles will weaken the PVC, which will eventually cause cracks. So, for certainty, glue with care!

The bonded connection is ready for use after 24 hours.

Usage

The PVC pipes are designed to have an operational lifespan of about 25 years under normal conditions of use. Normal conditions of use include:

- An environment and water temperature between 0°C and +60°C.
- A maximum utilisation pressure as shown in the following chart.



In addition, make sure you take account of possible increased external loads and/or chemical influences that a PVC pipe can be exposed to and that can shorten its lifespan.

Quality and warranty

Inspections and testing

Product quality is continuously monitored during the manufacturing process. Once the manufacturing process starts, both visual and metrological checks are carried out by our process computers and machine operators.

Our quality control team validates these checks with random tests and also tests the material composition of the pipes. This includes taking samples from the raw materials and manufactured pipes, which are then analysed and tested.



Checks performed by quality control team.

All checks are carried out in accordance with national, international, and Weterings Plastics specified standards and guidelines. Frequency of inspections and testing and the methods used are recorded in internal quality control documents.

Warranty

Should defects be discovered during your initial inspection, the pipe will be replaced as soon as possible. The new piping will be manufactured and delivered within ten business days at no charge.

If a defect is detected during use that may be due to the quality of the pipe then the location will be visited as soon as possible by one of our product specialists. The installer, in consultation with our specialist and other involved suppliers, will determine how the problem should be solved. Any contribution by Weterings towards labour costs will only be authorised if satisfactory measures are taken to limit the consequences of any defect. In addition to an appropriate acceptance check of the supplied materials, the installation of a finished section must be tested and approved before starting on the next section.

Standards and guidelines

BRL K17301	Piping systems of PVC for the transport of drinking water and raw water
DIN 8061	Unplasticized polyvinyl chloride (PVC-U) pipes – General quality requirements and testing
DIN 8062	Unplasticized polyvinyl chloride (PVC-U) pipes – Dimensions
ISO 1167-1+2	Thermoplastics pipes, fittings and assemblies for the conveyance of fluids – determination of the resistance to internal pressure – test method
ISO 3126	Plastics pipes— measurement of dimensions
ISO 3127	Thermoplastics pipes – determination of resistance to external shocks – round-the-clock method
NEN-EN 744	Plastics piping and ducting systems – thermoplastics pipes – test method for resistance to external shocks by the round-the-clock method
NEN-EN 921	Plastics piping systems – thermoplastics pipes – determination of resistance to internal pressure at constant temperature
NEN-EN 12200-1	Plastics rainwater piping systems for above ground external use – PVC-U – part 1: specifications for pipes, fittings and the system
NEN-EN 1401-1	Plastics piping systems for non-pressure underground drainage and sewerage – PVC-U – part 1: specifications for pipes, fittings and the system
NEN-EN 1452-2	Plastics piping systems for water supply – PVC-U – part 2: pipes
NEN-EN-ISO 9001	Quality management systems — Requirements

-