

Трубы канализационные для монтажа под землей KG PIPE SDR51 SN2, KG PIPE SN4, PVC KG PIPE SN8

Технические характеристики

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PVC KG

Technical Datasheet



Applications

Peštan PVC pipes for street sewerage systems together with the appropriate fittings are intended for removal of all kinds of waste water in systems of low building construction.

Product description

Peštan PVC pipes for street sewage systems are made as a three-layer (by EN 13476 standard) or compact (by EN 1401 standard) pipe.

Product portfolio of Peštan PVC pipes and fittings for street sewerage systems includes pipes and fittings manufactured from high quality polyvinyl chloride PVC-U in diameters from Ø110 to Ø630. Also these pipes are being made in lengths of 250mm, 500mm, 1000mm, 2000mm, 3000mm, 4000mm i 6000 mm.

Peštan also offers the complete range of fittings, injected and welded, made in all diameters and stiffness. Peštan PVC fitting or outer connecting elements are thanks to its geometry are at least two times more rigid than the pipes even though they have the same wall thickness.

Because of that according to EN 1401 fitting class SN4 can be used with pipes SN8, because its geometry gives them SN8 rigidity.

PVC pipe is a flame retardant material with good chemical resistance, with the addition of the stabilizers. They are produced in gray or orange color, without softeners and fillers. Manufacturing technology of the pipes and marking are fully responsive European norms and standards. Coupling joints and sealing rings are made of EPDM rubber (EN 681).

Mechanical and physical characteristics

Material	PVC
Pipe structure	Monolayer tube
Density	1,42-1,48 g/cm ³
Linear elongation coefficient	5x10 ⁻⁵ mm/mm°C
Chemical resistance	pH 2-pH 12
Specific mass of material	0.9-1 g/cm ³
Thermal conductivity	0.54 kJ/mh/°C
Tensile strength	50-60 MPa
Linear coefficient of thermal expansion	0.08 mm/m/°C.
Modulus of elasticity	2,7-3,3 GPa
Connection method	Muff and gasket - leak-proof up to 0.5 bar pressure
Flammability Classification	B2 - normal flammability

Chemical resistance

Resistant to fresh and salt water, to vegetable and animal oils, alcohol, chlorine compounds, alkaloid acids, bases and detergents. Do not contain heavy metals (eg Pb, Cd, Sn ...). They can not be used to transport water and fluids containing a high percentage of benzene, gasoline, petroleum or acetone.

*Plastic pipes and fittings - Combined chemical-resistance classification table ISO/TR 10358.

Product Attributes

Good mechanical properties, does not conduct electricity. Light weight and easy to manipulate, Low coefficient of hydraulic resistance.

Good thermal insulation, easy and low cost assembly. It can withstand working pressures of 6, 10 and 16 bars. Withstands short thermal loads up to 60 °C, withstands continuous thermal loads up to 40 °C.

Easy camera inspection, does not burn, resistance to aging

Product Availability

Dimensions DN:

- for SN2 from 160 to 630 mm, burial depth min 1.2 m to 4 m max, length from 1 to 6 m;
- for SN4 from 110 to 630 mm, burial depth min 1.2 m to 6 m max, length from 1 to 6 m;
- for SN8 from 110 to 630 mm, burial depth min 1.2 m to 6 m max, length from 1 to 6 m;

PVC KG pipe SDR51 SN2		
D	S	T
160	3.2	86
200	3.9	106
250	4.9	128
315	6.2	155
400	7.9	183
500	9.8	210
630	12.3	188

PVC KG pipe SDR41 SN4		
D	S	T
110	3.2	61
125	3.2	72
160	4.0	86
200	4.9	106
250	6.2	128
315	7.7	155
400	9.8	183
500	12.3	210
630	15.4	188

PVC KG pipe SDR34 SN8		
D	S	T
110	3.2	
125	3.7	
160	4.7	86
200	5.9	106
250	7.3	128
315	9.2	155
400	11.7	183
500	14.6	210
630	18.4	188

1 STANDARDS

STANDARDS APPLYING ON PEŠTAN PVC PIPES AND FITTINGS

EN 1401-1:2009- Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: Specifications for pipes, fittings and the system.

EN 13476-1:2007 Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 1: General requirements and performance characteristics.

EN 13476-2:2007 Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A.

ISO 3126:2005 Plastics piping systems - Plastics components - Determination of dimensions

EN 744:1995 Plastics piping and ducting systems - Thermoplastics pipes - Test method for resistance to external blows by the round-the-clock method

EN 1411:1996 Plastics piping and ducting systems - Thermoplastics pipes - Determination of resistance to external blows by the staircase method

EN 12061:1999 Plastics piping systems - Thermoplastics fittings - Test method for impact resistance

EN 12256:1998 Plastics piping systems - Thermoplastics fittings - Test method for mechanical strength or flexibility of fabricated fittings

EN 727:1994 Plastics piping and ducting systems - Thermoplastics pipes and fittings - Determination of Vicat softening temperature (VST)

EN ISO 2505:2005 Thermoplastics pipes - Longitudinal reversion - Test method and parameters

EN 580:2003 Plastics piping systems - Unplasticized poly(vinyl chloride) (PVC-U) pipes - Test method for the resistance to dichloromethane at a specified temperature (DCMT)

ISO 580:2005 Plastics piping and ducting systems - Injection-moulded thermoplastics fittings - Methods for visually assessing the effects of heating

EN 1053:1995 Plastics piping systems - Thermoplastics piping systems for non-pressure applications - Test method for watertightness

EN 681-1:1996/A3:2005 Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications - Part 1: Vulcanized rubber

EN ISO 9969:2007 Thermoplastics pipes - Determination of ring stiffness (ISO 9969:2007)

EN ISO 13968:2008 Plastics piping and ducting systems - Thermoplastics pipes - Determination of ring flexibility (ISO 13968:2008)

EN ISO 1183-1:2012 Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2012)

EN ISO 1167-1:2006 Thermoplastics pipes, fittings and assemblies for the conveyance of fluids - Determination of the resistance to internal pressure - Part 1: General method (ISO 1167-1:2006)

EN 1610:2015 Construction and testing of drains and sewers



2 INFORMATION

BASIC INFORMATION ABOUT PEŠTAN PVC PIPES AND FITTINGS

The Pestan PVC pipes and fittings program are made of PVC material (polyvinyl chloride) according to the latest extrusion and injection molding technology of pipes and fittings. Pestan PVC pipes for street sewer systems are made as three-layer (EN 13476) and compact (EN 1401) pipes. State-of-the-art pipe extrusion technology has elevated the underground drainage system outside buildings to a higher level. The possibility of recycling without loss of physical and mechanical properties make PVC material environmentally friendly.

Pipes and fittings within the PVC Pestan product range are intended for street sewer systems. The PVC pipe and fitting system is universal and can be used to remove all types of wastewater and stormwater in civil engineering systems.

Installation and manipulation of piping elements is very simple and is described in the following sections of this technical manual. Pipe fittings are connected via fittings, while the watertightness of the joint is ensured by rubber rings made of EPDM rubber. The inner layer of PVC sewage pipes has very low roughness, resulting in good hydraulic performance, high abrasion resistance as well as sediment retention and bacterial culture capture for the inner wall of the pipe.

PVC pipes are resistant to corrosion and have an estimated life of 50 years if used properly.

Pipes and fittings have excellent thermal stability and are resistant to:

- Short thermal loads up to 60 °C
- Continuous thermal load up to 40 °C

In terms of chemical resistance PVC pipes are resistant to: salt water, alcohol, acids, bases, sulfates, aggressive gases and all kinds of detergents. They are suitable for drainage of chemically aggressive waste, pH values from 2 (for very acidic wastewater) to 12 (for very basic wastewater).

The PVC program is sensitive to wastewater containing a high percentage of gasoline (petroleum), benzene or acetone. For detailed chemical resistance of the pipeline, see the chemical resistance table that is an integral part of this technical catalog.

Pipe and fitting joints are 100% leak-proof to a pressure of 0.5 bar (5m water column).

The pipes are intended for external use for a limited period of time due to their long-term UV

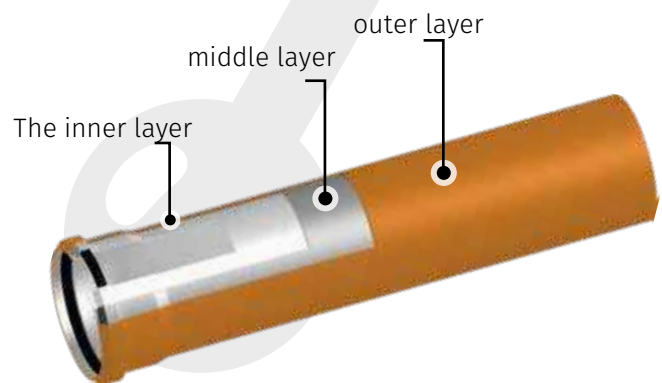
stability. Also the pipes are intended for installation underground. Does not install at temperatures below 5 °C.

The PVC pipe program belongs to the flammability class B2 of DIN 4102, or to the group of normally flammable materials.

Pestan PVC pipes can be compact or three-layer, each contributing to the desired product characteristics. Within Peštan PVC production program are:

- Three-way PVC pipes with diameters from DN 110 to DN 630
- Compact PVC pipes with diameters from DN 110 to DN 630
- Injected fittings with diameters from DN 110 to DN 400
- Welded fittings of larger diameter and not standard shape

When it comes to three-layered tubes, the center layer differs from the inside and the outside in structure and chemical composition.



Inner layer: Made of polyvinyl chloride, the smooth orange inner surface prevents the buildup of sediment and reduces abrasion on the tubes.

Middle layer: Made of expanded polyvinyl chloride and reinforced with mineral fillers, it gives the pipes strength and flexibility.

Outer layer: Made of polyvinyl chloride, orange, gives the tubes better impact resistance and greater safety when handling and installing the product.

Three-layer pipes are manufactured to EN 13476 while compact pipes are manufactured to EN 1401.



Material	PVC (polyvinyl chloride)	PVC (polyvinyl chloride)
Tube structure	Three-layer tube (outer smooth layer, inner smooth layer and foam layer of polyvinyl chloride)	One-layer PVC pipe
Density	Smooth layer = 1.42-1.48 g / cm ³ ; Foam layer = 0.8-1 g / cm ³	1,42-1,48 g/cm ³
Temperature resistance	short-term up to 60 °C, long-term up to 40 °C	short-term up to 60 °C, long-term up to 40 °C
Linear elongation coefficient	5x10 ⁻⁵ mm/mm °C	5x10 ⁻⁵ mm/mm °C
Chemical resistance	pH 2-pH 12	pH 2-pH 12
Modulus of elasticity	2,7-3,3 GPa	2,7-3,3 GPa
Connection mode	Socket and rubber ring - leak-proof up to 0.5bar pressure	Socket and rubber ring - leak-proof up to 0.5bar pressure
Field of application	UD - buried inside the structure of the building and outside the structure of the building	UD - buried inside the structure of the building and outside the structure of the building
Fire classification	B2 normal flammability	B2 normal flammability

Table 1: Basic properties of PVC materials

The main characteristics of PVC pipes are:

- Made of very light material with excellent mechanical properties,
- Simple and easy way of transport and handling,
- Fast and inexpensive mounting, by connecting couplings to pipe ends
- Resistant to corrosion in alkaline, acidic or aggressive environments,
- They are a good electrical insulator,
- Resistant to mechanical stress,
- Life span of 50 years,
- Without pipeline maintenance,
- EPDM rubber sealing rings according to (EN 681)

2.1 Marking of pipes



PESTAN DN/OD 315 SDR 34 SN8 UD PVC-U EN 1401-1:2009 www.pestan.net SRB 06:41 2019/01/31

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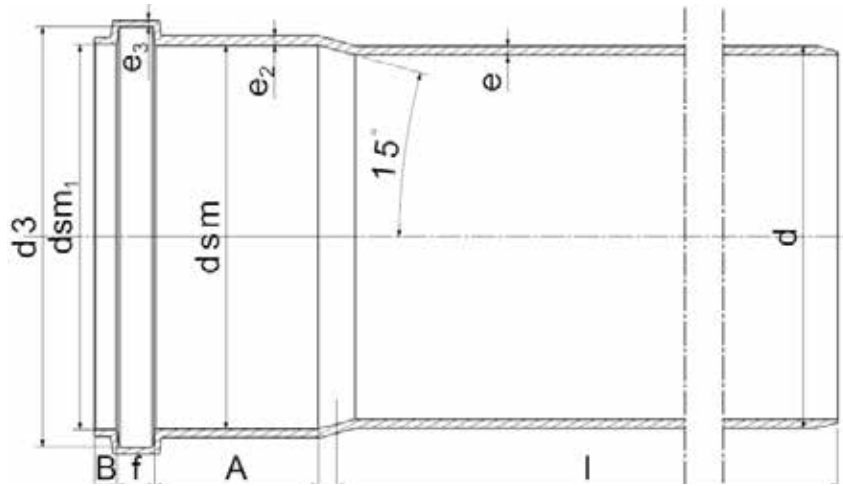
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|---------------------|--------------------------------|
| 1. Barcode | 5. Material |
| 2. Pestan logo | 6. Production standard |
| 3. Diameter and SDR | 7. Peštan logo |
| 4. Ring strength | 8. Time and date of production |



EN 1451 (SDR 41) - SN4									
(mm)	DN 110	DN 125	DN 160	DN 200	DN 250	DN 315	DN 400	DN 500	DN 630
Dem (mm)	110	125	160	200	250	315	400	500	630
e (mm) min	3,2	3.2	4.0	4.9	6.2	7.7	9.8	12.3	15.4
d3 (mm) min	120.3	137.1	173.8	215.6	272.9	338.9	427.1	533.2	427.1
B (mm) min	6	7	9	12	18	20	24	28	24
A (mm) min	32	35	42	50	55	62	70	80	70
L (mm)	250, 500, 1000, 2000, 3000, 4000 i 6000								

EN 1451 (SDR 34) - SN8									
(mm)	DN 110	DN 125	DN 160	DN 200	DN 250	DN 315	DN 400	DN 500	DN 630
Dem (mm)	110	125	160	200	250	315	400	500	630
e (mm) min	3,2	3.7	4.7	5.9	7.3	9.2	11.7	14.6	18.4
d3 (mm) min	120.3	137.1	173.8	215.6	272.9	338.9	427.1	533.2	427.1
B (mm) min	6	7	9	12	18	20	24	28	24
A (mm) min	32	35	42	50	55	62	70	80	70
L (mm)	250, 500, 1000, 2000, 3000, 4000 i 6000								

Table 2: Strength classes tube in relation to the SDR

2.2 Marking of fittings:



Each fitting has a barcode label.

See the detailed PVC product list for more details.

1. Logo
2. Nominal diameter and degree of obliquity
3. Fitting class
4. Material designation
5. Date

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