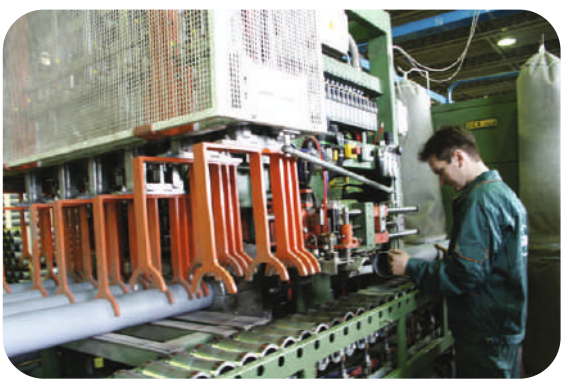
SINIKON

MODERN WASTEWATER SYSTEMS

www.sinikon.com

SINIKON



The SINIKON Company is a Russian manufacturer of high-quality European pipe products

The SINIKON company produces polypropylene pipes and fittings for internal sewage.

The SINIKON Company was founded in 1996 and is the leading manufacturer and seller of sewage pipes in Russia.

The co-founder of the company is the Italian VALSIR plant, which is part of FONDITAL International Holding (one of the world's leading manufacturers of heating, water supply and sewage systems).

SINIKON's work is based on the principle of constant improvement: we always upgrade production, introduce new technologies, and expand our range of products.

SINIKON is certified according to the European Union Standard DIN EN 1451-1 issued by the SKZ Institute in 2016. In 2015 SINIKON started the implementation of quality management system ISO 9001:2008 that was certified for compliance and confirmed in 2016 by international company TŰV Rheinland.

The company pays particular attention to educational programs with organizing lectures, seminars, and master classes for engineering systems specialists.

Thanks to new technologies and an expanding product range, the SINIKON Company offers a wide scale of polypropylene pipes and fittings. It ensures perfect compatibility of all components, reliability, comfort and long-term faultless operations.

Presently our factory has different lines and machines for producing pipes and fittings for internal sewage systems:

• **SINIKON Standard** - polypropylene push-fit pipes and fittings for the drainage of domestic wastewater (low and high temperatures – up to 95°C).

• Low-noise **SINIKON Comfort** - Polypropylene push-fit pipes and fittings are produced with a mix of polypropylene and mineral fillers that guarantees high mechanical resistance, excellent acoustic performance and high resistance to agents. Such systems are in high demand in hotels and hospitals.

ISO 9001:2008

TÜV Rheinland

EUROPEAN CONFORMITY CERTIFICATE 1451-1

certified by SKZ

SINIKON Standard Polypropylene domestic sewage system

General information

Polypropylene sewer systems have a range of undeniable advantages when compared to systems made of conventional materials, such as cast iron, as well as systems made of other polymer materials (polyvinyl chloride (PVC), polyethylene (HDP).

Advantages of polypropylene systems are the following:

- increased resistance to most chemical substances;
- stablility;
- smooth inner surface prevents scale formation, graning unobstructed flow;
- lightweight, which significantly reduces expenses for storage and transportation;
- flare joint with pre-installed O-ring significantly reduces mounting time, and grants higher reliability with hermetic property of the connection;
- upper limit of acceptable operating temperatures (80˚C) signicantly outperforms acceptable temperature limits for PVC and HDP pipes (60˚C);
- the widest range of fabricated shapes allows implementation of any design solution.

Purpose and application area

Polypropylene sewage pipes and fittings are designed to be used in household sewage system of buildings with maximum temperature for base flows of up to 80˚C and short term (within 1 minute) flows with a temperature of up to 95˚C. They may be used for removal of chemically aggressive waste with pH values ranging between 2 (acid environment) and 12 (alkaline environment). When pipes and fabricated shapes are used to transport untreated industrial waste, the chemical stability of the pipe material shall be tested.

Pipes and fittings are manufactured in accordance with European Regulation EN1451. All products have valid GOST R compliance certificates for mass production and permits to use conformity signage for voluntary product certification.

Application area: B - inside the building.

Service life of pipelines is not less than 50 years subject to compliance with current regulations and manufacturer's recommendations.

Material

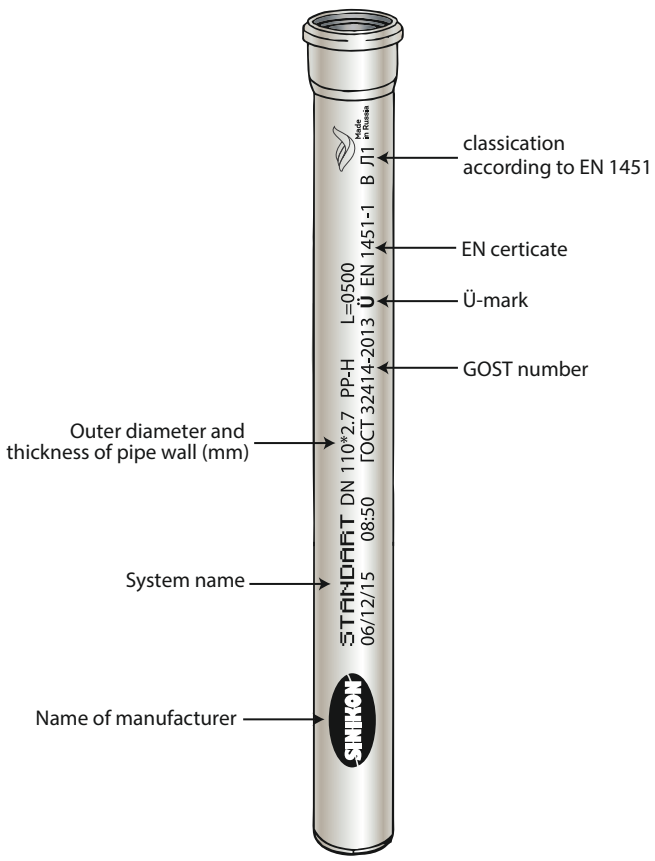
SINIKON polypropylene sewage pipes are manufactured by extrusion, and SINIKON fittings are manufactured by pressure casting from polypropylene homopolymer (type 1) PP-H. The basic properties of the material are specified in the table.

Name	Measuring Unit		Method
Density	gr/cm	0,9-0,95	UNI EN ISO 1183-2
Linear expansion coefficient	mm/m °C	0,15	UNI 8318
Melting point	° C	>160	EN 728
Thermal conductivity	Wt/m °C	0,26	DIN 52 162

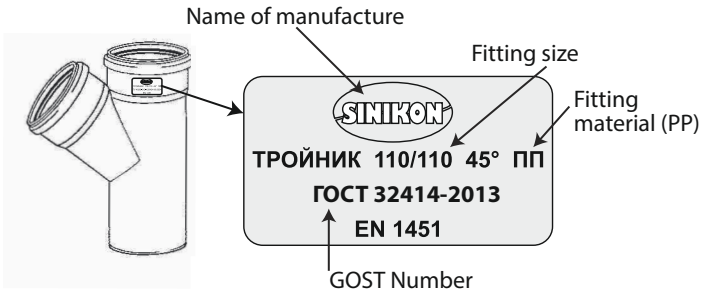
Colour

Grey metallic

Pipe labelling



Fitting labelling



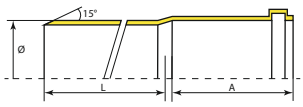
Sealing

Double-lipped sealing from soft styrene butadiene rubber (SBR 40±5 IRDH) with plastic (polypropylene PP) spacer. It is designed for plastic pipes and fittings made of PP and PVC based of EN 1451-1 and EN 14-1-1 Regulations corresponds to the requirements of EN 681-1 WC/WCL and DIN 4060. Manufacturer: M.O.L. Gummiverarbeitung GmbH & Co.

Coupling technique

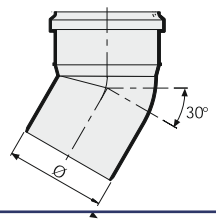
Flare joint. Push-fit connection does not require any special tools or machines.

Pipes with sockets



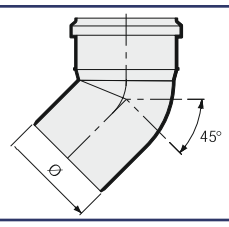
Ø	COD	e (mm)	L (mm)	Weight (kg)	❐	₹
32	500003	1,8+0,4	250	0,055	50	80.00
32	500005	1,8+0,4	500	0,100	60	120.00
32	500009	1,8+0,4	1000	0,200	60	200.00
32	500013	1,8+0,4	2000	0,345	60	360.00
32	500015	1,8+0,4	3000	0,493	60	520.00
40	500023	1,8+0,4	250	0,075	30	100.00
40	500025	1,8+0,4	500	0,125	40	150.00
40	500029	1,8+0,4	1000	0,235	50	260.00
40	500033	1,8+0,4	2000	0,445	50	460.00
40	500035	1,8+0,4	3000	0,614	50	640.00
50	500041	1,8+0,4	150	0,060	75	110.00
50	500043	1,8+0,4	250	0,090	50	150.00
50	500045	1,8+0,4	500	0,160	30	200.00
50	500047	1,8+0,4	750	0,230	50	270.00
50	500049	1,8+0,4	1000	0,300	50	340.00
50	500051	1,8+0,4	1500	0,440	50	470.00
50	500053	1,8+0,4	2000	0,560	50	600.00
50	500055	1,8+0,4	3000	0,850	50	840.00
75	500061	1,9+0,4	150	0,104	36	140.00
75	500063	1,9+0,4	250	0,105	21	180.00
75	500065	1,9+0,4	500	0,265	12	270.00
75	500069	1,9+0,4	1000	0,495	40	460.00
75	500071	1,9+0,4	1500	0,125	40	680.00
75	500073	1,9+0,4	2000	0,955	40	820.00
75	500075	1,9+0,4	3000	1,415	40	1150.00
110	500081	2,7+0,5	150	0,210	90	260.00
110	500083	2,7+0,5	250	0,325	30	340.00
110	500085	2,7+0,5	500	0,535	30	510.00
110	500087	2,7+0,5	750	0,780	30	700.00
110	500089	2,7+0,5	1000	1,105	30	880.00
110	500091	2,7+0,5	1500	1,515	30	1240.00
110	500093	2,7+0,5	2000	1,900	30	1700.00
110	500095	2,7+0,5	3000	2,855	15	2160.00

Bend 30°



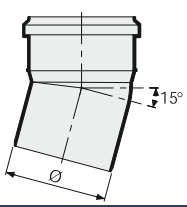
Ø	COD	Weight (kg)	❐	₹
32	504003R	0,020	50	180.00
40	504015R	0,035	50	170.00
50	504027R	0,040	40	100.00
75	504039R	0,083	50	180.00
110	504051R	0,175	20	250.00

Bend 45°



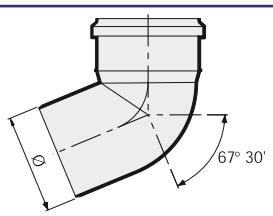
Ø	COD	Weight (kg)	❐	₹
32	504005R	0,020	50	70.00
40	504017R	0,035	50	80.00
50	504029R	0,045	40	100.00
75	504041R	0,087	30	180.00
110	504053R	0,185	20	230.00

Bend 15°



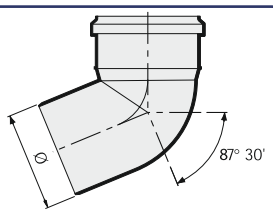
Ø	COD	Weight (kg)	❐	₹
32	504001R	0,020	50	180.00
40	504013R	0,030	50	80.00
50	504025R	0,040	20	100.00
75	504037R	0,074	50	180.00
110	504049R	0,165	20	250.00

Bend 67°30’



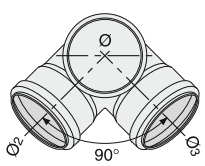
Ø	COD	Weight (kg)	❐	₹
32	504007R	0,025	50	180.00
40	504019R	0,035	50	80.00
50	504031R	0,045	20	100.00
75	504043R	0,090	30	180.00
110	504055R	0,215	20	250.00

Bend 87°30’



Ø	COD	Weight (kg)	❐	₹
32	504011R	0,025	50	70.00
40	504023R	0,040	50	80.00
50	504035R	0,050	40	100.00
75	504047R	0,097	20	180.00
110	504059R	0,230	20	230.00

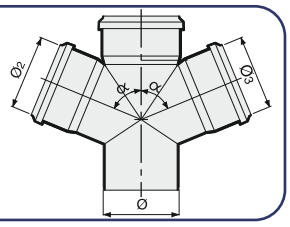
Corner branch



Ø/Ø2/Ø3	COD	α	Weight (kg)	❐	₹
110/50/110	512033R*	87°30	0,400	10	940.00
110/110/50	512035R**	87°30	0,400	10	940.00

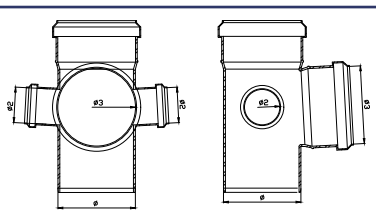
* - left, ** - right,

Double branch



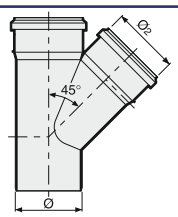
Ø/Ø2/Ø3	COD	α	❐	₹
50/50/50	506000E	45°	40	400.00
50/50/50	506003E	87°30	50	400.00
110/50/50	506008R	45°	20	660.00
110/50/50	506011R	87°30	20	600.00
110/110/50	506012R	87°30	15	740.00
110/110/110	506016E	45°	06	940.00
110/110/110	506015R	87°30	12	940.00

Double-sided corner branch



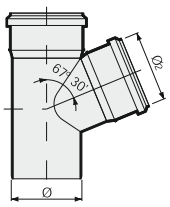
Ø/Ø2/Ø3	COD	α	L (mm)	❐	₹
110/110/50	512037R	87°30	252	10	940.00
110/110/110	512041R	87°30	252	12	2000.00

Equal branch 45°



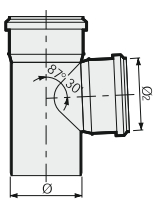
Ø/Ø2	COD	Weight (kg)	❐	₹
32/32	508001R	0,040	40	200.00
40/40	508007R	0,065	30	230.00
50/50	508013R	0,080	20	270.00
75/75	508019R	0,182	25	360.00
110/110	508025R	0,385	15	400.00

Equal branch 67°30’



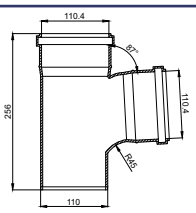
Ø/Ø2	COD	Weight (kg)	❐	₹
32/32	508003R	0,040	40	220.00
40/40	508009R	0,065	20	250.00
50/50	508015R	0,075	20	300.00
75/75	508021R	0,156	20	360.00
110/110	508027R	0,330	20	940.00

Equal branch 87°30’



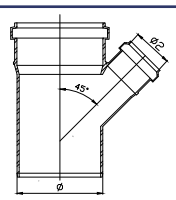
Ø/Ø2	COD	Weight (kg)	❐	₹
32/32	508005R	0,040	40	200.00
40/40	508011R	0,065	30	230.00
50/50	508017R	0,070	20	270.00
75/75	508023R	0,141	30	360.00
110/110	508029R	0,320	20	400.00

Swept Tee



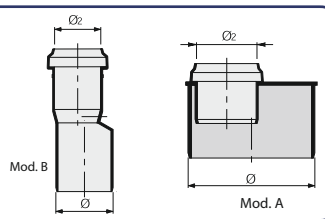
Ø/Ø2	COD	α	Weight (kg)	❐	₹
110/110	512051R	88°30	0,387	15	2270.00

Reducing branch 45°



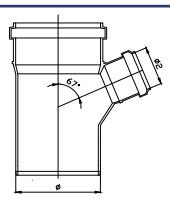
Ø/Ø2	COD	α	❐	₹
75/50	510019R	45°	25	330.00
110/50	510031R	45°	20	340.00
110/75	510037R	45°	20	600.00

Eccentric reducer



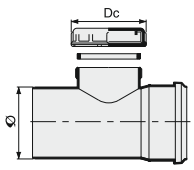
Ø/Ø2	COD.	Mod.	Weight (kg)	❐	₹
40/32	514001R	B	0,020	30	140.00
75/50	514007R	A	0,060	20	200.00
110/50	514009R	A	0,100	25	200.00
110/75	514011R	A	0,138	20	270.00

Reducing branch 67°



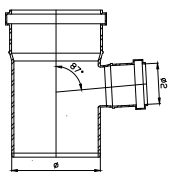
Ø/Ø2	COD	α	❐	₹
75/50	510021R	67°	25	330.00
110/75	510039R	67°	20	600.00

Access pipe with cap



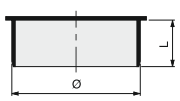
Ø	COD.	Dc (mm)	Weight (kg)	❐	₹
50	516003R	70	0,110	20	270.00
75	516005R	70	0,132	25	450.00
110	516007R	115	0,370	20	540.00

Reducing branch 87°



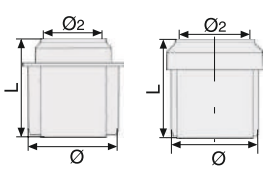
Ø/Ø2	COD	α	❐	₹
75/50	510023R	87°	20	330.00
110/50	510035R	87°	20	340.00
110/75	510041R	87°	20	600.00

Plugs



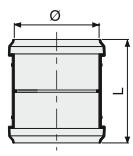
Ø	COD.	L (mm)	Weight (kg)	❐	₹
40	524001R	28	0,012	20	40.00
50	524003R	28	0,014	20	70.00
75	524005R	36	0,028	30	110.00
110	524007R	32	0,066	40	110.00

Concentric reducer



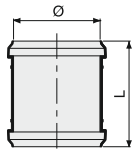
Ø/Ø2	COD	L (mm)	Weight (kg)	❐	₹
50/40	513001R	57	0,025	50	160.00
50/32	513002R	55	0,025	50	160.00

Double socket coupling



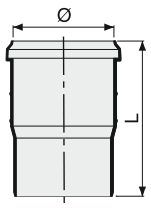
Ø	COD.	L (mm)	Weight (kg)	❐	₹
40	528001R	108	0,040	20	140.00
50	528003R	108	0,050	40	180.00
110	528007R	136	0,170	20	270.00

Sliding sleeve



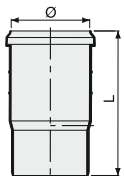
Ø	COD.	L (mm)	Weight (kg)	❐	₹
32	526000R	85	0,250	40	140.00
40	526001R	108	0,040	20	140.00
50	526003R	108	0,045	40	180.00
75	526005R	120	0,090	40	260.00
110	526007R	136	0,170	20	270.00

Double socket



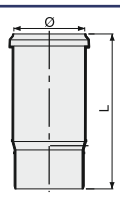
Ø	COD.	L (mm)	Weight (kg)	❐	₹
110	530007R	170	0,165	20	400.00

Triple socket



Ø	COD.	L (mm)	Weight (kg)	❐	₹
50	531003R	165	0,050	20	270.00

Quadruple socket

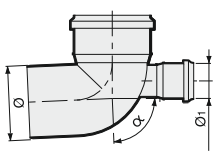


Ø	COD.	L (mm)	Weight (kg)	❐	₹
110	531011R	245	0,250	15	400.00

Adaptor for cast iron pipes with OR and ring seal

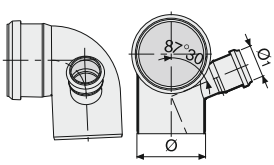
Ø	COD.	Ø1 (mm)	L (mm)	Weight (kg)	❐	₹
50	569001R	72	151	0,080	60	400.00
110	569005R	124	160	0,195	16	670.00

Bend with front attachment



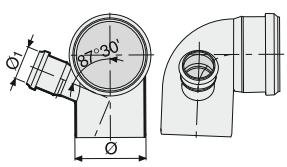
Ø/Ø1	COD.	α	Weight (kg)	❐	₹
110/50	551001E	87°30	0,255	16	740.00

Bend with left socket with ring seal



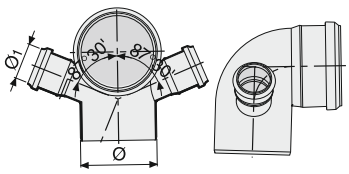
Ø/Ø1	COD.	α	Weight (kg)	❐	₹
110/50	552003E	87°30	0,255	16	740.00

Bend with right socket with ring seal



Ø/Ø1	COD.	α	Weight (kg)	❐	₹
110/50	554003E	87°30	0,255	16	740.00

Bend with double socket with ring seal

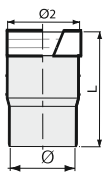


Ø/Ø1	COD.	α	Weight (kg)	❐	₹
110/50	556003E	87°30	0,285	14	870.00

Vent cowl

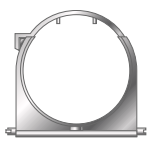
Ø	COD.	❐	₹
50	394001R	50	270.00
75	394003R	50	500.00
110	394005R	20	540.00

WC coupling with ring seal



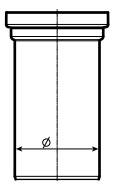
Ø	COD.	Ø2	L (mm)	Weight (kg)	❐	₹
110	536000R	102±5	152	0,192	10	470.00

Clamp



Ø	COD.	❐	₹
32	OP.032	50	50.00
40	KPP.040	200	40.00
50	KPP.050	200	60.00
75	OP.075	50	90.00
110	KPP.110	200	110.00

WC coupling with sealing ring

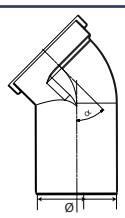


Ø	COD.	Ring colour	Weight (kg)	❐	₹
110	PU.110000.W.R	White	0,259	15	500.00
110	PU.110000.B.R	Black	0,259	15	500.00

Silicone Lubricant 250 gr.

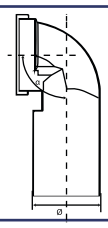
COD.	❐	₹
900003R	32	500.00

WC Bend with sealing ring 45°



Ø	COD.	α	Ring colour	Weight (kg)	❐	₹
110	PU.110045.W.R	45°	white	0,259	15	500.00
110	PU.110045.B.R	45°	black	0,259	15	500.00

WC Bend with sealing ring 90°



Ø	COD.	α	Ring colour	Weight (kg)	❐	₹
110	PU.110090.W.R	90°	white	0,332	12	500.00
110	PU.110090.B.R	90°	black	0,332	12	550.00

Metallic clamps with rubber seal

Size	COD.	❐	₹
3/8'' (015-018 mm)	KM038.RK	200	60.00
1/2'' (020-024 mm)	KM012.RK	180	70.00
3/4'' (025-029 mm)	KM034.RK	144	80.00
1'' (032-036 mm)	KM100.RK	126	80.00
1 1/4'' (040-045 mm)	KM114.RK	208	100.00
1 1/2'' (047-052 mm)	KM112.RK	192	100.00
2'' (058-062 mm)	KM200.RK	133	120.00
2 1/2'' (075-080 mm)	KM212.RK	108	150.00
3'' (087-093 mm)	KM300.RK	96	180.00
4'' (106-111 mm)	KM400.RK	72	200.00

Reasons for noise generation in sewage systems and ways to reduce it

Noise is generated inside the pipeline as it begins vibrating due to downfall of drained liquid, which:

- hits the walls of vertical stand pipe;
- hits the walls of horizontal pipelines when direction of flow changes;
- intakes air on top and compresses it at the bottom.

Most noise energy is transmitted from pipe wall over the air, but besides that sewage pipe vibration is transmitted through fixtures onto the wall and, as a result, the entire structure of the building.

Thus, the sewage system noise level value depends on:

- properties of fixing straps;
- number and properties (angle and cross-section of turning) of changes of waste water direction;
- type of system (ventilated or non-ventilated), and on proper design and installation;
- materials used in the building structure.

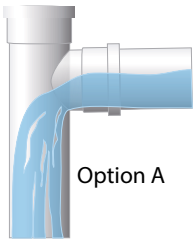
Finally, to reduce the noise level in sewage systems, it is required:

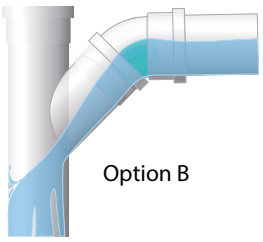
- to select a pipe having properties that ensure low noise level,
- to properly design and install the sewage system.

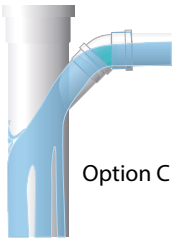
Design and installation for low noise

The following shall be taken in consideration in design and installation:

- sewage stand pipe shall be the ventilated type;
- the connection to stand pipe







Option A

Direct bend features angles 87° - 88.5° and represents the most viable solution since it facilitates air circulation, provides low flow velocity and the lowest noise level compared to other solutions.

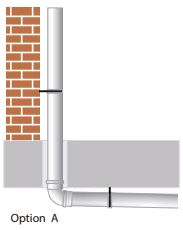
Option B

Corner bend features smaller angles (for example, 45°) and provides higher flow volume (about 30% more than in Option A), but it is not recommended since it limits air circulation and increases the noise level.

Option C

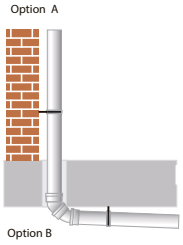
Corner bend with a reduced diameter shall be excluded if possible, since there is risk of draught and an increase to the noise level.

- connection to horizontal pipelines



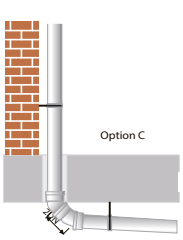
Option A

When the stand pipe connects to horizontal pipeline, it is not recommended to use the 90° (87.3°) bend. Risk of draught is too high.



Option B

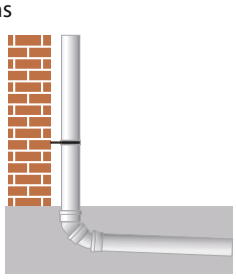
Two 15° bends placed in series may help to reduce extremely high pressure and noise level, but this option should be used only when there are issues with space.

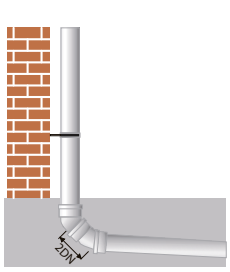


Option C

This configuration is the most suitable. A Pipe segment 2D long is installed between two 45° bends. Such a solution significantly reduces pressure and has a low noise level, at least 30% lower than in Options A and B.

- In case of horizontal embedding of the pipeline, the noise level in such configurations is reduced by 70 - 80 % as compared to foregoing solutions





- Pipes should pass through intermediate floors and interior walls (partitions) in elastic cases (made of porous polypropylene or other elastic materials), which bear expansion and pipe deformation without formation of cut-through cracks; fixtures shall be used only with a soundproof inner layer.

Insertion of low-noise pipes and fittings into a 'regular' pipe system, as a rule, does not result in a noticeable noise reduction. Thus, the system shall be originally designed and installed as a low-noise system

TRANSPORTATION AND STORAGE

During transportation the pipes should be stacked to avoid hard impacts, scratches and deformation.
During installation it's necessary to take precautions to avoid possible damage of the product, as well as exposure to impurity of the rubber seal and the inner surface of the socket. The pipes should be put horizontally on the transverse wooden beams or elements of the package if it is made of wood, plastic or other suitable material. To prevent damage or deformation the pipes shouldn't be put in a stack (within one package) higher than 1.70 m regardless of the diameter. Do not leave the pipes in the open air during long-term storage.
When the following conditions are satisfied the warranty period of pipes storage is 24 months.

INSTALLATION

The installation of the pipeline with push-fit connectors is a simple operation: it's necessary to connect the spigot of one pipe to another pipe or socket fitting (Figure 1). Double-lipped ring seal is provided with a retaining ring and guarantees a reliable and sealed connection. Therefore it's necessary to follow all recommendations that will allow to achieve high quality assembly of the whole system:

a) the pipe should be cut with a fine tooth saw or pipe cutter at a right angle (Fig. 2). It is forbidden to cut fittings (Fig. 5);

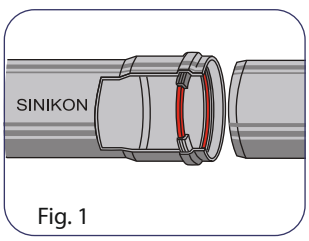


Fig. 1

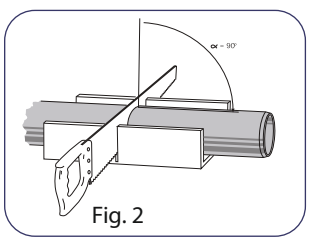


Fig. 2

b) the trimmed edge of the pipe should be chamfered at an angle of 15° by a special tool for chamfering (Fig. 3 & 4)

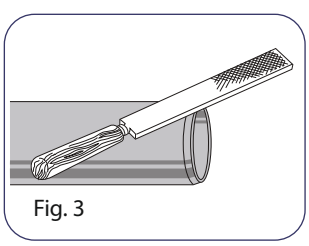


Fig. 3

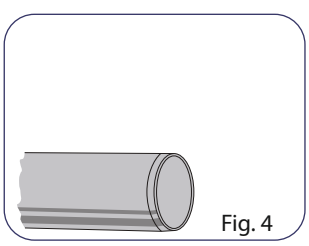


Fig. 4

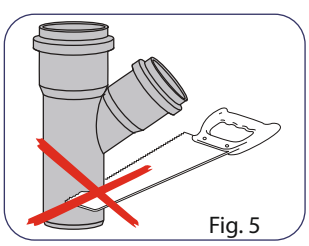


Fig. 5

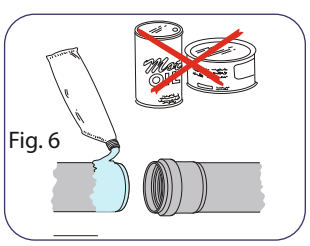


Fig. 6

The chamfer surface should be smooth to avoid damaging ring seal during installation;

c) it's necessary to ensure a clean interior surface of the socket, seal and smooth part of the inserted pipe;

d) silicone grease should be applied on the edge of the pipe, in its absence it's possible to use soapy water. Do not use mineral oils or lubrication (Fig. 6);

e) pipe has to be fully inserted into the socket, and then should be extended back to 1 cm. This creates a gap for compensation of the pipe's thermal extension (Fig. 7, 8);

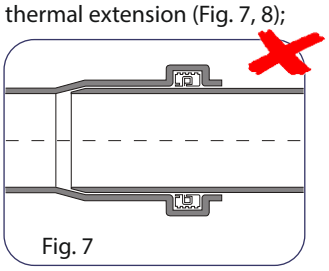


Fig. 7

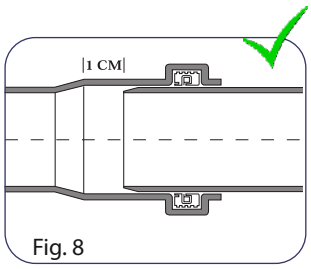


Fig. 8

f) insufficient depth of insertion of the pipe into the socket may not ensure a good seal and may cause misalignment, while the full insertion of the pipe impedes the thermal extension of the pipeline.

BASIC RULES OF INSTALLATION

• The installation of the pipeline should be started upwards. Sockets pipes and fittings on the vertical and horizontal sections of the pipeline system must be directed towards the liquid waste stream.

• The horizontal lines should be installed with a slope according to the project. Declination of sewer pipeline from the vertical axis by more than 2 mm per 1 m of pipe is not allowed.

• Movable mounting are used for sewage pipelines that permit movement of the pipe in the axial direction, and fixed mountings for pipelines that do not allow such movement.

• Do not apply the fixed mountings directly on the socket!

• For horizontal and vertical sections of pipelines with diameters of 50 and 75 mm, distance between the fixed mountings should not exceed 1.6 m (for D = 50 mm) and 2 m (for D = 75 mm) respectively.

• The distance between the movable mountings for horizontal sections of pipelines should not be more than 10D, vertical not more than 20D.

• Between fixed mountings it allowed no more than two compounds used as compensators.

• Pipes could be laid in the concrete floor without further isolation with a protection of the junction with thick paper or corrugated cardboard.

Comparison of various piping materials

Traditionally there are different materials in use for sewage pipes: Cast Iron, HDPE & polyvinyl chloride (PVC).

Each of them has different properties, advantages and weaknesses that could be decisive when choosing the most appropriate kind of pipe.

A modern material such as polypropylene has a number of undeniable advantages including lightness, reliability, ease of installation and long term service life as well as economic benet and safe environment.

Russian-Italian company SINIKON produces a wide range of high-quality polypropylene pipes and fittings.

Comparison of various piping material with PP Pipes

Criteria	Cast Iron	HDPE pipe	PVC pipe	SINIKON PP pipe
Effect of hard water	High scale formation	Scale formation is prevented due to smooth bore	Scale formation is prevented due to smooth bore	Scale formation is prevented due to smooth bore
Effect of water	Gets corroded	No effect	No effect	No effect
Health criteria	Low due to lead content and corrosion	Very good	Good	Very good
Jointing techniques	Soldered	Fusion weld	Solvent cement	Push fit with SBR rings 32-110
Corrosion resistance	Very low	No effect	No effect	No effect
Thermal strength property at 60°C	Very good	Limited	Not recommended	Very good
Availability of fittings	Very good	Low	Good	Very good
Thermal expansion	Low, good for concealed piping	Very high, not to be used for concealed piping 0.12 mm/m°C	Very special care is required for concealed piping 0.06 mm/m°C	Low*, good for concealed piping 0.11 mm/m°C
Effect of subzero temp.	Up to 0°C	Up to -40°C	Up to 0°C	Up to -10°C
UV resistance	Very good	Good	Low	Low
Ease of installation	Low	Low	Good	Very good
Flow properties for friction	Low	Very	Very good	Very good**

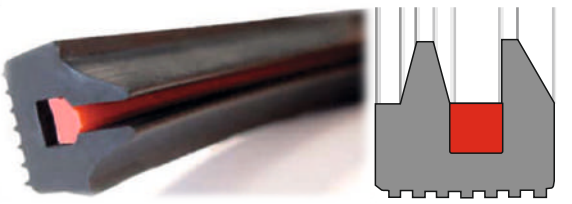
*Low due to the compensation of elongation in the flare joints
** Higher then HDE and PVC-U

Comparison between PVC & SBR SEALS

Seals in PVC don't have the properties of rubber. PVC rubber has a high residual deformation that increases during pipeline use. The ring does not take its original shape after deformation, the stress relaxation is high and the ring does not provide sufficient tightness for a long period.

The risk of leakage arises:

*In case of re-connecting of the pipeline;
*In case of horizontal laying of Internal sewer;
*after a brief period of service;
*If ambient temperature drops (as elasticity drops)



Double - Lipped Ring Seal (M.O.L. Germany)

*Long term elasticity
*The Seal does not take off during the assembly of pipes
*DIN EN 681.1 they will last at least 50 years, ensuring the tightness of the pipeline

Comparison between Double Lipped & Single Lipped Ring Seal

Double Lipped Ring Seal	Single Lipped Ring Seal
Long term elasticity	Short term elasticity
Soft rubber compound	Hard rubber compound
Styrene-butadiene rubber 40 shore	Styrene-butadiene rubber 60 shore
Expensive than Single Lipped	Cheaper than Double Lipped
Exactly matches a recess in the socket	Compensates irregularities of socket

Certificates

In 2016 the SINIKON company confirmed the quality of its products and obtained conformity certification for pipes and fittings of the "Standard" system to the European Standard 1451-1.

Certification was carried out by experts of one of the most prestigious European Institutes in charge of plastic product quality control: the SKZ Company.

Tests at the plant and in the SKZ laboratory proved that SINIKON'S polypropylene domestic sewerage systems fully comply with the European Standard DIN EN 1451-1:1999-03 in conjunction with DIN CEN / TS 1451-2: 2012-05 and DIN 4102-1: 1998-5 and DIN 4102-4: 1994-03 or DIN EN ISO 11925-2: 2011-02 in conjunction with DIN EN 13501-1: 2010-01.

Certificate

Standard ISO 9001:2008

Certificate Registr. No. 01 100 1518846

TÜV Rheinland Cert GmbH certifies:

Certificate Holder: LLC "SINIKON"
11 Promyshlennaia Str., Troitsk,
Moscow, 142191,
Russian Federation

Scope: Production, storage and supply of pipes and fittings made of polypropylene for water supply and sewerage systems.

An audit was performed. Proof has been furnished that the requirements according to ISO 9001:2008 are fulfilled.
The due date for all future audits is August 04th.

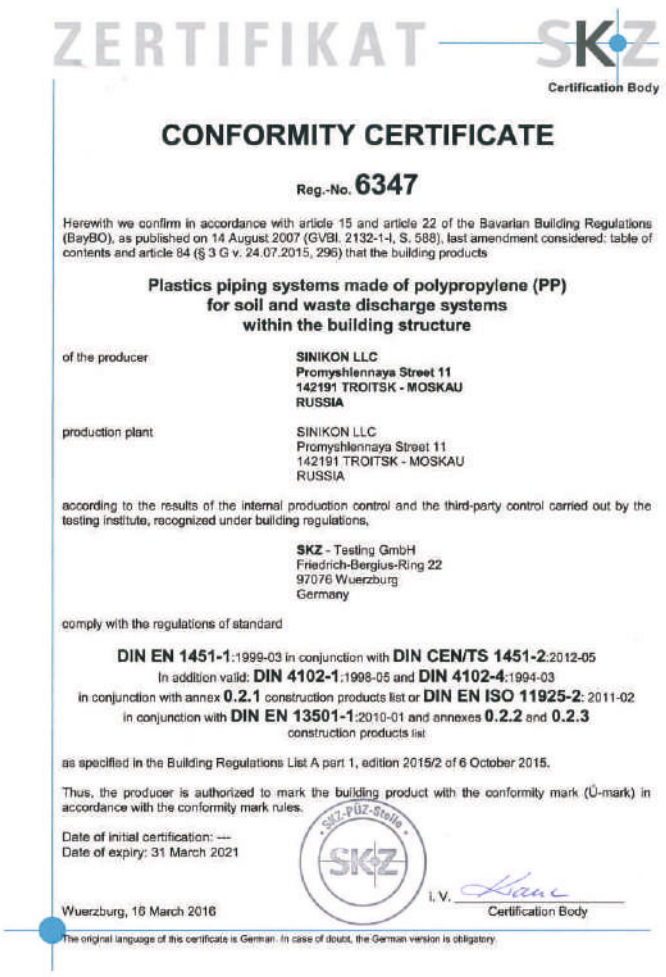
Validity: The certificate is valid from **20.09.2016** until **14.09.2018**.
First certification 2016.

20.09.2016

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

TÜVRheinland® Precisely Right.



ZERTIFIKAT SKZ Certification Body

CONFORMITY CERTIFICATE

Reg.-No. **6347**

Herewith we confirm in accordance with article 15 and article 22 of the Bavarian Building Regulations (BayBO), as published on 14 August 2007 (GVBl. 2132-1-I, S. 588), last amendment considered: table of contents and article 84 (§ 3 G v. 24.07.2015, 296) that the building products

**Plastics piping systems made of polypropylene (PP)
for soil and waste discharge systems
within the building structure**

of the producer
**SINIKON LLC
Promyshlennaya Street 11
142191 TROITSK - MOSKAU
RUSSIA**

production plant
SINIKON LLC
Promyshlennaya Street 11
142191 TROITSK - MOSKAU
RUSSIA

according to the results of the internal production control and the third-party control carried out by the testing institute, recognized under building regulations,

SKZ - Testing GmbH
Friedrich-Bergius-Ring 22
97076 Wuerzburg
Germany

comply with the regulations of standard

DIN EN 1451-1:1999-03 in conjunction with **DIN CEN/TS 1451-2**:2012-05
In addition valid: **DIN 4102-1**:1998-05 and **DIN 4102-4**:1994-03
in conjunction with annex **0.2.1** construction products list or **DIN EN ISO 11925-2**: 2011-02
in conjunction with **DIN EN 13501-1**:2010-01 and annexes **0.2.2** and **0.2.3**
construction products list

as specified in the Building Regulations List A part 1, edition 2015/2 of 6 October 2015.

Thus, the producer is authorized to mark the building product with the conformity mark (Ü-mark) in accordance with the conformity mark rules.

Date of initial certification: ---
Date of expiry: 31 March 2021

Wuerzburg, 16 March 2016

i. V. Certification Body

The original language of this certificate is German. In case of doubt, the German version is obligatory.

In 2015 SINIKON started the implementation of quality management system ISO 9001:2008 that was certified for compliance and confirmed in 2016 by international company TŰV Rheinland. The issued certificate of quality management system ISO 9001:2008 attests the capacity of SINIKON to supply high quality products that meet the needs of consumers and mandatory requirements.

ISO 9001:2008

TÜV Rheinland

EUROPEAN CONFORMITY CERTIFICATE · 1451-1

certified by SKZ

Certificates

Серия REC №000004

Russian Exporter

Voluntary certification system "Made in Russia"

Registered in the Unified Register of registered voluntary certification systems

Reg. № РОСС RU.31685.04РЭЦ0 from the 24th of May 2017

CERTIFICATE OF CONFORMITY

No RE.17.00003

Lease term from 18 September 2017 to 17 September 2019

Certification Body "Russian Export Center" JSC

The Certificate is issued to to Limited Liability Company «SINIKON» («SINIKON» LLC), city of Moscow, city of Troitsk

Taxpayer Identification Number (INN) 7710200649

With regard to the production of polypropylene pipes and fittings «SINIKON» (Code according to the Russian National Classifier of Economic Activities (OKVED) 22.21)

Certifies that, in accordance with the requirements of the Voluntary Certification System "Made in Russia" the manufacture is a bona fide exporter

On the basis of the Report No 000003 of September, 18, 2017, on the evaluation of the experience and goodwill
Additional information The Certificate applies to the production of polypropylene pipes and fittings «SINIKON»

Head of Certification Body _____ Podguzova V. A.

Серия REA №000003

Russian Exporter

Voluntary certification system "Made in Russia"

Registered in the Unified Register of the registered voluntary certification systems

Reg. № РОСС RU.31685.04РЭЦ0 from 24th of May 2017

The authority to use a Mark of Conformity

Reg. No RE.17.000003 of 18.09.2017

"Russian Export Center" JSC permits the use of the Conformity mark "Russian Exporter" of the Voluntary Certification System "Made in Russia"

The Permit is issued to

Name of the Certificate Holder
Limited Liability Company «SINIKON» («SINIKON» LLC)

Legal address
142191, city of Moscow, city of Troitsk, ul. Promyshlennaya, 11

Taxpayer Identification Number (INN)
7710200649

Place of marking The conformity mark is placed on the official website, information and/or advertising materials
Grounds: Certificate of conformity No RE.17.00003 of 18.09.2017

Valid from 18.09.2017 to 17.09.2019

Head of Certification Body _____ Podguzova V. A.

SINIKON

RUSSIAN PRODUCTION OF
PIPES AND FITTINGS
for waste systems

PRODUCT WARRANTY

1. The warranty period for all SINIKON's products (for manufacturing defects) is 10 years. The warranty period starts from the production date marked on the product. If the production date cannot be determined, the warranty period is 7 years and is calculated from the purchasing date.
2. All SINIKON's products must be installed in accordance with national technical rules, regulations and manufacturer's recommendations. In the absence of official regulations it is necessary to follow the SINIKON's recommendations for installation.
3. All service conditions (e.g. pressure, temperature, fluid properties, etc.) should correspond with all properties provided by the national technical standards or by the SINIKON's technical documentation.
4. Compatibility of SINIKON's products with all other similar items from other manufacturers without required technical properties is not guaranteed. Leak resistance at joints with other manufacturers products is not guaranteed.
5. The warranty does not cover the defects resulting from violation of transportation, storage or installation rules. It's prohibited to use products with visible defects during installation or system testing.
6. During the warranty period all material damage due to manufacturing defect of pipes and / or fittings will be compensated. The defect must be officially confirmed by technical expertise.
7. Non compliance with any of the conditions mentionned in the paragraphs 2-5 absolves the SINIKON from any liability in respect of material damage to property.

«SINIKON» LLC
Director

Vadim Konakov

Venues equipped by SINIKON RUSSIA

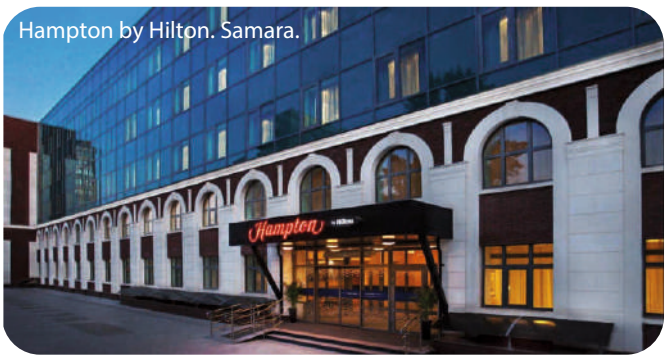
Khnevichi Aeroport. Vladivostok

IKEA. Ekaterinburg

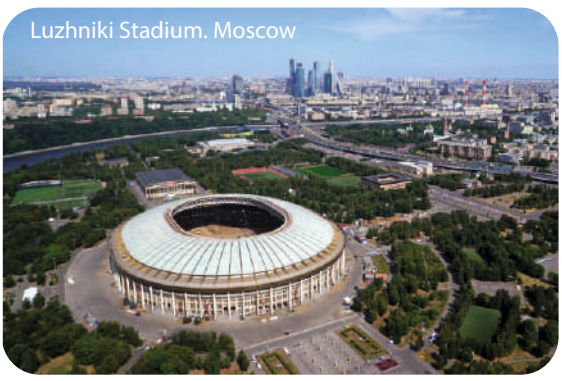

The State Primorsky Opera and Ballet Theater. Vladivostok.


Otkritie Arena. Moscow


Novosibirsk Marriott Hotel. Novosibirsk



Hampton by Hilton. Samara.


Luzhniki Stadium. Moscow


Eisberg Ice Palace. Sochi

Upcoming Projects by SINIKON in INDIA