

Installation Instructions Skolan Safe®

We refer to the following standards and regulations as basis for the installation and use of our soundproof pipe system Skolan Safe®:

DIN EN 12056 Gravity drainage systems inside buildings

DIN 1986-100 Drainage systems on private ground - Part 100

DIN 4109 and VDI 4100 Sound insulation in buildings

1. Field of application

The following instruction describes how the Skolan Safe pipes and fittings - for discharging media in foul water, rainwater and ventilation pipes inside buildings - are to be handled, stored and mounted.

Orders for laying the detailed waste water piping systems are only to be placed with companies with a pool of trained operating personnel. The instruction is only for installing genuine pipes and fittings involving the use of the genuine sealing elements and lubricants.

2. Transport, handling and storage

Skolan Safe pipes must not be bent during transport; the full length of the pipes should be supported. The pipes are to be laid down in such a manner that no damage occurs through deformation. Sockets must be unencumbered all around. At the construction site, stacking must not be carried out in excess of 1.50 m even if wood is laid down in between layers. Sealing elements may not be stored outside for longer than 2 years.

3. Cutting the pipes to length

Cutting pipes to length is done at right angles by using a pipe cutter or a fine-toothed saw. The cut edges must be deburred. The pipe end is then beveled with a beveling tool or by using a coarse file at an angle of approx. 15°.



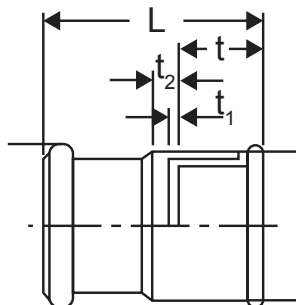
4. Connecting pipes and fittings

4.1 Push-fit connections with gasket (single socket)

Single sockets are equipped with larger sealing element: These gaskets are the standard connection between pipes and fittings. They have an extension compensator so that no measures need to be taken to allow for changes in length. The following procedure is to be observed:

- Trim the spigot end of the pipe and clean if necessary. Chamfering is not required.
- Remove the gasket from the socket and pull it - without any lubricant - onto the spigot end of the pipe.
- Smear the outside of the gasket with lubricant (do not use oil or grease) and also provide the inside of the socket with lubricant.





DN/OD	L (mm)	t (mm)	t ₁ (mm)	t ₂ (mm)
58	126	49	5	15
78	119	48	6	16
90	123	47	6	16
110	125	63	6	16
135	132	63	6	16
160	144	63	6	16
200	228,5	109	6	16



Pipe clamp with inserting tape as a loose clamp

4.2 Other push-fit connections

Push-fit connections between pipes and fittings which are not produced with a single socket must, in the case of a maximum pipe length of 3 metres, compensate thermal changes in length of maximum 10 mm. Therefore pipes are to be pulled back 10 mm in the socket after the connection has been made.

- Clean the spigot end, the socket and the gasket if necessary.
- Check the position and the intactness of the gasket in the socket corrugation.
- Smear the spigot end with lubricant.
- Place the spigot end in a central position and push it into the socket until it resists.
- Pull the pipe – not the fitting – back by 10 mm and – in case of a vertical position – protect the pipe from subsequent slipping by means of clamps.

5. Pipe Clamps

In general, plastic waste water pipe systems must be installed so that they are not under mechanical stresses and are allowed to undergo natural length changes. As a rule, securing pipes is done with pipe clamps that have an inner lining and that are appropriate for the given outer diameter and which completely circumvent the pipe. If no inner lining is used inside the clamp, then the inside edge of the clamp must be rounded off and the inside surface must be smooth. Only an inner lining that is recommended by the pipe manufacturer can be used.

Inner linings made of PVC or pipe hooks must not be used!

5.1 Fixed Clamps

Fixed points are achieved by completely tightening the pipe clamps in a piping system. They must be positioned so that each pipe length is prevented from slipping. The fixed clamps must be positioned directly behind the socket for pipe with sockets.

Fittings or groups of fittings must always be laid out as fixed points.

If necessary, you should consider using mounting brackets. If the fastening cannot ensure that the pipe does not slide apart, we recommend using our pull-out protection devices that are suitable for the system.

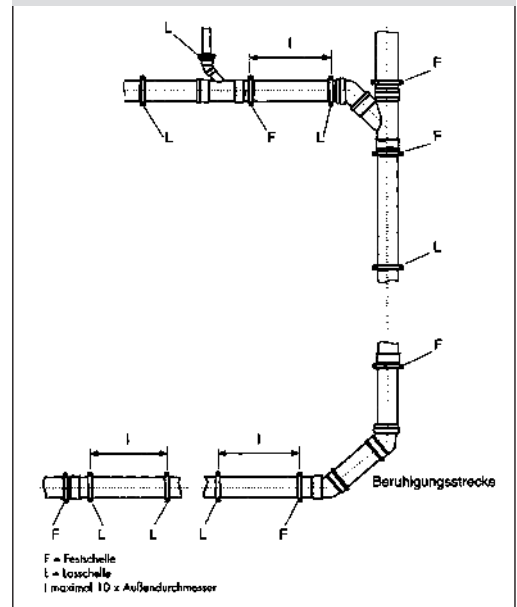
5.2 Loose Clamps

Pipe clamps which are not completely tightened (loose clamps) must allow unimpaired longitudinal movement of the pipeline after installation. For this reason the inside diameter of the clamp must be slightly bigger than the outside diameter of the pipe when installed. Spacers may also be used.

5.3 Distance between Pipe Clamps

Recommended Pipe Clamp Intervals		
DN/OD	horizontal (m)	vertical (m)
58	0,60	1,50
78	0,80	2,00
90	0,90	2,00
110	1,10	2,00
135	1,35	2,00
160	1,60	2,00
200	2,00	2,00

Examples for the arrangement of fixed clamps and loose clamps



6. Laying Pipe Lines in Masonry Structures

Slots in masonry must be made to allow stress and tension free pipe installation. If the pipes must be embedded in mortar without the use of mortar carriers or enclosures, then the pipes and fittings must be completely wrapped in flexible material, such as cardboard, mineral or glass wool. At areas where high temperatures can occur, appropriate measures must be taken to protect the pipes (insulation of heat carrying lines e.g. heating lines). In addition, the ZVSHK guidelines „Vorwandinstallation“ and the ZVSHK instruction manual „Entwasserungsleitungen“ must be referred to.

Horizontally laid pipelines (connecting or collecting lines) which, for example, serve as a connection for multiple wall fixture elements should have a wrapping along the entire length. Linear expansion of the pipes and fixtures must not be hindered.

7. Rain down pipes

If rain down pipes are installed through living areas, a condensate insulation is recommended also for the Skolan Safe System. At this the corresponding part of DIN 1986-100 should be considered: Inside rainwater pipelines have to be insulated to prevent condensation formation if demanded by the temperatures inside the building as well as the humidity. The requirements acc. to paragraph 1 also apply for wastewater downpipes which drain proportionally rainwater from collecting areas acc. to § 19 (4) AwSV.

8. Ceiling pipes

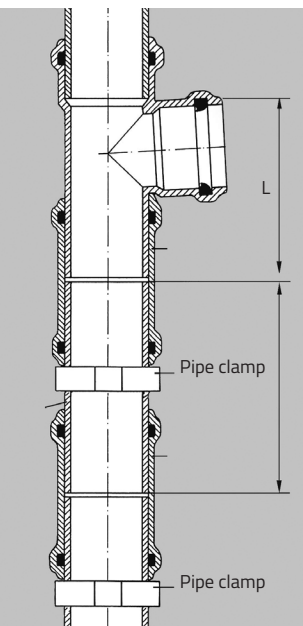
Laying pipes in ceilings must be done so that they are moisture proof and sound proof. The appropriate wrapping material must be used. In case of floors using poured asphalt, the pipeline parts must be protected by using protective pipes or by wrapping with heat insulating materials.

If fire protection requirements are placed on ceilings, then the appropriate fire protection steps are to be observed.

9. Installing Pipe Systems in Concrete

House waste water pipes and fittings may be embedded in concrete. Length changes of the pipes from thermal expansion must be considered as previously described.

The parts of the pipe system must be fastened so that movement and expansion is prevented during concrete pouring. To prevent penetration of concrete fluid into the gaps of connections, an adhesive tape strip must be used to seal the socket joint. All pipe openings must be closed off.



10. Subsequent installation of piping parts

Subsequent connections can be produced by means of the installation of a branch or by using couplers. In order to install, a sufficiently long piece of pipe ($L = \text{length of the shaped part} + 2.5 d$) is removed and the branch is inserted. Cutting edges are to be cleaned and smoothened. A coupler is pushed onto both the remaining pipe without a socket and onto a piece of pipe equivalent to the gap. The piece of pipe is then inserted into the piping and the couplers are pushed over the cutting edges. The couplers are to be secured by means of clamps.

11. Advantages DN/OD 90

The diameter DN/OD 90 can nowadays be used as collecting pipe as well as falling- and ground pipe. Therefore a complete discharge line can be installed with only two dimensions (DN/OD 50 and 90). There are further advantages of DN/OD 90 like for example little space in supply shafts or in front wall installation. The smaller diameter supports the washing out behavior and provides for a good self cleaning in the pipe. DN/OD 90 collecting lines can be used for

- a length up to 10 m
- for the connection of max. two 6 l WC cisterns
- for the connection of max. 6 sanitary items
- at a slope of 1 cm/m (1:100)
- with max. 3 changes of direction of 90° resp. 2 times 45°

According to DIN 1986-100 diameter DN/OD 90 is required for water-saving toilets with 4,5 to 6 l flush volume. All over Europe water-saving toilets have been used for years with the dimension DN/OD 90 without any problems.

Further information at www.ostendorf-kunststoffe.com.



We reserve the right to make technical changes.