

# 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

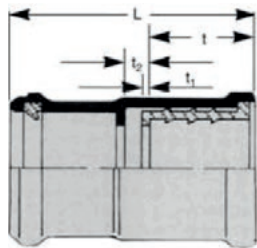
DIN 4109 and VDI 4100 Sound insulation in buildings

## 1. 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.

## 2. Cutting the pipes to length

The pipes can be cut to length with a commercial pipe cutter or with a fine-toothed saw. The cuts are to be made at an angle of 90° to the pipe shaft. Remove any trimmings or bumps at the disconnecting point. The cutting edges are to be smoothed on the inside and on the outside.



DN/OD	L (mm)	t (mm)	t <sub>1</sub> (mm)	t <sub>2</sub> (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

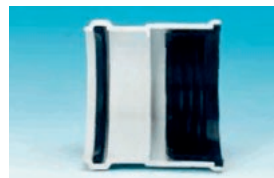


## 3. Skolan Safe connections

### 3.1 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.





Pipe clamp with inserting tape as a loose clamp

### 3.2 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.

Additional connection couplings (such as those required in the case of cast-iron pipes) are not necessary with Skolan Safe.

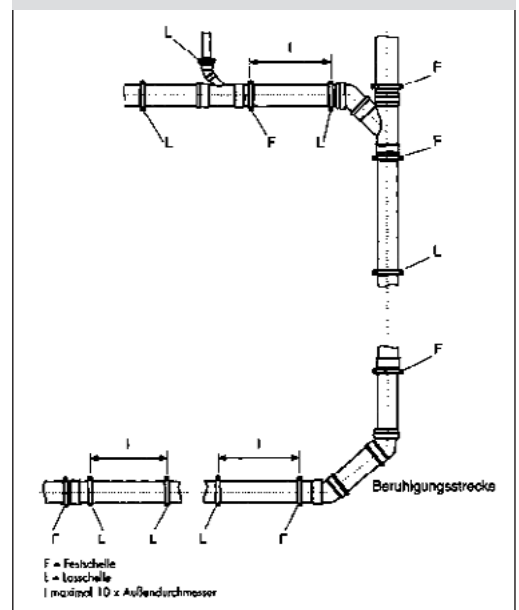
Push-fit connections are easier and quicker. This saves time and material.

### 4. Installation

Skolan Safe pipes are to be installed in such a manner that they are free of tension and that changes in lengths are not hindered. The Skolan Safe soundproof pipe system is installed by using commercial pipe clamps with inserting tapes made of profile rubber. Arranging the pipe clamps:

- The distance between the pipe clamps in the case of horizontal piping is approx. 10 x the exterior pipe diameter.
- In the case of vertical installation the distance between clamps should be 1–2 metres, however, 2 metres should not be exceeded.
- If possible, do not install pipe clamps directly at the zones of impact.
- A fixed clamp and a loose clamp per pipe length (storey height of more than 2.50 m) are recommended for drop pipe lines.
- Fixed clamps are fixed points in the piping system. In the case of pipes without sockets, the fixed clamp is to be placed directly above the shaped part at the bottom end of the pipe. Fittings or groups of shaped parts are always to be located as fixed points.
- Even when they are installed, loose clamps enable unhindered lengthways movements in order to allow for thermal changes in length.
- In multi-storey buildings, drop pipes are to be secured against subsidence. The use of an adjustment length with a fixed clamp under the socket is recommended.

Examples for the arrangement of fixed clamps and loose clamps



### 5. Installation in concrete / Brickwork

Skolan Safe pipes and fittings can be directly set in concrete or plaster provided that adequate care is taken. In order to prevent the concrete mixture from seeping into the socket gap, it should be sealed with adhesive tape. Open piping components are to be closed. The piping is to be installed in such a manner that it is prevented from moving during the cementing process. Should the piping be plastered under a gap in the wall, a layer of plaster of at least 1.5 cm should be applied onto a plaster support (e.g. metal mesh). No acoustic bridge for structure-borne sound should be allowed to develop between the piping and the plaster support. In order to prevent this, the piping should be fully covered with sound insulation material (e.g. mineral wool, insulating sheaths).

### 6. 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.

### 7. Ceiling pipes

Pipes installed through ceilings must be sound-insulated with structure-borne sound insulation material and be dampproof. Should melted asphalt be put onto the floors, the piping parts in the region where the pipe runs through the ceiling must be protected by means of protective pipes or by means of being wrapped in heat-insulating materials.

### 8. 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 smoothed. 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.

### 9. 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](http://www.ostendorf-kunststoffe.com).

