hakan

SILENTA PREMIUM & SILENTA 3A SILENT PIPE

hakan PLASTiK

SILENTA PREMIUM
NONCONDUCTIVE PIPE

SILENTA 3A
AESTHETICS IN PIPE

www.hakan.com.tr

3 Layered pipe technology
Silent Pipe

Silenta is a high quality and sound proof pipe system which is produced from mineral reinforced polypropylene.

Silenta products provide a perfect noise insulation opportunity by creating ideal conditions for usages oriented to the future in all areas of building construction (residence, industrial buildings and hospitals, hotels etc).

The noise insulated pipe systems contribute to increase the value of the residence together with the quality of life.

Today when the high demands in settlement areas are considered, silenta pipe systems meet the ecological and economical expectations completely.

Silenta prevents the which is the noise formed by **the impact of the waste on the internal surface of the pipe with its high molecular weighted special Formula and 3-layered structure.**

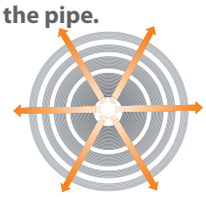
At the same time, its special structure minimizes the vibrations on the installation system substantially. Thus the contact noises and roaring occured as a result of the vibrations inside the building are prevented.

Noise formation in waste water systems

The noise caused by waste water is transmitted to the environment in two ways; by Airway by Contact.

By Airway ;

The voice waves diffusing by airway form a pressure inside the environment and they form a vibration on the materials and surfaces it beats.
The high molecular special formula used in the middle layer of three-layer SILENTA pipe absorbs this noise and avoids it to go outside of the pipe.

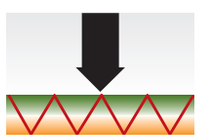


Normal Waste Water Pipe

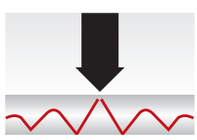
SILENTA
Nonconductive Pipe
(Absorbs the voice waves)

By Contact ;

In the waste water installations; vibrations on the pipe systems occur as a result of beating of the waste water on the pipe surface. These vibrations are transferred on the wall where the installation is assembled by contact.
The voice formed by contact is substantially absorbed by courtesy of the special structure of SILENTA.



Normal Waste Water Pipe



SILENTA
Nonconductive Pipe
(Absorbs the voice waves)

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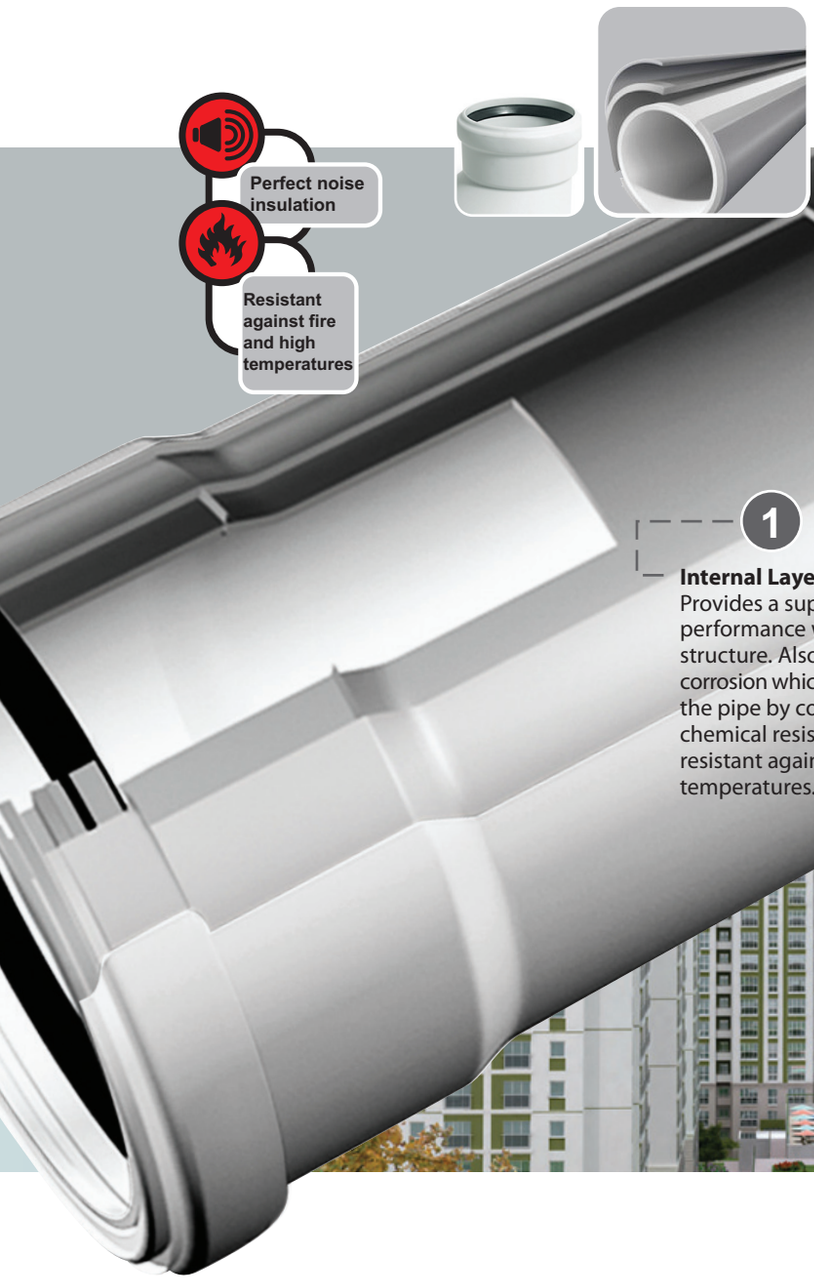


1

Internal Layer - PP
Provides a superior flow performance with its smooth structure. Also it prevents the corrosion which can form inside the pipe by courtesy of its chemical resistance. It is resistant against high water temperatures.

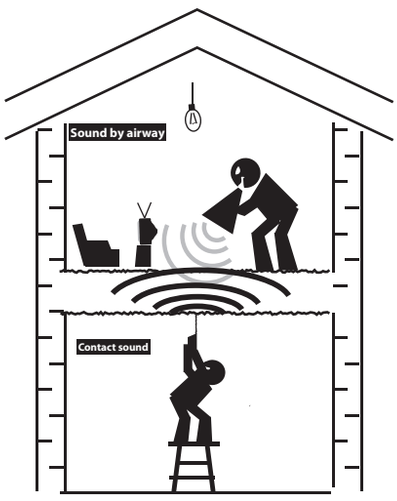
2

Middle Layer – Special formula
By courtesy of its high molecular weighted structure and its special formula, it prevents the voice waves formed inside the pipe to reflect towards outside of the pipe.

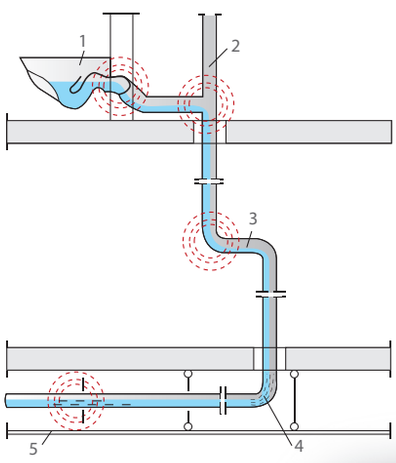
3

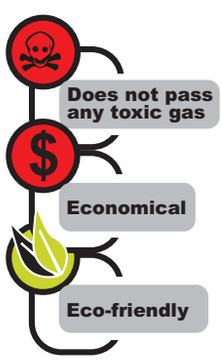
External Layer - PP
Resistant against high temperatures and impacts.

Sound transmission



Sound consisting points of a waste water installation





CONSUMER PROTECTION ASSOCIATION 2009 GOLD BRAND REWARD

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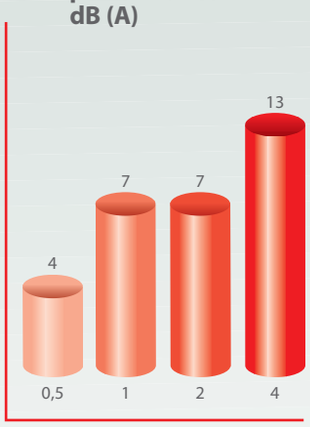
SILENTA PREMIUM
NONCONDUCTIVE PIPE

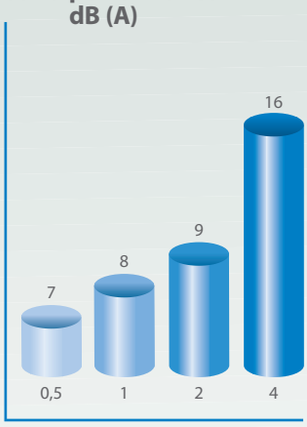
SILENTA 3A
AESTHETICS IN PIPE

perfect noise insulation

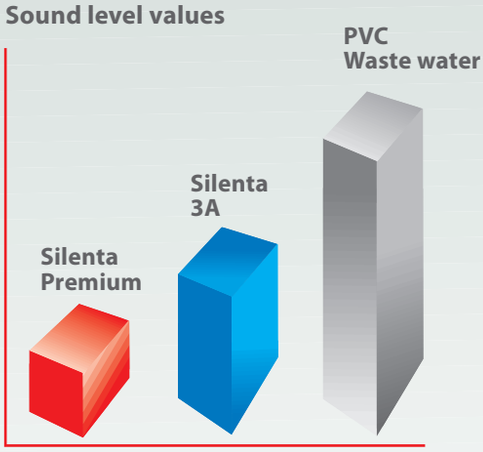
Silenta Premium
Sound performance dB (A)



Silenta 3A
Sound performance dB (A)

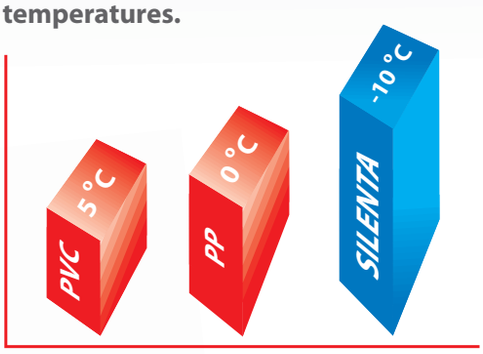


Sound level values



Impact resistance

Perfect impact resistance at low temperatures.



Silenta's perfect formulation enables easy assembly and usage at very low temperatures .

Anti –shrinkage system

Designed with patented anti-shrinkage system, Silenta, provides easy assembly. Against the hot wastes, it keeps its shape and measurements for years.

EN 681
Impermeability guarantee with seals which are suitable to its standard.

Color
Light Gray
RAL 7035

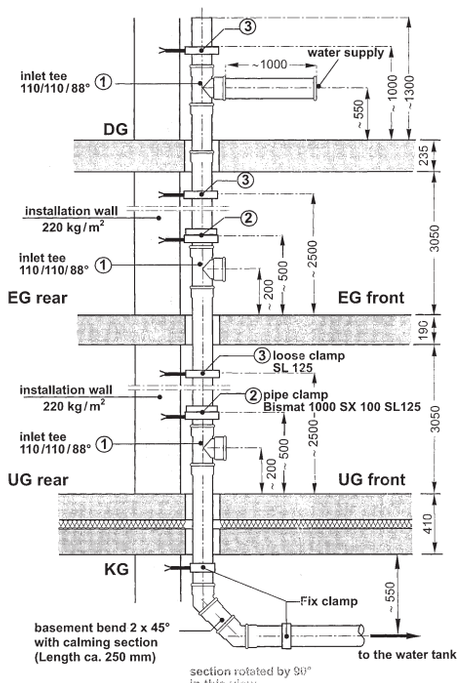
Technical Properties

- **Content: Silenta® PP (mineral reinforced polypropylene,) DIN 4102**
- **Chemical resistance: pH2-12**
- **Heat resistance ≈ 95° C (DIN 1986,DIN 12056)**
- **Connection type**
  Self sealed bellmouth connection
- **Flame resistance class:** DIN 4102

Physical Properties

Density	≈	1.9 gr/cm3
Tensile force	≈	20 N/mm2
Elasticity module	≈	3800 N/mm2
Linear expansion coefficient	≈	0,09 mm/mK
Service life	≈	50 years
Ring rigidity Premium	≈	18,9 kN/m²
Ring rigidity 3A	≈	6,1 kN/m²

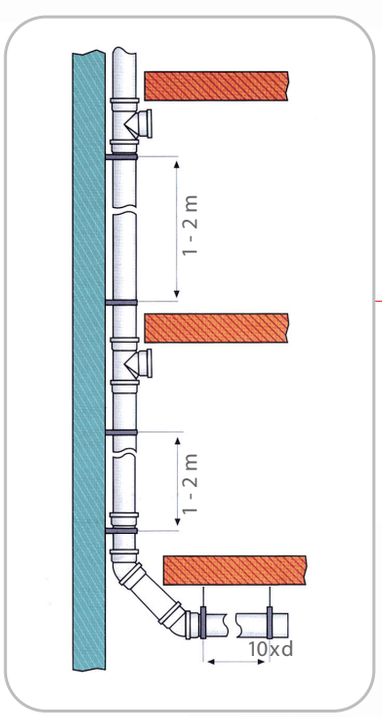
Fraunhofer Institut Stuttgart /GERMANY

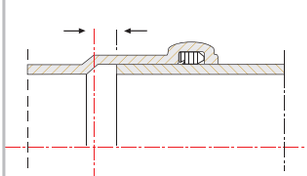


Sample Test Mechanism

Assembly

- In horizontal pipe installation; the distance between the pipe clamps should be approximately 10xED (external diameter).
- In vertical installations, the distance between the clamps should not exceed 1-2 meters.
- The clamps should be assembled to the rattling places. For example near the bends and reduction parts.
- For the vertical pipe lines, it is recommended to use a fixed clamp and a sliding clamp through the pipe length.
- The fixed clamp should be assembled on the connection point on the lower point of the pipe end. The sliding clamp should be assembled maximum 2 meters high from the fixed clamp.

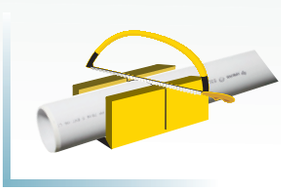




In vertical assemblies, 8-10 mm space should be left in order to enable the system to stretch longitudinally.

Pipe Cutting

It is possible to cut the pipes with pipe cutters or simple saws. It is required to cut the pipe vertical to the axis and to chamfer the edges.



Transportation and stocking of the pipes

After opening the packaging of Silenta pipes from their original stocking clamps; they should not be transported in an irregular/messy form, mixed with the other materials and subject to any hard impacts.

The products should be protected against sun light.
The stacking height should not exceed 1.5 meters.

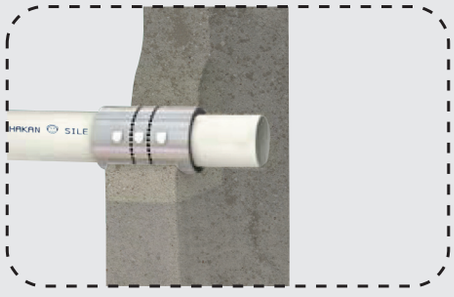
Transition between the floors

In floor and ceiling transitions; it is a must to do the heat, sound and humidity insulation.

FIRE PROTECTION

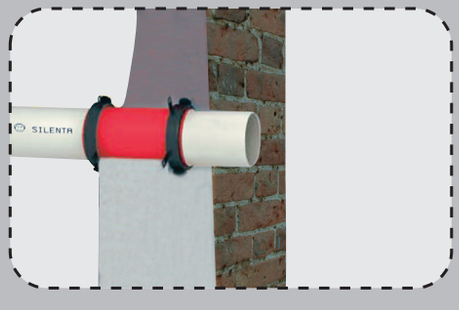
It is recommended to use one of the fire retarding products for the wall transitions and floor transitions for the fire protection during the assembly of Silenta pipes.

Fire-retarding Armbend



easy and simple installation.

Fire-retarding Cuff



can be assembled on both sides of the wall and the lower face of the ceiling.

Fire Protection Stripe

high flexibility with its self adhesive tape.

- In case of fire, it prevents the transition of flames between the floors and the adjacent doors by the courtesy of its special material which expands by melting by the heat.
- Can be applied up to 200 mm diameters.
- Their assembly is rapid and easy. No extra equipment is needed.
- Suitable for wet rooms.