

SILENTA PREMIUM  
SOUNDPROOF PIPE SYSTEMS

**GF HAKAN PLASTİK** is one of the world's largest plastic piping systems manufacturers. The company develops, produces and markets a comprehensive range of piping systems and components in a variety of materials used worldwide to transport water and gas at the highest quality, service and the right price. GF HAKAN PLASTİK operates in three core segments of piping systems; Building Technology, Utility and Agriculture. Its certified products are used in more than 70 countries in 5 continents worldwide.

With more than 10.000 products, GF HAKAN PLASTİK manages a land and maritime transport operation seamlessly and is able to meet the needs of its clients fully wherever they may be in the world.

■ **HISTORY**

**HAKAN PLASTİK** was founded in 1965 by the Karadeniz family. Since its foundation, Hakan Plastik has continuously expanded its presence in the manufacturing and sales of plastic piping systems with a focus on innovation.

In 2002, the company invested in a state of art modern facility in Çerkezköy Industrial Zone (ÇOSB), one of the three largest industrial zones in Turkey. To increase its production capacity, HAKAN PLASTİK opened up its second facility in Şanlıurfa. Both facilities totally cover an area of 170.000 m<sup>2</sup>.

In 2013, the leading plastic pipe manufacturer of Europe and the Middle East, HAKAN PLASTİK and the world's leading manufacturer of piping systems, Swiss-based Company, GEORG FISCHER joined forces under the name of "**GF HAKAN PLASTİK**" to provide a unique platform for further growth worldwide.

**GEORG FISCHER**, founded in 1802 is headquartered in Switzerland and has 125 companies, 48 of which are production facilities, in 32 countries with a workforce of 13,500 employees. The company generated sales of 3.6 billion Swiss francs in 2012. Georg Fischer operates in three core businesses GF Piping Systems, GF Automotive and GF Machining Solutions.

GF Piping System Division is a global supplier of plastic piping systems for the conveyance of liquids and gases in industry, building technology and utility applications. With over 5,000 employees, GF Piping Systems generated sales of about CHF 1.3 billion in over 100 countries in 2012.

■ **ABOUT GF HAKAN PLASTİK**

GF HAKAN PLASTİK operates in 2 production facilities equipped with the latest manufacturing technologies in Çerkezköy and Şanlıurfa with a workforce of 730 employees. Its headquarters is in Çerkezköy. The company has 6 regional directorates, offices and warehouses in Turkey.

The company has taken its place among the top 500 Enterprises in Turkey according to the worldwide known, prestigious Fortune 500 ranking and also one of the Top 500 Largest Companies in Turkey according to "Istanbul Chamber of Industry (ISO)."



GF Hakan Plastik Çerkezköy Factory

The system quality of GF HAKAN PLASTİK has been certified by BVQI, ISO 9001 and ISO 14001. As a result of a meticulous quality control approach and continuous research and development, product quality of GF HAKAN PLASTİK is confirmed by its international quality certificates.



The company gives top priority to using the highest standards of technology to manufacture user-friendly products with the highest quality and service.

**SILENTA PREMIUM PIPES & FITTINGS  
APPROVALS & CERTIFICATES**



GERMANY  
FRAUNHOFER INSTITUT  
[ P-BA 186 / 09 P-BA187 / 09 ]



TURKEY  
TURKISH STANDARDS INSTITUTION  
(59/14.02.76)



UKRAINE  
UKR SEPRO (10964)



TURKEY  
YILDIZ TECHNICAL UNIV.  
(23.02.06/210)



GERMANY  
HOCH



RUSSIA  
GOST-R [ 0303657 ]  
GOST-R HYGIENE  
(13.07.05 / 2737974)



GERMANY  
DIBt  
(Z-42.1-537)

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# SILENTA PREMIUM SOUNDPROOF PIPE SYSTEMS

**GF HAKAN PLASTİK SILENTA PREMIUM** is a sound-insulating 3-layered sewer pipe system made of Silenta PP which is specially formulated and reinforced for non-pressurized domestic drainage in accordance with system standards of **DIN 4109, DIN 4102**.

## GENERAL INFORMATION

- Silenta Premium reaches a sound-intensity level of **13 dB at 4lt/s** flow rate by the officially recognized Fraunhofer Institute, Germany.
- Silenta Premium is suitable for hot/cold water and acidic liquid transfers.
- Silenta Premium can be used at above and underground drainage systems, even at areas with high traffic load.
- Silenta Premium products consist of pipes from 58mm to 200mm with and without socket and fittings with complementing accessories.
- Silenta Premium is GF Hakan Plastik' s globally registered trademark.

**Silenta Premium** is a high quality sound insulating multilayer pipe system.



## BENEFITS

- Provides excellent sound insulation, creates ideal conditions for buildings and contributes to an increase in the property value along with the quality of life.
- Reduces the vibrations and unfamiliar sounds coming from the plumbing system.
- Flame-retardant, according to **DIN 4102** standard.
- High impact resistance.
- Does not require additional sound insulation systems.
- The coefficient of thermal expansion is only 0.04 mm/m°K.
- Operation and installation temperature climbs down to -20°C.
- Resistant to organic and inorganic acids.
- Suitable for ph value between 2 & 12.
- Alternative to cast iron.

## FIELDS OF APPLICATION

Silenta noise-insulating products are used wherever **sound protection** and **high impact resistance** is required. Silence plays a big role in areas such as;

### DRAINAGE SYSTEMS

#### - Working Areas

Office buildings, conference rooms, etc.

#### - Studying Areas

Schools, colleges, libraries, community centers, tutoring centers, etc.

#### - Sleeping Areas

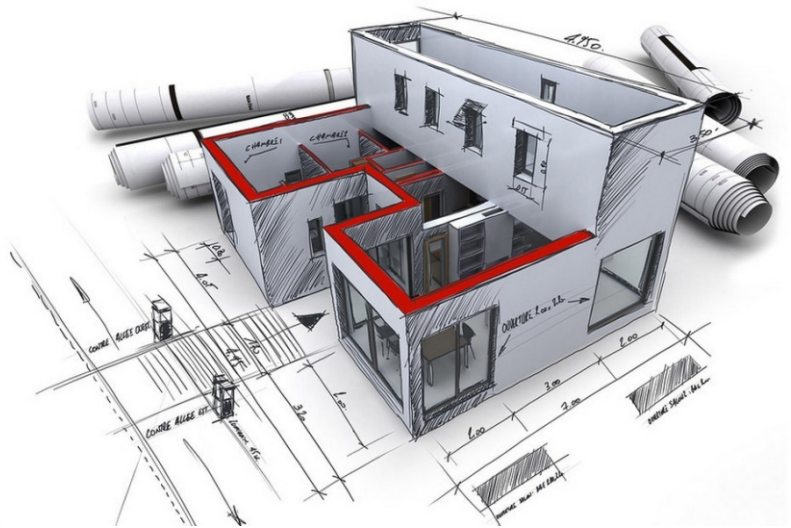
Hospitals, houses, residences, apartments, hotels, etc.

#### - Commercial Kitchens

Restaurants, industrial kitchens.

#### - Under Ground Drainage Systems

All underground drain systems between the building and the main pipe line.



### CENTRALISED VACUUM CLEANING SYSTEMS

Sustainable / green buildings

### EXHAUST GAS SYSTEMS

Waste gas transport at industrial areas

### CHEMICAL TRANSFER SYSTEMS

Industrial areas (short and long term usage)



**Silenta pipes and fittings are not suitable for:**

Transfer of waste water containing petrol or benzene and installations at temperatures below -20 °C.



# CHARACTERISTICS OF EXCELLENCE

# 3 LAYERED PIPE TECHNOLOGY

Silenta Premium features a three-layer wall construction. The multi-layer structure increases pipe rigidity. Technically desirable characteristics are optimized in a targeted way.

### Special Seal System

The push-fit socket with lip seal guarantees water tightness and allows movement of the pipe due to thermal expansion. The geometric characteristics of the socket ensure installation speed and simplicity.

### 1 Inner Layer

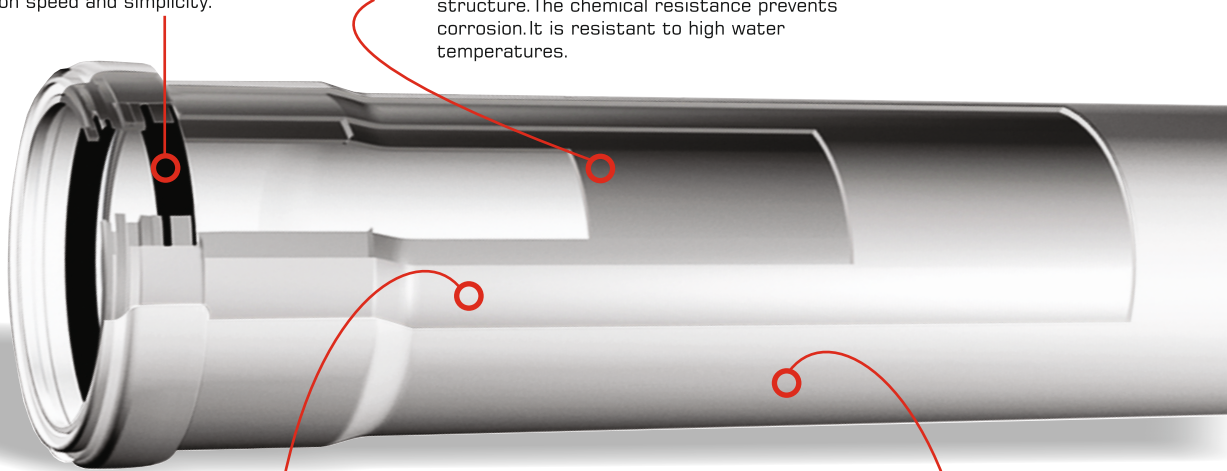
It provides a perfect flow performance with its structure. The chemical resistance prevents corrosion. It is resistant to high water temperatures.

### 2 Middle Layer

Thanks to its high molecular structure and special formula, the sound waves are absorbed and prevented.

### 3 Outer Layer

It is resistant to high temperatures and strokes.



### ANTI-SHRINK SYSTEM

“Anti-Shrink System” is a manufacturing process of SILENTA PREMIUM that prevents any kind of deformation in case of ambient temperature or heat variations. If this system is not applied during the manufacturing process, the socket may be subject to shape deformations. SILENTA Anti-Shrink System, avoids problems such as changes in shape, fluid flow obstacles, complicated assembly and leakages.



### SILENTA PREMIUM TECHNICAL PROPERTIES

#### RAW MATERIAL

INNER LAYER : PP  
MIDDLE LAYER: MINERAL REINFORCED PP  
OUTER LAYER : PP

TENSILE STRENGTH	13 N/mm
COLOR	Light Grey
ELASTICITY MODULE	2400-3800 Mpa
COEFFICIENT OF THERMAL EXPANSION	0,04 mm / mK
DIAMETERS	58 Ø - 78 Ø - 90 Ø - 110 Ø 135 Ø - 160 Ø - 200 Ø
CONNECTION TYPE	Push-Fit System
TEMPERATURE OF OPERATING MEDIA	Min: 0°C Max: 97°C

# SOUND INSULATION PERFORMANCE

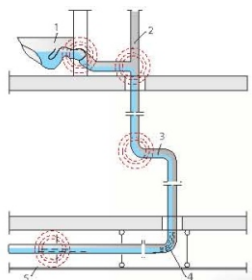


## WHY SOUND PROTECTION?

Sound protective measures in a building pursue the purpose of minimizing noise pollution in rooms. Occupants need to be protected from disturbing air-borne and structure-borne sound. Architectural sound protection measures can be applied to the buildings and the elements of them where people spend longer period of time (offices, flats). Disturbing noise caused by sources within the building directly (structure-borne noise) or indirectly (e.g. noise deriving from building engineering systems) can easily be solved by SILENTA.

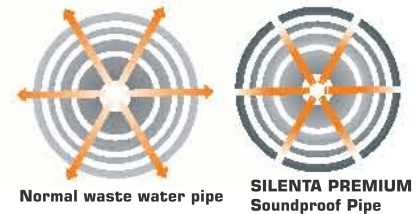
## SOUND REDUCTION WITH SILENTA

Both structure-borne and air-borne noise occur in sewer pipe systems. The pipe wall of the sewer pipe vibrates due to currents and flow noises. The type and intensity of these pipe vibrations depend on a variety of factors, such as the mass of the pipe, the pipe material and its inner damping. The pipe vibrations are emitted directly from the pipe as air-borne noise and are transferred as structure-borne noise via the pipe attachments to the wall fastening panel. When developing a sound-insulating domestic waste water system, both types of sound distribution must be taken into account.

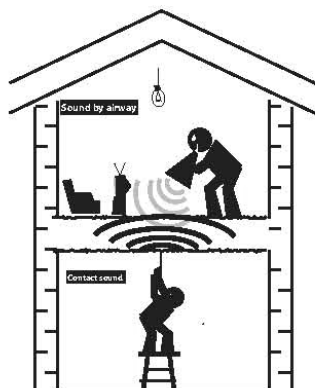


### The sources of sounds in buildings can be listed as;

- Water shrinks
- The change of direction of the water
- High water velocities
- Crossing points
- Narrowing the formation of cavitation
- Flushing the toilets
- Unloading
- Incorrect planning



Air-borne soundwaves diffused within the cavity of the pipe form a pressure load which reverberate along the inner surface of the pipe. The specially formulated middle layer of the three-layered SILENTA PREMIUM absorbs this noise and prevents it from radiating outwards.

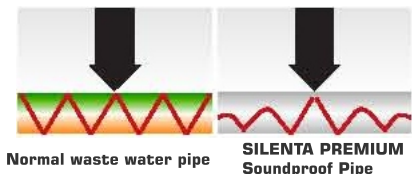


### Air-borne noise

Air-borne noise is present if the noises of a sound source are transferred directly through the air to people.

### Structure-borne noise

With structure-borne noise, the sound transfer first occurs through a solid body. This body vibrates and the vibration passes on to people as air-borne noise.



In the waste water installations, vibrations on the pipe systems occur as a result of impacts caused by rapid movement of water along the pipe's inner wall. These vibrations propagate outwards from the pipe and by direct contact, is transferred to the surface where the installation is assembled. The sound generated from this contact is substantially absorbed by the special structure of SILENTA PREMIUM.



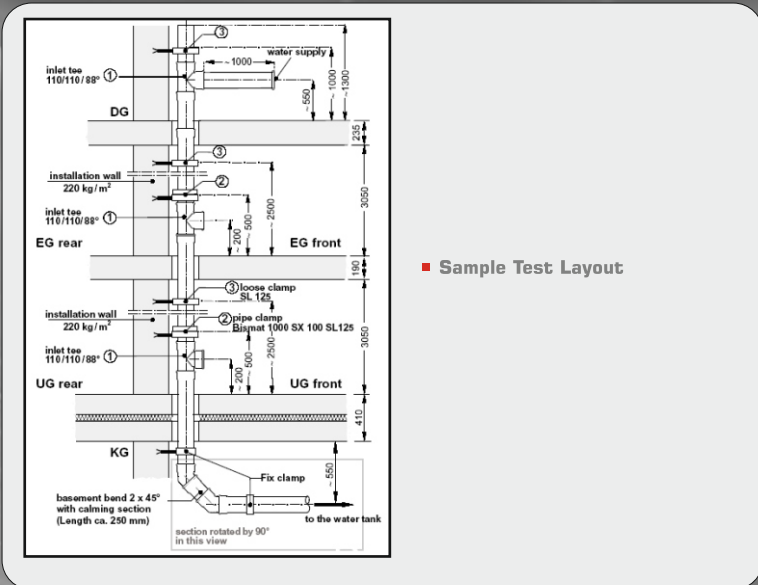
# SIGNIFICANT ACOUSTIC PERFORMANCE

Wastewater system "HAKAN SILENTA Premium Highly Noise-Insulated" with pipe clamps "Bismat 1000 SX100 SL125"				
Flow rate [l/s]	0,5	1,0	2,0	4,0
Installation sound level $L_{in}$ [dB(A)] measured in the basement test-room UG front *)	43	45	48	50
Installation sound level $L_{in}$ [dB(A)] measured in the basement test-room UG rear *)	6	9	9	15
Airborne sound pressure level $L_{p,ra}$ [dB(A)] †)	43	45	48	50
Structure-borne sound characteristic level $L_{w,s}$ [dB(A)] †)	4	7	7	13

GF Hakan Plastik measurements of August 18, 2009. Sound pressure levels measured in the installation test facility. Test object was the waste water system "HAKAN SILENTA Premium Highly Noise-Insulated" (manufacturer Hakan). The waste water system consisted of straight plastic pipes and fittings, nominal width OD 110 and pipe clamps "Bismat 1000 SX100 SL125" (manufacturer BIS Wainraven).

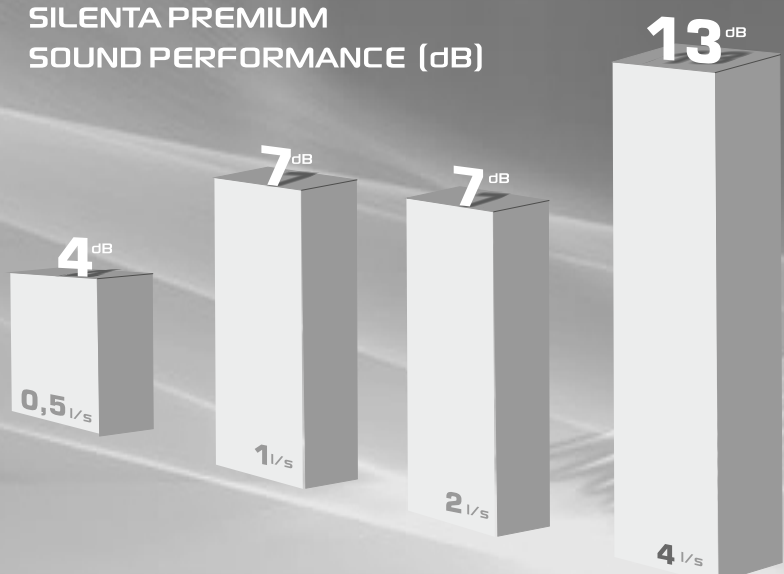
The sound-insulating domestic waste water system SILENTA PREMIUM guarantees quality, peace and living comfort.

In practice-oriented measurements carried out by the officially recognized Fraunhofer Institute for Building Physics in Stuttgart, Germany SILENTA PREMIUM reached a sound-intensity level of **13 dB at 4lt/s** flow rate.



■ Sample Test Layout

## SILENTA PREMIUM SOUND PERFORMANCE (dB)



Water Flow Rate (l/s)



## FIRE PROTECTION

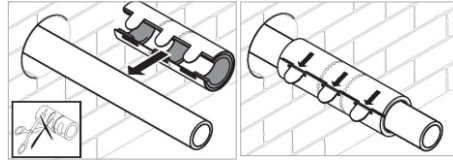


During the assembly of SILENTA pipes, it is recommended to use one of the below fire retarding products in wall and floor transitions in order to ensure a good fire protection. In case of fire, these items prevent the propagation of flames between the floors and the adjacent doors. Their assembly is fast and easy and does not require the use of any extra equipment.

### Fire Sleeve



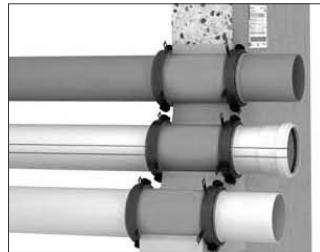
- 1-Foam Tape
- 2-Fire-Resistant Layer
- 3-Stainless Steel Sleeve



Is easily and simply installed.

Is maintenance-free and unaffected by moisture or any other building chemicals in common use.

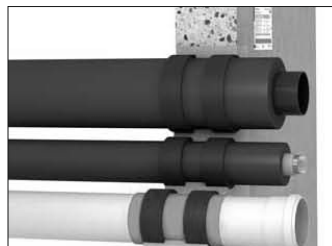
### Fire Collar



If installed properly, stuck on both sides of the wall, the cuffs will not allow smoke or flames to pass from a room to another.

It can be used with waste water pipes for up to 200mm diameter.

### Fire Strip



The nature of his work is based on the coverage of the surface of the pipes then the protective shield will protect it from heat and flame.

It can be applied to any material without the need of any extra tools or can be installed with glued tape.





## AN EXTREMELY WIDE RANGE

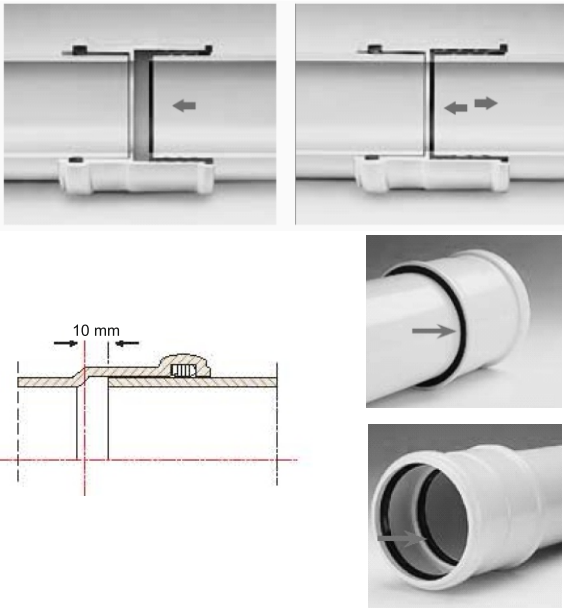
The wide range of GF Hakan Plastik Pipes & Fittings allow construction of the entire waste network.

Pipe lengths between **0,15m** to **6m** and diameters from **58mm** to **200mm** characterised by a wide choice of fittings.

These particular pipe sizes are due to the large wall thickness and the need for a sufficient bore passage; Special connection and transition fittings of **SILENTA PREMIUM SOUNDPROOF SYSTEM** to make possible to connect other waste systems made of different materials.

The range is completed with accessories for connections to other waste systems produced by GF Hakan Plastik and pipe clips with anti-vibration rubber to reduce the vibrations that are transferred to the installation walls when the waste system is in operation.

## EASY & RAPID INSTALLATION



Length expansion coefficient:

- **SILENTA PREMIUM** 0,04 mm/m°K

SILENTA PREMIUM having a great jointing system with push-fit socket ensures practical and rapid installations without the use of electrical appliances or special tools.

Thanks to Silenta low coefficient of heat expansion the push-fit joints are capable of absorbing the variations in length of the pipe without taking any particular precautionary measures; It is enough to observe the installation instructions in the GF Hakan Plastik technical manuals.

### SHORTENING AND CHAMFERING THE PIPES

1. Cut the pipe at a 90° angle from the axis with a pipe cutter, a fine-toothed saw or any other parting-off tool.
2. For connections to push-fit socket pipe systems, chamfer the pipe ends with a chamfering tool or a coarse file at an angle under approx. 10°.
3. Deburr the outside edges with a knife or a scraper.



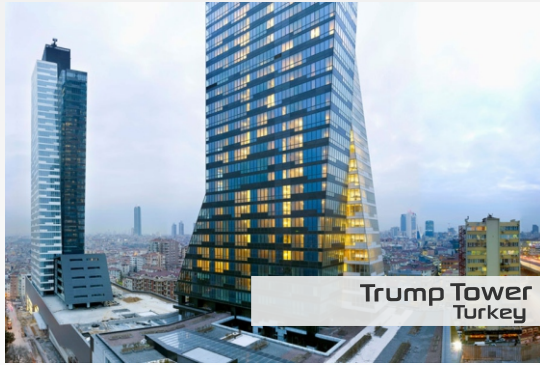
### CONNECTING THE PIPES WITH THE FITTINGS

1. Clean the ends of both the pipe and the fitting to be connected.
2. Apply a thin layer of lubricant to the ends of the pipe and the fitting. Do not use grease or soft soap.
3. Insert the pipe completely into the fitting until it stops.
4. Mark inserted pipe end in this position at the sleeve edge with a pencil, felt pen etc.
5. Vertically laid pipework: for each additional storey, retract the push-fit connection in the socket by 10 mm.
6. Horizontally laid pipework: after every 4 m of laid pipe length, retract the push-fit connections between the fittings and they can remain fully inserted.
7. It is not necessary to make changes in length to push-fit connections between fittings, they can remain fully inserted.



# REFERENCE PROJECTS

## RESIDENCE - TOWERS



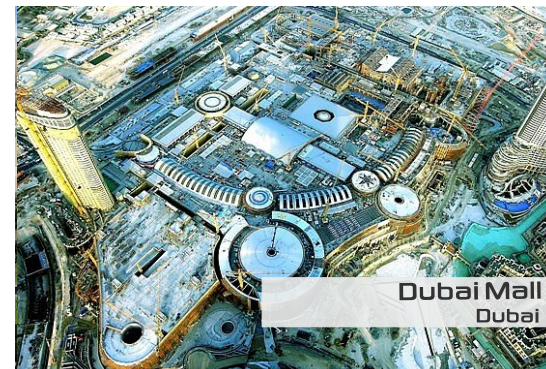
## HOTELS



## HOSPITALS



## SHOPPING & BUSINESS CENTERS





**SILENTA**

**SOUNDPROOF  
PIPE  
SYSTEMS**

**PREMIUM**



## SILENTA PREMIUM SOUNDPROOF PIPES & FITTINGS



### SILENTA PREMIUM PIPE w SINGLE SOCKET

CODES	DIAMETER (mm)	LENGTH (mm)	PACKING (PCS)
4401005800121	58	150	70
4401005800221	58	250	50
4401007801321	58	500	30
4401005800421	58	1000	8
4401005800521	58	2000	8
4401005800621	58	3000	8
4401007801021	78	150	40
4401007801121	78	250	30
4401007801221	78	500	30
4401007801321	78	1000	6
4401007801421	78	2000	6
4401007801521	78	3000	6
4401009002021	90	150	*
4401009002121	90	250	*
4401009002221	90	500	16
4401009002321	90	1000	10
4401009002421	90	2000	10
4401009003321	90	3000	5
4401011003021	110	150	22
4401011003121	110	250	15
4401011003221	110	500	9
4401011003321	110	1000	4
4401011003421	110	2000	4
4401011003521	110	3000	4
4401013504021	135	150	15
4401013504121	135	250	10
4401013504221	135	500	6
4401013504321	135	1000	4
4401013504421	135	2000	4
4401013504521	135	3000	4
4401016005021	160	150	8
4401016005121	160	250	6
4401016005221	160	500	4
4401016005321	160	1000	4
4401016005421	160	2000	4
4401016005521	160	3000	4
4401020006021	200	500	3
4401020006121	200	1000	1
4401020006221	200	2000	1
4401020006321	200	3000	1



### SILENTA PREMIUM PIPE w/o SOCKET

CODES	DIAMETER (mm)	LENGTH (mm)	PACKING (PCS)
4401005810621	58	3000	8
4401005810821	58	5000	8
4401007811521	78	3000	6
4401007811721	78	5000	6
4401009003021	90	500	*
4401009003121	90	1000	10
4401009002521	90	3000	*
4401011013521	110	3000	4
4401011013721	110	5000	4
4401013514521	135	3000	4
4401013514721	135	5000	4
4401016015521	160	3000	4
4401016015721	160	5000	4
4401020016021	200	500	4
4401020016121	200	1000	1
4401020016221	200	2000	1
4401020016321	200	3000	1
4401020016621	200	6000	1

### SILENTA PREMIUM PIPE w DOUBLE SOCKET

CODES	DIAMETER (mm)	LENGTH (mm)	PACKING (PCS)
4401005815221	58	500	25
4401005815321	58	1000	8
4401005815421	58	2000	8
4401005815521	58	3000	8
4401007815221	78	500	25
4401007815321	78	1000	6
4401007815421	78	2000	6
4401007815521	78	3000	6
4401011015221	110	500	15
4401011015321	110	1000	*
4401011015421	110	2000	*
4401011015521	110	3000	*
4401016016221	160	500	*
4401016016321	160	1000	*
4401016016421	160	2000	*
4401016016521	160	3000	*

## SILENTA PREMIUM SOUNDPROOF PIPES & FITTINGS



### SILENTA PREMIUM SINGLE BRANCH (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501205800121	58x58	50
4501207800221	78x58	30
4501207800321	78x78	25
4501209000121	90x58	*
4501209000321	90x90	*
4501211000421	110x58	20
4501211000521	110x78	15
4501211000621	110x110	10
4501213500721	135x78	10
4501213500821	135x110	8
4501213500921	135x135	6
4501216000921	160x58	3
4501216001021	160x110	5
4501216001121	160x135	4
4501216001221	160x160	4
4501220001321	200x58	2
4501220001421	200x110	2
4501220001521	200x135	2
4501220001621	200x160	2
4501220001721	200x200	3



### SILENTA PREMIUM SINGLE BRANCH (67°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501205805021	58x58	*
4501207805021	78x58	*
4501207805521	78x78	*
4501211001021	110x58	*
4501211001121	110x78	*
4501211001221	110x110	*



### SILENTA PREMIUM DOUBLE BRANCH (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501907830621	78x78	15
4501211003921	110x58	6
4501211004021	110x78	6
4501211004121	110x110	8
4501213504121	135x78	8
4501213504221	135x110	6
4501216004321	160x110	3
4501216004421	160x160	4
4501220001821	200x110	2
4501220004221	200x135	1
4501220004321	200x160	1
4501220004421	200x200	1



### SILENTA PREMIUM SINGLE BRANCH (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501205806021	58x58	60
4501207806121	78x58	40
4501207806221	78x78	30
4501209006121	90x58	*
4501209006221	90x78	*
4501209006321	90x90	*
4501211006321	110x58	25
4501211006421	110x78	20
4501211006521	110x110	15
4501213506621	135x110	10
4501213506721	135x135	8
4501216006621	160x110	8
4501216007021	160x135	3
4501216006921	160x160	2
4501220002021	200x110	3
4501220002321	200x135	3
4501220002421	200x160	2
4501220002521	200x200	2



### SILENTA PREMIUM DOUBLE BRANCH (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501209007021	90x90x90	*
4501205806121	58x58x58	*
4501207806321	78x78x78	12
4501211007021	110x110x110	10
4501216006721	160x110x110	*



### SILENTA PREMIUM DOUBLE CORNER BRANCH (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501211007121	110x110x110	10



### SILENTA PREMIUM PIPE CONNECTION PIECE

CODES	DIAMETER (mm)	PACKING (PCS)
4501911001221	110	15



### SILENTA PREMIUM ADAPTOR

CODES	DIAMETER (mm)	PACKING (PCS)
4501905801021	58x50	150
4501907801021	78x75	*
4501913501021	135x125	*



## SILENTA PREMIUM SOUNDPROOF PIPES & FITTINGS



### SILENTA PREMIUM ELBOW (15°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501105800321	58	125
4501107800121	78	75
4501109000121	90	*
4501111000521	110	30
4501113500821	135	*
4501116001021	160	*



### SILENTA PREMIUM ELBOW (30°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501105800421	58	125
4501107800221	78	75
4501109000221	90	*
4501111000621	110	30
4501113500921	135	*
4501116001121	160	*



### SILENTA PREMIUM ELBOW (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501105800121	58	100
4501107800321	78	60
4501109000321	90	*
4501111000721	110	25
4501113501021	135	15
4501116001221	160	10
4501120001421	200	4



### SILENTA PREMIUM ELBOW (67°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501105800521	58	*
4501107800521	78	*
4501111000821	110	25



### SILENTA PREMIUM ELBOW (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501105800221	58	100
4501107800421	78	50
4501109000421	90	*
4501111000921	110	20
4501113501121	135	10
4501116001321	160	8
4501120001521	200	4



### SILENTA PREMIUM SLEEVE SOCKET

CODES	DIAMETER (mm)	PACKING (PCS)
4501505804021	58	125
4501507804121	78	75
4501509004121	90	*
4501511004221	110	40
4501513504521	135	20
4501516004321	160	15
4501520004421	200	6



### SILENTA PREMIUM SOCKET

CODES	DIAMETER (mm)	PACKING (PCS)
4501505803021	58	125
4501507803121	78	75
4501509003121	90	*
4501511003221	110	40
4501513503321	135	20
4501516003421	160	15
4501520003521	200	6



### SILENTA PREMIUM CLEAN-OUT (RECTANGULAR)

CODES	DIAMETER (mm)	PACKING (PCS)
4501311000121	110	10
4501313500221	135	7
4501316000321	160	5



### SILENTA PREMIUM CLEAN-OUT (CIRCULAR)

CODES	DIAMETER (mm)	PACKING (PCS)
4501305800422	58	50
4501307800522	78	30
4501309000121	90	*



### SILENTA PREMIUM CLEAN-OUT TEE

CODES	DIAMETER (mm)	PACKING (PCS)
4501311002121	110X110	10
4501316001321	160X78	5
4501316002321	160X110	5

## SILENTA PREMIUM SOUNDPROOF PIPES & FITTINGS



### SILENTA PREMIUM REDUCER

CODES	DIAMETER (mm)	PACKING (PCS)
4501405800221	58x40	175
4501405800121	58x50	150
4501407802421	78x50	100
4501407800221	78x58	100
4501407800321	78x75	75
4501409000121	90x58	*
4501409000221	90x78	*
4501411000421	110x58	50
4501411000521	110x78	50
4501411000621	110x90	50
4501413500621	135x110	25
4501413500721	135x125	20
4501416000821	160x110	20
4501416000921	160x135	15
4501420001021	200x110	8
4501420001121	200x160	10



### SILENTA PREMIUM S-SIPHON

CODES	DIAMETER (mm)	PACKING (PCS)
4501611000121	110x45°	10
4501611000221	110x87°	9



### SILENTA PREMIUM LONG ELBOW (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501111001321	110	12



### SILENTA PREMIUM SIPHON ELBOW (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501105830621	58/40	150



### SILENTA PREMIUM BLIND CAP

CODES	DIAMETER (mm)	PACKING (PCS)
4501905800121	58	250
4501907800221	78	150
4501909000321	90	*
4501911000321	110	75
4501913500421	135	50
4501916000521	160	30



### SILENTA PREMIUM CLEAN-OUT ELBOW (87,5°)

CODES	DIAMETER (mm)	PACKING (PCS)
4501311001121	110	15



### SILENTA PREMIUM SINGLE PARALLEL BRANCH

CODES	DIAMETER (mm)	PACKING (PCS)
4501211010122	110x110x100	10



### PVC - PP CONNECTOR

CODES	DIAMETER (mm)	PACKING (PCS)
4501405002021	50x58	75
4501407502221	78x75	50
4501407502121	75x78	50



### SILENTA PREMIUM FLOOR TRAP

CODES	DIAMETER (mm)	PACKING (PCS)
4501911030322	110x78x58	12



### SILENTA PREMIUM VENTILATION ELBOW

CODES	DIAMETER (mm)	PACKING (PCS)
4501111010022	110x135	20





## SILENTA PREMIUM SOUNDPROOF PIPES & FITTINGS

### SILENTA PREMIUM FIRE SLEEVE



CODES	DIAMETER (mm)	PACKING (PCS)
4501905820282	58	*
4501907826182	78	*
4501909026182	90	*
4501911026182	110	*
4501913526182	135	*
4501916026182	160	*



### SILENTA PREMIUM SAFETY CLAMP (LIPPER)

CODES	DIAMETER (mm)	PACKING (PCS)
4501905820382	58	*
4501907826282	78	*
4501909026282	90	*
4501911026282	110	*
4501913526282	135	*
4501916026282	160	*

### SILENTA PREMIUM FIRE COLLAR



CODES	DIAMETER (mm)	PACKING (PCS)
4501905820182	58	*
4501907826082	78	*
4501909026082	90	*
4501911026082	110	*
4501913526082	135	*
4501916026082	160	*



### SILENTA PREMIUM SAFETY CLAMP (FLAT)

CODES	DIAMETER (mm)	PACKING (PCS)
4501905820482	58	*
4501907826482	78	*
4501909026482	90	*
4501911026482	110	*
4501913526482	135	*
4501916026482	160	*

### SILENTA PREMIUM FIRE STRIP



CODES	PACKING (PCS)
4501900000182	*



### SILENTA PREMIUM CONNECTION CLAMP

CODES	DIAMETER (mm)	PACKING (PCS)
4501905820582	58	*
4501907826582	78	*
4501909026582	90	*
4501911026582	110	*
4501913526582	135	*
4501916026582	160	*

## SILENTA PREMIUM SOUNDPROOF PIPES & FITTINGS



SILENTA PREMIUM CLAMP w NUT

CODES	DIAMETER (mm)	CLAMMING RANGE (mm)
4501905820082	58	52-59
4501907820182	78	75-84
4501909026682	90	84-93
4501911020282	110	101-110
4501913520382	135	129-137
4501916020482	160	155-163
4501920020582	200	197-219
4501925020582	250	246-255



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## Quality Certificates

 GERMANY - DVGW	 SCANDINAVIAN COUNTRIES - SWEDCERT	 SPAIN - AENOR	 TURKEY - TSE	 UKRAINE UKR - SEPRO
 GERMANY - SKZ	 BULGARIA BULGARKONTROLA	 SOUTH AFRICA SABS	 TURKEY - TSEK	 GERMANY HOCH
 GERMANY FRAUNHOFER INSTITUT	 SCANDINAVIAN COUNTRIES INSTA-CERT	 GERMANY, RUSSIA HYGENE INSTITUT	 TURKEY YILDIZ TECHNICAL UNIVERSITY REPORT	 TURKEY AGRICULTURAL CREDIT REPORT
 GERMANY DIBT	 SCANDINAVIAN COUNTRIES NORDIC POLYMARK	 GREECE EBETAM	 TURKEY HIFZISSIHA REPORT	 UKRAINE HYGIENE
 RUSSIA, BELARUS, UKRAINE GOST-r	 HUNGARY- EMI	 SWEDEN SP REPORT	 POLAND REKOMENDACJA	 UNITED KINGDOM WRAS

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