

SILENTA3A

LOW NOISE 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 2012 in Şanlıurfa. Both facilities totally cover an area of 170.000 m².

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 3A PIPES & FITTINGS APPROVALS & CERTIFICATES



Fraunhofer

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]



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



SCANDINAVIAN COUNTRIES
SWEDCERT



GERMANY
HOCH



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SILENTA 3A LOW NOISE PIPE SYSTEMS

GF HAKAN PLASTIK SILENTA 3A 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 3A reaches a sound-intensity level of **16 dB at 4lt/s** flow rate by the officially recognized Fraunhofer Institute, Germany.
- Silenta 3A is suitable for hot/cold water and acidic liquid transfers.
- Silenta 3A can be used at above and underground drainage systems, even at areas with high traffic load.
- Silenta 3A Products consist of pipes from 40mm to 200mm with and without socket and fittings with complementing accessories.
- Silenta 3A is GF Hakan Plastik' s globally registered trademark.

SilentA 3A 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 0.06 mm/m°K.
- Operation and installation temperature climb 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

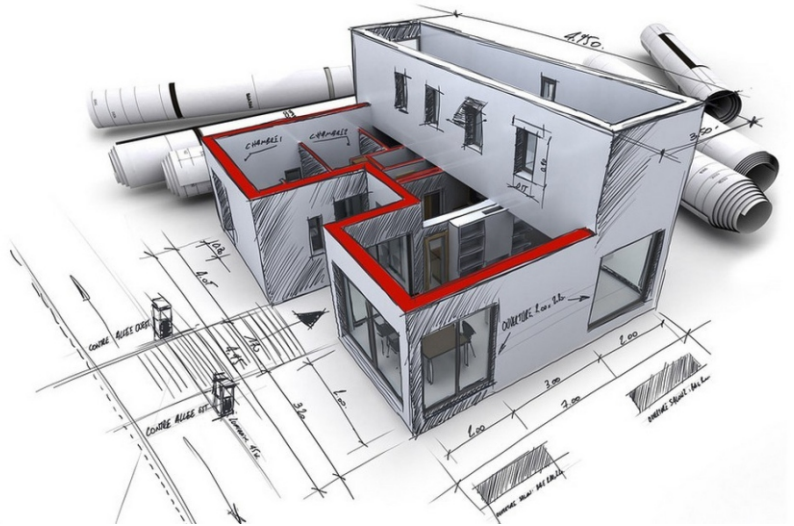
Hospitals, houses, residences, apartments, hotels, etc.

- 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.

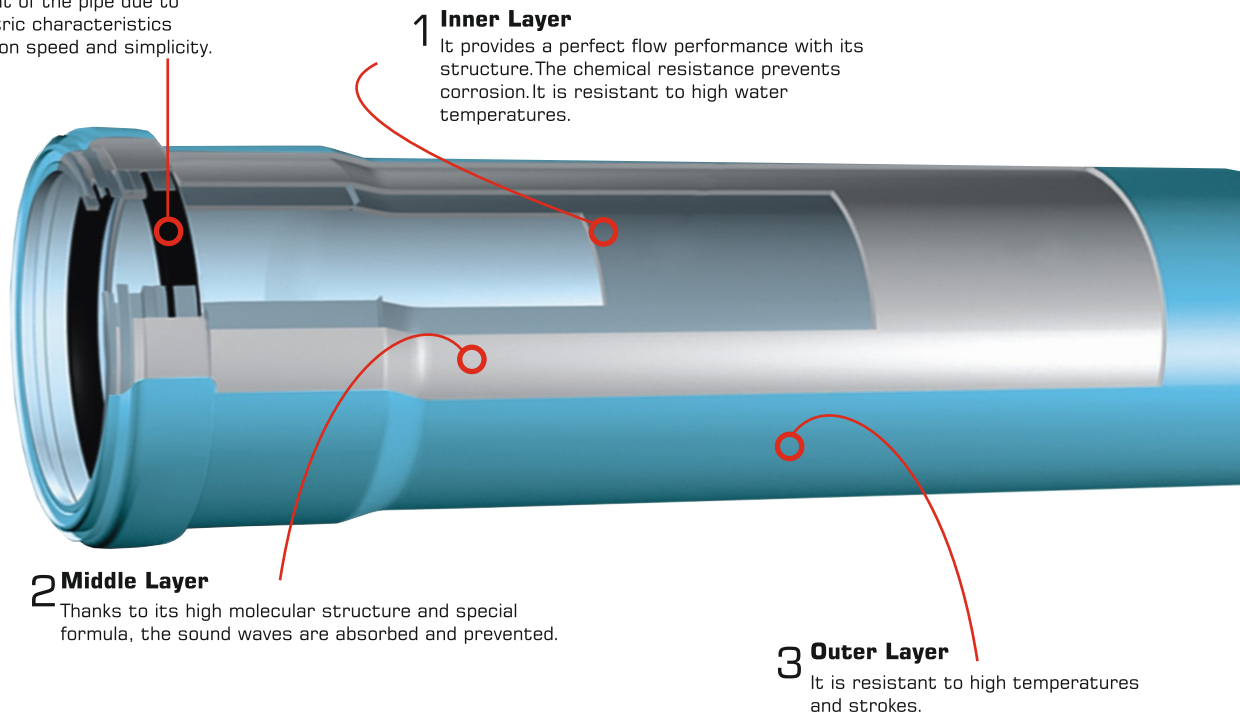
CHARACTERISTICS OF EXCELLENCE

Silenta 3A features a three-layer wall construction. The multi-layer structure increases pipe rigidity. Technically desirable characteristics are optimized in a targeted way.

3 LAYERED PIPE TECHNOLOGY

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.



ANTI-SHRINK SYSTEM

"Anti-Shrink System" is a manufacturing process of SILENTA 3A 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 3A TECHNICAL PROPERTIES

RAW MATERIAL

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

TENSILE STRENGTH	13 N/mm
COLOR	Light Blue
ELASTICITY MODULE	2400-3800 Mpa
COEFFICIENT OF THERMAL EXPANSION	0,06 mm / mK
DIAMETERS	40 Ø - 50 Ø - 75 Ø - 90 Ø 110 Ø - 125 Ø - 160 Ø - 200 Ø
CONNECTION TYPE	Push-Fit System
TEMPERATURE OF OPERATING MEDIA	Min: 0°C Max: 97°C

SOUND INSULATION PERFORMANCE

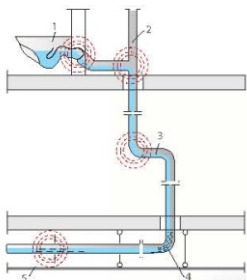


WHY SOUND PROTECTION ?

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.

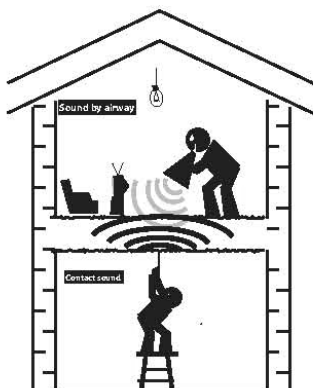
SOUND REDUCTION WITH SILENTA

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

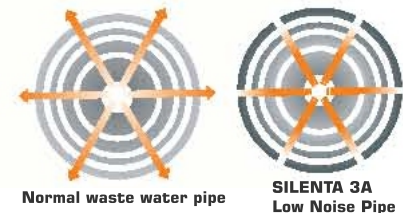


Air-borne noise

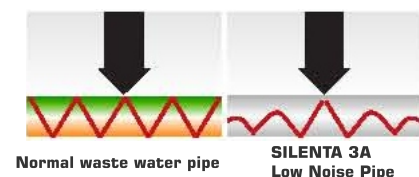
Air-borne noise is present if the noises of a sound source are transferred directly through the air to people.

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.



The voice waves diffusing by airway form a pressure inside the environment and surfaces it beats. The high molecular special formula used in the middle layer of three-layer SILENTA 3A pipe absorbs this noise and avoids it from going out.



In the waste water installations, vibrations on the pipe systems occur as a result of beating or the impulsion 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 3A.

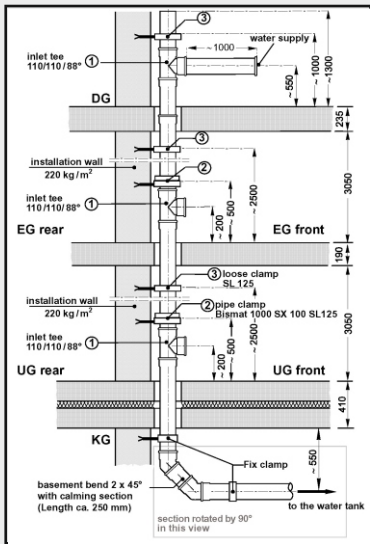
SIGNIFICANT ACOUSTIC
PERFORMANCE

Flow rate [l/s]	0,5	1,0	2,0	4,0
Installation sound level $L_{p,1}$ [dB(A)] measured in the basement test-room UG front *)	46	48	49	52
Installation sound level $L_{p,2}$ [dB(A)] measured in the basement test-room UG rear *)	9	10	12	19
Airborne sound pressure level $L_{p,A}$ [dB(A)] *)	46	48	49	52
Structure-borne sound characteristic level $L_{w,A}$ [dB(A)] *)	7	8	9	16

GF Hakan Plastik measurements of August 19, 2009.
Sound pressure levels measured in the installation test facility. Test object was the waste water system "HAKAN SILENTA 3A Noise-Insulated DIN 4102" (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 Walraven).

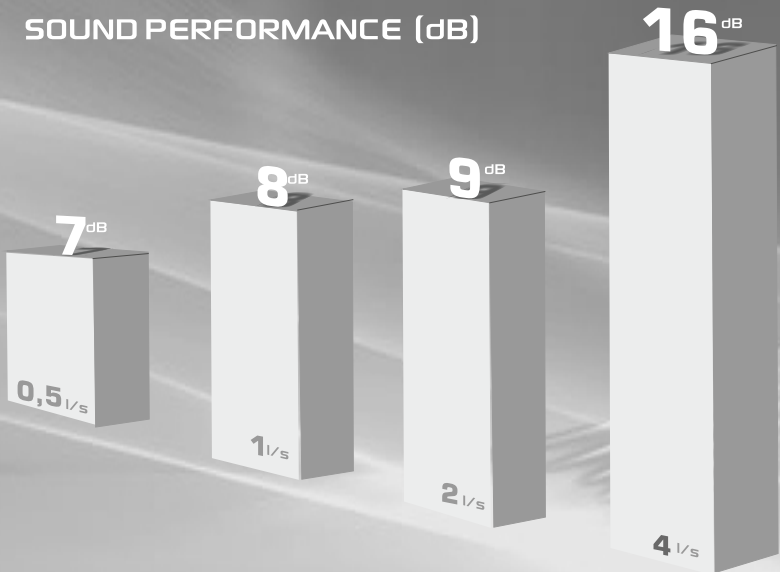
The sound-insulating domestic waste water system SILENTA 3A guarantees quality, peace and living comfort.

In practice-oriented measurements carried out by the officially recognized Fraunhofer Institute for Building Physics in Stuttgart, Germany SILENTA 3A reached a sound-intensity level of **16 dB at 4lt/s** flow rate.



■ Sample Test Layout

SILENTA 3A
SOUND PERFORMANCE (dB)



Water Flow Rate (l/s)

FIRE PROTECTION

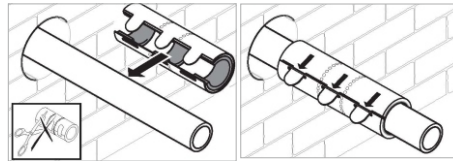


During the assembly of SILENTA pipes, it is recommended to use one of the below fire retarding products in wall and floor transitions in order to ensure a good fire protection. In case of fire, these items prevent the propagation of flames between the floors and the adjacent doors. Their assembly is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

Fire, Smoke and Noise Barrier



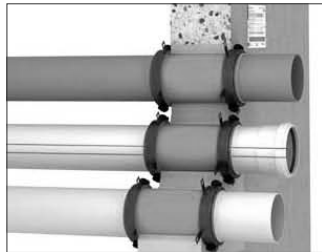
1-Foam Tape
2-Fire-Resistant Layer
3-Stainless Steel Sleeve



Is easily and simply installed.

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

Fire Retarding Cuff



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 Protection Stripe



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



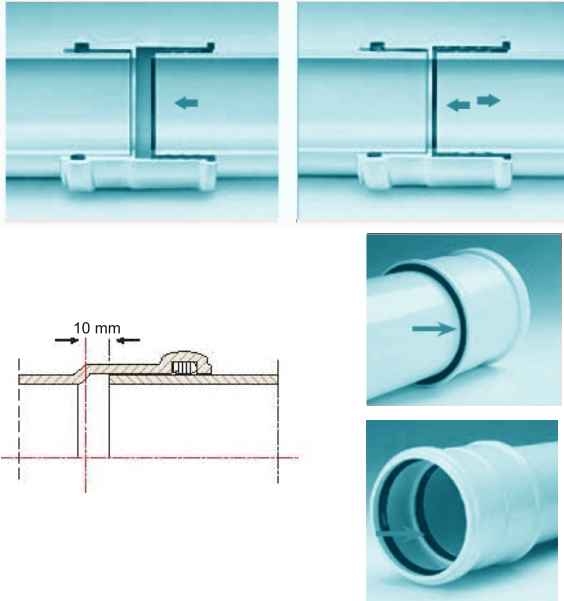
The wide range of GF Hakan Plastik Pipes & Fittings allow construction of the entire waste network.

Pipe lengths between **0,15m** to **6m** and diameters from **40mm** 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 3A LOW NOISE SYSTEM** to make it 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:

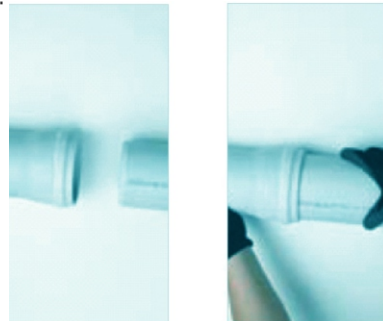
- **SILENTA 3A** 0,06 mm/m°K

SILENTA 3A 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.

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.



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.



SOME REFERENCE PROJECTS

RESIDENCE - TOWERS



HOTELS



HOSPITALS



SHOPPING & BUSINESS CENTERS



SILENTA3A

SILENTA 3A LOW NOISE PIPES & FITTINGS

SILENTA 3A PIPE WITH SINGLE SOCKET



CODES	DIAMETER (mm)	LENGTH (mm)	PACKING (PCS)
4604004000321	40	500	150
4604004000421	40	1000	10
4604004000521	40	2000	10
4604004000621	40	3000	10
4604005000121	50	150	200
4604005000221	50	250	150
4604005000321	50	500	90
4604005000421	50	1000	10
4604005000521	50	2000	10
4604005000621	50	3000	10
4604005000721	50	6000	10
4604007501021	75	150	100
4604007501121	75	250	70
4604007501221	75	500	40
4604007501321	75	1000	10
4604007501421	75	2000	10
4604007501521	75	3000	10
4604007501621	75	6000	1
4604009006021	90	150	75
4604009006121	90	250	50
4604009006221	90	500	30
4604009006321	90	1000	5
4604009006421	90	2000	5
4604009006521	90	3000	5
4604011002021	110	150	45
4604011002121	110	250	35
4604011002221	110	500	20
4604011002321	110	1000	4
4604011002421	110	2000	4
4604011002521	110	3000	4
4604011002621	110	6000	4
4604012503021	125	150	40
4604012503121	125	250	20
4604012503221	125	500	16
4604012503321	125	1000	4
4604012503421	125	2000	4
4604012503521	125	3000	4
4604012503621	125	6000	1
4604016004021	160	150	24
4604016004121	160	250	14
4604016004221	160	500	8
4604016004321	160	1000	4
4604016004421	160	2000	4
4604016004521	160	3000	4
4604016004621	160	6000	1
4604020006621	200	150	1
4604020006721	200	250	1
4604020006321	200	500	5
4604020006421	200	1000	1
4604020005621	200	2000	1
4604020005721	200	3000	1
4604020006521	200	6000	1



SILENTA 3A PIPE WITHOUT SOCKET

CODES	DIAMETER (mm)	LENGTH (mm)	PACKING (PCS)
4604005003121	50	150	100
4604005003221	50	250	100
4604005003021	50	3000	10
4604007503021	75	3000	10
4604009005021	90	150	*
4604009005121	90	250	*
4604009005221	90	500	*
4604009005321	90	1000	*
4604009005421	90	2000	*
4604009005521	90	3000	*
4604009005621	90	6000	*
4604011003121	110	2100	4
4604011003021	110	3000	4
4604011003221	110	3350	4
4604016003021	160	3000	4
4604020005021	200	150	1
4604020005121	200	250	1
4604020005221	200	500	8
4604020005321	200	1000	1
4604020005421	200	2000	1
4604020005521	200	3000	1
4604020006021	200	4000	1
4604020006121	200	5000	1
4604020006221	200	6000	1

SILENTA 3A PIPE DOUBLE SOCKET

CODES	DIAMETER (mm)	LENGTH (mm)	PACKING (PCS)
4604004001621	40	500	100
4604004001721	40	1000	10
4604004001921	40	2000	10
4604004002021	40	3000	10
4604005020021	50	500	50
4604005020121	50	1000	10
4604005020321	50	2000	10
4604007520021	75	500	30
4604007520121	75	1000	10
4604007520321	75	2000	10
4604007520421	75	3000	10
4604009020321	90	2000	10
4604011020121	110	500	15
4604011020221	110	1000	4
4604011020421	110	2000	4
4604011020521	110	3000	4
4604016010021	160	500	6
4604016010121	160	1000	4
4604016010221	160	2000	4
4604016010321	160	3000	4



SILENTA 3A LOW NOISE PIPES & FITTINGS



SILENTA 3A SINGLE BRANCH (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704203200121	32x32	250
4704204000121	40x40	250
4704205000121	50x50	150
4704207500221	75x50	75
4704207500321	75x75	60
4704209000321	90x90	*
4704211000321	110x40	*
4704211000421	110x50	40
4704211000521	110x75	30
4704211000621	110x110	20
4704212500721	125x50	30
4704212500821	125x75	25
4704212500921	125x110	20
4704212501021	125x125	16
4704216001121	160x110	10
4704216001221	160x125	10
4704216001321	160x160	8
4704220001421	200x110	4
4704220001521	200x125	4
4704220001621	200x160	4
4704220001721	200x200	4



SILENTA 3A SINGLE BRANCH (67°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704211000721	110x110	25



SILENTA 3A DOUBLE BRANCH (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704205003021	50x50	100
4704207503121	75x50	80
4704207503521	75x75	80
4704211003221	110x50	35
4704211003321	110x75	20
4704211003421	110x110	16
4704212503521	125x110	10
4704212505021	125x125	10
4704216003621	160x110	8
4704220003721	200x110	4



SILENTA 3A SINGLE BRANCH (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704204000221	40x40	200
4704205001821	50x50	150
4704207501921	75x50	100
4704207502021	75x75	80
4704209000421	90x90	50
4704211002021	110x40	*
4704211002121	110x50	50
4704211002221	110x75	30
4704211002321	110x110	30
4704212502421	125x50	20
4704212502521	125x75	20
4704212503822	125x110	20
4704212503921	125x125	20
4704216002621	160x110	14
4704216004022	160x125	10
4704216001421	160x160	5
4704220002821	200x110	5



SILENTA 3A DOUBLE BRANCH (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704209002521	90x90x90	30
4704211002521	110x110x110	20



SILENTA 3A DOUBLE CORNER BRANCH (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704211003021	110x110x110	*

SILENTA 3A LOW NOISE PIPES & FITTINGS



SILENTA 3A ELBOW (15°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704103200121	32	500
4704104000121	40	500
4704105000121	50	300
4704107500621	75	150
4704109001121	90	*
4704111001121	110	60
4704116001121	160	*



SILENTA 3A ELBOW (30°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704103200221	32	500
4704104000221	40	500
4704105000221	50	350
4704107500721	75	150
4704109001221	90	*
4704111001221	110	60
4704116001221	160	*



SILENTA 3A ELBOW (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704103200321	32	500
4704104000321	40	500
4704105000321	50	300
4704107500921	75	150
4704109001321	90	*
4704111001321	110	50
4704112501621	125	40
4704116001821	160	20
4704120002021	200	10



SILENTA 3A ELBOW (67,5°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704105000421	50	300
4704107500821	75	150
4704111001421	110	50



SILENTA 3A LONG ELBOW (45°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704111004521	110	*



SILENTA 3A ELBOW (87°)

CODES	DIAMETER (mm)	PACKING (PCS)
4704103200421	32	500
4704104000521	40	450
4704105000521	50	300
4704107501021	75	100
4704109001421	90	75
4704111001521	110	40
4704112501721	125	30
4704116001921	160	15
4704120002121	200	6



SILENTA 3A BLIND CAP

CODES	DIAMETER (mm)	PACKING (PCS)
4704905000421	50	1000
4704907500121	75	500
4704909000121	90	150
4704911000221	110	200
4704912508121	125	100
4704916000321	160	60

SILENTA 3A LOW NOISE PIPES & FITTINGS



SILENTA 3A SOCKET

CODES	DIAMETER (mm)	PACKING (PCS)
4704504000121	40	600
4704505000121	50	400
4704507500221	75	200
4704509000321	90	100
4704511000321	110	80
4704512506121	125	40
4704516000421	160	30
4704520000521	200	12



SILENTA SLEEVE SOCKET

CODES	DIAMETER (mm)	PACKING (PCS)
4704505000221	50	400
4704507500321	75	200
4704511000421	110	80
4704512506122	125	60
4704516000621	160	30
4704520000721	200	12



SILENTA 3A REDUCER

CODES	DIAMETER (mm)	PACKING (PCS)
4704405000021	50x32	500
4704405000121	50x40	500
4704407500121	75x50	200
4704411000221	110x50	100
4704411000321	110x75	100
4704411000421	110x90	100
4704412500421	125x110	50
4704416000521	160x110	40
4704416000721	160x125	50
4704420000621	200x160	20
47044200008621	200x110	20
47044200008721	200x125	20



SILENTA 3A "S" SIPHON

CODES	DIAMETER (mm)	PACKING (PCS)
4704607500121	75x45°	50
4704611000121	110x45°	20
4704607500221	75x87°	50
4704611000221	110x87°	20



SILENTA 3A CLEAN-OUT

4704311000121	110	30
4704316000221	160	8



SILENTA 3A FLOOR TRAP

CODES	DIAMETER (mm)	PACKING (PCS)
4701911002022	110x75x50x50	12



SILENTA 3A LONG SOCKET

CODES	DIAMETER (mm)	PACKING (PCS)
4704911002221	110	*



SILENTA 3A CLEAN-OUT

CODES	DIAMETER (mm)	PACKING (PCS)
4704311000421	75	80
4704309000421	90	*
4704312500122	125	20



SILENTA 3A SINGLE PARALLEL BRANCH

CODES	DIAMETER (mm)	PACKING (PCS)
4704211010122	110x110x100	*

SILENTA 3A LOW NOISE PIPES & FITTINGS

FIRE, SMOKE AND NOISE BARRIER



CODES	DIAMETER (mm)	PACKING (PCS)
4704905020282	50	*
4704907520282	75	*
4704909020282	90	*
4704911020282	110	*
4704912520282	125	*
4704916020282	160	*

SAFETY CLAMP (LIPPER)



CODES	DIAMETER (mm)	PACKING (PCS)
4704905020382	50	*
4704907520382	75	*
4704909020382	90	*
4704911020382	110	*
4704912520382	125	*
4704916020382	160	*

FIRE RETARDING CUFF



CODES	DIAMETER (mm)	PACKING (PCS)
4704905020182	50	*
4704907520182	75	*
4704909020182	90	*
4704911020182	110	*
4704912520182	125	*
4704916020182	160	*

SAFETY CLAMP (FLAT)



CODES	DIAMETER (mm)	PACKING (PCS)
4704905020482	50	84
4704907520482	75	48
4704909020482	90	*
4704911020482	110	18
4704912520482	125	15
4704916020482	160	15

FIRE PROTECTION STRIPE



CODES	PACKING (PCS)
4704900000182	1

CONNECTION CLAMP



CODES	DIAMETER (mm)	PACKING (PCS)
4704905020582	50	*
4704907520582	75	*
4704909020582	90	*
4704911020582	110	*
4704912520582	125	*
4704916020582	160	*

SILENTA 3A LOW NOISE PIPES & FITTINGS



SILENTA 3A CLAMP

CODES	DIAMETER (mm)	PACKING (PCS)
4701905001022	50	100
4701907501122	75	100
4701909001222	90	100
4701911001222	110	100
4701912501322	125	100
4701916001422	160	50



SILENTA 3A CLAMP WITH NUT

CODES	DIAMETER (mm)	CLAMMING RANGE (mm)
4701903200222	32	31-38
4501904020082	40	38-45
4701905002022	50	45-52
4501757526682	75	66-75
4501909026682	90	84-93
4501911020282	110	101-110
4701912501422	125	119-129
4501916020482	160	155-163
4501920020582	200	197-219
4501925020582	250	246-255



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PLASTİK

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	

GEORG FISCHER HAKAN PLASTİK BORU VE PROFİL SANAYİ TİCARET A.Ş.

Organize Sanayi Bölgesi, Gaziosmanpaşa Mh. 3. Cd. No:11-13 Çerkezköy/Tekirdağ/TÜRKİYE
Phone: +90 282 726 64 43 Fax: +90 282 726 94 67 e-mail: info@hakan.com.tr

