

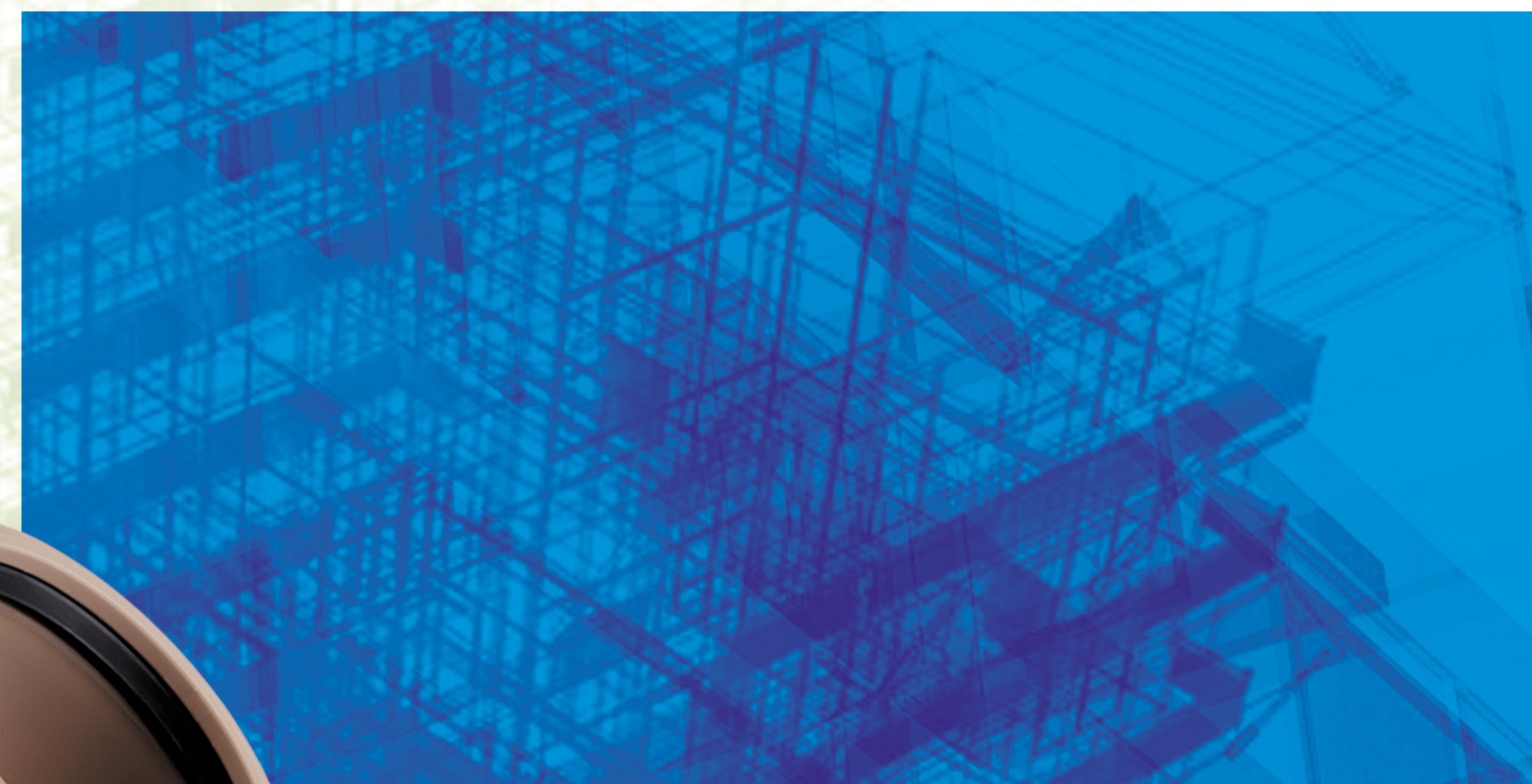
POLIRAN

Silent-10

Soundproof Push-fit drainage system

BD Application

10 dB(A)



German Technology

www.poliran.org

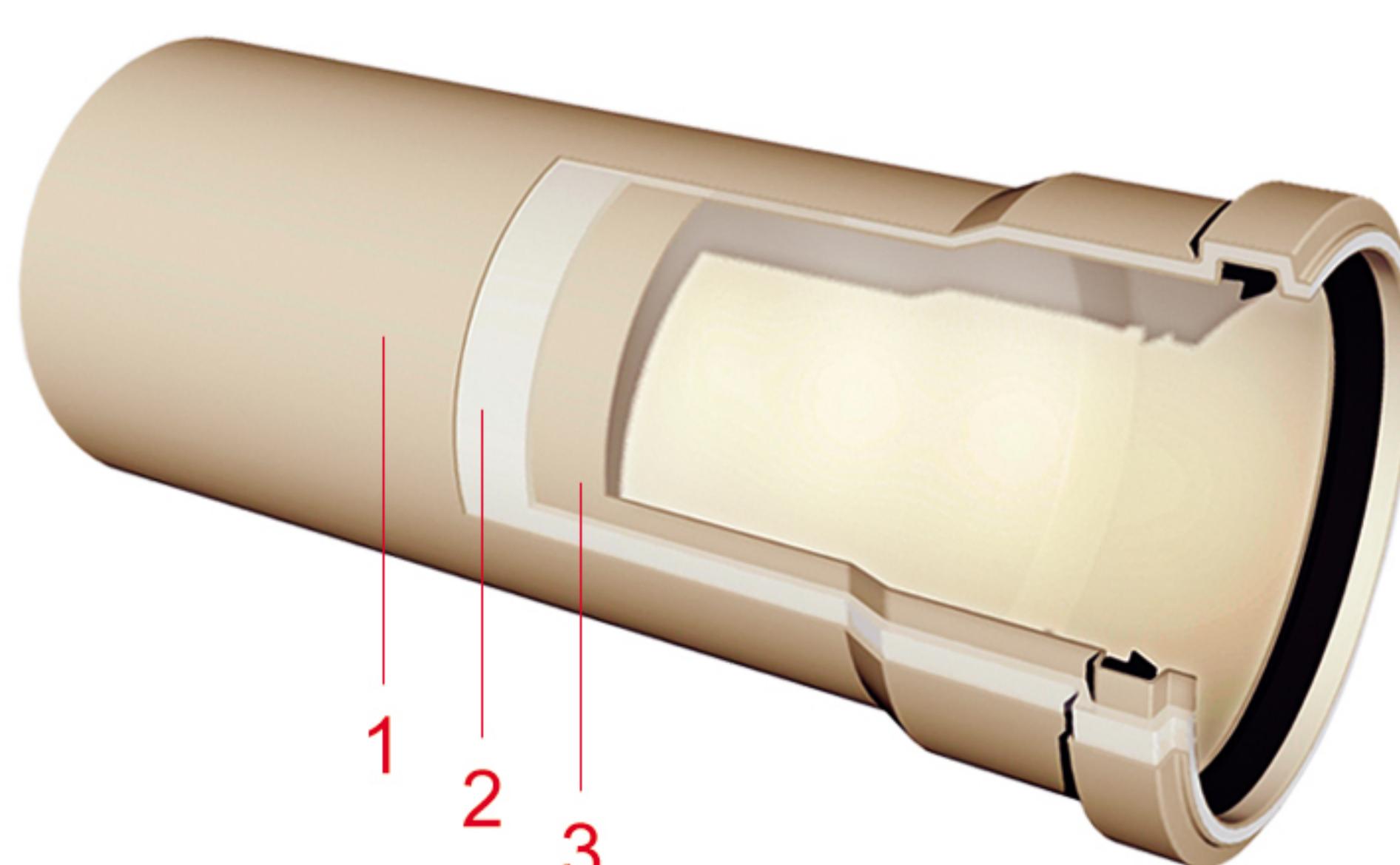


Silent-10 is a highly noise-insulated drainage system, designed to be installed in accordance with EN 12056. The incredible acoustic performance of the system exceeds the requirements DIN 4109 and VDI 4100, making it the best choice for multi-occupancy applications as well as hospitals, hotels, educational buildings and other applications that require a high level of noise control.

Jointing pipes and fittings in this system does not require welding, sealant or glue as all joints are sealed by means of lip seal rings which increases flexibility of the system even during ground movements or earthquakes.

The lip seal rings in this system are produced by the leading German companies in compliance with EN 681-1 WC, ensuring a durable sealing effect with an outstanding long-term elasticity.

Silent-10 pipes are manufactured from polypropylene in a 3-layer structure with each layer having its own function:



1 External Layer

The tough protective layer of the pipe
Highly Impact resistant

2 Middle Layer

Mineral-reinforced compound "Poliran KB"
High stiffness & superior noise-insulation

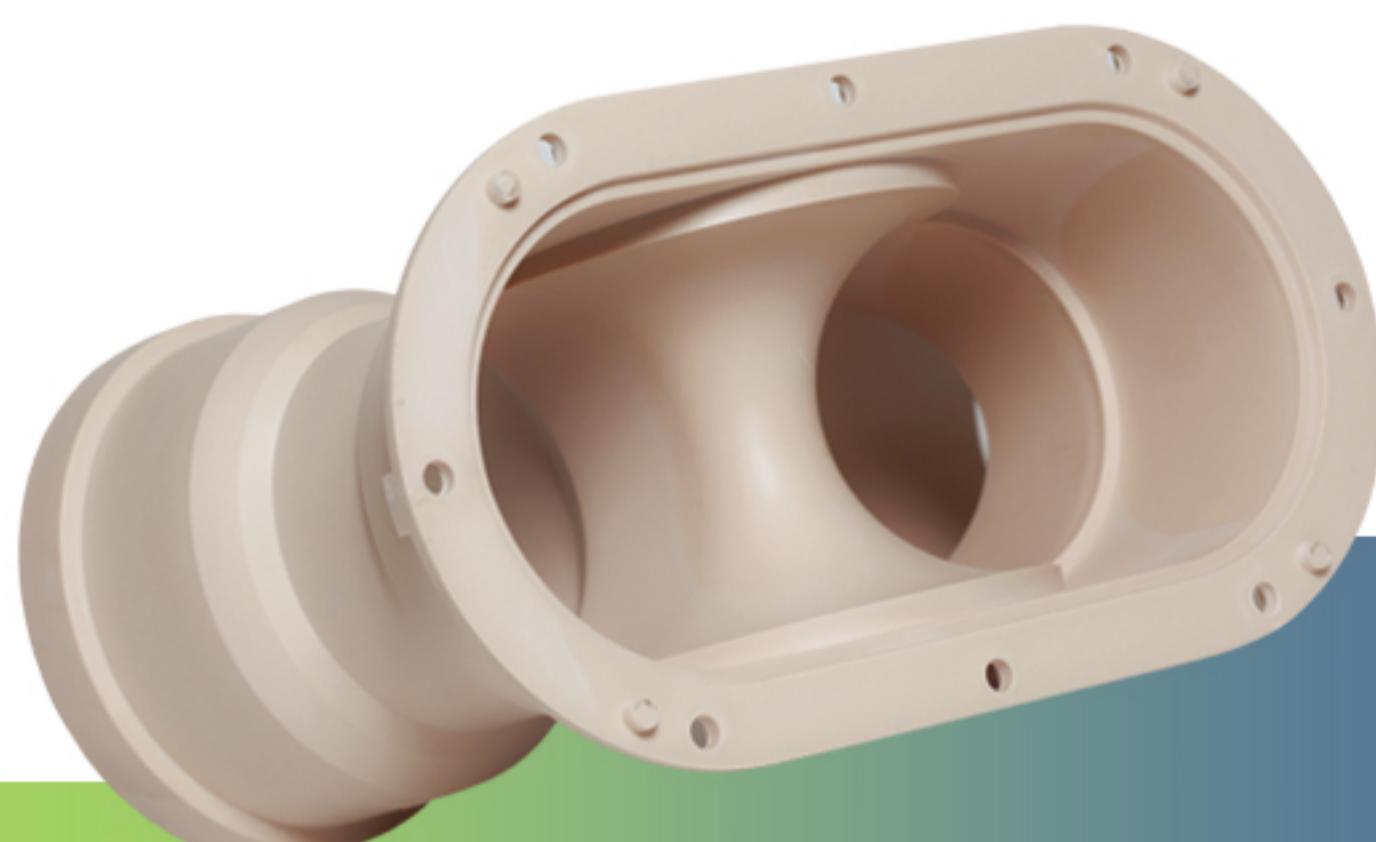
3 Internal Layer

Extremely smooth surface
High chemical and temperature resistance

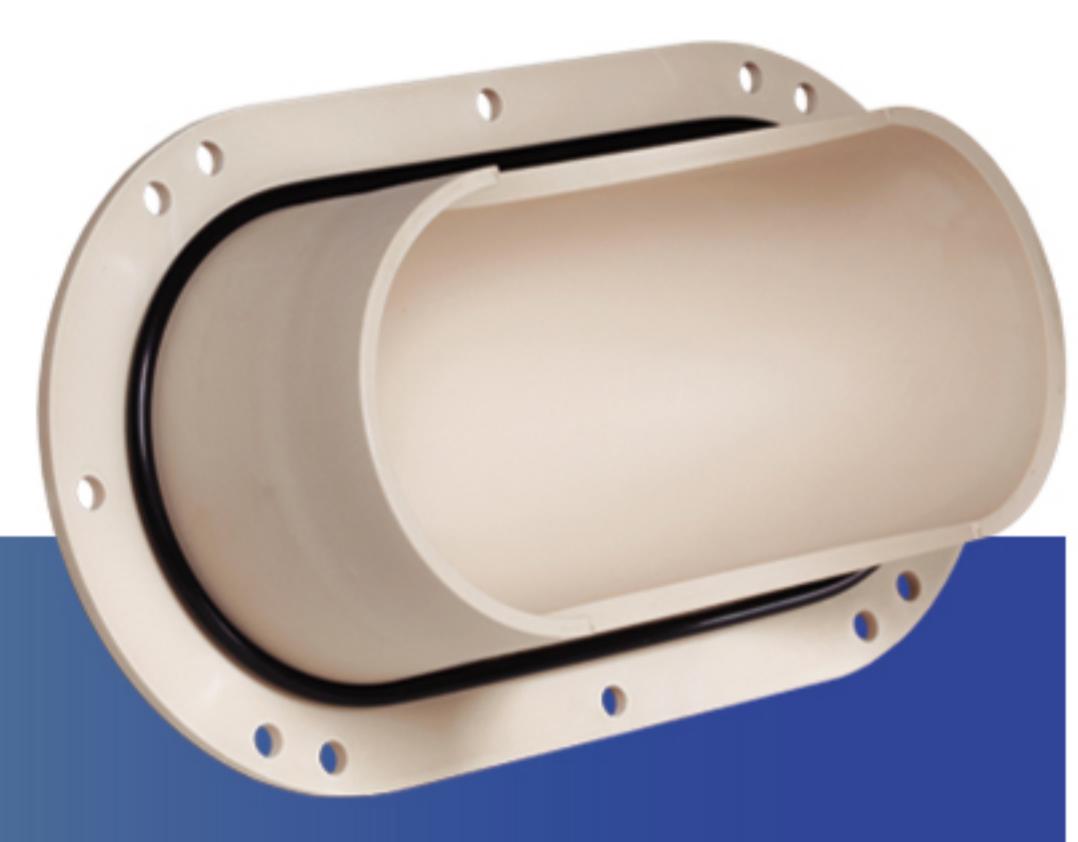


Gated Trap, designed and patented by Poliran's R&D team, is an innovative two-piece device that maintains an adequate water seal to prevent the back passage of sewer gasses, while providing easy accessibility for cleaning and inspection.

- Perfect and permanent watertightness
- Smooth Internal surface, preventing scale formation and blockage and ensuring an unobstructed flow
- Uniform cross section along the water passage
- Adequate water seal equal to trap diameter
- Thoughtfully designed to avoid push-fit seals from being always submerged in water
- Trap outlet angle of 87°, facilitating installation with no need for an additional bend
- Safe and secure fastening by installing a pipe clamp under the inlet socket



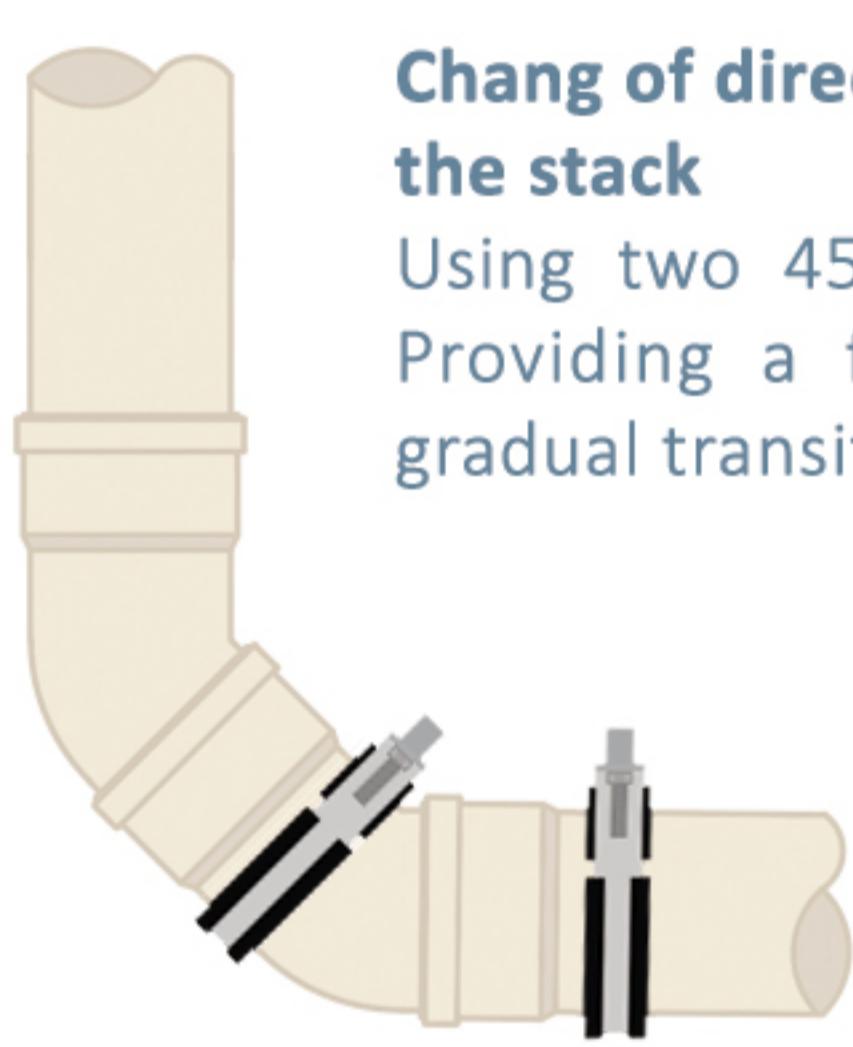
Upper Part



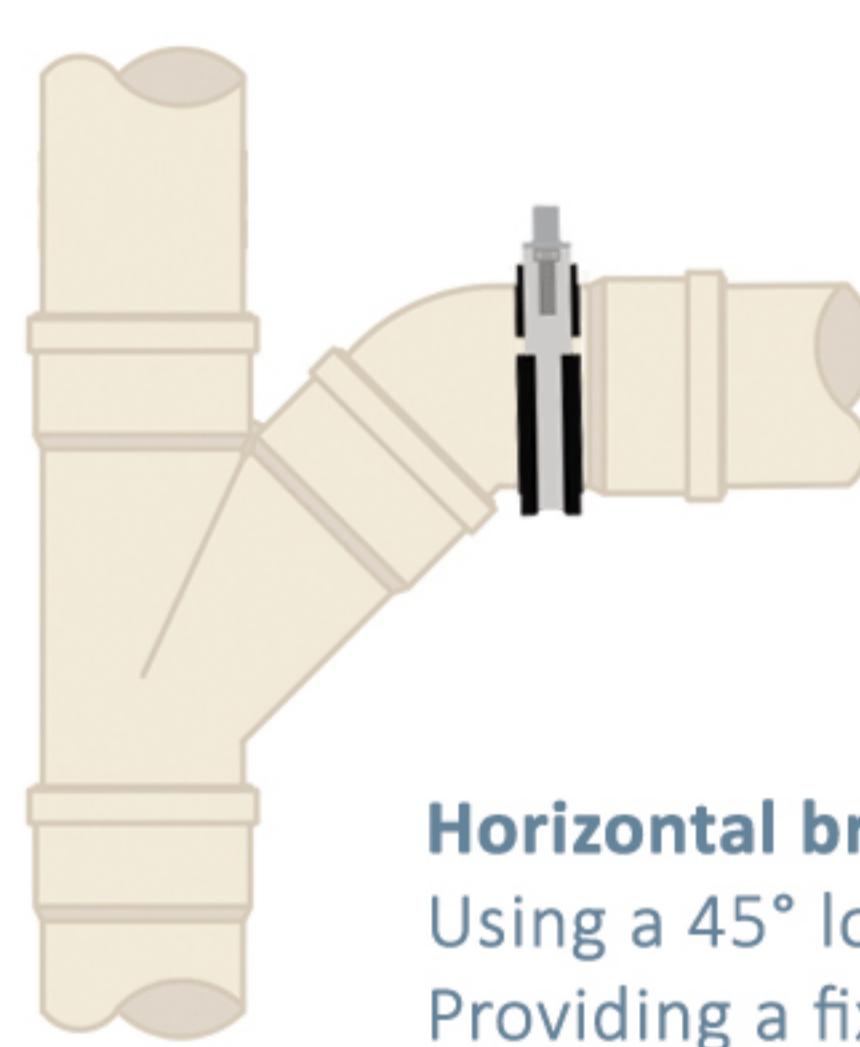
Lower Part

Special Fittings

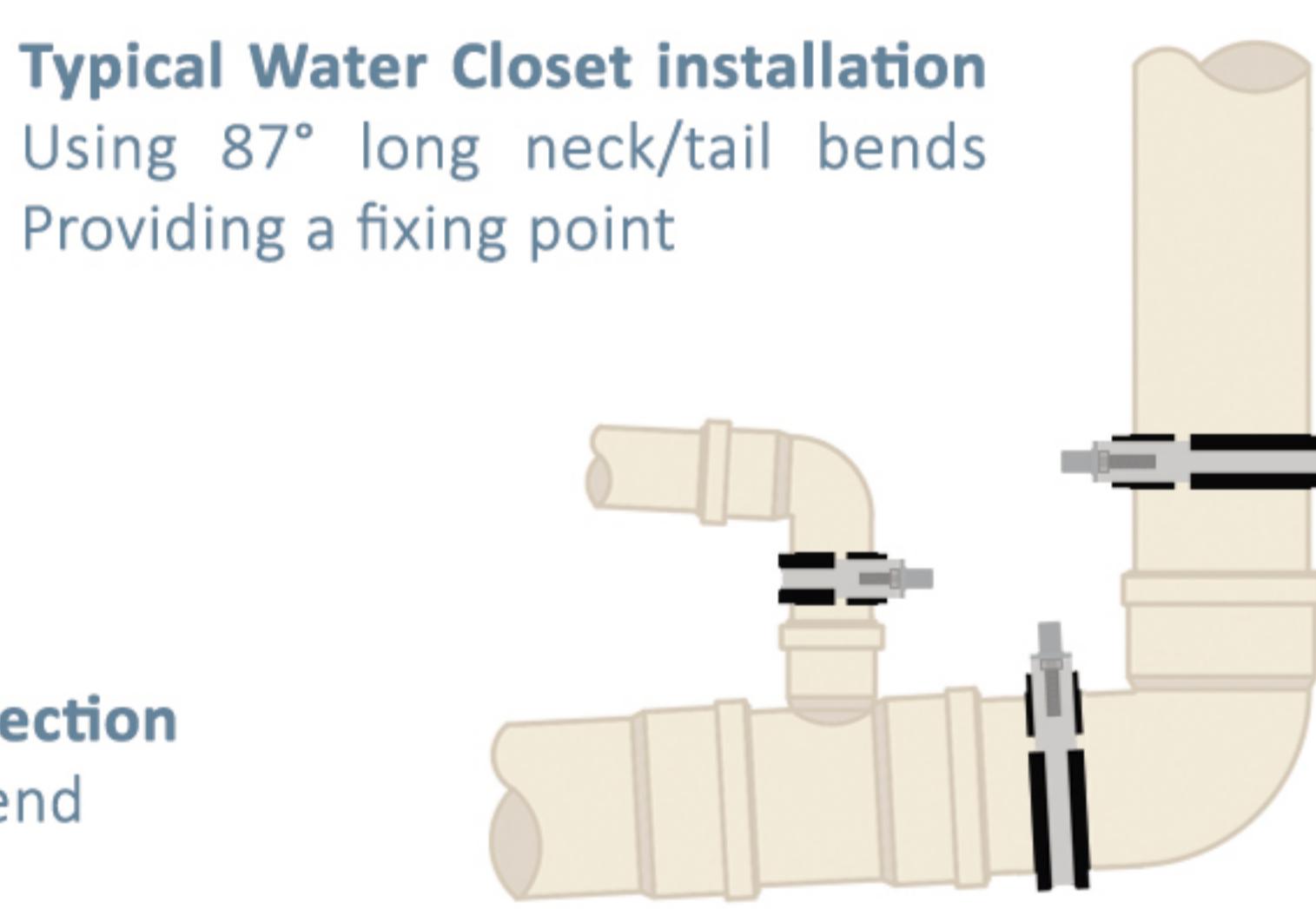
Poliran's R&D department has a very close relationship with the plumbing contractors and continuously examines the possible difficulties of the installation job. One of the major problems in fastening the system, especially if a water test has to be conducted, is fixing the fittings where a change in direction occurs. To address this problem special fittings has been designed with the capability of installing a fixing point on them without putting pressure on the socket, which can cause out of roundness and sealing failure of rubber seal.



Change of direction at the base of the stack
Using two 45° long neck bends
Providing a fixing point and a gradual transition



Horizontal branch connection
Using a 45° long neck bend
Providing a fixing point



Typical Water Closet installation
Using 87° long neck/tail bends
Providing a fixing point



Long Tail Bend - 87°



Long Neck Bend - 45°

Poliran RC clamps are especially designed for the soundproof drainage system. A special body section and the use of rubber inlays provide a stable grip while isolating vibrations from the building structure and maintaining acoustic properties.

- Made of electrogalvanized steel. For more corrosion protection zinc flake coating is available upon request
- Specially designed linings made of EPDM rubber
- Excellent strength characteristics with a 3-piece structure
- Suitable for soundproofing other metal or plastic systems
- Simple and fast installation
- Available in 4 different types, from DN50 to DN200 mm
- In accordance with the requirements of DIN 4109 & VDI 4100
- Tested by the renowned Fraunhofer institute of Germany



Stand Pipe Clamp



Screw Clamp



Weldable Clamp



Adjustable Clamp



About Noise

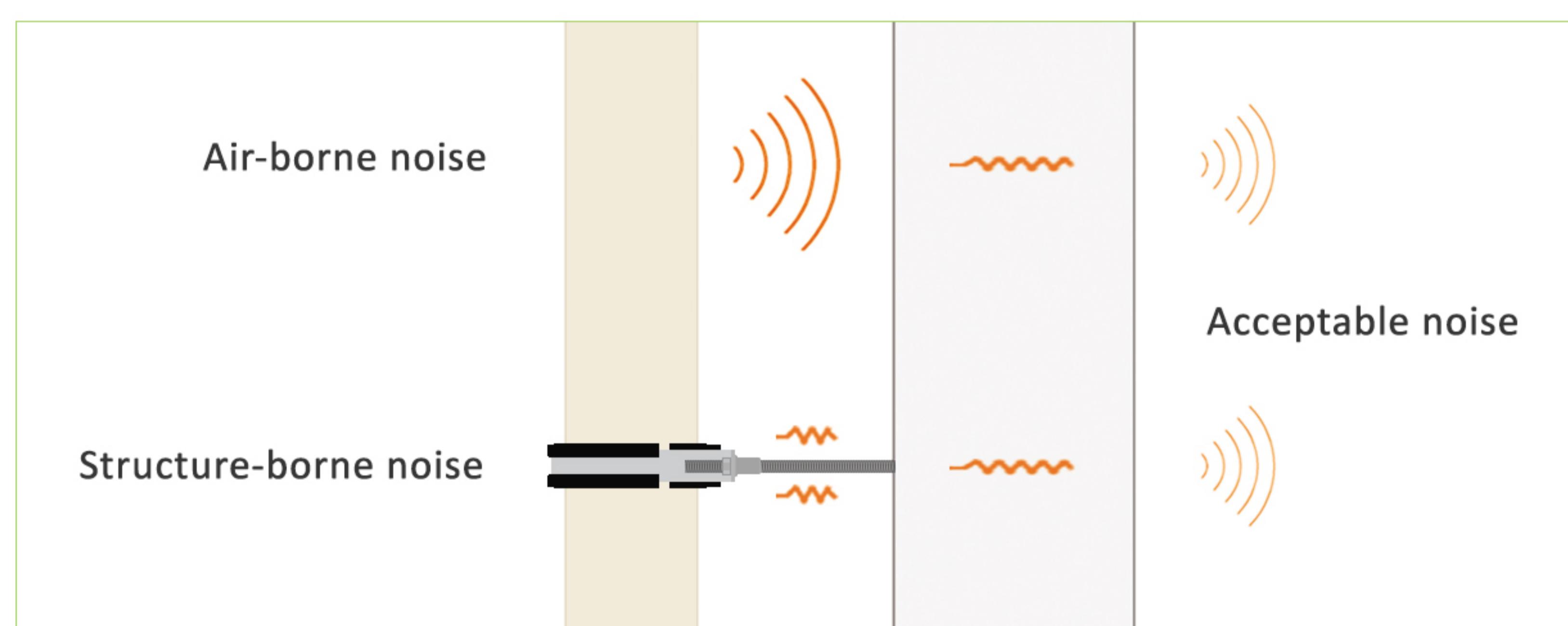
The modern life in the populous cities, crowded streets and tall buildings has caused new problems along with its many benefits. Today the noise pollution is a major concern; there are regulations and standards established for acceptable noise levels and new products and methods are developed for better noise control.

Noise reduction in buildings is more significant; relaxing in an apartment or focusing in a workplace is impossible in presence of disturbing noises. One of the sources of noise propagation inside buildings is the waste water systems.

The water movement inside the pipe transmits its vibrations to the surrounding air and structures. There are two types of noise in a soil and waste systems:

Airborne noise is the sound that travels through the air into the room. Limiting the propagation of this sound is achieved by using sound absorbing materials. Silent-10 reduces airborne noise with its 3-layer pipe structure and sound absorbing compound of a special formula.

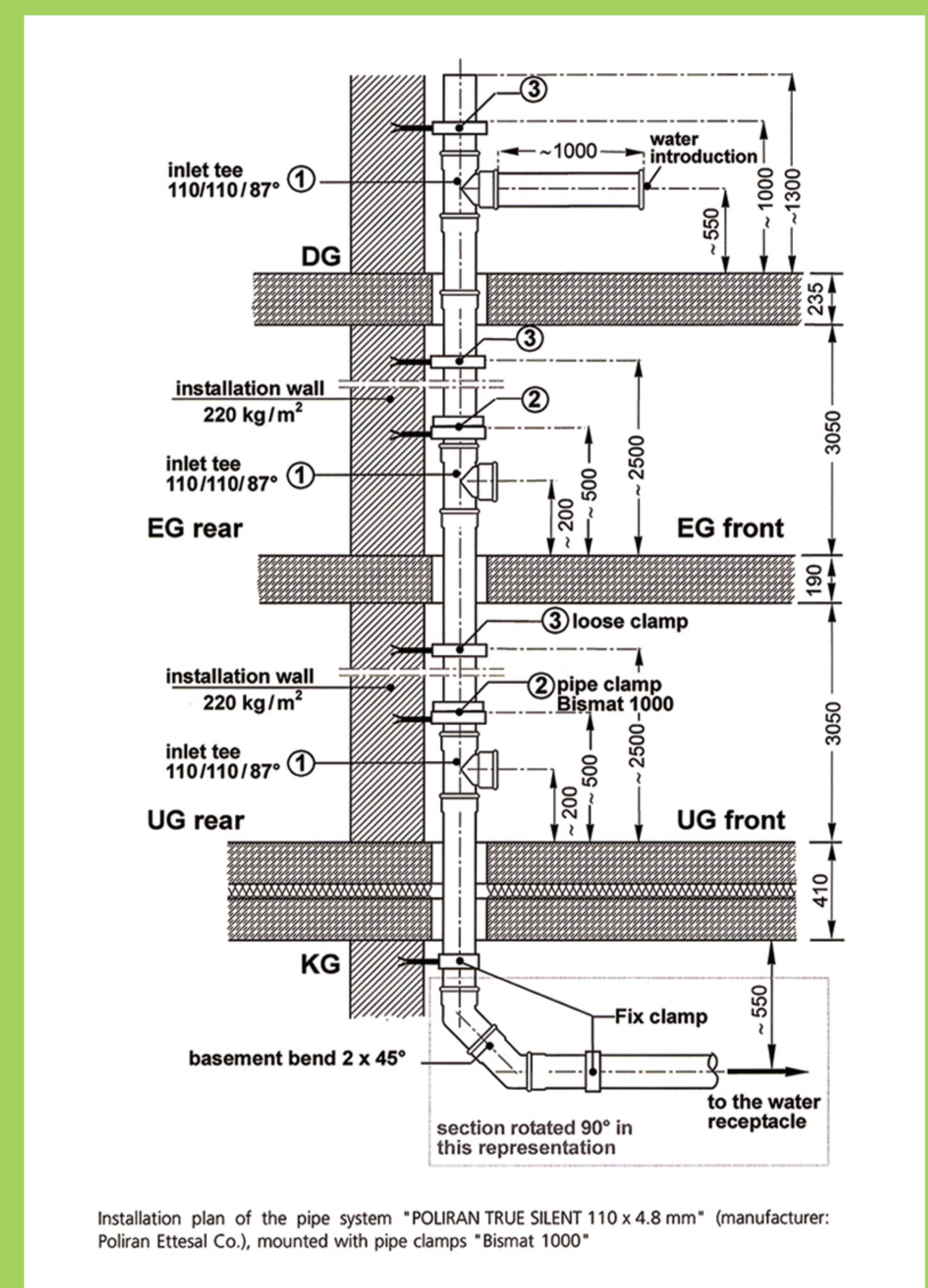
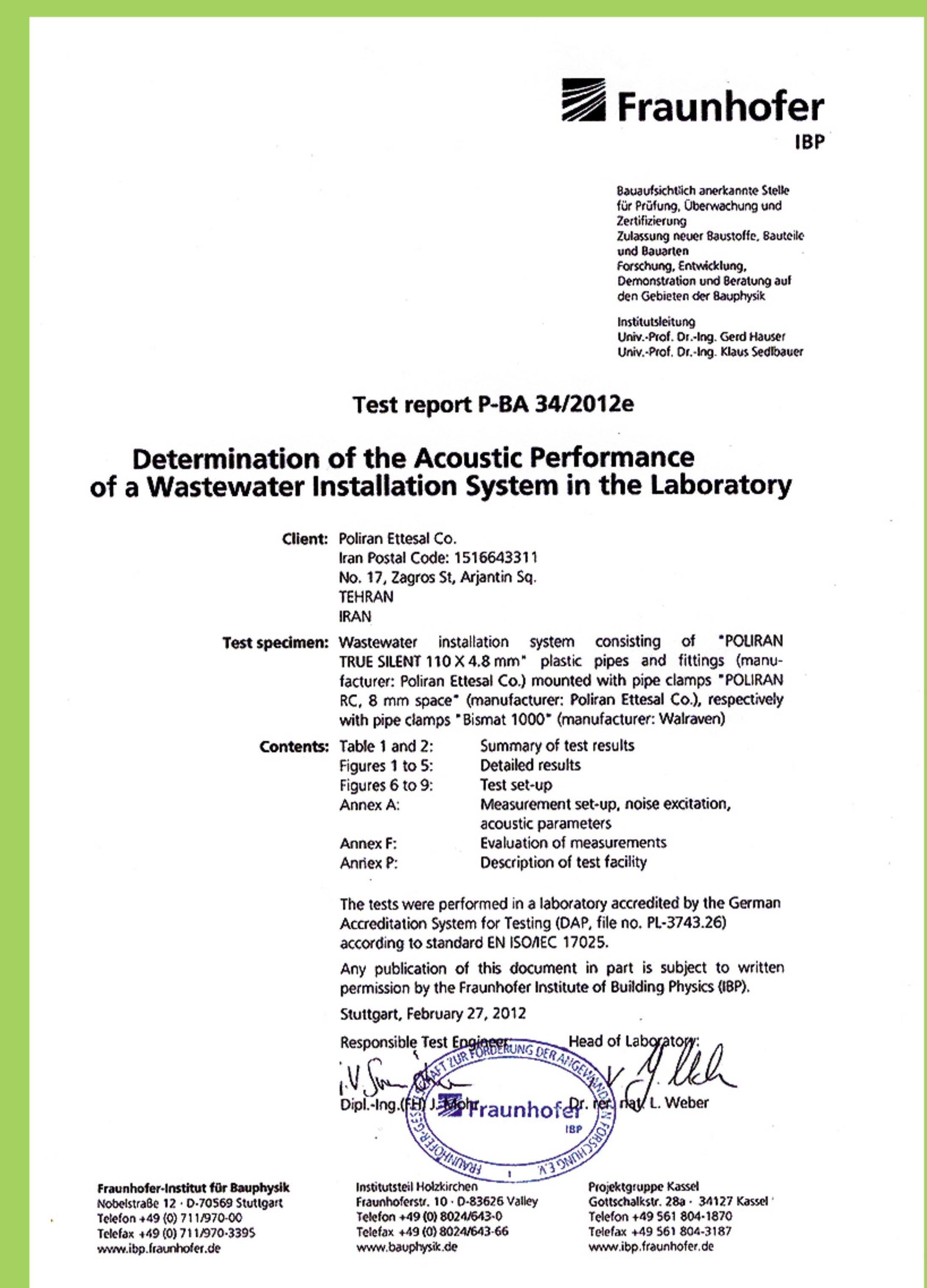
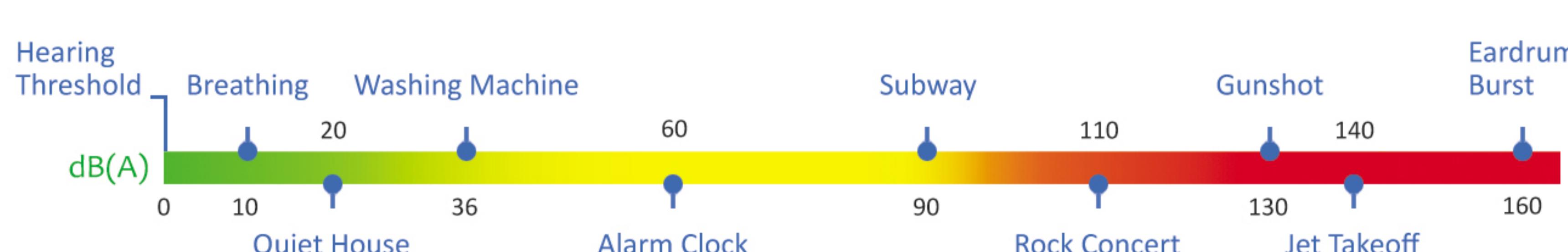
Structure-borne noise is the sound that first occurs through a solid structure generated from a vibrating source or an impact. The vibrations pass through pipe clamps and supports to the building's structure and from there to the adjacent rooms as an airborne noise. Silent-10 reduces structure-borne noise by using Poliran RC clamps; a special pipe clamp with rubber linings to uncouple vibrations from the piping system.



Reference standards

DIN 4109 establishes that the maximum noise level that can be produced by a drainage system inside a building is 30dB.

The directive VDI 4100 limits the noise levels in its most strict requirements to 20dB.



Installation plan of the pipe system "POLIRAN TRUE SILENT 110 x 4.8 mm" (manufacturer: Poliran Etesal Co.), mounted with pipe clamps "Bismat 1000".

Silent 10dB(A)

Waste water system "POLIRAN TRUE SILENT 110 x 4.8 mm" with pipe clamps "Bismat 1000" (mounting details see test set-up)

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	47	49	52
Installation sound level L_{in} [dB(A)] measured in the basement test-room UG rear	<10	<10	<10	10
Airborne sound pressure level $L_{a,A}$ [dB(A)] ¹⁾	43	47	49	52
Structure-borne sound characteristic level $L_{sc,A}$ [dB(A)] ¹⁾	<10	<10	<10	10

¹⁾ Evaluation according to EN 14366.

Silent-10 Drainage system is certified at a noise transmission level of incredible 10dB(A) at a flow Rate of 4 l/s

All tests were carried out in the accredited Fraunhofer institute of Germany in compliance with European standard EN 14366.

About Us

Founded in 1971, Poliran is the leading manufacturer of plastic pipe systems in Iran, providing state-of-the-art solutions for pipes and fittings used in water conveyance, irrigation and building water supply and drainage systems.

Deep attention to quality requirements and continuous improvement of products, as well as using best raw materials and up to date technologies have kept Poliran at the forefront of manufacturing plastic pipe systems. To achieve our quality objectives, we have adopted ISO 9001 Quality Management System and we aim to be the quality leader in our sector.

Our technical department provides complete support during design and installation thanks to a team of experienced engineers and experts, capable of dealing with the most complex system requirements.



Some of our projects:



Milad Tower



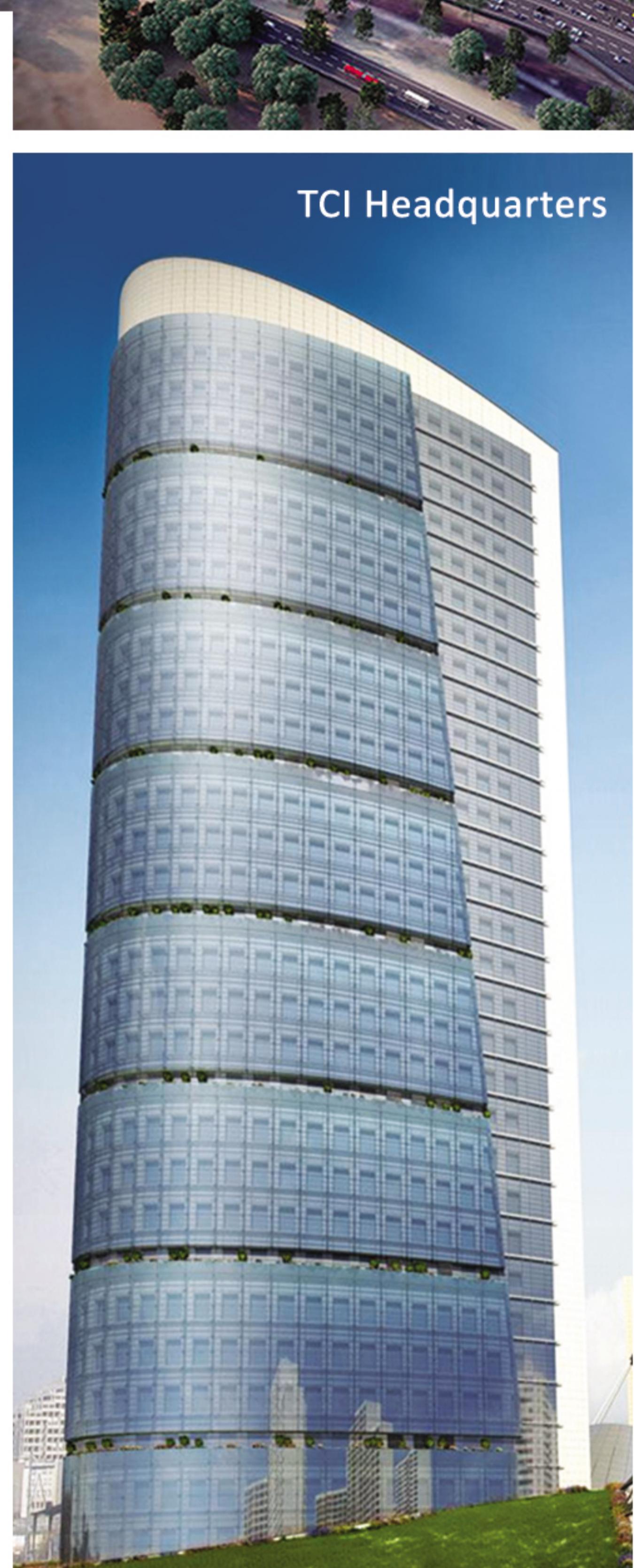
Iran Mall



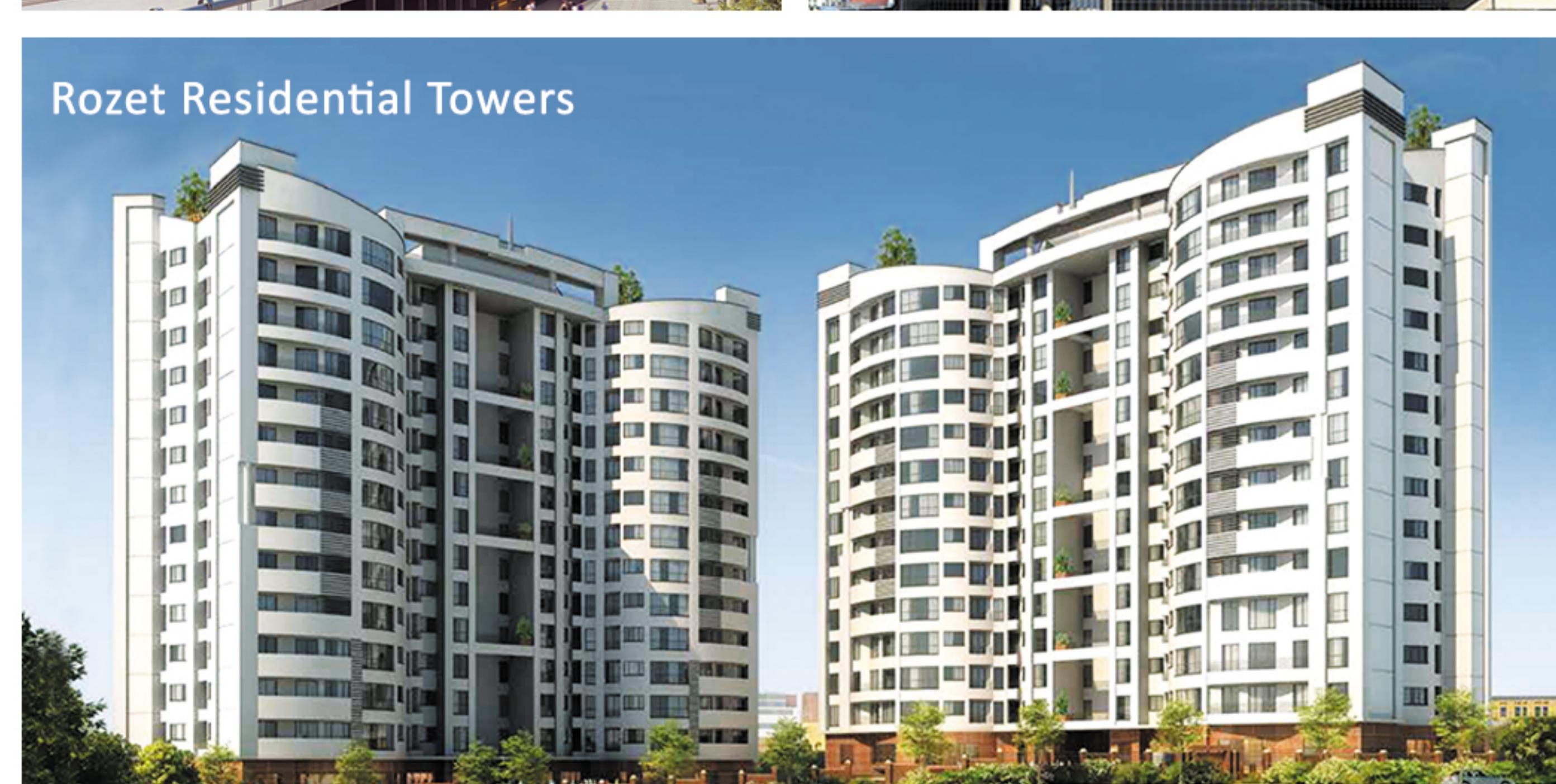
Araz Hotel



Atieh 2 Hospital



TCI Headquarters



Rozet Residential Towers



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