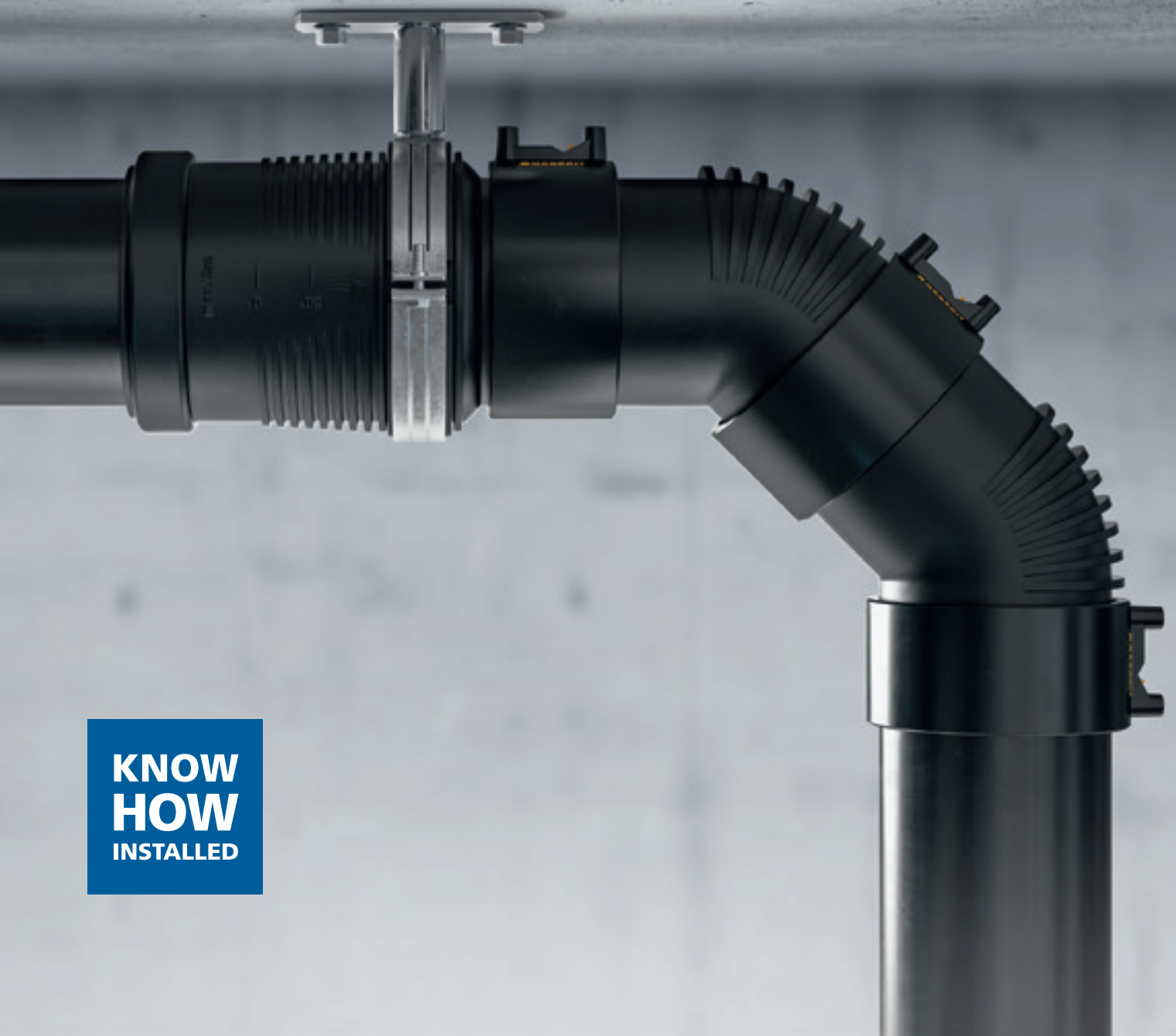


GEBERIT DRAINAGE SYSTEMS

**SAFE BET**

FOR CLEAN DRAINS



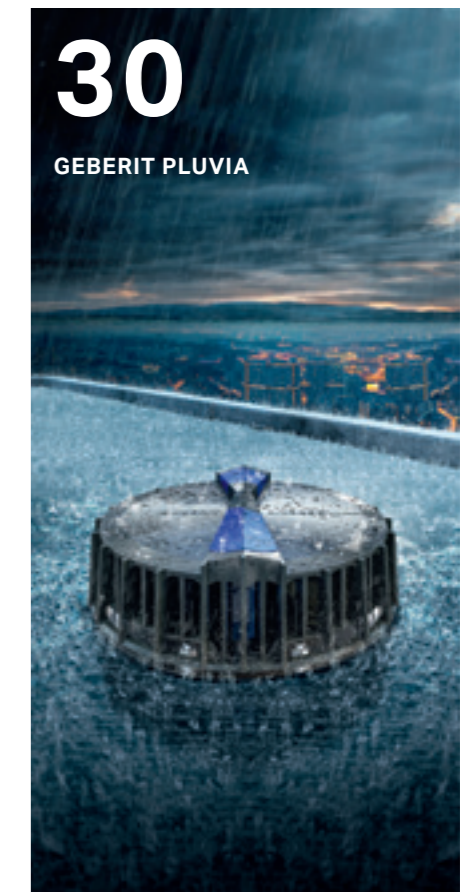
**KNOW  
HOW**  
INSTALLED



# PLAY IT **SAFE**

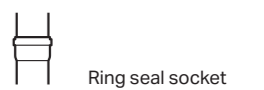
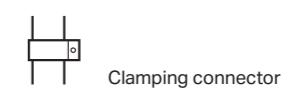
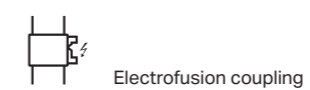
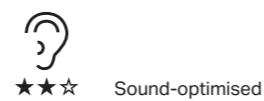
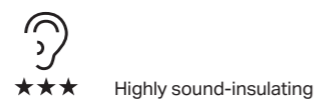
The piping systems of Geberit stand for know-how in the field of sanitary technology. From the connection to the water supply through to the distribution on the floor to the consumers, all the way to the drainage of roofs and buildings into the public sewage system, you can rely on Geberit systems.

With Geberit, you can provide your customers with state-of-the-art technological solutions in the areas of hydraulics, fire protection and sound insulation, reliability and environmental properties.



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# GEBERIT'S SYSTEMATIC APPROACH TO TECHNOLOGY WHEN EVERYTHING MATCHES AND FITS

Drainage means more than simply draining off water – at least for Geberit. To ensure that its drainage technology can keep up with reality on the building site and with the high fire protection and sound insulation requirements, Geberit invests lots of know-how into developing innovative products.

## ALWAYS ROOM FOR IMPROVEMENT

Geberit is the market leader in the area of sanitary technology in Europe. This is particularly true in the field of building drainage. Hardly any other company in this sector invests as much year after year in continually optimising existing systems and in developing new technologies and products as Geberit.

## SAFETY IN THE SYSTEM

The fire protection and sound insulation of a drainage system are only ever as good as their weakest component. If you combine elements from different manufacturers, you risk compromises at the interfaces. This also makes it more difficult to comply with current standards and regulations. Geberit therefore provides complete systems with a warranty and the necessary documentation for your project. You can therefore offer your customers a proven high degree of protection against the spread of fire through the discharge pipes. Furthermore, with the sound insulation expertise of Geberit, you can ensure that waste water noise is minimised in private houses, public buildings, hotels and business premises.

## SYSTEM SOLUTIONS WITH HIGH FLEXIBILITY

For Geberit, the waste fittings are the visible part of the waste water installation, which, together with the Geberit piping systems, form a homogeneous unit with simple interfaces. Geberit waste fittings also form perfect connections with the sanitary appliances. Regardless of whether the bathroom design needs to fulfil the highest expectations, barrier-free applications are required or the construction simply needs to be as space-saving as possible: Geberit has the right solution.

## GO WITH THE PROS

The success of a product or technology goes hand in hand with its practicality at the building site and its economic efficiency. For this reason, the feedback and suggestions provided by plumbers from across the globe are taken into account for all new innovations and further developments. This means that Geberit products and systems incorporate your know-how!

- Future-proof drainage systems
- Reliable compliance with sound insulation and fire protection standards
- Safe connection technology and waste fittings
- Suitable solutions for almost every application range



# SOUND INSULATION, FIRE PROTECTION AND HYDRAULICS CONVENIENCE SAFELY INSTALLED

Contemporary buildings are setting ever-higher requirements, including for drainage systems. To ensure convenience and safety at all times, including during peak loads, Geberit develops hydraulically optimised, innovative products and solutions, which fulfil the requirements for safe installations, fire protection, sound insulation and saving resources to ensure that you and your customers have peace of mind.



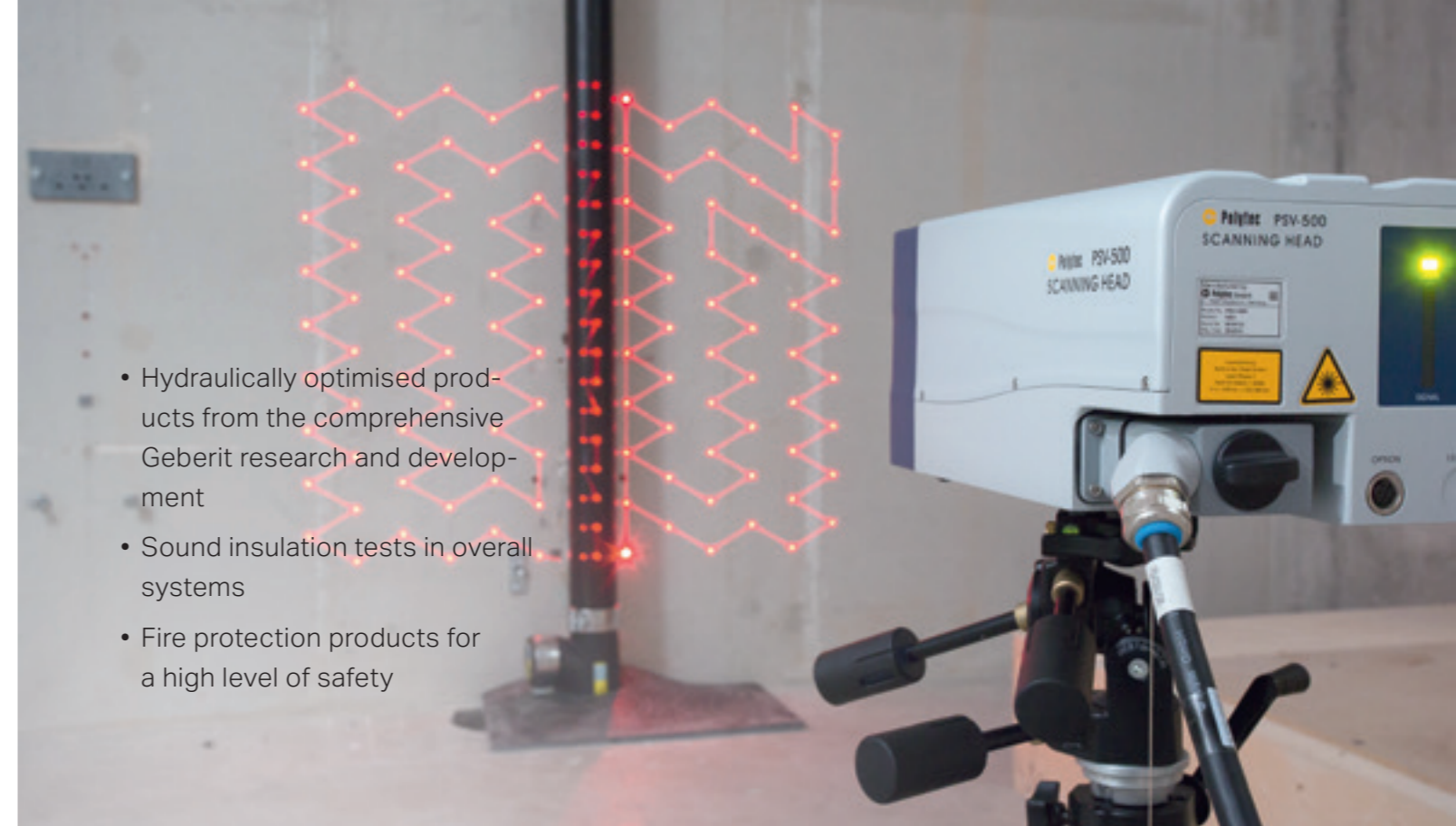
## COMPREHENSIVE TESTING AND CONSISTENT DEVELOPMENT

In addition to laboratories for sanitary technology and materials development, Geberit also operates a unique Building Technology and Acoustics Laboratory for testing components and entire drainage systems with respect to their hydraulics and acoustics. Thus, for example, the sound transmission of discharge stacks through several floors can be tested under realistic conditions. For the subject of fire protection, Geberit works closely with external testing laboratories. Both prototypes and series products are subjected to realistic fire tests. Country-specific fire protection requirements are thereby taken into account in full during product development.



## WASTE WATER HYDRAULICS CHALLENGE

Empty traps or highly fluctuating water levels in the WC, as well as oversized systems or unnecessary ventilation ducts, are all indications of inadequate planning or installation. This can result in user complaints and significant costs. Geberit anticipates these problems with hydraulically optimised products that are the result of in-house research in the laboratory and on the computer. With the practical training of sanitary engineers and plumbers on Geberit drainage towers, Geberit contributes to knowledge transfer in the area of hydraulics.



- Hydraulically optimised products from the comprehensive Geberit research and development
- Sound insulation tests in overall systems
- Fire protection products for a high level of safety

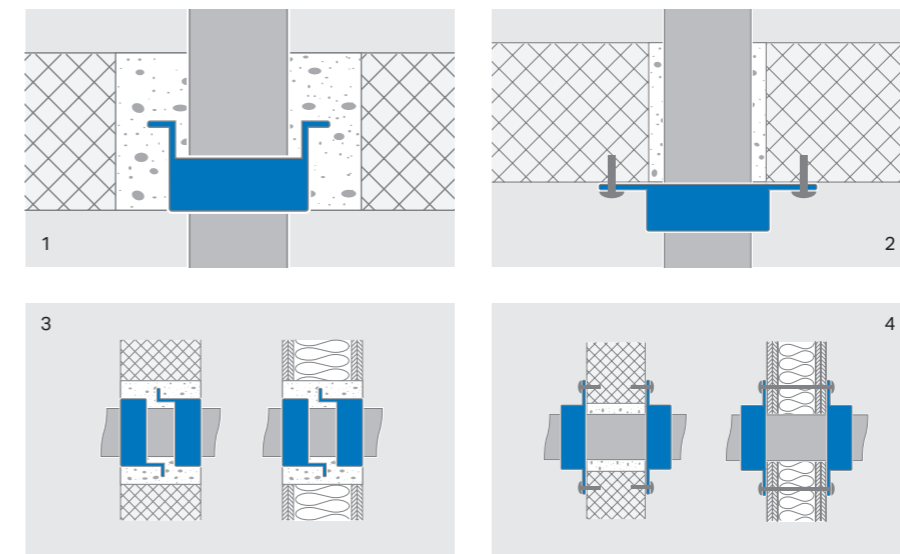
## SOUND INSULATION FROM A SINGLE SOURCE

In addition to the piping system with sound insulation, intelligent fastening and insulation technologies ensure that the development of noise from waste water is kept to a minimum. The system pipe brackets for Geberit Silent-Pro and Geberit Silent-db20, the Geberit sound insulation mat Isol Flex, the insulation hose comprised of PE and the self-adhesive sealing tape complete the sound insulation system.

## SAFER PROTECTION AGAINST FIRE SPREAD

Wall and ceiling openings as well as installation ducts can make it easier for fires in buildings to spread if they are not sealed in a proper, standard-compliant way. The Geberit fire protection sleeve RS90 Plus seals the pipe opening in case of fire and prevents smoke, fire and heat spreading to other rooms or parts of the building. The fire protection sleeve RS90 Plus can be used with all Geberit drainage systems.

## PROOF OF FIRE PROTECTION FOR A LARGE NUMBER OF DIFFERENT CONSTRUCTION SITUATIONS



### Examples:

- 1 Installed flush with the ceiling
- 2 Oblique in-ceiling installation
- 3 In-wall installation
- 4 Oblique in-wall installation



GEBERIT SERVICES

# A STRONG PARTNER FOR EVERY TASK

Quality and innovation are worth a great deal. Equally valuable are reliability, partnership and personal advice. We operate at full steam not only in the development of high-quality products, but also in offering you the services and support you need for your success – even at the building site if necessary.



#### PERSONAL ADVICE AND SERVICES

We are happy to help. Regardless of whether you need us on the service telephone, in a personal meeting or on site – Geberit is available to you with advice and action everywhere. Whether it be specialist information or technical advice or support for all planning issues, we offer you comprehensive and uncomplicated help. We go the extra mile for your project and also supervise entire building projects on request. And even if something should happen not to work on occasion, you can rely on Geberit's support.

#### OUR KNOW-HOW FOR YOU

With the comprehensive training courses it offers, Geberit supports the sanitary industry in preparing for the challenges of the future. In our own seminars, via webinar or directly at your building site, we share our knowledge with you and thereby contribute to our shared success. We provide you with helpful media for a large number of questions and tasks, from manuals to installation videos.

#### DIGITAL PLANNING SUPPORT

Successful sanitary projects start with good planning. With the Geberit ProPlanner planning software, the practical Geberit ProApp and numerous other tools, we support you in your day-to-day operations. BIM data are also available for building planning in Autodesk Revit.



- Noise-reducing design
- Compact fittings
- Visual inspection of insertion depth
- Visibly and noticeably of high quality



GEBERIT SILENT-PRO

# STRONG SOUND INSULATION

## EASY PLUG-IN

The Geberit Silent-Pro drainage system audibly reduces unwanted noise annoyance from neighbours' bathrooms. Plumbers and sanitary engineers also hear nothing more after installation: Plan, install and then enjoy peace of mind, because Geberit Silent-Pro fulfils all relevant sound insulation and fire protection requirements. Geberit Silent-Pro – and peace at home has a system.

### NOISE-REDUCING DESIGN

Geberit Silent-Pro is highly sound-insulating – thanks to its great own weight and its special, noise-reducing design on the impact zones of the fittings.

### EASY PLUG-IN WITH A SECURE HOLD

Geberit Silent-Pro is easily inserted and has a secure hold, because the whole range of pipes and fittings fit perfectly. By the way: The seals are already slightly lubricated for easier processing.

### COMPACT FITTINGS

If the installation space is limited, Geberit Silent-Pro offers additional benefits, because all fittings convinced with their compact design.

### HIGH DISCHARGE RATE

Geberit Silent-Pro can handle high volumes – thanks to swept-entry branch fittings. The large swept-entry increases the discharge capacity, and the system can therefore be given smaller dimensions.



Perfectly equipped for nearly all tasks: Geberit Silent-Pro has a very wide assortment with more than 100 fittings and more than 60 article numbers for pipes from DN50 to DN150.

# GEBERIT SILENT-PRO



## TIME-SAVING ALIGNMENT

The 30° markings on the fittings of Geberit Silent-Pro enable a quick and precise alignment of the fittings.

## SAFE HANDLE

With Geberit Silent-Pro, a safe installation is also possible in places in the building that are difficult to access, because even in the event of large pipe diameters, Geberit Silent-Pro lies safely in the plumber's hand thanks to its grasping ribs.

## VISUAL INSPECTION OF THE INSERTION DEPTH

If fittings are not inserted deep enough by mistake, leaks and severe subsequent damage may occur. The correct insertion depth can be identified immediately with the stop ring, without any measuring and marking.



## UV-RESISTANT

The high proportion of sooty particles in the piping material and the high-quality seals made of EPDM make the pipelines resistant for outside storage.



## ADDITIONAL SAFETY

Geberit Silent-Pro is leakproof, because a generously dimensioned insertion depth means that the system is generally forgiving, even if pipe ends by mistake have an oblique cut or components are not inserted fully.



## SEALS MADE FROM EPDM

They remain leakproof for decades. Even under severe operating conditions, e.g. in the event of increased water temperatures or exposure to household chemicals, the seals made of EPDM ensure longevity and safety.



## PROTECTION FROM SCRATCHES

In the rough building site environment, the fittings' sealing surfaces can easily get scratched. The protruding stop ring also offers effective protection for the sealing surfaces – that is smart design.



- Effective sound insulation
- High discharge capacity
- Varied options of use
- Available in all standard dimensions



GEBERIT SILENT-DB20

# ROBUST CONNECTION FOR STRONG SOUND INSULATION

Be it in a residential estate, a hotel or a meeting room: Noisy drainage pipes are a nuisance. This problem does not even occur with the Geberit Silent-db20 drainage system. The sound and hydraulically optimised pipes and fittings are suitable not only for stacks but also for floor connections and ensure quiet and effective drainage in any building.

#### EFFECTIVE SOUND INSULATION

The high inherent weight of Silent-db20 means that its natural vibrations are reduced and the sound is noticeably absorbed. The product design with special sound insulation ribs also reduces the noise on the impact zones.

#### SPACE-SAVING CONSTRUCTION

The hydraulically optimised product geometry of the fittings enables a cost-effective dimensioning of the product with a high discharge rate. This creates new free spaces, as a space-saving configuration is also sufficient for the pipe ducts of the stacks.



# GEBERIT SILENT-DB20

## SOLUTIONS FOR EVERY TYPE OF BUILDING

With the Geberit Silent-db20 drainage system, practically any building drainage can be solved perfectly and without compromise. Geberit Silent-db20 is available in all standard pipe diameters between d56 – d160, and the assortment of fittings and accessories caters to virtually any need.



## INNOVATIVE FITTINGS

Geberit continuously develops its piping systems. For instance, the floor height can be reduced with the combined branch fitting, swept-entry for toilet and shower element.

## TIME-SAVING INSTALLATION

The drainage system Geberit Silent-db20 enables efficient operation on the building site thanks to a comprehensive assortment of fittings and tools which have undergone practical trials. Furthermore, the Geberit Silent-db20 is also suitable for prefabrication in the plumber's own workshop. This pays off for serial production, in particular.

## CONNECTIONS FOR ALL CIRCUMSTANCES

You have all of the options: The system can be connected in three different ways – regardless of whether using a quick electrofusion welding, a clamping connector or using butt welding if lower sound insulation requirements are sufficient.

## SAFE ADAPTER CONNECTION

For the connection of floor drainages from Geberit PE or Geberit Silent-PP to stacks from Geberit Silent-db20, Geberit offers special adapters that ensure permanent connection thanks to retaining claws made of stainless steel.



## RESISTANT TO UV RADIATION

The polyethylene (PE) used by Geberit contains special additives which effectively protect against UV radiation. The weatherproof Geberit Silent-db20 pipes can therefore be stored outdoors for months.



## SHOCKPROOF AND FLEXIBLE

Geberit Silent-db20 pipes are nearly indestructible at normal room temperatures. The tough polyethylene (PE) is even shockproof at icy temperatures of - 20 °C. This robustness provides, most notably, a guarantee during the construction stage that the pipelines will remain intact despite possible mechanical influences.





- More power, less sound
- Hydraulically optimised for a high drainage capacity
- Simple push-fit connection system

GEBERIT SILENT-PP

# QUIET DRAINAGE EASY PLUG-IN

The Geberit Silent-PP drainage plug-in system made up of robust three-layer pipes is ideal for use in the stack and for quick, cost-efficient and sound-optimised floor connection in multiple-storey residential construction or comprehensively in one-family and two-family homes. In combination with Geberit Silent-Pro and Silent-db20 as stack, Silent-PP achieves very good sound insulation values.

#### SOUND-OPTIMISED CONSTRUCTION

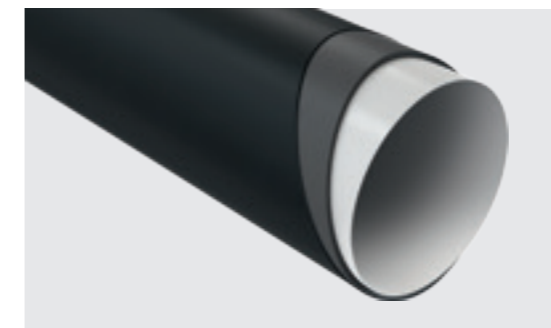
Geberit Silent-PP ensures less sound resulting from waste water. This is ensured by the mineral-reinforced three-layer construction of the material and the hydraulically optimised fittings.

#### HIGH RING STIFFNESS AND RELIABLE LEAKPROOF MATERIALS

The high ring stiffness of the Geberit Silent-PP system pipes and the tried-and-tested lip seals from EPDM in the sockets of the pipes and fittings ensure the reliable and permanent seal of the drainage system.

#### SILENT-PP PIPE WITH TWO SOCKETS

Precut mat turns one pipe section into two fully usable parts. This generates fewer scraps and waste, and space requirements in the warehouse, during transport and at the site of use are also reduced. This means less capital commitment, more cost-effectiveness and a more environmentally friendly process.



Mineral-reinforced three-layer construction



Geberit Silent-PP pipe with two sockets



# GEBERIT SILENT-PP



## LARGE ASSORTMENT

Geberit Silent-PP is available in seven lengths and more than 100 fittings. For the connection of toilets and low shower drains (e.g. Geberit shower element), a double branch fitting is available that makes the joint installation of toilet and floor-even shower easier, more efficient and more space-saving.



## LOW LINEAR EXPANSION

The minor expansion of the three-layer pipes in the Geberit Silent-PP plug-in system means that the entire drainage system can be fitted without expansion sockets. Linear expansion is thereby compensated for in the sockets. This contributes to cost saving and reduction of the assembly time.

## SYSTEM COMPATIBILITY

Compatible with the highly sound-insulating drainage systems of Geberit Silent-Pro and Geberit Silent-db20. Adapter sockets create a reliably sealed connection to the stacks from the Silent-db20. Silent-PP and Silent-Pro are compatible without the use of adapters.

## COLD IMPACT STRENGTH

Because Geberit Silent-PP features robust product materials which have cold impact strength, the pipes and fittings can even be safely processed as before at low temperatures, unproblematically and without risk of breakage.

## UV-RESISTANT

The high proportion of sooty particles in the piping material and the high-quality seals made of EPDM make the system resistant to sunlight for outside storage for up to two years.



## EASY ALIGNMENT

All fittings of the pluggable Geberit Silent-PP drainage system have a 30° marking for quick and easy alignment of the entire drainage system. The rib-enforced fittings enable easy handling of the fittings.

## CONTROLLABLE INSERTION DEPTH

The insertion depth marking serves as the stop position and is used for simple control of correct insertion depth: This is an added bonus for you in terms of even more safety and permanent tightness in all your discharge pipes.

- Large range of products and wide range of dimensions
- High temperature and chemical resistance
- Robust and shockproof
- Various connection options
- Environmentally friendly plastic

GEBERIT PE

# ROBUST RESISTANCE NO MATTER WHAT

The Geberit PE drainage system defies temperatures, pressure and aggressive media. The robust pipes are available in all common diameters from d32 to d315, and the range of fittings including the special fittings is nearly comprehensive. The polyethylene piping material is very light yet unbelievable tough, and the connection technologies guarantee permanent tightness and high tensile strength. The system includes detail-tested components and practical tools for the building site and workshop.



#### IDEAL FOR PREFABRICATION

Due to the fixed connection technology, Geberit PE is perfectly suitable for prefabrication and thereby cost-effective production of series.

#### DEFIES EXTREME TEMPERATURES

The high density of the material makes Geberit PE particularly robust. Hot water does not affect the material at temperatures of up to 80 °C – or even up to 100 °C in the short term and under certain conditions. In the event of cold, the tough material is even still shockproof at temperatures of - 40 °C.

#### SHOCKPROOF AND FLEXIBLE

The pipes and fittings withstand shocks, drops, impacts or pressures of up to 1.5 bar without breakage or permanent deformation. This robustness provides, most notably, a guarantee during the construction stage that the pipeline will remain intact despite possible mechanical influences.

#### GENTLE TO THE ENVIRONMENT

Polyethylene, the material used, is environmentally friendly, has a positive ecobalance and is 100 % recyclable. No toxic emissions whatsoever are released if processed correctly. Also, no problematic hydrochloric gases are created in the event of a fire.

# GEBERIT PE



## PERMANENT SEAL

The welding joints of Geberit PE pipes remain persistently leakproof for many years and offer building owners and plumbers a high degree of safety.

## VARIED SOLUTIONS

The comprehensive assortment of fittings with special fittings and accessories makes Geberit PE the universal solution for numerous drainage tasks. It is suitable, among other things, for use in industry, commerce, laboratory, for buried ground pipes and for roof drainage with Geberit Pluvia.

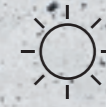
## IN THE WALL AND FLOOR

The extraordinarily tough and robust Geberit PE pipelines can be embedded in concrete or laid in the ground in accordance with static and other recognised technical regulations without any concern.



## RESISTANT AGAINST CHEMICALS

The Geberit PE drainage system is suitable for a multitude of applications in industry or laboratories. The material is resistant against most standard alkalis, acids and chemicals.



## UV-RESISTANT

The polyethylene (PE) used by Geberit contains special additives which effectively protect against UV radiation. The weatherproof pipes can therefore also be stored outdoors.

## CONNECTIONS FOR ALL CIRCUMSTANCES

From butt welding to quick electrofusion sleeve coupling all the way to screw connection with flanges and pipe threads: Geberit PE pipes and fittings can be connected in a permanently sealed manner in many ways.





- More residential and floor space
- Simple planning and installation
- Consistently smaller pipe dimensions
- No additional ventilation pipe required
- Horizontal pipelines of up to 6 metres without slope

GEBERIT SUPERTUBE

# THE SPACE GAINING SYSTEM

Geberit SuperTube offers space savings in all directions – both vertical and horizontal – by accommodating smaller pipe dimensions and doing away with additional ventilation pipes. Horizontal pipelines of up to 6 metres can be installed without a slope.



## 1 GEBERIT PE SOVENT FITTING

The optimised geometry of the Geberit PE Sovent fitting guides the water within the stack, sets it in rotation and thereby causes it to press against the pipe wall. The resulting annular flow creates a stable, consistent column of air inside, which facilitates a high discharge capacity.



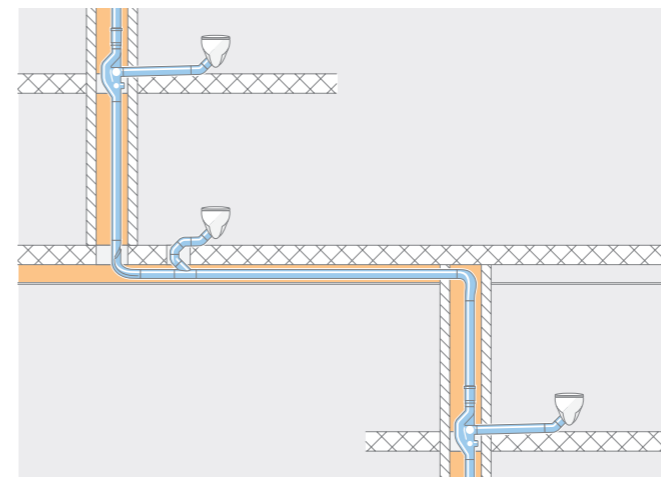
## 2 GEBERIT PE BOTTOMTURN BEND

With the Geberit PE BottomTurn bend, a change in direction causes the wall of water to break and the annular flow to become a layered flow without disrupting the column of air. This change significantly reduces impulse losses compared with conventional solutions.



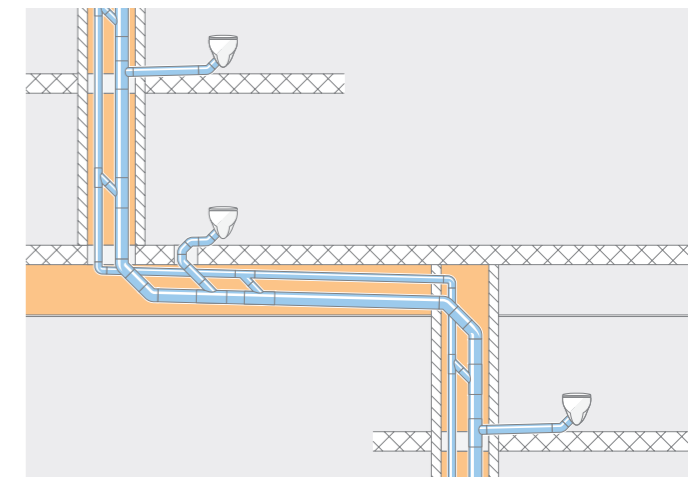
## 3 GEBERIT PE BACKFLIP BEND

The twisted Geberit PE BackFlip bend guides the layered flow back into a swirling, offset annular flow so that the air column is maintained throughout the remaining stack.



### GEBERIT SUPERTUBE

This technology facilitates a consistent discharge capacity of 12 l/s with a pipe dimension of d110 without a parallel ventilation pipe. Horizontal pipelines of up to 6 metres can be installed without a slope.



### CONVENTIONAL SYSTEMS

A conventional discharge pipe with a pipe dimension of d160 and the additional d90 ventilation pipe for a discharge capacity of 12.4 l/s. Horizontal pipelines must be installed with a slope of 0.5–5%.



- High savings in materials
- Fast installation
- Optimal design freedom and use of space
- Less time spent on maintenance
- High performance and reliability

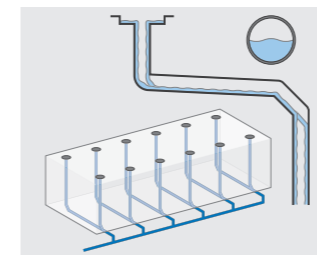
GEBERIT PLUVIA

# SYPHONIC ROOF DRAINAGE

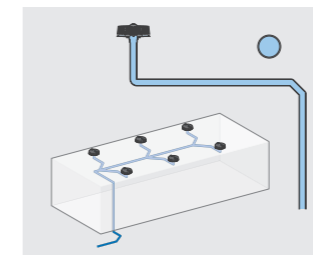
Geberit Pluvia drains roofs efficiently and reliably even under the heaviest rainfall. Because significantly less product material and space is required for syphonic roof drainage than for conventional systems, free space is opened up. More design freedom in planning, higher profitability during installation and in operation: Good reasons to opt for Geberit competence. Through tried-and-tested technology, innovative details and comprehensive service, Geberit Pluvia has been setting new standards for many years.

While conventional systems simply allow rain to run off through sloping pipes, the compact Geberit Pluvia pipe system fills up quickly and extracts the rainwater from the roof using the resultant negative pressure. The Geberit Pluvia roof outlets prevent air from being sucked in and guarantee reliable performance.

The result: Double the amount of rainwater discharge at half the pipe diameter. There is also greater design freedom in terms of planning, since there is no longer any need for pipelines that have to be laid with a slope.



Conventional roof drainage system



Geberit Pluvia syphonic roof drainage

#### SUITABLE FOR PRACTICALLY ANY ROOF SHAPE

Geberit Pluvia ensures architectonic freedom, as different roof shapes can be reliably drained with it. The syphonic roof drainage makes many things possible that would not be technically feasible with conventional systems.

#### FEWER ROOF OUTLETS

Thanks to the high discharge rate of the syphonic roof drainage system, fewer roof outlets are required. This results in savings in product material and the amount of work needed, while also preserving the roof.

#### FEWER DISCHARGE STACKS

Because the pipes are filled completely, fewer drains are required. The effect: more flexibility in planning.

#### FEWER UNDERGROUND PIPE CONNECTIONS

Fewer discharge stacks and fewer connections mean lower installation and material costs.

#### SMALLER PIPE DIAMETERS

Geberit Pluvia pipelines are designed for complete filling. This reduces the pipe diameter to the bare necessity.

#### SELF-CLEANING SYSTEM

The high flow velocity of more than 0.5 m/s when the pipeline is filled produces suction which contributes to the self-cleaning of the system. This ultimately means less time spent on maintenance.

#### NO SLOPE

Because Geberit Pluvia pipelines are laid horizontally, the drainage system does not result in any loss of space.



# GEBERIT PLUVIA

## ALL-ROUND RELIABILITY

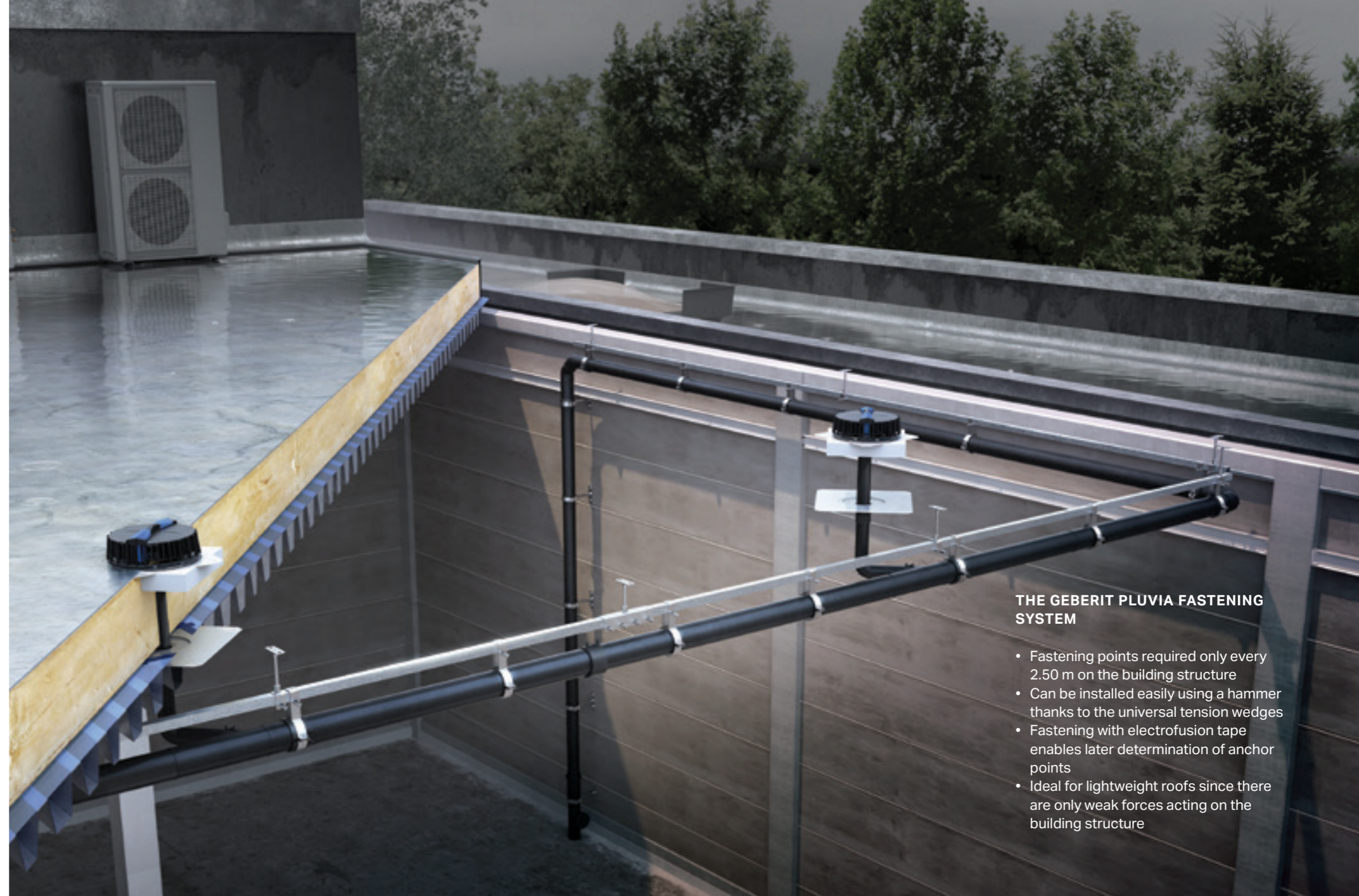
Perfectly matched components ensure that the overall system functions flawlessly. Sophisticated details and a consistently high level of material quality reliably ensure durability, safety and smooth operation.

## THE GEBERIT PLUVIA ROOF OUTLETS

- Geberit roof outlets for all roof types
- Reliable sealing with the Geberit flange gasket made of EPDM
- Each roof outlet is tested individually for tightness at the factory
- Rotating lock bar sealing for easy installation
- With the Pluvia emergency overflow, it is possible to convert to an emergency overflow system

## SIMPLER PLANNING AND CALCULATION

- With a few clicks to the right solution for your design situation with the Geberit Pluvia Product Finder
- Geberit ProPlanner software with plug-in for Autodesk® Revit® for hydraulic calculation
- Complete BIM data available



## THE GEBERIT PLUVIA FASTENING SYSTEM

- Fastening points required only every 2.50 m on the building structure
- Can be installed easily using a hammer thanks to the universal tension wedges
- Fastening with electrofusion tape enables later determination of anchor points
- Ideal for lightweight roofs since there are only weak forces acting on the building structure

## ROOF STRUCTURES – A SOLUTION FOR EVERY CONSTRUCTION SITUATION



**Example 1**  
Concrete roof with bitumen roof foil



**Example 2**  
Lightweight roof, insulated with roof foil and the Geberit vapour barrier connection



**Example 3**  
Weight-bearing concrete roof with bitumen roof foil



**Example 4**  
Roof with steel gutter





GEBERIT ENERGY RETAINING VALVE ERV

# THE PINNACLE USAGE TO A BETTER EN- ERGY EFFICIENCY

Energy-saving measures are a standard feature throughout modern buildings. They generally extend throughout an entire building, from the facade to the windows right through to the roof; however, they have never addressed the open ventilation pipe in a stack – until now. When a toilet is flushed, this kind of opening prevents negative pressure from forming and traps from being blown empty. The result is constant heat loss via the drainage system. The Geberit energy retaining valve ERV closes the open pipeline without impairing functionality.

#### SEALS EVERY LAST LEAK

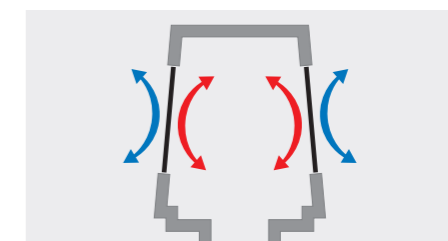
The Geberit energy retaining valve ERV seals the ventilation pipe for waste water above the roof using a patented magnetic diaphragm system. The diaphragms open automatically when pressure compensation is required. The rest of the time, the valve retains heat inside the building. Overpressure from the sewage system can escape via the ERV, as the diaphragms open in both directions. This is compliant with standard SN592000.

#### POSITIVE EFFECTS THAT PAY OFF

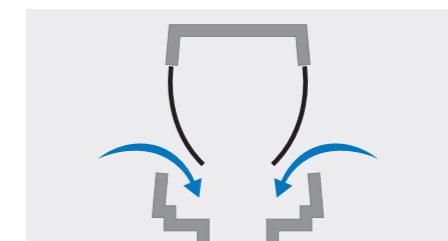
Depending on the building structure, location and weather conditions, an energy retaining valve ERV can pay for itself within five to ten years\*.

\*Based on the air temperatures in Lucerne for a multi-storey building and uninsulated stacks

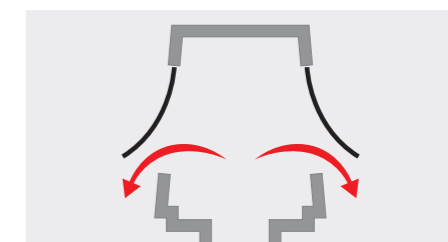
#### VENTILATION AS REQUIRED



When there is no waste water flowing through the stack, the diaphragms stay closed – preventing energy loss.



If negative pressure arises when a toilet is used, for instance, the diaphragms open and air flows into the system.



They also open if they need to compensate for high levels of overpressure from the sewage system.

- Save energy without losing ventilation functionality
- Can be mounted onto a diameter of d110 and adapted to suit common installation methods
- Maintenance-free with protection against insects and frost resistance
- Can pay for itself within five to ten years
- Prevents unpleasant odours on roof terraces

TOOLS

# DEVICES THAT WELD TOGETHER



### GEBERIT PIPE SCRAPER

In a short period of time, a pipe or fitting can be prepared for welding with a Geberit electrofusion coupling.

- For Geberit PE and Geberit Silent-db20 with d110
- Can be used with traditional cordless drill drivers
- Ideal in narrow areas or areas that are difficult to access
- Scraping knife that can be quickly and easily replaced



### BUTT WELDING MACHINES

The Universal and Media butt-welding machines are easy to operate and can be converted quickly. Thanks to their particular robustness, they are well suited to both prefabrication in the workshop and use at the building site.



### GEBERIT ELECTROFUSION MACHINE ESG 3

The Geberit electrofusion machine ESG 3 for the piping systems Geberit PE and Geberit Silent-db20 is made for demanding everyday work at the building site. It is powerful and suitable for electrofusion welding or electrofusion coupling with integrated thermal fuse of all pipe dimensions from d40 to d315.

### GEBERIT ELECTROFUSION MACHINE ESG LIGHT

The small Geberit electrofusion machine ESG light is the compact alternative to the ESG 3 and ensures easy handling at the building site. The ESG light makes it possible to connect Geberit PE and Geberit Silent-db20 pipes and fittings with the help of electrofusion couplings.

## GEBERIT ESG 3 AND ESG LIGHT IN COMPARISON



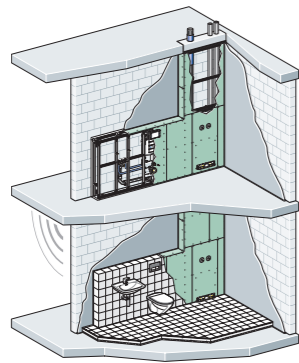
Geberit electrofusion machine	GEBERIT ESG 3	GEBERIT ESG LIGHT
d40 - d160	✓	✓
d200 - d315	✓	
Electrofusion couplings	✓	✓
Electrofusion tapes	✓	✓
Electrofusion couplings with integrated thermal fuse	✓	
Quick exchange of the connecting cable for electrofusion coupling	✓	✓
Fall impact cushioning	✓	✓
Right angle plug	✓	✓
Remote control	✓	
Simultaneous welding of up to three electrofusion couplings	✓	
Possible to interrupt the welding procedure	✓	✓
Operation with power generator	✓	
Weight in kg	5.9	2.0

# SOUND INSULATION PROOF

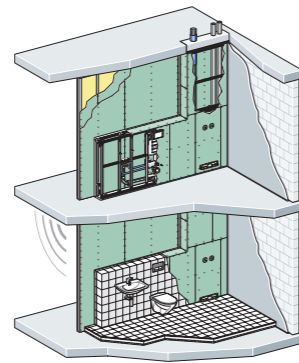
TRIED-AND-TESTED SOLUTIONS FOR ALL STANDARD CONSTRUCTION SITUATIONS



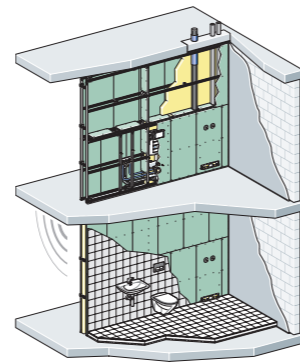
**1** Geberit GIS prewall installation in front of solid partition (180 kg/m<sup>2</sup>)



**2** Geberit GIS prewall installation in front of drywall partition (Knauf, W112)



**3** Geberit GIS separating partitions

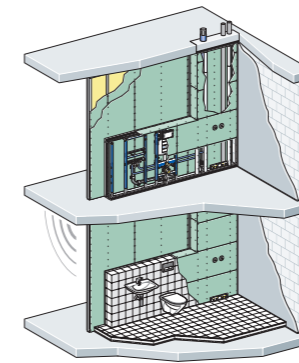


Stack	Silent-db20 or Silent-Pro	Silent-db20 or Silent-Pro	Silent-PP	Silent-db20 or Silent-Pro	Silent-db20 or Silent-Pro	Silent-PP	Silent-db20 or Silent-Pro	Silent-db20 or Silent-Pro	Silent-PP
	<b>Collector branch pipe</b>	Silent-db20 or Silent-Pro	Silent-PP	Silent-PP	Silent-db20 or Silent-Pro	Silent-PP	Silent-PP	Silent-db20 or Silent-Pro	Silent-PP
<b>System sound pressure level L<sub>AFmax,n</sub></b>	18 dB(A)	21 dB(A)	24 dB(A)	17 dB(A)	19 dB(A)	20 dB(A)	17 dB(A)	21 dB(A)	23 dB(A)
<b>DIN 4109-1:2016-07</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>DIN 4109/Supplement 2:1989-11</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓

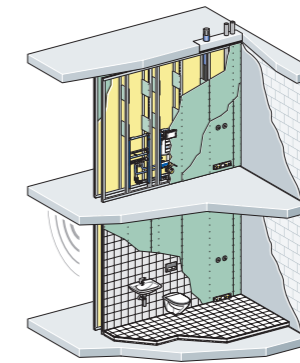
The acoustics information is based on measurements and calculations done by the Fraunhofer Institute for Building Physics in Stuttgart, Germany. The measurements were carried out in accordance with the German standards and directives under real-life conditions. All information refers to the structural setting in the installation test facility of the Building Technology and Acoustics Laboratory of Geberit AG under the described installation conditions. The test facility represents a section from a typical residential building and can be used directly for proving compliance with the sound insulation requirements stipulated by construction supervision authorities.

Other building conditions can lead to deviating results. The Geberit Silent-db20 drainage system with pipe brackets type Silent-db20 are used for the measurements. Characteristic comparison measurements with the Geberit Silent-Pro drainage system with pipe brackets type Silent-Pro resulted in a comparable sound-insulation behaviour (technical statement of the Fraunhofer Institute for Building Technology IBP).

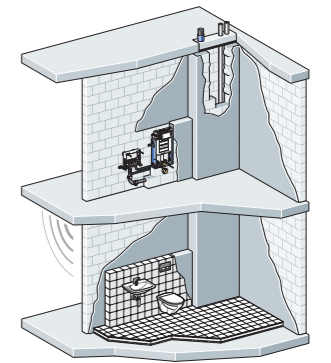
**4** Geberit Duofix system wall prewall installation in front of drywall partition (Knauf, W112)



**5** Geberit Duofix installation elements in separating drywall partition (Knauf, W116)



**6** Geberit Kombifix installation elements in masonry prewall installation in front of a solid partition (180 kg/m<sup>2</sup>)



Stack	Silent-db20 or Silent-Pro	Silent-db20 or Silent-Pro	Silent-PP	Silent-db20 or Silent-Pro	Silent-db20 or Silent-Pro	Silent-PP	Silent-db20 or Silent-Pro	Silent-db20 or Silent-Pro	Silent-PP
	<b>Collector branch pipe</b>	Silent-db20 or Silent-Pro	Silent-PP	Silent-PP	Silent-db20 or Silent-Pro	Silent-PP	Silent-PP	Silent-db20 or Silent-Pro	Silent-PP
<b>System sound pressure level L<sub>AFmax,n</sub></b>	20 dB(A)	22 dB(A)	23 dB(A)	21 dB(A)	25 dB(A)	26 dB(A)	27 dB(A)	30 dB(A)	30 dB(A)
<b>DIN 4109-1:2016-07</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>DIN 4109/Supplement 2:1989-11</b>	✓	✓	✓	✓	✓	-	-	-	-

\* Selection of the most frequent construction situations. You can find further evidence in Geberit's sound insulation and fire protection competence brochure.

# TECHNICAL DATA

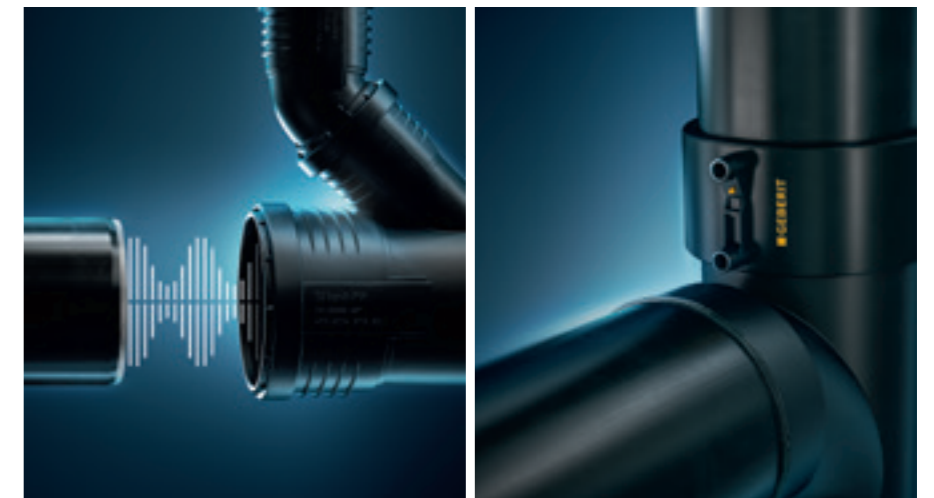
SUITABLE DRAINAGE SOLUTIONS FOR NEARLY ANY APPLICATION AREA



	Geberit Silent-db20	Geberit Silent-Pro
<b>Available dimensions</b>	d56; d63; d75; d90; d110; d135; d160	d50; d75; d90; d110; d125*; d160*
<b>DN nominal width</b>	DN56; DN60; DN70; DN90; DN100; DN125; DN150	DN50; DN70; DN90; DN100; DN125*; DN150*
<b>Building drainage</b>	✓	✓
<b>Conventional interior roof drainage system</b>	✓	✓**
<b>Additional applications</b>	Geberit drainage systems are approved for various other application areas. Additional applications on request from Geberit.	
<b>Material</b>	PE-S2	PP-MX
<b>Coefficient of linear expansion</b>	0.17 mm/(m·K)	0.08 mm/(m·K)
<b>Absorption of linear expansion</b>	Requires an expansion socket with double flange or a double sleeve coupling	Takes place inside the ring seal socket and does not require any additional measures
<b>Installation temperature</b>	-20 to 40 °C	-10 to 40 °C
<b>Permanent load application temperature</b>	-20 to 60 °C	-10 to 90 °C
<b>Chemical resistance</b>	95 % of all standard alkalis, acids and chemicals	Standard household chemicals
<b>Fire protection sleeve (approval in acc. with EN)</b>	Geberit fire protection sleeve RS90 Plus EN	Geberit fire protection sleeve RS90 Plus EN

\* Planned

\*\* With Geberit retaining claw for heights up to 20 m



	Geberit Silent-PP	Geberit PE
<b>Available dimensions</b>	d32; d40; d50; d75; d90; d110; d125; d160	d32; d40; d50; d56; d63; d75; d90; d110; d125; d160; d200; d250; d315
<b>DN nominal width</b>	DN30; DN40; DN50; DN70; Dn90; DN100; DN125; DN150	DN30; DN40; DN40; DN50; DN56; DN60; DN70; DN90; DN100; DN125; DN150; DN200; DN 250; DN300
<b>Building drainage</b>	✓	✓
<b>Conventional interior roof drainage system</b>	✓**	✓
<b>Additional applications</b>	Geberit drainage systems are approved for various other application areas. Additional applications on request from Geberit.	
<b>Material</b>	PP-MD	PE-HD
<b>Coefficient of linear expansion</b>	0.08 mm/(m·K)	0.17 mm/(m·K)
<b>Coefficient of linear expansion</b>	Takes place inside the ring seal socket and does not require any additional measures	Requires an expansion socket
<b>Coefficient of linear expansion</b>	-10 to 40 °C	-20 to 40 °C
<b>Permanent load application temperature</b>	-10 to 90 °C	-20 to 80 °C
<b>Chemical resistance</b>	Standard household chemicals	95 % of all standard alkalis, acids and chemicals
<b>Fire protection sleeve (approval in acc. with EN)</b>	Geberit fire protection sleeve RS90 Plus EN	Geberit fire protection sleeve RS90 Plus EN

\* Planned

\*\* With Geberit retaining claw for heights up to 20 m



Photo: Marie-Louise Halpenny.

# READY FOR GREEN BUILDING

Green building continues to gain in importance. The economical use of water is one of the key characteristics of a sustainable building.

Not far from the Northern Irish village of Bushmills stands a building that hardly looks like one from the outside. Thanks to its sustainable overall concept, the visitor's centre at the Giant's Causeway – which was designed by Heneghan Peng Architects and opened in 2012 – is considered a model green building. Design, materials, energy concept, transportation concept – the significance of sustainability spans all areas here, with water consumption clearly playing a main role.



## DESIGN: MELTED INTO THE LANDSCAPE

The facade, which is made of basalt that was mined nearby, is modelled on the cliffs that stand proudly above the world-famous Giant's Causeway. The visitor's centre, which has a green roof, appears to melt into the breathtaking landscape.



## WATER CONSUMPTION: -75 %

The visitor's centre consumes only a quarter of the water volume used by conventional domestic engineering solutions. This is due in part to the Geberit Sigma concealed cisterns 12 cm with dual flush. These are equipped with Sigma50 actuator plates.



## AWARD: BREEAM EXCELLENT

Projects require exemplary water consumption, energy consumption and sound insulation solutions if they are to meet the high standards of BREEAM, LEED, DGNB, Minergie and other recognised sustainability labels; Geberit offers these kinds of solutions.



The Giant's Causeway consists of around 40,000 uniformly shaped basalt columns.

[www.geberit.com/products/references](http://www.geberit.com/products/references)

For further information, visit:

[www.geberit.com.sg](http://www.geberit.com.sg)

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