



COMPETENCE

in roof drainage systems



Analysis of existing buildings

Implementation planning

Execution and monitoring across Europe

Experience for over 30 years



Safety. by Bublitz

The small pipe

with a big effect

Roof drainage

Low costs thanks to an effective system

This form of roof drainage takes advantage of the physical phenomenon that narrower tube cross-sections produce a negative pressure and thus deliver greater drainage performance.

We work with products from the company Geberit, Europe's market leader in this sector. Geberit has been developing highly efficient, intelligent products for over 100 years. Their products, processes and materials undergo constant further development.

GEBERIT

Benefit from the knowhow of Europe's market leader

We are the only company in Europe to offer you a complete specialised solution for roof drainage systems. The planning, implementation and monitoring are carried out as a one-stop service by our own employees.

The advantages for you:

- No loss of details when handing work or information on to other contractors.
 - You can expect experienced, reliable staff that are used to working together as team.
- ✓ Project discussion and comprehensive preplanning directly on-site
 - ✓ Implementation planning
 - ✓ Execution and projekt monitoring

References - a small selection

Practical examples are proof of quality

- Müllermilch, Dresden - High-bay warehouse
- Rösrather Möbelzentrum, Cologne/Gremberghoven
- AS Creation, Gummersbach - High-bay warehouse
- Weltbild-Verlag, Augsburg - High-bay warehouse
- Airbizz, Frankfurt - High-bay warehouse

On request, we will be happy to send you our complete list of references.

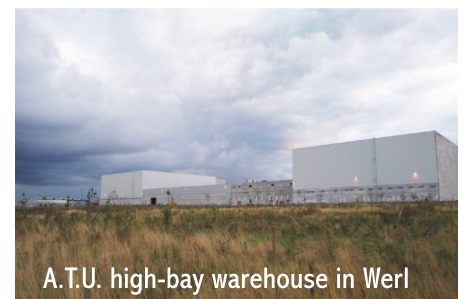
The advantages for you thanks to forward-looking technology in accordance with DIN EN 12056 and DIN 1986-100

- ✓ Significantly fewer drainage sections and only one downpipe - optimum utilisation of space
- ✓ The horizontal installation of the collecting mains allows flows to be merged directly below the roof surface
- ✓ Almost maintenance-free thanks to self-cleaning effect
- ✓ Requires little underground pipe-work, reducing the underground engineering and assembly work, as well as the material required
- ✓ Guaranteed compression strenght in the case of backlog
- ✓ Installation in existing buildings without significant business interruptions



Westfalenhütte galvanizing plant of Number 8 hot-dip coating line, Dortmund

Across Europe, we have already planned and realized more than 350 projects. These projects involved roof-drainage areas of up to 100,000 square metres!



A.T.U. high-bay warehouse in Werl

In use worldwide for
25 years: Geberit Pluvia

Geberit-Pluvia - the intelligent and economical solution offering decisive advantages

All flat roofs have one problem in common: drainage. Conventional drainage systems with a large number of roof inlets and just as many downpipes not only place significant limitations on the design and usage of the building, but also make construction harder and - because of the elaborate underground pipework system - introduce a delay to the building process. What's more, they require a lot of materials, are unnecessarily cost-intensive to install and often cannot be used with various roof constructions.



For contemporary architecture

The highly effective Geberit Pluvia roof inlets are connected to a common collecting mains without an incline directly under the roof. Large roof areas can thus be drained via **one** downpipe. This makes planning easier and reduces construction time. Cost-intensive underground pipes are no longer needed, and both the architect's planning freedom and the building's usability are increased several-fold.

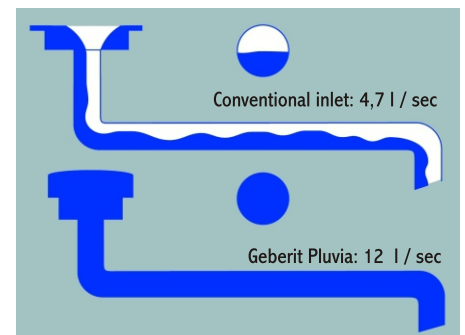


Roof drainage with suction



Suction is the magic word

Unlike conventional roof drainage systems, with the Geberit Pluvia system the rainwater pipes are planned specifically for the complete filling of the pipes. Negative pressure arises in the system - so the rainwater is literally sucked from the roof. The Geberit Pluvia roof inlet, which is specially designed for this purpose, prevents air entering and ensures the optimum functioning of the system.



It can drain up to 12 litres of rainwater per second; this is more than double the capacity of a conventional inlet, (max 4,7 l/sec) - and with a far smaller pipe cross-section. In principle this is very simple - in practice it is the product of long development and technical experience stemming from 25 years of successful deployment on construction projects.

Small Pipe - big capacity

Conventional or Geberit Pluvia - the comparison says it all:

Geberit Pluvia roof drainage:

Only one downpipe ✓

- Freedom in terms of architectural building planning
- Provides optimum utilization of space
- Simplifies the overall planning of the building

Minimal underground pipes ✓

- Simplified planning and coordination between trades
- Reduced material and assembly costs

Installation without inclines ✓

- Makes planning and implementation easier
- Parallel laying with other supply pipes
- Flows from several roof inlets merge under the roof

Small pipe - big capacity ✓

- Rule of thumb: double drainage capacity for half the pipe size
- Easier assembly
- Reduced material requirements

Fewer roof inlets ✓

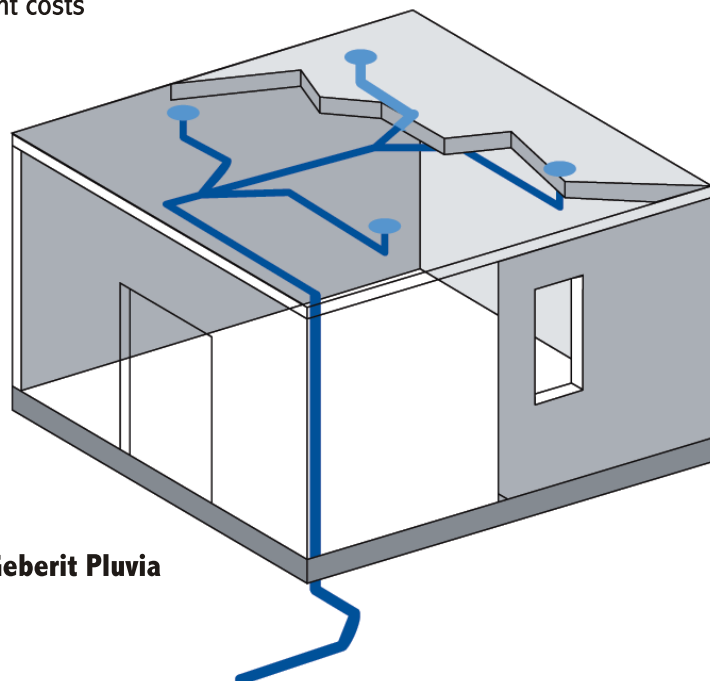
- Large drainage capacity - 12 l/sec
- Fewer roof penetrations
- Lower investment costs



Drainage with Geberit Pluvia

Example: Roof area 1,125 m²

- 1 downpipe DN 100
- 4 roof inlets carried on the ceiling
- High level of architectural freedom
- One short underground drain



An example of Geberit Pluvia

Conventional roof drainage

A lot of effort
for poor performance

**Conventional or Geberit Pluvia -
the comparison says it all:**

Conventional roof drainage:

Lots of downpipes

- Lots of roof inlets
- Architecture and building planning are tied to the rainwater system



Elaborate network & underground pipework

- Lengthy installation
- High investment costs



Installation with incline is required

- Makes planning more difficult
- Uses a lot of space



Large cross-sections

- High material use



Lots of roof inlets

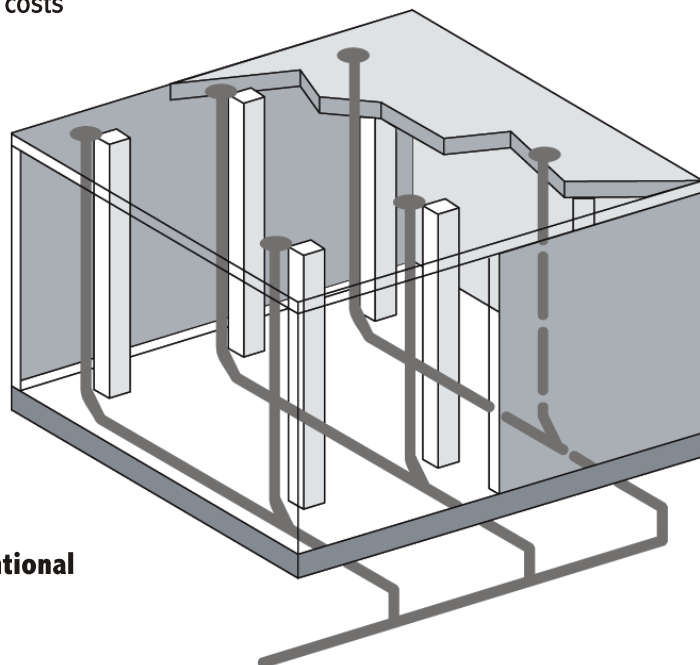
- Lots of roof penetrations
- Low discharge capacity
- High investment costs



Conventional drainage

Example: Roof area 1,125 m²

- 6 downpipes DN 100
- 6 roof inlets run through the room
- Lack of architectural freedom
- Long underground drain



Example: Conventional

Conventional:
a lot of effort for poor performance

Types of application - always the perfect system

Types of application - always the perfect system

100 m² or 100,000 m² - Geberit Pluvia is always the perfect system

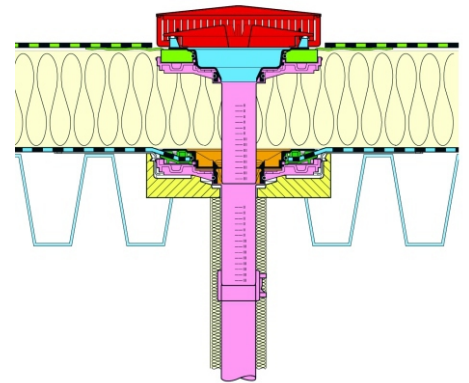
The technical principle behind Geberit Pluvia and its high drainage rate ensure that the system can be used in a broad range of applications. It can be fitted into both cold and warm roofs.

100 m² or 100,000 m² - we have the system for you

Even inverted roofs and roofs with various amounts of green coverage - extensive or intensive - can be drained.

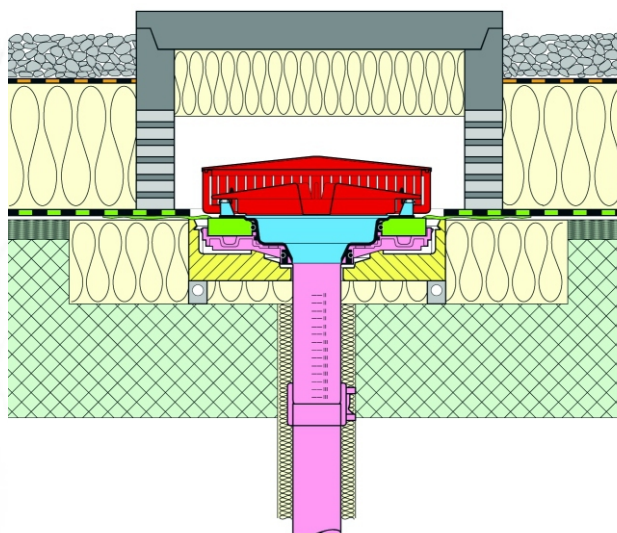
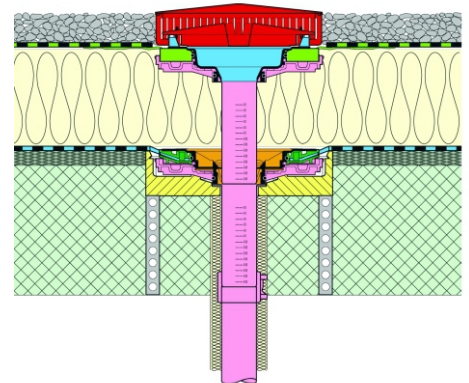
Warm roof, lightweight construction

For trapezoid designs with bitumen or membrane roof sealing, with or without fixed vapour barrier connection. Also with horizontal outflow and for wooden structures with membrane roof sealing.



Warm roof, solid construction

For concrete constructions with membrane or bitumen roof sealing, with or without fixed vapour barrier connection. Also with recess and inlaid rainwater drainage for horizontal outflow.



Invert roof / Blue roof

For concrete constructions with membrane or bitumen roof sealing, gravel-covered. With insulated drain system or water-permeable thermal insulation.

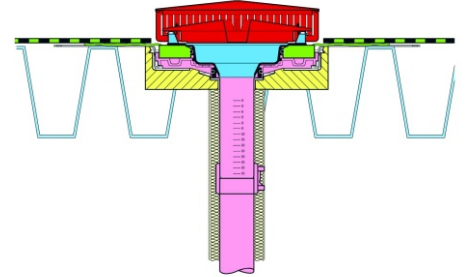
Types of application - always the perfect system

Types of application - always the perfect system

100 m² or 100,000 m² - we have the system for you

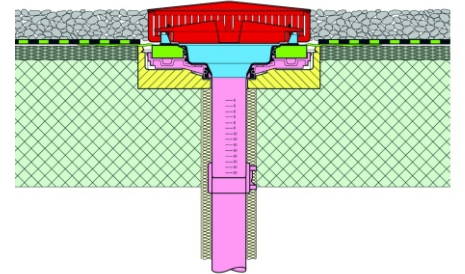
Cold roof, lightweight construction

For trapezoid designs with bitumen or membrane roof sealing.



Cold roof, solid construction

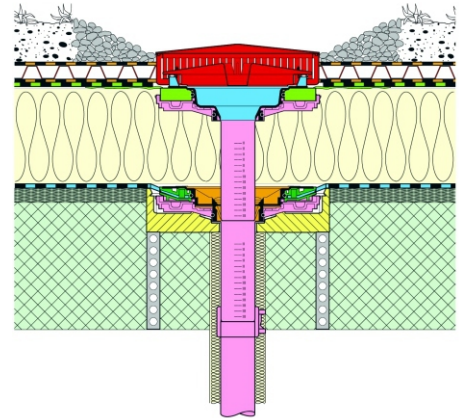
For concrete constructions with membrane or bitumen roof sealing, with or without gravel covering. Also with recess and inlaid rainwater drainage for horizontal outflow.



Roof with extensive green coverage

Warm roof of solid concrete construction with membrane roof sealing, fixed vapour barrier connections and extensive green coverage.

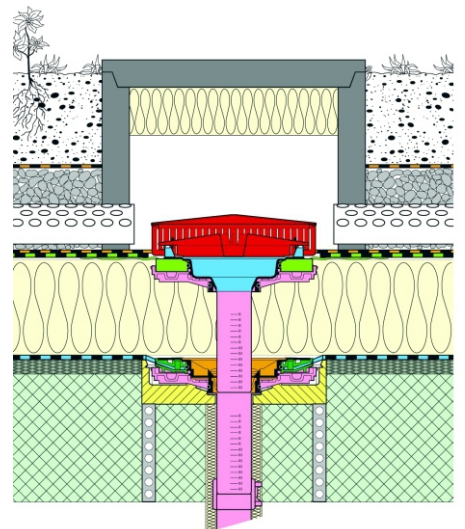
Depending on the layer structure, either with roof gravel ring or with inlet shaft.



Roof with intensive green coverage

Warm roof of solid concrete construction, membrane roof sealing, fixed vapour barrier connections and intensive green coverage.

Inlet via insulated inspection shaft or with retention basin. Also in conjunction with automatic irrigation systems.

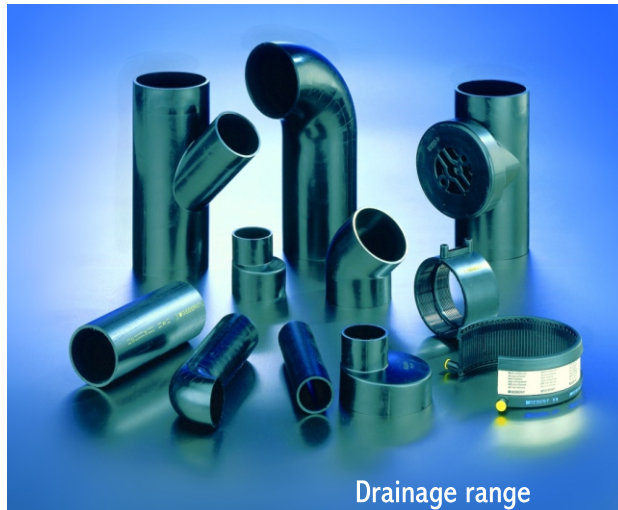


Four components for optimum performance

The four-component system from Geberit Pluvia

The Geberit PE drainage range offers a multitude of advantages for Geberit Pluvia:

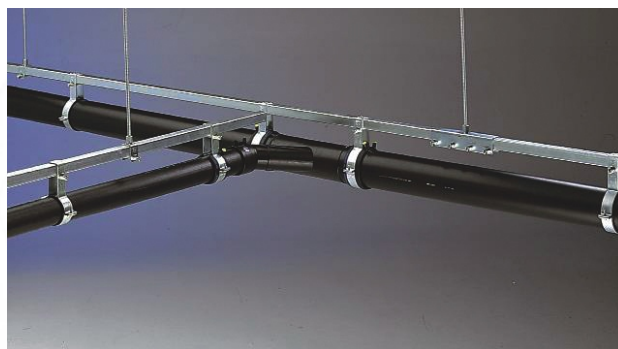
- Welded joints guarantee absolutely watertight seals and the necessary longitudinal strength.
- The low weight of the drainage pipes allows easy and efficient processing even when working at height.
- Larger pipe sections can be prefabricated to minimize construction time on-site.
- The extensive product range offers all prerequisites for economical processing.



Drainage range

The Geberit Pluvia fastening system was developed specially for the assembly of Geberit PE drainage pipes:

- The PE drainage pipes can be assembled quickly below the roof regardless of the distance to the ceiling.
- Shear and tensile forces in the PE pipes are absorbed by the fastening system.
- The fastening system provides ideal support for the efficient prefabrication of individual sections of installations.
- Operating range of DN 40 - DN 300



It's all down to the performance of the components



Geberit Pluvia roof inlet

as a central component impresses with its 12 l/sec discharge capacity, far superior to that of conventional systems. With the low installation height of just 4.50 cm, it can be mounted quickly and easily anywhere, ensuring a wide range of applications for Geberit Pluvia.

- Prefabricated membrane-insert rings are available for all common roof-sealing membranes. These guarantee an absolutely secure and long-lasting connection between the roof drainage inlet and the roof sealing membranes.
- The mounting plate, used to mount the inlet firmly on the roof, offers decisive advantages for quick and secure assembly.
- Different thicknesses of roof insulation, in the range 4 - 18 cm, can be bridged simply by inclining the inlet pipe.

Geberit Pluvia software

The latest software from Geberit is used for planning and projecting, from calculating the isometrics to dimensioning the pipes and producing the bill of materials and specification.

The ideal, lasting and safe solution: Geberit PE

The Geberit PE material is an ideal, safe solution that you can rely on where it counts.

Drainage pipes are subjected to extreme stresses such as icy cold, tropical heat, chemicals and aggressive underground conditions. Using PE material for its pipes and fittings, the Geberit PE Drainage System impresses with its joints' absolutely watertight seals. It meets all requirements of DIN EN 12056, in connection with DIN 1986-100 and DIN EN 752.

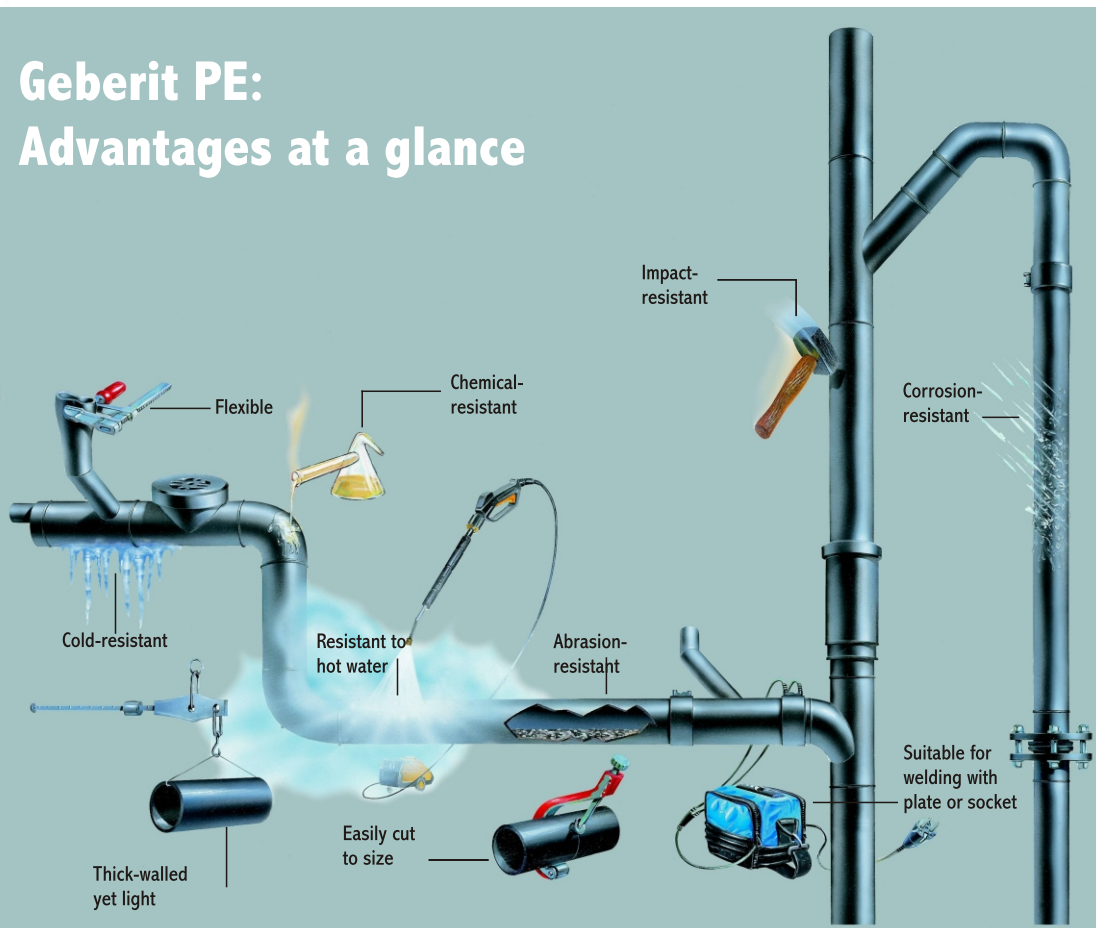
Geberit PE easily withstands the intense stresses of both internal and external factors and is therefore suitable for universal application. Geberit PE is:

- **Cold-resistant:** It elastically accommodates the greater volume of frozen water. Even outdoor joints remain fully intact.
- **Resistant to hot water:** Temperatures of up to 100°C for a short time and up to 80°C in constant use, e.g. in industrial plants, pose no problem at all.

Geberit PE - The extremely resilient material that gives a tight seal

- **Impact-resistant:** It is absolutely unbreakable at normal room temperature. Even at -40°C, the impact resistance remains very high.
- **Flexible:** Impervious to vibrations, subsidence and high pressure, Geberit PE pipes do not crack and remain watertight at all times.
- **Chemical-resistant:** It is therefore particularly suitable for use in industry and laboratory facilities.
- **Very easy to shorten:** Just saw and go. The welded joints are easy and fast to create and, above all, are totally watertight.
- **Abrasion-resistant.**

Geberit PE: Advantages at a glance



Top quality

ensures safe solutions

Geberit PE Drainage System

Keeping drainage firmly under control

Geberit PE is always the right solution

Whether in the laboratory, on the roof or underground, Geberit PE is always the right solution. The Geberit PE Drainage System fulfils the utmost requirements of drainage pipes in situations of extreme stress. It is therefore suitable for a wide range of applications, from homebuilding to industrial facilities to underground installation.

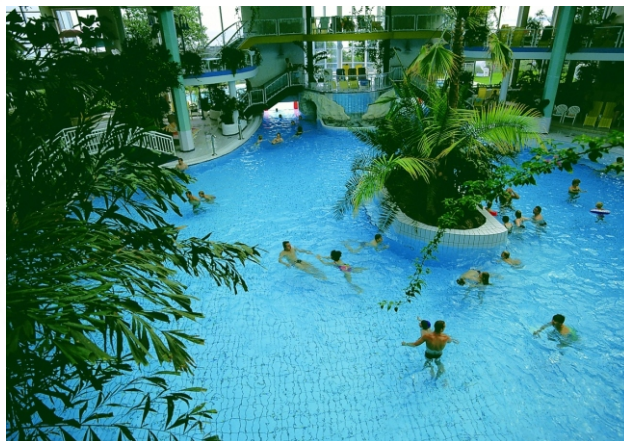
In industry, trades and laboratories

Especially for industrial and laboratory drainage, Geberit PE pipes and fittings demonstrate their utmost strengths: a high level of resistance to aggressive, chemical wastewater and high level of resistance to hot water.



In swimming baths, communal shower facilities or saunas

Wherever a large quantity of wastewater requires drainage, Geberit PE fulfils all requirements and, with the Geberit PE floor drain, delivers the best conditions for problem-free discharge.



Geberit PE - The system that keeps drainage under control



In breweries and bottling plants

The high abrasion-resistance makes Geberit PE resistant to glass residues in cleaning water. Geberit PE's high level of resistance to acids and alkalis is another important benefit in this field of application.

Under bridges or underground

Thanks to its outstanding material properties, Geberit PE is particularly suited to installation underground or under bridge structures. Geberit PE is impervious to external factors and non-breakable. Where subsidence or vibrations are to be expected, the longitudinal friction-locking joints help to protect our groundwater.



Easy to assemble and eco-friendly

Geberit PE is thick-walled yet light-weight. Assembly is easy, fast and safe - in short, it makes life easy for both processing and transportation. This facilitates prefabrication and saves time and money. In terms of environmental compatibility, too, Geberit PE is exemplary: It can be completely disposed of and recycled.

Geberit PE Drainage System

One range
for all applications

Geberit PE - The product range that can solve any problem

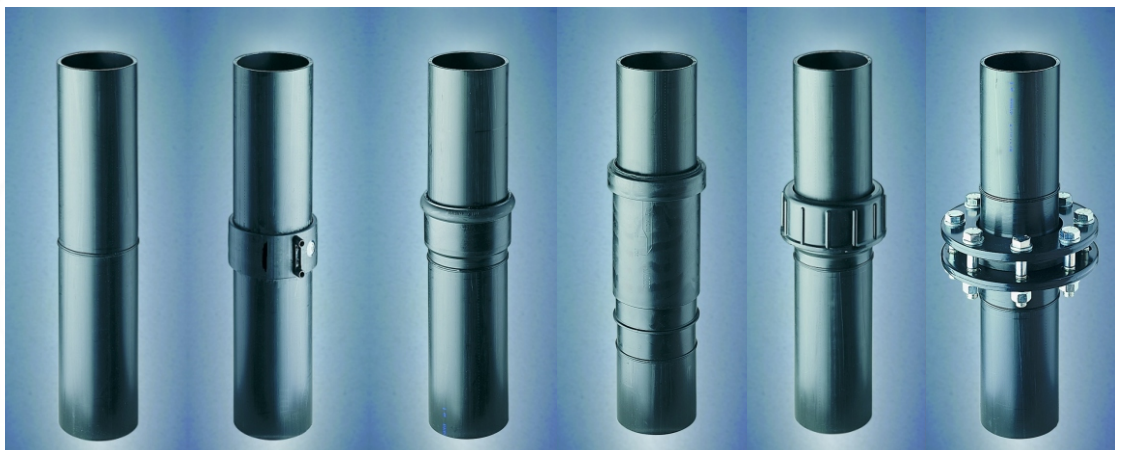
The Geberit PE product range is so versatile that there is virtually no limit to its application: DN 30 - DN 300 pipes, transition pieces, bends, branch fittings, special fittings, access pipes and connectors. The practical product range is supplemented by special-purpose product lines for laboratories, fire protection, noise insulation and moisture proofing.

The best joint
for every situation

The homogeneous welded joints guarantee an absolute seal and longitudinal strength for the utmost safety.

- **Butt-weld:** space-saving, without further connecting pieces, simple and provides an absolutely water-tight seal
- **Electric socket weld:** friction-locked joint, prioritized for prefabricated parts
- **Sliding socketed joint:** for waste fittings
- **Long-sleeve socket joint:** tried-and-tested expansion socket for horizontal and vertical installation
- **Screw joint:** allows subsequent opening of the joint
- **Flange joint:** for friction-locked, detachable connections in industry

A joint for every application: six different pipe joints



Geberit PE - In use
and during installation:
Top quality for your safety



The Geberit PE fastening system



Assembling the fastening system



Top quality
for your safety

Geberit PE Drainage System

Playing it safe in installation

With Geberit PE, nothing is left to chance during installation either.

For prefabrication, assembly on the construction site and installation underground, Geberit PE offers simple and safe resources:

- **With the Geberit welding machine** you can work quickly and accurately according to precision plans. Thanks to the light weight of Geberit PE, you can easily prepare and transport even complex, extensive prefabrications.
- **The Geberit welding plate** is the ideal aid for welding on the construction site, to allow optimum adaption to the respective on-site situation.
- **The Geberit electrofusion machine** is particularly suited to joints in confined spaces, where there is insufficient space for other types of joint.
- **For pipes with a diameter of 200 mm and up**, welding is carried out using an electrofusion coupling with integrated heat fuse and a Geberit start switch.



**Geberit PE - in use
and during installation:
Top quality for your safety**



Guaranteed safety

The warranty agreement with the German Central Association for Plumbing, Heating and Air Conditioner Technology (ZVSHK) and German Federal Industrial Association for Heating, Air Conditioning and Plumbing (BHKS) provides you with the additional assurance of the function and quality of a roof drainage system with future-proof technology.



Rainwater reservoir and infiltration system behind a high-bay warehouse



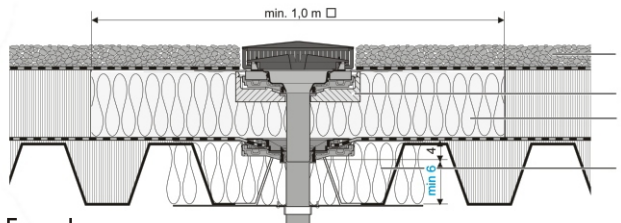
Top quality for your safety

Geberit Fire protection

Economical and safe fire protection

To be able to benefit from the advantages of Geberit systems in locations subject to fire-protection requirements, suitable design measures must be employed to achieve fire protection.

Structural fire protection primarily refers to avoiding the transmission of fire and smoke. This is achieved through the compartmentalization principle. The Geberit RS90 Fire Protection Sleeve enables fire protection with fire-resistance class R90 both on and in walls.



Example:
Roof water inlet with fire protection, warm roof

The Geberit Fire Protection Sleeve fulfils fire protection with the fire protection class R90



The Geberit product range is designed to minimize the effort required for planning and assembly, and thus also the associated costs.

All Geberit systems meet the building code requirements for fire protection.

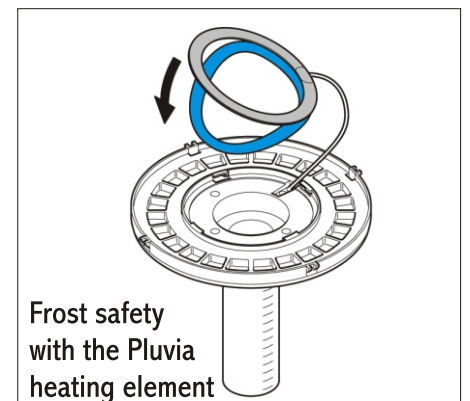
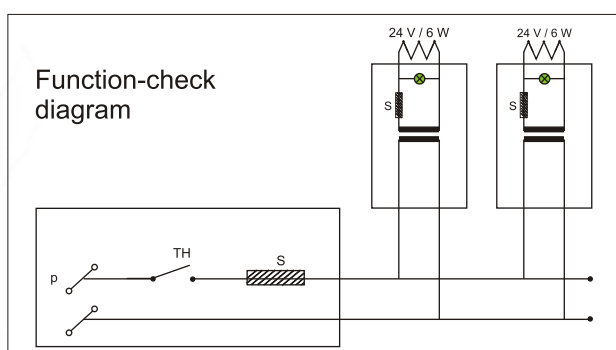
Geberit Frost Protection

100 % frost protection through function checking

No regulations or guidelines generally exist for installing heating elements in roof inlets. With cold roofs, and especially with protruding canopies, however, the installation of heating is recommended, as the roof drainage inlets could freeze. To this end, the roof drainage inlets are equipped with a heating ring. **We even developed a special trick in-house:** function checking of the roof drainage inlets. A control unit with a function-checking diode is mounted just below the roof and checks whether the roof inlet's power supply is correct.

This is 100% frost safety.

The Geberit Pluvia heating element keeps the inlet clear even in hard frosts



For any situation:
all-round protection from Geberit

Before it's too late:

emergency drainage

Emergency drainage

Danger lies ahead
for many roofs!

The increasing occurrence of heavy precipitation means many flat roofs are unexpectedly becoming a ticking time bomb. If even just a few points of the roof surface are not completely drained, there is a threat of static overloading of the entire roof. Climate change in recent years explains why the originally installed drainage systems so often fail to adequately drain many roofs: While the total amount of rainfall has not increased, its intensity has. The standards DIN 12056 and DIN 1986-100 therefore require the additional installation of an emergency drainage system that is independent from the existing drainage.



If it comes to this, it's going to be expensive

Don't let it come to this -
take preventive action!

Benefit from our knowhow and decades of experience in draining large roof surfaces.

We produce an expert calculation of the overflow cross sections and investigate the roof drainage in accordance with DIN EN 12056-3 and DIN 1986-100: 2008-05.

The location-specific precipitation totals are taken from the KOSTRA Atlas of the German National Meteorological Service (DWD). The water constituting the difference between the actual precipitation total and the maximum drainage capacity of the existing drainage system must always be discharged from the building via a completely independent emergency drainage system. We determine which system is right for your building and offer individual, economical and manufacturer-independent solutions, from planning right through to implementation.

Emergency drainage is used when the normal roof drainage is overburdened



Unforeseeable
damages

If the fire brigade has to pump non-drained water from the roof, this generally has disastrous consequences. Besides the evacuation of the building and the damage to your company's image, such buildings often cannot be used for months afterwards. The safety of the building and its occupants takes highest priority.

The recent sad events served as a cautionary example.



Geberit Pluvia Emergency overflow

High-performance: The new emergency overflow

The new emergency overflow does not cause building damage due to emergency-overflow openings on the facade. The emergency overflow is installed at the same sealing level as the roof drainage. A free discharge from each roof drain to an emergency overflow is installed on the roof sealing.

This element protects your building from damage and safely leads the water resulting from heavy precipitation away from the building.



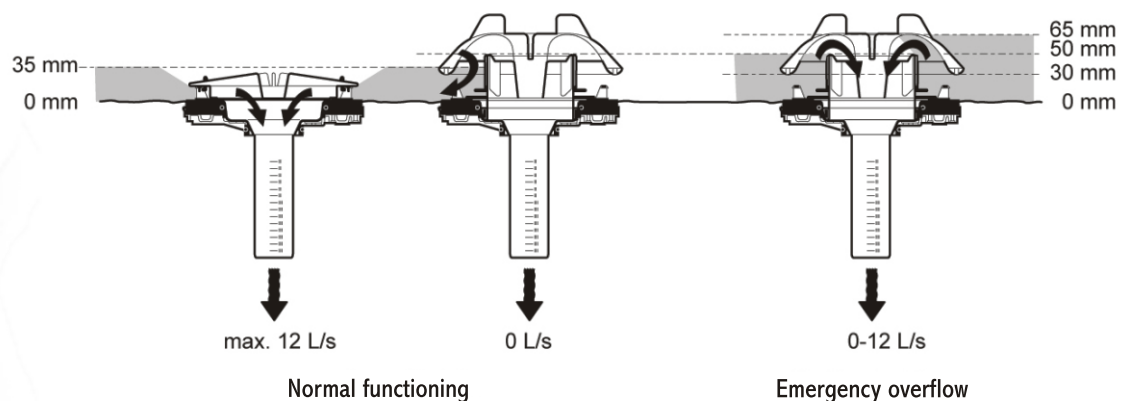
The new Geberit Pluvia Emergency Overflow literally sucks the water from the roof



Geberit Pluvia Emergency Overflow

Pluvia Emergency Overflow - How it works

- Up to a maximum water depth of 50 mm, the rainwater is discharged through the roof drainage (12 l/sec) via the primary drainage system.
- At a water depth of 50 mm, the emergency overflow springs into action and functions as a normal drain.
- At an accumulated depth of 65 mm, full fill is reached - the primary and emergency overflow systems together reach their maximum capacity of 24 l/sec.
- The water depth temporarily drops to 30 mm.
- The water depth levels off between 50 and 65 mm.



For any situation: the emergency overflow

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