GEBERIT SUPPLY AND DRAINAGE SYSTEMS

# SO THAT EVERYTHING **RUNS SMOOTHLY**

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KNOW

HOW

INSTALLED

# LIFELINES **FOR MODERN BUILDINGS**

A modern building works like a complex organism that has to be supplied with water.

Geberit delivers the solutions that allow its functions to work reliably and consistently. Potable water, heating, cooling and gas, compressed air and other media -Geberit supply systems for residential buildings provides the confidence your customers expect from you.

# 12



20 GEBERIT MAPRESS STAINLESS STEEL



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## GEBERIT'S SYSTEMATIC APPROACH TO TECHNOLOGY FOR SUPPLY SYSTEM

# A RELIABLE CONNECTION **THAT IS FIT FOR THE FUTURE**

Supply pipes have to carry out a wide range of tasks in one building and meet complex requirements in safety and hygiene. They supply us with hygienically perfect drinking water and pleasant heating power. They transport gas safely to its point of use and must satisfy the highest safety standards in special applications.

#### 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 supply systems. 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.

#### TAILORED SOLUTIONS FOR SAFE AND CLEAN DOMESTIC INSTALLATION

With different products for different tasks, Geberit provides suitable solutions for the private, semi-public, public and industrial sectors. Geberit's piping systems made of plastic and metal solve almost all tasks in domestic installation. Custom-fit adapters ensure reliable and permanent connections within a Geberit supply system, as well as between different product materials.

### QUICK CONNECTIONS

As a pioneer in pressing technology, Geberit revolutionised pipe installation 50 years ago and has continued to improve it ever since, such as with the Geberit Mapress pressing indicator. With the development of the Geberit Mepla connection system, the company is continuing to pave the way towards economical and safe installation.

#### THE PERFECT ADAPTER WITH GEBERIT MASTERFIX

For a reliable connection to valves and installation elements, Geberit MasterFix provides a connection technology without the need for tools and without hemping. Even in dark or narrow installation situations, MasterFix ensures reliable installation, as the adapter noticeably locks into place, both visibly and audibly. When using the Geberit MasterFix, pipelines can easily be detached again – even after a long period of operation.



Audible and visible: Geberit MasterFix ensures reliable connections and makes installation easier.



### GEBERIT PRESSING SYSTEMS

# CONNECTED **QUICKLY AND RELIABLY**

Your customers expect reliable and durable pipe joints. They value quick and economical work on the building site. The Geberit Supply Systems, which have been used successfully for decades, enable you to achieve both goals.

#### SPEED MEANS COST-EFFECTIVENESS

The pipe and/or fitting change shape when they are pressed with a pressing tool developed for this purpose. Geberit press connections create solid mechanical connections which are permanent and lengthways non-positive. The resilience of the deformed seal rings ensures that the fittings are permanently and hydraulically leakproof. Corrosion-resistant, stainless-steel claws on the inside of the fitting ensure high tensile strength. Pressing and insertion are quick connection methods which save a lot of time in comparison to traditional methods such as soldering or welding. As open flames are not required, many time-consuming protection measures can also be dispensed with.

#### **IT'S VISIBLY SECURE**

Geberit Supply Systems have different mechanisms for ensuring correct processing.

#### Correct insertion depth

With the Geberit Mepla system, the pipe is inserted until it reaches a stop position on the fitting.

#### Tool guide

In all pressing systems, the pressing jaws are designed in such a way that it is almost impossible to position the tool incorrectly. This reduces or prevents failed pressing sequences.

#### Pressing indicator

Let us not forget press connections. Unpressed Geberit Mapress fittings are therefore identified straight away by the coloured pressing indicators. The coloured pressing indicators at the ends of the fittings are easy to remove after the pressing procedure.

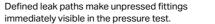
#### Leaky if unpressed

If the Geberit Mepla and Geberit Mapress<sup>1)</sup> fittings are not firmly pressed, they will certainly be leaky when subjected to a pressure test with air or water. Defined leak paths ensure that connections which have not yet been pressed are detected reliably. You and your customer can therefore be assured that no nasty surprises will suddenly jump out at you later on and that everything will stay reliably leakproof.



The Geberit pressing tool ensures permanently

reliable connections



Coloured indicators identify unpressed Mapress fittings even before the pressure test.



Mechanically stable and hydraulically leakproof: the pressed joint.

<sup>1)</sup> Only applies to seal rings CIIR, black, typically used in technical building systems.

- Tailored economical solutions for a wide range of installation projects
- Reliably detect unpressed fittings thanks to a defined leak path
- · Geberit pressing tool for quick and reliable progress
- Perfectly coordinated tool components





### GEBERIT SERVICES

# A STRONG PARTNERSHIP FOR EACH DELIVERY

Quality and innovation as well as reliability, partnership and personal consultation are all incredibly valuable. We aren't only running at top speed in terms of developing high-quality products, but we also offer you the services and support that you need to be successful. This is even possible on-site or at the building site if required.



#### PERSONAL CONSULTATION AND SERVICES

We are happy to help. On the service telephone, in a personal conversation or on site – Geberit is there to offer you help and advice. From specialist information and technical consultation right up to support for any questions relating to planning, we offer comprehensive and straightforward assistance. We will assist throughout the whole construction project if required. And even if something stops working, you can rely on the support of Geberit.

#### **EXPERTISE FOR YOU**

Geberit's comprehensive training programme supports the sanitary industry in preparing for the challenges of the future. We share our knowledge with you in our seminars directly at your building site and therefore contribute to the shared success. We also provide helpful media – from the handbook to the installation video – to help answer your questions and to assist in a wide range of tasks.



- Flexible, bendable and yet inherently stable
- Clean, safe, easy to process
- Reliable press connection
- Quick and secure adapters to other systems such as Geberit Mapress

# GEBERIT MEPLA **FLEXIBLE AND INHERENTLY STABLE** WITHOUT SOLDERING

The Geberit Mepla multilayer pipe system combines the advantages of metal and plastic. They therefore ensure fast progress at the building site and comply with all the necessary standards and regulations.

#### THREE LAYERS FOR DRINKING WATER AND HEATING

More corrosion-resistant and lighter than metal pipes, more inherently stable and robust than plastic pipes – easy and safe to process: Geberit Mepla combines the advantages of both types of pipe. Stable, bendable and able to form a barrier against diffusion: Geberit Mepla also remains leakproof when subjected to pressure far in excess of the standard testing pressure of 1.1 MPa (11 bar). The outer plastic layer made of polyethylene (PE-RT of the second generation) protects against corrosion and mechanical damage. The central aluminium layer makes the pipe stable and bendable. The inner layer, which is likewise made of PE-RT, is corrosionresistant and food-safe. Geberit Mepla can therefore be used for all drinking water qualities without previous analysis of the drinking water.

### SAFE INSTALLATION OF DRINKING WATER AND HEATING

With Geberit Mepla, you only need one single system for the drinking water and heating supply. Pipe dimensions from 16 to 75 mm and a selection of around 300 fittings made of polyvinylidene fluoride (PVDF), brass and gunmetal offer a solution for almost any installation task. All pipe dimensions are permitted for use in the drinking water installation from 0 to 70 °C and for operating pressures from 1 MPa (10 bar). Clever connections such as the cross fitting have proven their worth in day-to-day applications such as radiator connections for a connection to two parallel pipes without intersecting.

### THE ECONOMICAL SYSTEM

The Geberit MeplaFix adapter establishes quick connections to the Geberit sanitary elements. Special fittings simplify the transitions of Geberit Mepla to the metal Geberit Mapress system. Installing series-connected or circular pipes is especially economical with the Geberit MeplaFix T-piece.







### **GEBERIT MEPLA**

#### LEAKY IF UNPRESSED

Unpressed Geberit Mepla fittings leak visibly when subjected to leak tests with water. Water flows out of the unpressed connections. This occurs even at a low water testing pressure and during leak tests at up to 15 bar. The pressure test cannot be completed successfully unless all the connections have been pressed.

#### **HIGH STABILITY**

PRESSING JAW GUIDE

long-lasting connection.

corrosion protection.

12

The defined jaw guide on the fitting ensures that the pressing jaw is positioned in exactly the right position during pressing and cannot slip. This prevents failed pressing sequences which therefore guarantees a secure,

**IDEAL FOR COLD-WATER PIPES** 

Cooling pipes can be installed with

Geberit Mepla without too much effort, as special processing is not required for

The particularly thick aluminium layer in Geberit Mepla multilayer pipes ensures a high level of stability and extraordinary mechanical strength. Using high-quality polyethylene and aluminium combines the benefits of plastic with those of metallic piping systems.

#### SAFETY FOR HIGH LOADS

The tremendous tensile strength of the Mepla press connection ensures a reliable, long-lasting connection. The quality of the press connection is constantly checked and exceeds the values demanded in the standards many times over. This guarantees a high standard of reliability, even in piping systems subjected to high loads.

#### FORMS A BARRIER **AGAINST DIFFUSION**

Oxygen cannot diffuse through the aluminium layer meaning that Geberit Mepla is therefore the ideal solution for hot water applications.

#### LARGE DIAMETER

Geberit Mepla is available up to a dimension of d75 and can therefore be used in a broad range of applications. Larger construction projects can consistently be installed with Geberit Mepla.

#### **EQUAL BENDING PROPERTIES**

The weld seam is crucial for the quality of the pipe. The homogeneous longitudinally welded aluminium layer in Mepla pipes with its smoothly formed weld seam guarantees the highest possible degree of safety and quality. As a result, the aluminium layer does not overlap. The pipe has the same bending properties in all directions.

**DEPTH CONTROL** 

pressed. The piping system can therefore be premounted. When the system is ready to be pressed, each connection can be checked immediately to ensure that each pipe is in the correct position.

#### FLEXIBLE ADJUSTMENT

Thanks to the good bending capacity, the installation can be adjusted flexibly to the on-site conditions. Pipes in the dimensions of d16 and d20 can be bent effortlessly by hand and using a bending machine up to d32. Installation is easier and fittings can be saved. This saves time and money for the installation.





#### **RELIABLE INSERTION**

The insertion depth remains visible at all times. This ensures that the pipe is correctly pushed onto the fitting during installation and can then be correctly

#### EASY AND RELIABLE INSTALLATION

Special cams on the plastic fittings and retaining rings on the metal fittings achieve a high level of fitting retaining force in the pipe and prevent the fitting slipping out of the pipe during installation. The pipe system is therefore easy to install, align and then press.

#### FEWER FASTENING POINTS

The special composition of Mepla pipes with the thick aluminium layer reduces the extent to which the pipes expand in response to temperature fluctuations. This means fewer fastening points are required during installation than with conventional plastic pipes.

#### **HYGIENICALLY PERFECT**

Geberit Mepla fittings and pipes have suitable protective caps which facilitate hygienically safe storage or an installation break.

- Geberit pressing technology for reliable leakproof connections
- A large number of national and international approvals



# GEBERIT MAPRESS STABLE CONNECTION PRESSED IN NEXT TO NO TIME

For the last 50 years, the name Mapress has stood for a technologically advanced piping system with economically superior and more intelligent connection technology. Geberit Mapress has already paved the way for generations of plumbers who are now abandoning complex connection technologies in favour of simple and reliable pressing. With the wide range of robust product materials, the comprehensive product range, as well as the numerous combination options, Geberit Mapress sets itself apart from the rest due to its universality and is now indispensable in the day-to-day activities of the sanitary industry.

#### THE GROUNDBREAKING SYSTEM

Different Geberit Mapress systems provide customised and economical solutions for different installations in residential buildings and project construction, as well as special applications and industrial pipe installations. Thanks to the large spectrum of pipe dimensions, fittings in different product materials and with different seal rings, Geberit is able to provide solutions not only for technical building systems but also for almost all applications such as solar and industrial plant engineering.

#### **GEBERIT MAPRESS SEAL RINGS**

The media that can be transported in Geberit Mapress supply systems depend on both the product material and the selected seal ring. Geberit Mapress therefore offers special O-rings for different liquid and gaseous media which cover almost all applications in technical building systems and industry, leaving hardly anything to be desired.

#### **CLEAN CONNECTION**

Geberit Mapress systems can easily be connected anywhere. With a large selection of suitable adapters, Mapress is easy to connect to other Geberit Supply Systems.



**CIIR, black** General applications in technical building systems and industry



FKM, blue High temperature and chemical resistance



HNBR, yellow The specialist for gas applications



**FKM, white** The expert for saturated steam applications

### **GEBERIT MAPRESS**



#### EASY CONNECTION

Making the connection couldn't be easier: The whole deburred pipe is inserted into the fitting and the insertion depth is marked with a pin. The pressing jaw with the groove is close-coupled on the predetermined pressing contour and the pressing procedure is performed with permanent pressing. The pin marking is useful for checking the insertion depth retroactively. The risk of an error during the pressing operation is virtually zero.

#### **MECHANICAL STRENGTH**

The coordinated components lend the Geberit Mapress system a very high level of strength. Operating pressures of 25 bar and more can therefore be achieved. This enables a wide range of applications which extends far beyond the drinking water and heating installations in technical building systems.

#### **DETECT UNPRESSED FITTINGS** WITH THE SEAL RING

The contour seal ring provides the pressing indicator with additional safety. Due to its special contours, unpressed connections leak during the pressure test. This therefore prevents any subsequent damage during operation.

#### **PROTECTION AGAINST DUST AND DIRT**

The pressing sockets of the metal fittings are fitted with protection plugs which offer protection against dust and dirt on the building site and therefore ensure hygienically clean installations from the start. The protection plugs are transparent for general applications and yellow for gas application fittings.

#### FOR PERMANENT FIXTURE AND A HIGH LEVEL OF SAFETY

During the pressing sequence, the seal ring is given a precise, pre-defined shape. During this process, the ring absorbs additional energy for permanent and reliable tightness. As a result, the Geberit Mapress pressing system has been working for 50 years.

#### QUICK VISUAL CHECK OF THE **PRESSING OPERATION**

The pressing indicator on all Geberit Mapress fittings can be removed manually after the correct pressing operation, and it indicates unpressed connections before the pressure test. The colour of the pressing indicator enables clear identification of the material. For clear identification, the Geberit logo and the dimensions are printed on the pressing indicator.

#### **PIPES WITH A HOMOGENEOUS** MATERIAL STRUCTURE

A special thermal treatment process ensures a homogeneous material structure, including weld seams without band edges. The seams are also smoothed mechanically. This results in the pipes and fittings behaving uniformly during pressing and when used.

#### **COMPACT FITTING DESIGN**

The compact fitting geometry takes up little space, which results in narrower fitting combinations. Geberit also offers numerous fittings which are coordinated to the respective application.

#### **RELIABLE PRESSING SYSTEM** THANKS TO SMOOTH SURFACES

The extremely smooth surface is a prerequisite for added system safety and guaranteed long-term tightness. Particularly when supporting the seal ring in the inside of the fitting, the clean weld seam is key to the system's permanent tightness and to cutting susceptibility to corrosion. The weld seams are smoothed with a mechanical treatment and the roughness values are therefore well below those stipulated by the European standards.

- For extremely high requirements in terms of hygiene and load bearing capacity
- Extremely high corrosion resistance and excellent hygiene characteristics
- Suitable for different even aggressive media





# GEBERIT MAPRESS STAINLESS STEEL POLISHED PERFORMANCE FOR HIGH REQUIREMENTS

Geberit Mapress Stainless Steel is the versatile installation system which meets high technical requirements. The product material demonstrates its performance capability in the drinking water supply, in complex industrial applications and in installations with extremely high hygienic requirements, such as those in hospitals or laboratories.

#### HIGH MOLYBDENUM CONTENT

The Geberit Mapress Stainless Steel 1.4401/SS316 system has a minimum molybdenum content of 2.3 %. This value is higher than the usual standards and therefore ensures an extremely high corrosion resistance as well as excellent hygiene characteristics.

#### VERSATILE AND RELIABLE

If you are faced with the challenge of overcoming high hygiene requirements, high temperatures and pressures or aggressive liquids, then Geberit Mapress Stainless Steel is the right choice for you. It is suitable for drinking water installations in living areas, in areas particularly sensitive to hygiene, and for industrial buildings and applications.

#### HYGIENICALLY PURE ALL THE TIME

The pressing sockets on the pipes and fittings are delivered with a leakproof plug already fitted. It offers reliable protection against dust and dirt until processing.



#### **APPROVED FOR SPRINKLER SYSTEMS**

You can use Geberit Mapress Stainless Steel for "wet", "wet/dry" and "dry" sprinkler systems. The system has received VdS approval and other important international approvals.

#### **A COMPREHENSIVE SYSTEM**

With eleven nominal widths and around 500 fittings and adapters, Geberit Mapress Stainless Steel offers a comprehensive range of application options. The Geberit Mapress Stainless Steel fittings are identified by the blue indicator ring.

The wide range of adapters and transitions to other Geberit piping systems optimises the economical use of product materials.

## GEBERIT TOOLS **PRESSING TOOLS** FOR ADDED CONVENIENCE

Low weight, fast work and much more: convenience, power and many other advantages. This is what the Geberit pressing tools have to offer. Ideal for processing Geberit pressing systems.

#### **CONVENIENT PROCESSING**

The Geberit pressing tools are compact, lightweight and provide a high level of convenience. The head on the Geberit ACO 103plus means that it is also easy to press in narrow spaces. Easy handling and low weight are particularly noticeable when performing overhead work.

#### IMPROVED PERFORMANCE

With the brushless motor in the Geberit pressing tool ACO 203plus, the Geberit Mepla and Geberit Mapress piping systems can be pressed up to 10% more quickly<sup>1)</sup>. In addition, up to 40% more pressing operations<sup>1)</sup> are possible per battery charge.

#### CHARGE RECHARGEABLE BATTERIES LESS OFTEN

The Geberit pressing tools are driven electrohydraulically. The battery-operated pressing tools are fitted with modern lithium-ion batteries. Thanks to the long battery running time, the Geberit pressing tools require charging less often and, due to short charging times, they can be put back into operation more quickly. In addition, two 1.5 Ah rechargeable batteries are always contained in battery-operated pressing tools in a case. This means it is possible to work with one rechargeable battery while the second is being charged.

#### BLUETOOTH®INTERFACE FOR THE NOVOCHECK APP

You can now access all essential device parameters and operating data, display device statuses, or even make basic settings from the convenience of your smartphone. The NovoCheck app can be used in parallel for multiple pressing tools, which simply involves connecting the relevant devices via the Bluetooth® interface.®

<sup>1)</sup> When compared to the predecessor model – Geberit ACO 202



An integrated pressing point light in the Geberit ACO 203plus, ECO 203 and ACO 203XLplus ensures good visibility in dark corners.



A slim, non-slip handle ensures reliable and ergonomic operation.

- Compact and lightweight with high performance
- Also suitable for restricted construction situations
- Slim, non-slip handle for reliable handling
- Electrohydraulic drive
- Good visibility in dark corners thanks to integrated LEDs <sup>2)</sup>
- Easy maintenance thanks to the brushless motor <sup>3)</sup>



<sup>2)</sup> Geberit pressing tools ACO 203plus / ACO 203XLplus / ECO 203
<sup>3)</sup> Geberit pressing tools ACO 203plus / ACO 203XLplus





Geberit pressing jaws for Geberit Mepla and Geberit Mapress

#### **NO MAINTENANCE THROUGHOUT** THE ENTIRE SERVICE LIFE

High pressing performance without external maintenance. The maintenance-free Geberit pressing jaws ensure a balanced distribution of force which lasts throughout the entire service life. Even after prolonged and intensive use, the corrosionresistant surfaces keep the tool in top quality.

#### PRESSING OPERATION WITH MAXIMUM PRECISION

Incorrect pressing is practically a thing of the past thanks to the precise pressing jaw guide of the fitting. Set in the correct position, the pressing jaw grips reliably and cannot slide out of place. This guarantees durable and reliable connections.

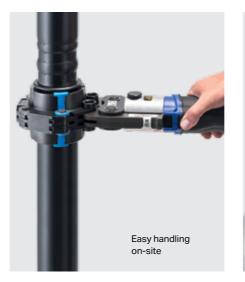
### **GEBERIT POWERTEST**

The Geberit PowerTest provides you with information about the condition of your Geberit pressing jaw. Hold the Geberit PowerTest at the front between the pressing jaw and press a fitting. If the Geberit PowerTest changes colour, the pressing jaw can continue to be used.



## **GEBERIT TOOLS** PRESSING JAWS AND **PRESSING COLLARS**

The Geberit pressing collars with snap mechanism and the maintenance-free Geberit pressing jaws ensure quick processing and a reliable connection when installing supply systems.





Geberit pressing collars for Geberit Mepla and Geberit Mapress

#### FOR LARGE DIMENSIONS

From dimension d63 for Geberit Mepla, d42 for Geberit Mapress, The adapter jaws can be easily hooked onto the pressing collars pressing collars are used for pressing rather than pressing jaws. because the user can see the connection area clearly, and so Regardless of how the pipes are aligned, these are held firmly will know when the Geberit adapter jaw is engaged correctly. onto the pressfitting by a snap mechanism, thereby ensuring easy and reliable handling. The Geberit pressing collars and Geberit adapter jaws require regular service.

#### COMPACT DESIGN

Thanks to the small, compact but extremely robust design, processing is convenient even in narrow spaces.



large Mapress pipe diameters

### **RELIABLE APPLICATION**

## **APPLICATION TECHNICAL** DATA

	Operating conditions			Piping system				
			GEBERIT IAPRESS	GEBERIT MEPLA	GEBERIT MAPRESS STAINLESS STEEL			
APPLICATION	Operating temperature	Max. operating pressure	Operating temperature	Max. operating pressure	Mepla	CrNiMo steel 1.4401 / 316	CrMoTi steel 1.4521 / 444	CrNi steel 1.4301 / 304
Hot and cold potable water	0 – 70 °C <sup>6)</sup>	10 bar	0-100 °C	16 bar	✓			
Cold potable water	0-20°C	16 bar			√ <sup>10)</sup>			
Heating water <sup>2)</sup>	0 – 80 °C 7)	10 bar	0-100°C	16 bar	~			
Cooling water without antifreeze agent	0-70°C	10 bar	0-100°C	16 bar	~			
Cooling water with antifreeze agent <sup>3)</sup>	-10-+40 °C 4)	10 bar	-10-+40 °C	16 bar	~			
Remote network heating water $\leq$ 120 °C <sup>2)</sup>			0-120 °C	16 bar				
Remote network heating water $\leq$ 140 °C <sup>2)</sup>			0-140 °C	16 bar				
Saturated steam <sup>2)</sup> ≤ 120 °C			0-120°C	2 bar				
Saturated steam <sup>2)</sup> ≤ 155 °C			5–155 °C	5 bar				
Service water <sup>1)</sup>	0-40°C	10 bar	0-100°C	16 bar	~			
Treated water <sup>5)</sup>	0-40°C	10 bar	0-100°C	16 bar	~			
Rainwater with a pH value > 6.0	0-40 °C	10 bar	0-100 °C	16 bar	~			
Salt water	0-70°C	10 bar			~			
Grey and black water with pH value > 0.6			0 – 100 °C	16 bar				
Extinguishing water (wet)	0-70°C	10 bar	0-70 °C	16 bar	1			
Extinguishing water (wet/dry; dry)	0-70°C	10 bar	0-70 °C	10 bar/16 bar	~	<b>1</b> 1)		
Sprinkler (wet)			0-70 °C	Varies depending on Ø		11)		
Sprinkler (wet/dry; dry)								
For thermal medium (solar) 9)			-25 – +220 °C	10 bar/16 bar				
For mineral oils	Te	mperature and pres	sure available on i	request				
For fuels <sup>1)</sup>	Te	mperature and pres	sure available on i	request				
Chemicals and technical liquids 1)	Te	mperature and pres	sure available on i	request	~			
Compressed air (oil purity class 0-3) <sup>8)</sup>	0-70°C	10 bar	0-100 °C	Varies depending on Ø	~	<b>1</b> 2)	15)	<b>1</b> 3)
Compressed air (oil purity class 0-X) <sup>8)</sup>			0-100°C	Varies depending on Ø		12)	15)	13)
Negative pressure	0-40 °C	≥ 0.2 bar (absolute)	0-40 °C	≥ 0.2 bar (absolute)	~			
Inert gases (e.g. nitrogen)	40 °C	10 bar	0-100 °C	Varies depending on Ø	~	<b>1</b> 2)	15)	<b>1</b> 3)
For industrial gases <sup>1)</sup> (e.g. acetylene, shielding gases)	Те	mperature and pres	sure available on	·				
Natural gases			-20 – +70 °C	Varies depending on system		<mark>1</mark> 14)		
Liquefied gases			-20 – +70 °C	Varies depending on system		<mark>1</mark> 4)		
Biogases <sup>1)</sup>			-20 – +70 °C	5 bar				

DIMENSIONS

ND

– +70 °C	system		<mark>_</mark> 14)		
– +70 °C	5 bar		-		
Si	urface roughness (µm)	7	1.5	1.5	1.5
Thermal e	expansion (mm / (m·K))	0.026	0.0165	0.0104	0.016
Thermal c	onductivity (W / (m·K))	0.43	15	23	15
		(	d x wall thic	kness in mi	m
	10		12 x 1.0	12 x 1.0	-
	12	16 x 2.25	15 x 1.0	15 x 1.0	15 x 1.0
	15	20 x 2.5	18 x 1.0	18 x 1.0	18 x 1.0
	20	26 x 3.0	22 x 1.2	22 x 1.2	22 x 1.2
	25	32 x 3.0	28 x 1.2	28 x 1.2	28 x 1.2
	32	40 x 3.5	35 x 1.5	35 x 1.5	35 x 1.5
	40	50 x 4.5	42 x 1.5	42 x 1.5	42 x 1.5
	50	63 x 4.5	54 x 1.5	54 x 1.5	54 x 1.5
	65	75 x 4.7	76.1 x 2.0		76.1 x 1.5
	80		88.9 x 2.0		88.9 x 1.5
	100		108 x 2.0		108 x 2.0

#### Applications generally approved if the defined additional requirements are met in accordance with the footnotes.

- 1) After Geberit approval
- 2) Only use approved inhibitors 3) Use only approved antifreeze agents
- 4) Higher temperature only after approval by Geberit
- 5) Application range according to TI "Treated waters"
- Malfunction temperature in accordance with ISO 10508:2006: Tmal = 100 °C, total 100 h
- over the course of the service life 8) Oil purity class in accordance with ISO 8573-1:2010DEE; for details on moisture and particles, see Technical Information "Geberit Piping Systems for Compressed Air
- Installations"
- 10) Exclusively MeplaFix
- 10 bar for d88.9 108 mm
- bar for d76.1 mm; 12 bar for 88.9 108 mm
- 13) Maximum operating pressure 16 bar for d15 76.1 mm; 10 bar for d88.9 – 108 mm
- 14) Maximum operating pressure: 5 bar

#### Only applicable to Geberit Mapress systems

- Application with black CIIR seal ring with predetermined operating data.
- Application with blue FKM seal ring with predetermined operating data.
- operating data.
- Application with red FPM seal ring with predetermined operating data (only upon request). Application with white FKM seal ring with predetermined operating data.

Applications apply with standard fitting and seals. For respective piping system.

- 6) Malfunction temperature according to EN 806-2:
  - Tmal = 95 °C, total 100 h over the course of the service life
- 9) Service life with collector downtime of 200 h/a at 180 °C, 60 h/a at 200 °C, total of 500 h/service life at 220 °C
- 11) Maximum operating pressure: 16 bar for d22 76.1 mm,
- 12) Maximum operating pressure: 25 bar for d12 54 mm; 16
- 15) Maximum operating pressure: 16 bar for d15 54 mm
- Application with yellow HNBR seal ring with predetermined
- applications with additional fittings and seals, please see the applications in the tables contained in the catalogue for the

### GEBERIT'S SYSTEMATIC APPROACH TO TECHNOLOGY FOR DRAINAGE SYSTEM

# 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!

- standards
- waste fittings
- every application range



## 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 dayto-day operations. BIM data are also available for building planning in Autodesk Revit.

# **SHARING KNOWLEDGE** IS THE WAY FORWARD

## KNOW HOW INSTALLED



- 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.

### **GOOD REASONS TO USE GEBERIT HDPE**



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



### **RESISTANCE TO EXTREME TEMPERATURE**

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.



### **RESISTANCE TO IMPACT**

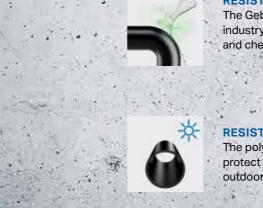
The pipes and fittings withstand shocks, drops, impacts or pressures of up to 1.5 bar without breakage or permanent deformation. This robustness provides, most notably, a guarantee during the construction stage that the pipeline will remain intact despite possible mechanical influences.



### NON-TOXIC

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**



#### RESISTANCE TO CHEMICALS **RESISTANCE TO CHEMICALS** The Geberit PE drainage system is suitable for a multitude of applications in and chemicals. 1.283

RESISTANCE TO SOLAR RADIATION

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

### 19.00 COMPLETELY LEAKPROOF

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

Sec. 10

### VARIED SOLUTIONS

The comprehensive assortment of fittings with special fittings and accessories makes Geberit PE the universal solution for numerous drainage tasks.

regulations without any concern.



industry or laboratories. The material is resistant against most standard alkalis, acids

#### 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

#### 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.

## TOOLS **DEVICES** THAT WELD TOGETHER



### **BUTT WELDING MACHINES**

The Universal and Media buttwelding 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 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 ESG 3**

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



# GEBERIT PIPING SYSTEMS FOR DRAINAGE **TECHNICAL** DATA

## SUITABLE DRAINAGE SOLUTIONS FOR NEARLY ANY APPLICATION AREA



	GEBERIT HDPE
AVAILABLE DIMENSIONS	D32; D40; D50; D56; D63; D75; D90; D110; D125; D160; D200; D250; D315
DN NOMINAL WIDTH	DN30; DN40; DN40; DN50; DN56; DN60; DN70; DN90; DN100; DN125; DN150; DN200; DN 250, DN300
BUILDING DRAINAGE	✓
CONVENTIONAL INTERIOR ROOF DRAINAGE SYSTEM	$\checkmark$
ADDITIONAL APPLICATIONS	Geberit drainage systems are approved for Various other application areas. Additional applications on request from geberit.
MATERIAL	HDPE
COEFFICIENT OF LINEAR EXPANSION	0.17 mm/(m.K)
ABSORPTION OF LINEAR EXPANSION	Requires an expansion socket
PERMANENT LOAD APPLICATION TEMPERATURE	-40 To 80 °c
CHEMICAL RESISTANCE	95 % Of all standard alkalis, acids and chemicals

# APPLYING KNOWLEDGE FORMS VALUES

- Geberit owns 25 education centres worldwide
- Every year approximately 30,000 plumbers, architects and planners are trained on Geberit systems and software
- Geberit is interested in passing on knowledge and a vivid exchange of experience
- Success at the international level is a matter of dialogue
- Geberit relies on partnership in business relations and fairness in interaction with competitors and associations



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## IMPROVED CARBON FOOTPRINT THANKS TO LOWER MATERIAL CONSUMPTION

# **SUSTAINABLE** DRAINAGE

Geberit is renowned for its environmentally friendly, resource-saving and durable products. The company has been applying ecodesign principles to its new product development processes since 2007. This involves observing the product over its entire life cycle and ensuring it is better than its predecessor from an ecological perspective. This principle also applies to Geberit drainage systems. The lower material consumption and the energy-efficient production of Geberit products lead to an improved carbon footprint. By using energy-efficient solutions from Geberit, you are contributing to sustainable construction processes and the protection of the environment.



#### **PRODUCTION OF GEBERIT DISCHARGE PIPES**

Geberit is constantly improving its production processes and implementing measures to reduce its ecological footprint at its production sites worldwide. Geberit discharge pipes are manufactured at the Villadose plant in Italy, where numerous energy-saving measures have been implemented in recent years. For example, the energy efficiency of the cooling systems has been increased by more than 50% thanks to new



#### **EXAMPLE: GEBERIT PLUVIA**

Geberit provides efficient and sustainable roof drainage for flat roofs. Not only does the Geberit Pluvia roof drainage system require just half as many roof outlets as conventional drainage systems, it also offers impressively smaller pipe dimensions and can function with fewer connections to the sewage system. This allows Geberit to lower installation costs on one hand and reduce material consumption on the other. In turn, this has a positive effect on the CO<sub>2</sub> balance in the field of transport and with regard to raw material and energy consumption in the production process.

CALCULATIONS OF THE DIFFERENCES IN A PROJECT EXAMPLE	GEBERIT PLUVIA	CONVENTIONAL ROOF DRAINAGE SYSTEM <sup>1)</sup>
Roof area	3000 m <sup>2</sup>	3000 m <sup>2</sup>
Number of roof outlets	18	36
Diameter of Geberit HDPE pipes	d75 to d160	d110 to d315

SAVINGS		
Material weight for HDPE pipes and fittings	-73%	
CO <sub>2</sub>	-74%	
Material costs* for HDPE pipes and fittings	-84%	
Total installation time** including fastening	-55%	

<sup>1)</sup> Calculation in accordance with DIN 1986-100



### **EXAMPLE: GEBERIT SUPERTUBE**

A drainage system in high-rise projects with SuperTube technology offers a consistent discharge capacity of twelve litres per second with a pipe dimension of d110 without a parallel ventilation pipe. In comparison to the conventional solution, it offers shorter installation times and lower costs as well as significant material savings. This is reflected in a 50% improvement in the carbon footprint.

CALCULATIONS OF THE DIFFERENCES IN A PROJECT EXAMPLE
Floors

Dimensions of stack

Material

SAVINGS	
Material weight for HDPE pipes and fittings	
CO <sub>2</sub>	
Material costs for HDPE pipes and fittings*	
Total installation time** including fastening	

compressors. As for the office and training buildings, these are predominantly heated with the waste heat from the compressed air systems. Another contributing factor to the reduction in energy consumption can be found in the state-of-the-art electric motors in the production lines. Furthermore, almost 100% of the waste created in the manufacturing process is recycled.

GEBERIT SUPERTUBE	CONVENTIONAL STACK
25	25
d110	d160 + secondary ventilation d90
Geberit HDPE	Geberit HDPE
-51%	
-50%	
-51%	
-60%	

\*Calculated with average material prices \*\*According to the values recorded in the Geberit ProPlanner

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