GEBERIT

Valid from April 2020

GEBERIT HDPE CATALOGUE

TRADE WASTE, STACK AND SIPHONIC ROOF DRAINAGE

KNOW HOW INSTALLED

Geberit HDPE

Geberit PE systems - Overview

Geberit PE is the state of the art in drainage systems and is a real alternative to systems made of conventional materials. It combines flexibility with robustness and reliability. Geberit PE is the complete solution for all types of drainage, both above and below ground and with regard to chemical waste. The system is manufactured from high density polyethylene, a material with inherent characteristics which offer numerous advantages compared to conventional piping systems.

Geberit PE provides specifiers and installers with a complete solution for all types of drainage both above and below ground. The properties of Geberit PE offer numerous advantages compared to conventional piping systems, including resistance to fracturing, abrasion, impact and extremes of temperature. Combined with the flexibility of several jointing methods and the option of off-site prefabrication, Geberit PE offers substantial material and labour savings.

Certification and Approvals

The Geberit PE products are Water Mark approved and comply to Australian Standards.
For more information please refer to our website, www.geberit.com.au or call 1800 GEBERIT.

- AU standards
- AS/NZS4401
- AS/NZS5065
- AS/NZS/ISO9001

global-mark

Certificate of Conformity

This certificate confirms that the company below complies with the following standard(s):

Company Name / Certificate or License Holder	**Geberit Pty Ltd**	*WaterMark WM number:*	**GM-WM-040011-I02-R00**
Company Other Name		*Type of Certification*	**Watermark Level 1**
Client ID	**100150**	*Certification Standard*	**AS/NZS 5065:2005 : Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications**
Scheme	**WaterMark Certification Scheme Level 2**		

Certificate Dates:

Original / Initial	**1/02/2008**	*Last Certificate update*	**3/10/2017**
Certification / Re Certification	**1/02/2008**	*Expiry*	**2/10/2022**
Last Certification Decision	**1/10/2017**		

Approved Company/Site Address(es):
Unit 8a, 6-8 Byfield Street North Ryde 2113 NSW Australia
Schachenstrasse 77 Jona CH- 8645 - Switzerland
Viale del Lavoro 4 Villadose I-45010 (RO) Italy
Geberitstrasse 1 Pottenbrunn - - Austria
No.1515 Huiping Road Nanxiang High Technologuy Development Zone CN-201802 Shanghai China

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions. This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN 108 497 654. The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to those activities covered by JAS-ANZ accreditation. Refer to www.jas-anz.org/register for verification.

Certification Manager

Global-Mark Pty Ltd, 407, 32 Delhi Road, North Ryde NSW 2113, Australia - Copyright 2005

JAS-ANZ

SQS

Certificate

The SQS herewith attests that the organisation named below has a management system that meets the requirements of the normative basis mentioned.

Geberit International AG
Schachenstrasse 77
8645 Jona
Switzerland

Further sites according to appendix

Scope

Sanitary products

Normative basis

ISO 9001:2015	Quality Management System
ISO 14001:2015	Environmental Management System

Reg. no. H20644

Validity 15.09.2018 – 14.09.2021
Issue 15.08.2019

A. Grisard, President SQS

F. Müller, CEO SQS

sqs.ch

Swiss Association for Quality
and Management Systems (SQS)
Bernstrasse 103, 3052 Zollikofen, Switzerland

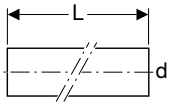
Swiss Made

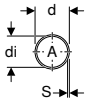
Partner of IQNet

4021_2/June 2019/Version 2.0

Pipes

Geberit HDPE pipe





Application purposes
- For building drainage
- For site drainage

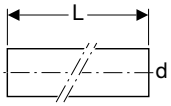
Characteristics
- UV-resistant

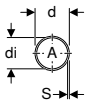
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	di, ø [mm]	s [mm]	L [m]	A² [cm²]	PN [bar]	S
360.000.16.0	1430000	40	40	34	3	5	9	8.1	6.3
361.000.16.0	1430002	50	50	44	3	5	15.2	6.4	8
363.000.16.0	1430004	56	56	50	3	5	19.6	5.7	8.8
364.000.16.0	1430006	60	63	57	3	5	25.4	5	10
365.000.16.0	1430008	70	75	69	3	5	37.3	4.1	12.5
366.000.16.0	1430010	90	90	83	3.5	5	54.1	4	12.5
367.000.16.0	1430012	100	110	101.4	4.3	5	80.7	4	12.5
368.000.16.0	1430014	125	125	115.2	4.9	5	104.5	4	12.5
369.000.16.0	1430016	150	160	147.6	6.2	5	171.1	4	12.5
370.000.16.0	1430018	200	200	187.6	6.2	5	276.4	3.2	16
371.000.16.0	1430020	250	250	234.4	7.8	5	431.5	3.2	16
372.000.16.0	1430022	300	315	295.4	9.8	5	685.3	3.2	16

Geberit HDPE pipe PN4





Application purposes
- For building drainage
- For site drainage
- For discharge pipes with increased negative pressure

Characteristics
- UV-resistant

Technical data

Product material	PE-HD

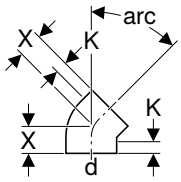
Art. no.	Reece no.	DN	d, ø [mm]	di, ø [mm]	s [mm]	L [m]	A² [cm²]	PN [bar]	S
370.050.16.0	1430027	200	200	184.6	7.7	5	268.4	4	12.5
371.050.16.0	1430028	250	250	230.6	9.7	5	418.2	4	12.5
372.050.16.0	1430029	300	315	290.6	12.2	5	663.8	4	12.5

- SDR26

Fittings

Bends

Geberit HDPE elbows



Application purposes
- For building drainage
- For site drainage

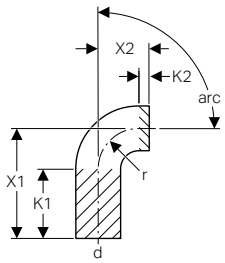
Characteristics
- Can be welded on both sides with electrofusion coupling
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	X [cm]	K [cm]
arc / angle: 45°					
360.045.16.1	1430100	40	40	4	2
361.045.16.1	1430101	50	50	4.5	2
363.045.16.1	1430102	56	56	4.5	2
364.045.16.1	1430103	60	63	5	2
365.045.16.1	1430104	70	75	5	2
366.045.16.1	1430105	90	90	5.5	2
367.045.16.1	1430106	100	110	6	2.5
368.045.16.1	1430107	125	125	6.5	2.5
369.045.16.1	1430108	150	160	6.9	2
370.045.16.1	1430109	200	200	18	2.5
arc / angle: 88.5°					
361.088.16.1	1430240	50	50	6	2
363.088.16.1	1430241	56	56	6.5	2
364.088.16.1	1430242	60	63	7	2
365.088.16.1	1430243	70	75	7.5	2
366.088.16.1	1430244	90	90	8	2
367.088.16.1	1430245	100	110	9.5	2.5
369.088.16.1	1430246	150	160	12	2.5

Geberit HDPE bend with large leg



Application purposes
- For building drainage
- For site drainage

Characteristics
- Large radius
- UV-resistant

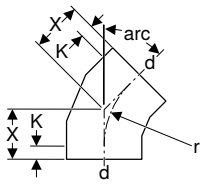
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	X1 [cm]	X2 [cm]	K1 [cm]	K2 [cm]	r [cm]
arc / angle: 15°								
367.015.16.1	1430145	100	110	18	7	15.5	4.5	–
369.015.16.1		150	160	7.5	7.5	4.5	4.5	–
arc / angle: 30°								
367.030.16.1	1430146	100	110	19.5	8.5	15.5	4.5	–
369.030.16.1		150	160	9.5	9.5	4.5	4.5	–
arc / angle: 88.5°								
363.051.16.1	1430140	56	56	21	8.5	17	0	4
365.051.16.1		70	75	21	11.5	14	0	7
367.051.16.1	1430144	100	110	27	14.5	17	0	10
arc / angle: 90°								
360.055.16.1	1430114	40	40	15	3	12	–	3
361.055.16.1	1430126	50	50	18	4	14	–	4
363.055.16.1	1430127	56	56	21	4	17	–	4
364.055.16.1	1430128	60	63	21	5	16	–	5
365.055.16.1	1430129	70	75	21	7	14	–	7
366.055.16.1	1430130	90	90	24	9	15	–	9
367.055.16.1	1430131	100	110	27	10	17	–	10
368.055.16.1	1430132	125	125	20	11	9	–	11
369.055.16.1	1430133	150	160	20	14	6	–	14

- Short leg on 90 degree bends connected by butt welding
- Geberit HDPE bend with angles 15°, 30°, 45° and 88.5° can be welded on both legs with Geberit electrofusion couplings
- Geberit HDPE bend with angle 90° can be welded on the long leg with Geberit electrofusion couplings

Geberit HDPE segment bend



Application purposes
- For building drainage
- For site drainage

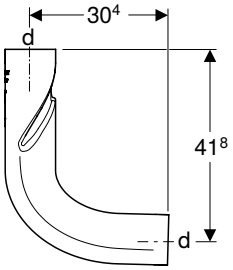
Characteristics
- Can be welded on both sides with electrofusion coupling
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	X [cm]	K [cm]	r [cm]
arc / angle: 15°						
370.015.16.1		200	200	15.5	4	–
371.015.16.1		250	250	10.3	0	–
372.015.16.1		300	315	10.3	0	–
arc / angle: 30°						
370.030.16.1		200	200	15	2	20
371.030.16.1		250	250	16	0	42
372.030.16.1		300	315	17	0	47.3
arc / angle: 45°						
371.045.16.1	1430110	250	250	16.5	0	29
372.045.16.1	1430111	300	315	18	0	32.5
arc / angle: 90°						
370.055.16.1	1430134	200	200	30	2.5	20
371.055.16.1	1430135	250	250	33.5	0	29
372.055.16.1	1430136	300	315	37	0	32.5

Geberit PE BottomTurn bend



Application purposes
- For building drainage
- For buildings with more than five floors (high-rise buildings)
- For use with Geberit PE Sovent fitting d110

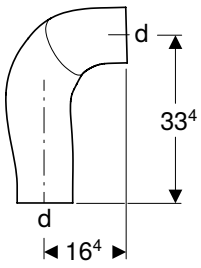
Characteristics
- Can be welded on both sides with electrofusion coupling
- UV-resistant
- With SuperTube technology

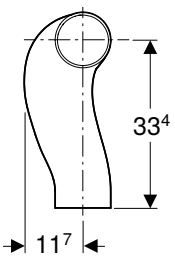
Technical data

Maximum discharge rate	12 l/s
Product material	PE-HD

Art. no.	Reece no.	Colour / surface	DN	d, ø [mm]
367.615.16.1	1430247	black	100	110

Geberit PE BackFlip bend





Application purposes
- For building drainage
- For buildings with more than five floors (high-rise buildings)
- For use with Geberit PE Sovent fitting d110

Characteristics
- Can be welded on both sides with electrofusion coupling
- UV-resistant
- With SuperTube technology

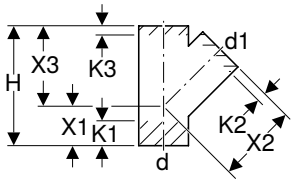
Technical data

Maximum discharge rate	12 l/s
Product material	PE-HD

Art. no.	Reece no.	Colour / surface	DN	d, ø [mm]
367.616.16.1	1430248	black	100	110

Branch fittings

Geberit HDPE branch fitting 45°



Application purposes
- For building drainage
- For site drainage

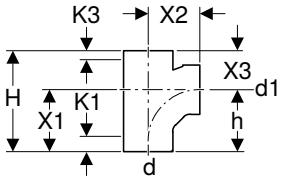
Characteristics
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
360.109.16.1	1431068	40 / 40	40	40	13.5	4.5	9	9	2.5	3	3
361.109.16.1	1433163	50 / 40	50	40	16.5	5.5	11	11	4	4.5	4.5
361.112.16.1	1430278	50 / 50	50	50	16.5	5.5	11	11	3.5	2	2
363.115.16.1	1430280	56 / 56	56	56	18	6	12	12	4	2.5	2.5
364.112.16.1	1430282	60 / 50	63	50	19.5	6.5	13	13	5	3	3
364.115.16.1	1430283	60 / 56	63	56	19.5	6.5	13	13	4.5	2.5	2.5
364.120.16.1	1430284	60 / 60	63	63	19.5	6.5	13	13	4	2	2
365.109.16.1	1433197	70 / 40	75	40	21	7	14	14	6.5	5	6
365.112.16.1	1430285	70 / 50	75	50	21	7	14	14	6	3	4
365.115.16.1	1430286	70 / 56	75	56	21	7	14	14	5.5	2.5	3.5
365.120.16.1	1433198	70 / 60	75	63	21	7	14	14	4.5	2.5	3.5
365.125.16.1	1430288	70 / 70	75	75	21	7	14	14	4	2.5	2.5
366.109.16.1	1433571	90 / 40	90	40	24	8	16	16	7.5	5.5	6.5
366.112.16.1	1430251	90 / 50	90	50	24	8	16	16	8	4	5
366.115.16.1	1430252	90 / 56	90	56	24	8	16	16	7.5	3.5	4.5
366.120.16.1	1431064	90 / 60	90	63	24	8	16	16	7	3	4
366.125.16.1	1430254	90 / 70	90	75	24	8	16	16	6.5	3	3.5
366.130.16.1	1430289	90 / 90	90	90	24	8	16	16	5	2	2
367.109.16.1	1433582	100 / 40	110	40	27	9	18	18	9.5	6	7.5
367.112.16.1	1430256	100 / 50	110	50	27	9	18	18	9.5	5	5.5
367.115.16.1	1430290	100 / 56	110	56	27	9	18	18	9	4	4.5
367.120.16.1	1430291	100 / 60	110	63	27	9	18	18	8.5	3.5	4
367.125.16.1	1430257	100 / 70	110	75	27	9	18	18	7.5	3	3.5
367.130.16.1	1430258	100 / 90	110	90	27	9	18	18	6.5	2.5	3
367.135.16.1	1430292	100 / 100	110	110	27	9	18	18	5.5	2	2
368.120.16.1	1430266	125 / 60	125	63	30	10	20	20	10.5	4.5	6
368.125.16.1	1430267	125 / 70	125	75	30	10	20	20	9.5	4	5
368.130.16.1	1430268	125 / 90	125	90	30	10	20	20	8.5	3	3.5
368.135.16.1	1430269	125 / 100	125	110	30	10	20	20	7	2.5	2.5
368.139.16.1	1430270	125 / 125	125	125	30	10	20	20	6	2	2
369.125.16.1	1430271	150 / 70	160	75	37.5	12.5	25	25	13.5	6.5	7.5
369.130.16.1	1433620	150 / 90	160	90	37.5	12.5	25	25	12.5	5.5	6.5
369.135.16.1	1430294	150 / 100	160	110	37.5	12.5	25	25	11	4.5	5.5
369.139.16.1	1430272	150 / 125	160	125	37.5	12.5	25	25	10	4	5
369.145.16.1	1430273	150 / 150	160	160	37.5	12.5	25	25	7.5	2.5	2.5
370.135.16.1	1430295	200 / 100	200	110	54	18	36	36	7.5	10	0
370.139.16.1	1430300	200 / 125	200	125	54	18	36	36	5.5	9	0
370.145.16.1	1430296	200 / 150	200	160	54	18	36	36	4	5.5	0
370.146.16.1	1430301	200 / 200	200	200	54	18	36	36	0	0	0
371.135.16.1	1430302	250 / 100	250	110	66	22	44	44	14	10	7.5
371.139.16.1	1430303	250 / 125	250	125	66	22	44	44	13	13	6.5
371.145.16.1	1430297	250 / 150	250	160	66	22	44	44	10.5	10	0
371.146.16.1	1430304	250 / 200	250	200	66	22	44	44	7.5	0	1.5
371.147.16.1	1430298	250 / 250	250	250	66	22	44	44	4	0	0
372.135.16.1	1431120	300 / 100	315	110	84	28	56	56	23	20	16
372.145.16.1	1430306	300 / 150	315	160	84	28	56	56	19.5	17.5	12.5
372.146.16.1	1430307	300 / 200	315	200	84	28	56	56	16.5	5	10
372.147.16.1	1430308	300 / 250	315	250	84	28	56	56	13	5.5	6.5
372.148.16.1	1430309	300 / 300	315	315	84	28	56	56	8.5	2	2

Geberit HDPE branch fitting 88.5°, swept-entry



Application purposes
- For building drainage

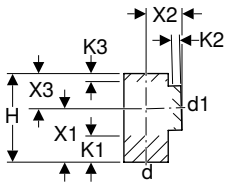
Characteristics
- Swept entry
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	H [cm]	h [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K3 [cm]
367.163.16.1	1430336	100 / 100	110	110	22.5	13.8	13.5	11.5	9	2.5	0

Geberit HDPE branch fitting 88.5°



Application purposes
- For building drainage
- For site drainage

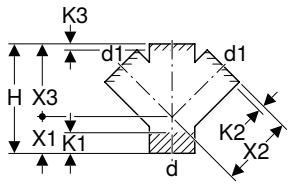
Characteristics
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
360.159.16.1	1433156	40 / 40	40	40	13	7.5	5.5	5.5	4.5	2.5	2.5
361.159.16.1	1433164	50 / 40	50	40	15	9	6	6	6	2.5	3
361.162.16.1	1430314	50 / 50	50	50	15	9	6	6	5.5	2.5	2.5
363.162.16.1	1433176	56 / 50	56	50	17.5	10.5	7	7	7	3	3.5
363.165.16.1	1430316	56 / 56	56	56	17.5	10.5	7	7	6.5	3	3
364.170.16.1	1430320	60 / 60	63	63	17.5	10.5	7	7	6	3	3
365.159.16.1	1433560	70 / 40	75	40	17.5	10.5	7	7	7.5	2.5	4
365.162.16.1	1430322	70 / 50	75	50	17.5	10.5	7	7	7	2.5	3.5
365.165.16.1	1430323	70 / 56	75	56	17.5	10.5	7	7	6.5	2.5	3
365.170.16.1	1433561	70 / 60	75	63	17.5	10.5	7	7	6	2.5	2.5
365.175.16.1	1430325	70 / 70	75	75	17.5	10.5	7	7	5.5	2.5	2.5
366.180.16.1	1430906	90 / 90	90	90	20	12	8	8	6.5	2.5	2.5
367.159.16.1	1433583	100 / 40	110	40	22.5	13.5	9	9	10	2.5	6
367.162.16.1	1430326	100 / 50	110	50	22.5	13.5	9	9	9.5	2.5	5
367.165.16.1	1430908	100 / 56	110	56	22.5	13.5	9	9	9	2.5	4.5
367.170.16.1	1430909	100 / 60	110	63	22.5	13.5	9	9	9	2.5	4
367.175.16.1	1433584	100 / 70	110	75	22.5	13.5	9	9	8.5	2.5	3.5
367.180.16.1	1433585	100 / 90	110	90	22.5	13.5	9	9	7.5	2.5	3
367.185.16.1	1430327	100 / 100	110	110	22.5	13.5	9	9	6.5	2	2
369.175.16.1	1433621	150 / 70	160	75	35	21	14	14	15	4.5	8
369.185.16.1	1430912	150 / 100	160	110	35	21	14	14	13.5	4.5	6
369.195.16.1	1430335	150 / 150	160	160	35	21	14	14	10.5	3.5	3
370.185.16.1	1433742	200 / 100	200	110	36	18	18	18	0	3	0
370.195.16.1	1433743	200 / 150	200	160	36	18	18	18	0	2	0
370.196.16.1	1433744	200 / 200	200	200	40	20	20	20	0	0	0
371.185.16.1	1433745	250 / 100	250	110	44	22	22	22	3.5	4	3.5
372.195.16.1	1433748	300 / 150	315	160	56	28	28	28	7	6	7

Geberit HDPE double branch fitting 45°



Application purposes
- For building drainage
- For site drainage
- For vertical installation

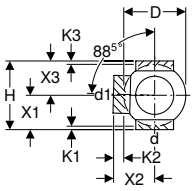
Characteristics
- UV-resistant

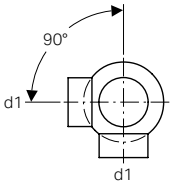
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
367.235.16.1	1430299	100 / 100	110	110	27	9	18	18	5	1.5	1.5

Geberit HDPE double branchball 88.5°, connections 90° offset





Application purposes
- For building drainage

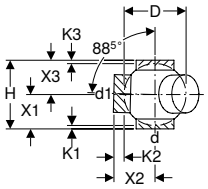
Characteristics
- UV-resistant

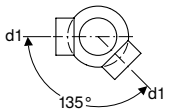
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
367.315.16.1	1433588	100 / 56	110	56	17	20	10	12	10	1.5	1.5	1.5
367.320.16.1	1433589	100 / 60	110	63	17	20	10	12	10	1.5	1.5	1.5
367.325.16.1	1433590	100 / 70	110	75	17	20	10	12	10	1.5	1.5	1.5
367.330.16.1	1433591	100 / 90	110	90	17	20	10	12	10	1.5	1.5	1.5
367.335.16.1	1431105	100 / 100	110	110	17	20	10	12	10	1.5	4	1.5

Geberit HDPE double branchball 88.5°, connections 135° offset





Application purposes
- For building drainage

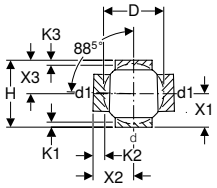
Characteristics
- UV-resistant

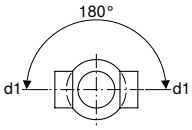
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
367.362.16.1	1433592	100 / 40	110	50	17	20	10	12	10	1.5	1.5	1.5
367.365.16.1	1433593	100 / 56	110	56	17	20	10	12	10	1.5	1.5	1.5
367.370.16.1	1433594	100 / 60	110	63	17	20	10	12	10	1.5	1.5	1.5
367.375.16.1	1433595	100 / 70	110	75	17	20	10	12	10	1.5	1.5	1.5
367.380.16.1	1433596	100 / 90	110	90	17	20	10	12	10	1.5	1.5	1.5
367.385.16.1	1433597	100 / 100	110	110	17	20	10	12	10	1.5	4	1.5

Geberit HDPE double branchball 88.5°, connections 180° offset





Application purposes
- For building drainage

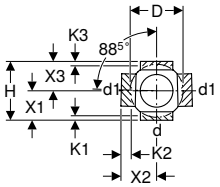
Characteristics
- UV-resistant

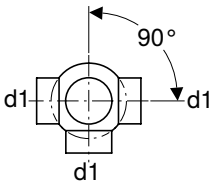
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
367.285.16.1	1431100	100 / 100	110	110	17	20	10	12	10	1.5	4	1.5

Geberit HDPE triple branchball 88.5°, connections 90° offset





Application purposes
- For building drainage

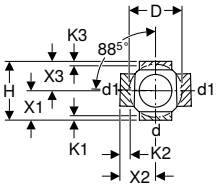
Characteristics
- UV-resistant

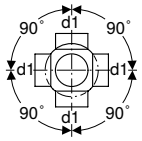
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
367.605.16.1	1430395	100 / 100	110	110	17	20	10	12	10	1.5	4	1.5

Geberit HDPE quadruple branchball 88.5°, connections 90° offset





Application purposes
- For building drainage

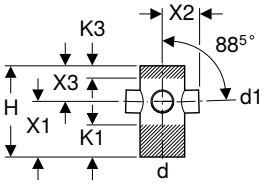
Characteristics
- UV-resistant

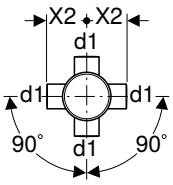
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K2 [cm]	K3 [cm]
367.610.16.1	1430396	100 / 100	110	110	17	20	10	12	10	1.5	4	1.5

Geberit HDPE quadruple branch fitting 88.5°





Application purposes
- For building drainage
- For site drainage

Characteristics
- UV-resistant

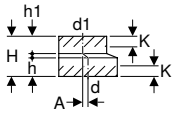
Technical data

Product material	PE-HD

Art. no.	Reece no.	d, ø [mm]	d1, ø [mm]	H [cm]	X1 [cm]	X2 [cm]	X3 [cm]	K1 [cm]	K3 [cm]
367.445.16.1	1430845	110	56	22.5	13.5	9	9	7.5	3

Reducers

Geberit HDPE reducer, eccentric, short



Application purposes
- For building drainage
- For site drainage

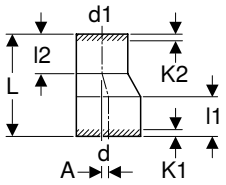
Characteristics
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	A [cm]	H [cm]	h [cm]	h1 [cm]	K [cm]
361.558.16.1	1430193	50 / 40	50	40	0.5	8	3.5	3.7	2
363.558.16.1	1430196	56 / 40	56	40	0.8	8	3.5	3.7	2
363.561.16.1	1430197	56 / 50	56	50	0.3	8	3.5	3.7	2
364.558.16.1	1433189	60 / 40	63	40	1.2	8	3.5	3.7	2
364.561.16.1	1430199	60 / 50	63	50	0.7	8	3.5	3.7	2
364.566.16.1	1430200	60 / 56	63	56	0.4	8	3.5	3.7	2
365.558.16.1	1433562	70 / 40	75	40	1.8	8	3.5	3.7	2
365.561.16.1	1430202	70 / 50	75	50	1.3	8	3.5	3.7	2
365.566.16.1	1430203	70 / 56	75	56	1	8	3.5	3.7	2
365.571.16.1	1430204	70 / 60	75	63	0.6	8	3.5	3.7	2
366.561.16.1	1430205	90 / 50	90	50	2	8	3.5	3.7	2
366.566.16.1	1430206	90 / 56	90	56	1.7	8	3.5	3.7	2
366.571.16.1	1430207	90 / 60	90	63	1.3	8	3.5	3.7	2
366.576.16.1	1430208	90 / 70	90	75	0.8	8	3.5	3.7	2
367.558.16.1	1433599	100 / 40	110	40	3.4	8	3.5	3.7	2
367.561.16.1	1430209	100 / 50	110	50	2.9	8	3.5	3.7	2
367.566.16.1	1430210	100 / 56	110	56	2.6	8	3.5	3.7	2
367.571.16.1	1430211	100 / 60	110	63	2.2	8	3.5	3.7	2
367.576.16.1	1430212	100 / 70	110	75	1.6	8	3.5	3.7	2
367.581.16.1	1430213	100 / 90	110	90	0.9	8	3.5	3.7	2
368.561.16.1	1430217	125 / 50	125	50	3.6	8	3.5	3.7	2
368.566.16.1	1430218	125 / 56	125	56	3.3	8	3.5	3.7	2
368.571.16.1	1430219	125 / 60	125	63	2.9	8	3.5	3.7	2
368.576.16.1	1430220	125 / 70	125	75	2.3	8	3.5	3.7	2
368.581.16.1	1430221	125 / 90	125	90	1.6	8	3.5	3.7	2
368.586.16.1	1430222	125 / 100	125	110	0.7	8	3.5	3.7	2
369.586.16.1	1430214	150 / 100	160	110	2.3	8	3.5	3.7	2
369.588.16.1	1430215	150 / 125	160	125	1.6	8	3.5	3.7	2

Geberit PE reducer, eccentric, long



Application purposes
- For building drainage
- For site drainage

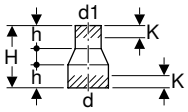
Characteristics
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	A [cm]	L [cm]	l1 [cm]	l2 [cm]	K1 [cm]	K2 [cm]
368.584.16.1	1430223	125 / 100	125	110	0.7	16	7	6.4	4	3
369.584.16.1	1430225	150 / 100	160	110	2.5	28	9.4	6.4	6	3
369.587.16.1	1430228	150 / 125	160	125	1.7	24	9.4	8	6	5
370.584.16.5	1430229	200 / 100	200	110	4.3	28	11.5	3.7	4	0
370.587.16.5	1430230	200 / 125	200	125	3.6	28	11.5	3.7	4	0
370.594.16.5	1430226	200 / 150	200	160	2	28	11.9	9.1	4	6
371.596.16.1	1430227	250 / 200	250	200	2.5	40.5	15.8	15.7	8	8
372.596.16.1	1430259	300 / 200	315	200	5.7	58	16.1	15.7	8	8
372.598.16.1	1430232	300 / 250	315	250	3.2	43.5	16.1	15.7	8	8

Geberit HDPE reducer, concentric, short



Application purposes
- For building drainage
- For site drainage

Characteristics
- UV-resistant

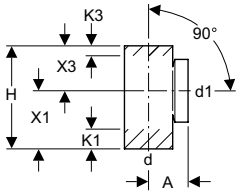
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	H [cm]	h [cm]	K [cm]
363.560.16.1	1433181	56 / 50	56	50	8	3	1.5
366.575.16.1	1430188	90 / 70	90	75	8	3	1.5
367.560.16.1	1430178	100 / 50	110	50	8	3	1.5
367.565.16.1	1430189	100 / 56	110	56	8	3	1.5
367.570.16.1	1430179	100 / 60	110	63	8	3	1.5
367.575.16.1	1430180	100 / 70	110	75	8	3	1.5
367.580.16.1	1430190	100 / 90	110	90	8	3	1.5
368.580.16.1	1433615	125 / 90	125	90	8	3	1.5
369.535.16.1	1430184	150 / 100	160	110	4	0.6	0

Access pipes

Geberit HDPE access pipe 90° with round service opening



Application purposes
- For building drainage

Technical data

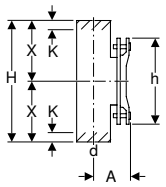
Product material	PE-HD

Characteristics
- UV-resistant

Scope of delivery
- Seal made of EPDM
- Screw cap made of PP

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	A [cm]	H [cm]	X1 [cm]	X3 [cm]	K1 [cm]	K3 [cm]
364.451.16.1	1430400	60 / 60	63	63	9	17.5	10.5	7	4.5	0
365.451.16.1	1430401	70 / 70	75	75	9.5	17.5	10.5	7	3.5	0
366.451.16.1	1430402	90 / 90	90	90	11	20	12	8	3	0
367.451.16.1	1430403	100 / 100	110	110	9	24	13.5	10.5	4.5	0
368.451.16.1	1433610	125 / 100	125	110	13	25	15	10	6	1
369.451.16.1	1430405	150 / 100	160	110	15	35	21	14	12	4

Geberit HDPE access pipe 90° with oval service opening



Application purposes
- For building drainage
- For site drainage

Technical data

Product material	PE-HD

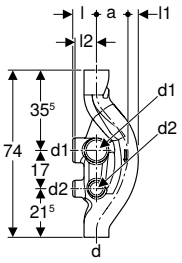
Characteristics
- UV-resistant

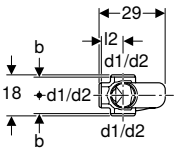
Scope of delivery
- Seal made of EPDM
- Cover, grey cast iron, dip-coated black

Art. no.	Reece no.	DN	d, ø [mm]	A [cm]	H [cm]	h [cm]	X [cm]	K [cm]
370.454.16.1	1433629	200	200	17.5	65	38	32.5	5.5
371.454.16.1	1433631	250	250	20	58	38	29	3
372.454.16.1	1433633	300	315	23	62	38	31	8

Special fittings

Geberit HDPE Sovent fitting





Application purposes

- For building drainage
- For buildings with more than five floors (high-rise buildings)

Characteristics

- Six connection options, closed
- UV-resistant
- With SuperTube technology

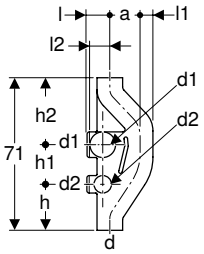
Technical data

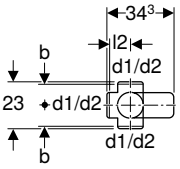
Maximum discharge rate	12 l/s
Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	d2, ø [mm]	a [cm]	l [cm]	l1 [cm]	l2 [cm]	b [cm]
367.614.16.1	1430112	100 / 100 / 70	110	110	75	13	10.5	5.5	9.5	8

- Sovent fittings are installed as a system. Refer Sovent Installation Guide.

Geberit HDPE Sovent fitting





Application purposes

- For building drainage
- For buildings with more than five floors (high-rise buildings)

Characteristics

- Six connection options, closed
- UV-resistant

Technical data

Maximum discharge rate	17 l/s
Product material	PE-HD

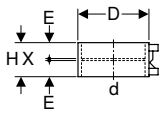
Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	d2, ø [mm]	a [cm]	l [cm]	l1 [cm]	l2 [cm]	b [cm]	h [cm]	h1 [cm]	h2 [cm]
369.001.16.1	1433739	150 / 100 / 70	160	110	75	13.3	13	8	11	9.5	19	17	35

- Sovent fittings are installed as a system. Refer Sovent Installation Guide.

Connections

Welding joints

Geberit electrofusion coupling



Application purposes
- For building drainage
- For site drainage
- For high-tensile, permanent connection of pipes and fittings

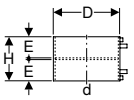
Characteristics
- Can be welded with Geberit electrofusion machines
- UV-resistant

Technical data

Installation temperature	-10 – +40 °C
Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	E [cm]	H [cm]	X [cm]
360.771.16.1	1430420	40	40	5.2	2.8	6	0.3
361.771.16.1	1430421	50	50	6.2	2.8	6	0.3
363.771.16.1	1430422	56	56	6.8	2.8	6	0.3
364.771.16.1	1430423	60	63	7.6	2.8	6	0.3
365.771.16.1	1430424	70	75	8.9	2.8	6	0.3
366.771.16.1	1430425	90	90	10.4	2.8	6	0.3
367.771.16.2	1430426	100	110	12.5	2.8	6	0.3
368.771.16.1	1430429	125	125	14.2	2.8	6	0.3
369.771.16.1	1430427	150	160	17.8	2.8	6	0.3

Geberit HDPE electrofusion coupling with integrated thermal fuse



Application purposes
- For building drainage
- For site drainage
- For high-tensile, permanent connection of pipes and fittings

Characteristics
- With integrated thermal fuse
- Can be welded with Geberit starter switch ESG-T2
- Can be welded with Geberit electrofusion machines ESG 3
- Heat-insulated
- UV-resistant

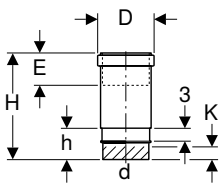
Technical data

Installation temperature	-10 – +40 °C
Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	E [cm]	H [cm]
370.775.16.1	1430430	200	200	22.4	7.5	15
371.775.16.1	1430428	250	250	27.5	7.5	15
372.775.16.1	1430431	300	315	34.3	7.5	15

Push-in connections

Geberit HDPE expansion socket with double flange



Application purposes
- For building drainage
- For site drainage
- For horizontal and vertical installation

Characteristics
- Double flange for supporting the pipe bracket
- With seal made of EPDM
- UV-resistant

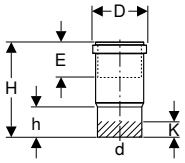
Technical data

Product material	PE-HD

Scope of delivery
- Protective cap

Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	E [cm]	l [cm]	H [cm]	h [cm]	K [cm]
363.700.16.1	1430462	56	56	7.4	6.5–13	3	24	6.8	3
364.700.16.1	1430463	60	63	8.3	7–13.5	3	24.3	6.8	3
365.700.16.1	1430464	70	75	9.7	7–13.5	3	24.6	6.8	3
366.700.16.1	1430465	90	90	11.3	7–13.5	3	24.9	6.9	3
367.700.16.1	1430466	100	110	13.6	7.5–14	3	25.6	7.3	3.5
368.700.16.1	1430471	125	125	15.7	8–14.5	3	26.1	7.4	3.5
369.700.16.1	1430467	150	160	19.5	8–14.5	3	26.8	7.4	3.5

Geberit HDPE expansion socket



Application purposes
- For building drainage
- For site drainage
- For horizontal and vertical installation

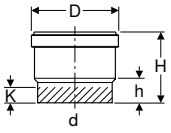
Characteristics
- With seal made of EPDM
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	E [cm]	H [cm]	h [cm]	K [cm]
370.700.16.1	1430472	200	200	24.3	18–23	43	15.6	11
371.700.16.1	1430468	250	250	29.1	17–23.5	42.5	17	14
372.700.16.1	1430469	300	315	36.1	17–23.5	45.8	17.5	14

Geberit PE ring seal socket with lip seal



Application purposes
- For building drainage
- For site drainage

Characteristics
- With lip seal made of EPDM
- Welding end for connection to electrofusion sleeve coupling
- UV-resistant

Technical data

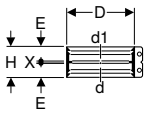
Product material	PE-HD

Scope of delivery
- Protective cap

Art. no.	Reece no	DN	d, ø [mm]	D [cm]	H [cm]	h [cm]	K [cm]
360.779.16.3	1433755	40	40	5.5	8	3.5	2.5
361.779.16.3	1433756	50	50	6.5	8	3.5	2.5
363.779.16.3	1433757	56	56	7	8.3	3.5	2.5
364.779.16.3	1433758	60	63	7.8	8.8	3.5	2.5
365.779.16.3	1433759	70	75	9	9.7	3.5	2.5
366.779.16.3	1433760	90	90	10.6	10.3	3.6	2
367.779.16.3	1433761	100	110	12.9	10.5	3.7	2
369.779.16.3	1433762	150	160	18.5	13 6	4	2

Adapters to other product materials

Geberit adapter clamping connector



Application purposes
- For building drainage
- For site drainage
- For connecting pipes and fittings made of the same or different product materials

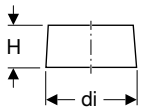
Characteristics
- With seal made of EPDM

Technical data

Product material	Stainless steel

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	E [cm]	H [cm]	X [cm]
359.426.00.2	1436298	56	56	58	7.5	2.7	5.7	0.3
359.427.00.2	1436299	56	56	68	8.3	2.7	5.7	0.3
359.430.00.2	1436302	60	63–64	68	8.3	2.7	5.7	0.3
359.432.00.2	1436304	70	75	68	9	2.7	5.7	0.3
359.440.00.2	1436312	100	108–110	106	12.5	2.7	5.7	0.3
359.449.00.2	1436168	150	159–160	159–160	17.5	3.3	6.9	0.3

Geberit HDPE support ring



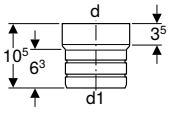
Application purposes
- For building drainage
- For site drainage
- For supporting Geberit HDPE pipes and fittings when using a clamping connector or adapter clamping connector
- For transitions from Geberit HDPE to cast iron

Technical data

Product material	304 stainless steel (DIN 1.4301)

Art. no.	Reece no.	DN	d, ø [mm]	di, ø [mm]	H [cm]
359.455.00.1	1430762	56	56	50	4
359.456.00.1	1430763	60	63	57	4
359.457.00.1	1430764	70	75	69	4
359.459.00.1	1430766	100	110	101.4	4
359.464.00.1	1430769	150	160	147.6	4

Geberit HDPE slab repair coupling



Application purposes
- For building drainage
- For site drainage

Characteristics
- UV-resistant

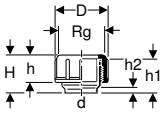
Technical data

Product material	PE-HD

Art. no.	Reece no.	d, ø [mm]	d1, ø [mm]
359.461.16.1	1431009	110	99

Screwing joints

Geberit HDPE threaded connector with compression joint



Application purposes
- For building drainage
- For site drainage

Technical data

Product material	PE-HD

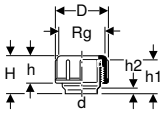
Characteristics
- Union nut made of PP
- Compression ring made of PP
- Seal made of EPDM
- UV-resistant

Scope of delivery
- Protective cap

Art. no.	Reece no.	DN	d, ø [mm]	Rg ["]	D [cm]	H [cm]	h [cm]	h1 [cm]	h2 [cm]
360.740.16.1	1433158	40	40	52 x 1/6	6.4	6.3	3.3	5	2
361.740.16.1	1433168	50	50	62 x 1/6	7.4	6.3	3.3	5	2
363.740.16.1	1430518	56	56	70 x 1/6	8.5	6.8	3.5	5	2
365.740.16.1	1430520	70	75	95 x 1/6	11.2	9.6	4.5	7.5	2.5
366.740.16.1	1433574	90	90	110 x 1/4	12.9	9.7	5	7.5	2.5

- Welding end connected by butt welding only

Geberit HDPE threaded connector with screw cap



Application purposes
- For building drainage
- For site drainage

Technical data

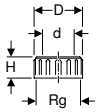
Product material	PE-HD

Characteristics
- With seal made of EPDM
- Screw cap made of PP
- UV-resistant

Art. no.	Reece no.	DN	d, ø [mm]	Rg ["]	D [cm]	H [cm]	h [cm]	h1 [cm]	h2 [cm]
360.750.16.1	1433159	40	40	52 x 1/6	6.4	6.3	3.3	5	2
361.750.16.1	1433169	50	50	62 x 1/6	7.4	6.3	3.3	5	2
363.750.16.1	1430533	56	56	70 x 1/6	8.5	6.8	3.5	5	2
365.750.16.1	1430535	70	75	95 x 1/6	11.2	9.6	4.5	7.5	2.5
366.750.16.1	1430536	90	90	110 x 1/4	12.9	9.7	4.8	7.5	2.5
367.750.16.1	1430537	100	110	130 x 1/4	14.9	9.7	6.3	7.5	2.5

- Welding end connected by butt welding only

Geberit HDPE compression joint



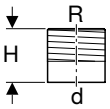
Application purposes
- For building drainage
- For site drainage

Characteristics
- Compression ring made of PP

Scope of delivery
- Union nut made of PP
- Seal made of EPDM
- Compression ring

Art. no.	Reece no.	d, ø [mm]	Rg ["]	D [cm]	H [cm]
364.749.16.1	1433193	63	75 x 1/6	9	6.8

Geberit HDPE adapter with male thread



Application purposes
- For building drainage

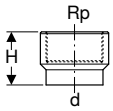
Characteristics
- With support ring made of chrome nickel steel
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	R ["]	H [cm]
361.726.16.1		50	50	1 1/4	6
361.727.16.1	1430806	50	50	1 1/2	6
363.728.16.1	1430807	56	56	2	6.5
364.728.16.1	1430808	60	63	2	6.5
365.729.16.1	1433563	70	75	2 1/2	7

Geberit HDPE adapter with female thread



Application purposes
- For building drainage

Characteristics
- With support ring made of chrome nickel steel
- UV-resistant

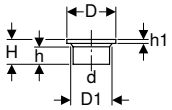
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	Rp ["]	H [cm]
360.721.16.1	1433157	40	40	1	5.5
361.723.16.1	1430792	50	50	1 1/2	6
363.724.16.1	1430793	56	56	2	6.5
364.724.16.1	1430794	60	63	2	7
365.725.16.1	1430795	70	75	2 1/2	7

Flange connections

Geberit HDPE flange adapter



Application purposes
- For building drainage
- For site drainage
- For combining with Geberit HDPE loose flanges

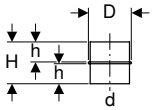
Technical data

Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	D1 [cm]	H [cm]	h [cm]	h1 [cm]
364.744.16.1	1433192	60	63	9	6.8	6	3.7	0.8
366.744.16.1	1433576	90	90	12.8	9.6	7	4.4	1.1
367.744.16.1	1430611	100	110	14.8	11.6	7.5	4.8	1.2
368.744.16.1	1433616	125	125	16	13.1	8	5	1.4
369.744.16.1	1430613	150	160	19.8	16.5	9	5.1	1.7
370.744.16.1	1433630	200	200	26	20.6	7.8	5.4	1.4
371.744.16.1	1433632	250	250	32.5	25.6	7.8	5.2	1.6
372.744.16.1	1433634	300	315	37	31.5	10	7	2

Flange bushings

Geberit HDPE flange bushing



Application purposes
- For building drainage
- For site drainage

Characteristics
- UV-resistant

Technical data

Product material	PE-HD

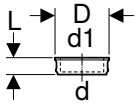
Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	H [cm]	h [cm]
365.772.16.1	1433565	70	75	9	7.2	3.4
366.772.16.1	1433577	90	90	10.3	9.2	4.4
367.772.16.1	1433603	100	110	12	11.7	5.6

- Welding end connected by butt weld

Waste fittings

Coupling sockets

Geberit HDPE connection ring seal socket with lip seal for wall-hung WC



Application purposes
- For building drainage
- For site drainage
- For connecting sanitary appliances with horizontal outlet

Characteristics
- With seal made of EPDM
- UV-resistant

Scope of delivery
- Protective cap

Technical data

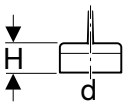
Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	D [cm]	L [cm]
366.941.16.1	1433581	90 / 90	90	90	11.1	4
367.941.16.1	1440068	100 / 90	110	90	11.1	4

Accessories

Caps and seals

Geberit HDPE end cap, extended



Application purposes
- For building drainage
- For site drainage
- For welding or insertion

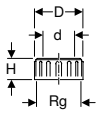
Characteristics
- UV-resistant

Technical data

Product material	PE-HD

Art. no.	Reece no.	d, ø [mm]	H [cm]
361.929.16.1	1430593	50	4
363.929.16.1	1430594	56	4
365.929.16.1	1430596	75	4.4
366.929.16.1	1430597	90	4.5
367.929.16.1	1430598	110	4.6
369.929.16.1	1430599	160	6.5

Geberit HDPE screw cap



Application purposes
- For building drainage
- For site drainage

Characteristics
- With seal made of EPDM

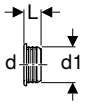
Technical data

Product material	PP

Art. no.	Reece no.	d, ø [mm]	Rg ["]	D [cm]	H [cm]
366.781.16.1	1433578	90	110 x 1/4	12.9	5

Seals

Geberit sleeve



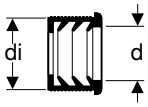
Application purposes
- For bidets and washbasins

Technical data

Product material	EPDM

Art. no.	Reece no.	d, ø [mm]	d1, ø [mm]	L [cm]
152.496.00.1	1430720	40	46	2.3

Geberit sleeve



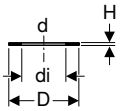
Application purposes
- For bidets and washbasins

Technical data

Product material	EPDM

Art. no.	Reece no.	DN	d, ø [mm]	di, ø [mm]
152.690.00.1	1430676	56	40	50
152.692.00.1	1430883	60	40	57
152.693.00.1	1430678	60	50	57
152.694.00.1		70	50	70

Geberit HDPE flange gasket



Application purposes
- For building drainage
- For creating flange connections

Characteristics
- With seal made of EPDM

Technical data

Product material	EPDM

Art. no.	Reece no.	DN	d, ø [mm]	di, ø [mm]	D [cm]	H [cm]
366.742.00.1	1433575	90	90	83	14.2	0.3
367.742.00.1	1433602	100	110	102	16.2	0.3

Geberit HDPE compression seal

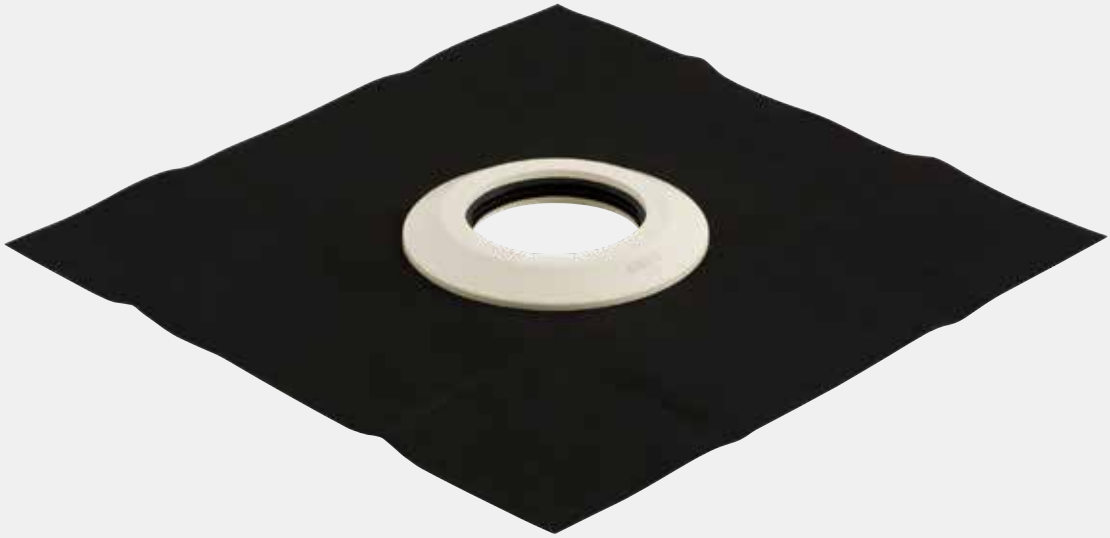
Application purposes

- For building drainage
- For Geberit HDPE screw connections
- For Geberit HDPE screw caps

Technical data

Product material	EPDM

Art. no.	Reece no.	DN	d, ø [mm]
360.783.00.1	1433162	40	40
361.783.00.1	1430890	50	50
363.783.00.1	1430891	56	56

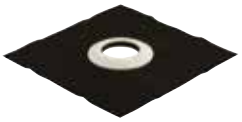


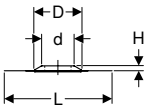
Moisture Protection

Moisture protection

Caulks

Geberit moisture sealing with contact foil Resistit®





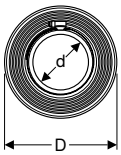
Application purposes
- For sealing pipe feed-throughs in walls, ceilings and floors
- For Geberit HDPE
- For Geberit Silent-db20
- For Geberit Silent-Pro
- For Geberit Silent-PP
- For bonded connections
- For hot bitumen and sealing paint
- For water levels up to 1 m
- For protecting against moisture
- For connecting elastic bituminous seals (e.g. SBS bitumen)
- Not suitable for connection of plastic caulk on bitumen base (e.g. APP sheets)
- Not suitable for processing with an open flame

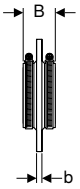
Characteristics
- With seal made of EPDM
- Can be thermally processed with hot air

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]	D [cm]	L [cm]	H [cm]
361.673.00.1	1433735	50	EPDM (Resistit® Perfekt E)	50	13.5	50	2.5
363.673.00.1	1433736	56	EPDM (Resistit® Perfekt E)	56	13.5	50	2.5
365.673.00.1	1433737	70	EPDM (Resistit® Perfekt E)	75	19.5	50	2.5
366.673.00.1	1433738	90	EPDM (Resistit® Perfekt E)	90	19.5	50	2.5
367.673.00.1	1433740	100	EPDM (Resistit® Perfekt E)	110	19.5	50	2.5

Puddle flanges

Geberit puddle flange (wall & floor collar)





Application purposes
- For sealing pipe feed-throughs in walls, ceilings and floors
- For protecting against moisture and pressurised water up to 8 bar / 800 kPa
- For Geberit HDPE
- For Geberit Silent-db20
- For Geberit Silent-Pro
- For Geberit Silent-PP

Scope of delivery
- 2 clamping bands made of stainless steel
- Lubricant for rubber washers

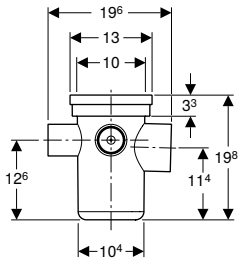
Art. no.	Reece no.	DN	d, ø [mm]	D [cm]	B [cm]	b [cm]
348.227.00.1	1433725	100	110	21	6	1
348.229.00.1	1433726	150	160	26	6	1

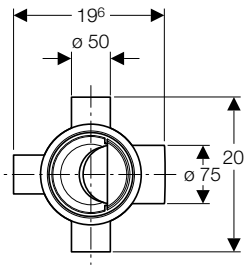
Floor Drainage Systems

Surface drainage systems for indoor and outdoor

Floor drains 12 x 12 cm

Geberit collector drain





Application purposes

- For use inside buildings
- For connecting sanitary appliances
- For use as floor drain with horizontal outlet

Technical data

Inlet capacity	0.8 l/s
Discharge rate	1.15 l/s
Depth of water seal	75 mm

Characteristics

- Straight connector permanently mounted, ø 75 mm, made of PE-HD
- Three connection options, made of PE-HD, ø 50 mm
- Trap insert can be removed without tools

Scope of delivery

- Trap

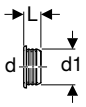
Art. no.	Reece no.
388.001.00.1	1433065

Waste Fittings

Drain assemblies for washbasins and bidets

Seals

Geberit sleeve



Application purposes

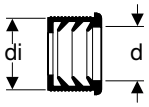
- For bidets and washbasins

Technical data

Product material	EPDM

Art. no.	Reece no.	d, ø [mm]	d1, ø [mm]	L [cm]
152.496.00.1	1430720	40	46	2.3

Geberit sleeve



Application purposes

- For bidets and washbasins

Technical data

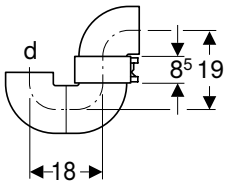
Product material	EPDM

Art. no.	Reece no.	DN	d, ø [mm]	di, ø [mm]
152.690.00.1	1430676	56	40	50
152.692.00.1	1430883	60	40	57
152.693.00.1	1430678	60	50	57
152.694.00.1		70	50	70

Drain assemblies for WCs and wall-hung sinks

Traps

Geberit trap for WC, horizontal outlet, can be aligned



Technical data

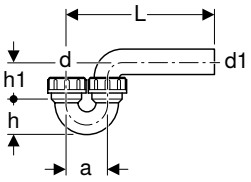
Product material	PE-HD

Art. no.	Reece no.	d, ø [mm]
167.736.16.1	1430858	110

Drain assemblies for sinks

Traps

Geberit P-trap for sink, with compression joint, vertical inlet and horizontal outlet

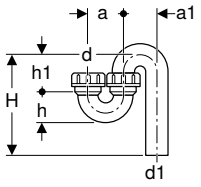


Technical data

Discharge rate	0.84 l/s
Depth of water seal	75 mm
Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	a [cm]	L [cm]	h [cm]	h1 [cm]
152.039.16.1	1430879	50 / 50	50	50	8	8–18	6.5	8
152.043.16.1	1430880	50 / 56	50	56	8	8–21	6.5	8

Geberit S-trap for sink, with compression joint, vertical inlet and vertical outlet



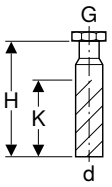
Technical data

Discharge rate	0.84 l/s
Depth of water seal	75 mm
Product material	PE-HD

Art. no.	Reece no.	DN	d, ø [mm]	d1, ø [mm]	a [cm]	a1 [cm]	H [cm]	h [cm]	h1 [cm]
152.038.16.1	1430877	50 / 50	50	50	8	8	8–18	6.5	8
152.041.16.1	1430878	50 / 56	50	56	8	9	8–21	6.5	9

Straight connectors

Geberit straight connector with union nut



Technical data

Product material	PE-HD

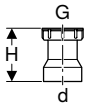
Scope of delivery

- Seal

Art. no.	Reece no.	DN	d, ø [mm]	G ["]	H [cm]	K [cm]
152.113.16.1	1430882	50	50	1 1/2	20	13
152.114.16.1	1430885	50	50	2	20	13

- For connection of sinks to P-traps

Geberit straight connector with union nut



Technical data

Product material	PE-HD

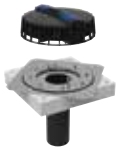
Scope of delivery

- Seal

Art. no.	Reece no.	DN	d, ø [mm]	G ["]	H [cm]
152.180.16.1	1430650	50	50	1 1/2	3.3
152.181.16.1	1430881	50	50	2	3

Geberit Pluvia Roof Drainage Systems

Pluvia siphonic roof outlet matrix

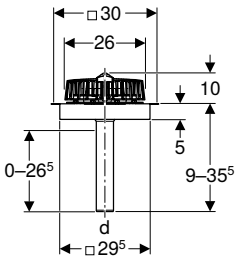
	Pluvia Series 7					New Pluvia outlets			
	Picture	Reece Code	Product Description	Geberit Part No.		Picture	Reece Code	Product Description	Geberit Part No.
12 l Roof		1433727	Geberit Pluvia roof outlet 14 L with Flange connection	359.003.00.1	→		1431095	Geberit Pluvia roof outlet with fastening flange, for roof foils	359.105.00.1
		1431073	Geberit Pluvia roof outlet, with contact sheet and insulation against condensation	359.571.00.1					
		1431076	Geberit Pluvia roof outlet, 14 L, d56, with contact sheet for bitumen and clamp flange	358.010.00.1					
12 l Gutters		1431075	Geberit Pluvia roof outlet, with insulation against condensation and welding flange	359.636.00.1	→		1431097	Geberit Pluvia roof outlet with contact sheet for gutters	359.111.00.1
		1433728	Geberit Pluvia roof outlet 14 L with Flange for Gutter	359.032.00.1					
12 l Overflow Insert		1433542	Geberit emergency overflow set for Geberit Pluvia	359.065.00.1	→		1431079	Geberit Pluvia emergency overflow	359.114.00.1
19 l Gutters		1431066	Geberit Pluvia roof outlet for gutters	359.034.00.1	No Change		1431066	Geberit Pluvia roof outlet for gutters	359.034.00.1
25 l Roof		1433216	Geberit Pluvia roof outlet with fastening flange, for roof foils	359.012.00.1 / 359.023.00.1	→		1431091	Geberit Pluvia roof outlet with flange	359.098.00.1
		1431074 / 1433730	Geberit Pluvia roof outlet, 25 L, with contact sheet for bitumen	359.573.00.1 / 359.506.00.1					

	Pluvia Series 7					New Pluvia outlets			
	Picture	Reece Code	Product Description	Geberit Part No.		Picture	Reece Code	Product Description	Geberit Part No.
25 l Gutters		1431072	Geberit Pluvia roof outlet 25 L, with contact seam for gutters, round	359.544.00.1 / 359.519.00.1	→		1431093	25 litres	359.100.00.1
25 l Overflow Insert		1433141	Geberit emergency overflow set for Geberit Pluvia roof outlet 25 L	358.008.00.1	→		1431094	Geberit Pluvia emergency overflow	359.101.00.1
45 l		1433142	Geberit Pluvia roof outlet for gutters	359.528.00.1	→		1433544	Geberit Pluvia roof outlet for gutters	359.342.00.1
		1433732	Geberit Pluvia roof outlet with contact sheet	359.538.00.1	→		1433199	45 litres	359.345.00.1
60 l		1433731	Geberit Pluvia roof outlet for gutters	359.536.00.1	→		1433143	Geberit Pluvia roof outlets for gutters	359.343.00.1
		1433733	Geberit Pluvia roof outlet with contact sheet	359.539.00.1	→		1433545	Geberit Pluvia roof outlet with contact sheet	359.346.00.1
100 l		1433144	Geberit Pluvia roof outlet for gutters	359.537.00.1	→		1433144	Geberit Pluvia roof outlet for gutters	359.344.00.1
		1433734	Geberit Pluvia roof outlet with contact sheet	359.540.00.1	→		1433546	Geberit Pluvia roof outlet with contact sheet	359.347.00.1

Roof outlets

Roof outlets up to 12 l/s

Geberit Pluvia roof outlet with fastening flange, for roof foils



Application purposes
- For collecting and draining off rainwater from roofs
- For roof foils without fleece lamination
- For syphonic roof drainage systems
- For connecting to roof foils with thicknesses ≤ 4 mm

Technical data

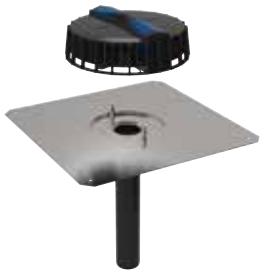
Minimum discharge rate	1 l/s
Maximum discharge rate	12 l/s
Maximum head of water	40 mm

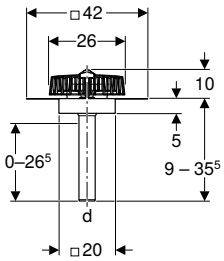
Characteristics
- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector made of PE-HD, can be shortened
- Maintenance-free clamping flange joint

Scope of delivery
- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Flange gasket made of EPDM
- Condensation insulation ring
- Fastening flange with prevailing torque nuts

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.105.00.1	1431095	56	304 stainless steel (DIN 1.4301)	56

Geberit Pluvia roof outlet with contact sheet





Application purposes
- For collecting and draining off rainwater from roofs
- For syphonic roof drainage systems
- For connecting bituminous roof sealings

Technical data

Minimum discharge rate	1 l/s
Maximum discharge rate	12 l/s
Maximum head of water	40 mm

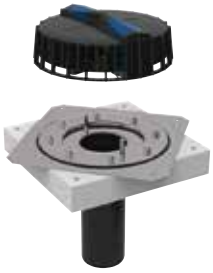
Characteristics
- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector made of PE-HD, can be shortened

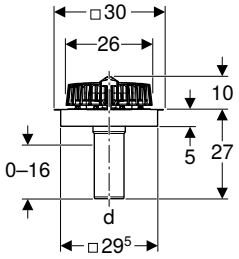
Scope of delivery
- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Condensation insulation ring
- Protection box cover

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.108.00.1	1431096	56	304 stainless steel (DIN 1.4301)	56

Roof outlets up to 25 l/s

Geberit Pluvia roof outlet with fastening flange, for roof foils





Application purposes

- For collecting and draining off rainwater from roofs
- For roof foils without fleece lamination
- For syphonic roof drainage systems
- For connecting to roof foils with thicknesses ≤ 4 mm

Technical data

Minimum discharge rate	1 l/s
Maximum discharge rate	25 l/s
Maximum head of water	50 mm

Characteristics

- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector made of PE-HD, can be shortened
- Maintenance-free clamping flange joint

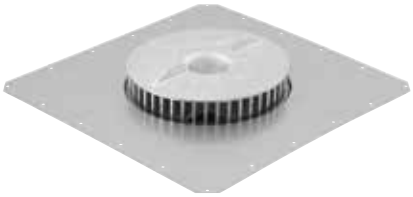
Scope of delivery

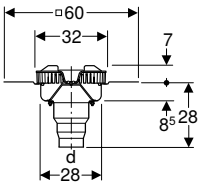
- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Flange gasket made of EPDM
- Fastening flange with prevailing torque nuts
- Condensation insulation ring

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.098.00.1	1431091	90	304 stainless steel (DIN 1.4301)	90

Roof outlets up to 100 l/s

Geberit Pluvia roof outlet with contact sheet





Application purposes

- For collecting and draining off rainwater from roofs
- For syphonic roof drainage systems
- For connecting bituminous roof sealings

Technical data

Discharge rate	45 l/s
Minimum discharge rate	7 l/s
Maximum head of water	80 mm

Characteristics

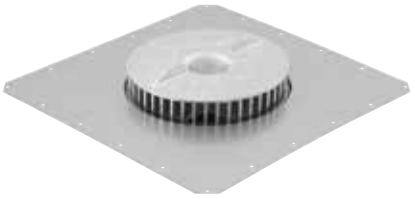
- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector permanently mounted, ø 110 mm, made of PE-HD
- Outlet grating with integrated function disc
- Base unit with built-in outlet disc

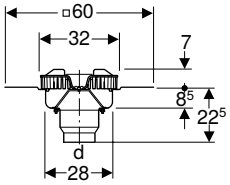
Scope of delivery

- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Wing nut and prevailing torque nuts, made of 304 stainless steel (DIN 1.4301)
- Protection box cover

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.345.00.1	1433199	100	304 stainless steel (DIN 1.4301)	110

Geberit Pluvia roof outlet with contact sheet





Application purposes

- For collecting and draining off rainwater from roofs
- For syphonic roof drainage systems
- For connecting bituminous roof sealings

Technical data

Discharge rate	60 l/s
Minimum discharge rate	8 l/s
Maximum head of water	85 mm

Characteristics

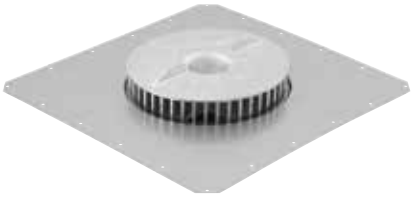
- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector permanently mounted, ø 125 mm, made of PE-HD
- Outlet grating with integrated function disc
- Base unit with built-in outlet disc

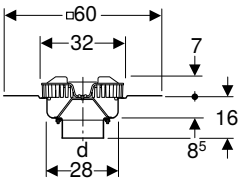
Scope of delivery

- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Wing nut and prevailing torque nuts, made of 304 stainless steel (DIN 1.4301)

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.346.00.1	1433545	125	304 stainless steel (DIN 1.4301)	125

Geberit Pluvia roof outlet with contact sheet





Application purposes

- For collecting and draining off rainwater from roofs
- For syphonic roof drainage systems
- For connecting bituminous roof sealings

Technical data

Discharge rate	100 l/s
Minimum discharge rate	14 l/s
Maximum head of water	105 mm

Characteristics

- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector permanently mounted, ø 160 mm, made of PE-HD
- Outlet grating with integrated function disc
- Base unit with built-in outlet disc

Scope of delivery

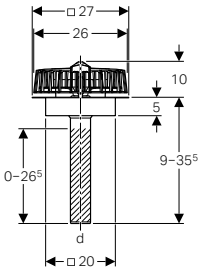
- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Wing nut and prevailing torque nuts, made of 304 stainless steel (DIN 1.4301)
- Protection box cover

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.347.00.1	1433546	155	304 stainless steel (DIN 1.4301)	160

Roof outlets for gutters

Roof outlets up to 12 l/s

Geberit Pluvia roof outlet with contact sheet for gutters



Application purposes

- For collecting and draining off rainwater from roofs
- For gutters with a minimum width of 30 cm
- For connecting metallic product materials
- For syphonic roof drainage systems

Technical data

Minimum discharge rate	1 l/s
Maximum discharge rate	12 l/s
Maximum head of water	40 mm

Characteristics

- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector made of PE-HD, can be shortened

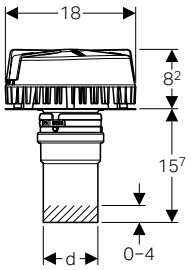
Scope of delivery

- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Condensation insulation ring

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.111.00.1	1431097	56	304 stainless steel (DIN 1.4301)	56

Roof outlets up to 25 l/s

Geberit Pluvia roof outlet for gutters



Application purposes

- For connecting metallic product materials
- For connecting to concrete gutter
- For installation in gutters with a minimum width of 21 cm
- For collecting and draining off rainwater from roofs
- For syphonic roof drainage systems

Technical data

Minimum discharge rate	1 l/s
Maximum discharge rate	19 l/s
Maximum head of water	55 mm

Characteristics

- Straight connector made of PE-HD, can be shortened
- Straight connector can be reduced directly or extended

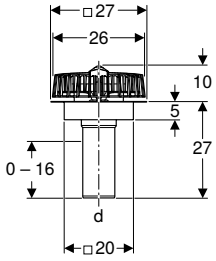
Scope of delivery

- Base unit made of 304 stainless steel (DIN 1.4301)
- Outlet grating with function disc and blue rotary latching slider
- 6 hammer fixings made of chrome nickel steel

Art. no.	Reece no.	d, ø [mm]
359.034.00.1	1431066	75

- Piccolo

Geberit Pluvia roof outlet with contact sheet for gutters



Application purposes

- For collecting and draining off rainwater from roofs
- For gutters with a minimum width of 30 cm
- For connecting metallic product materials
- For syphonic roof drainage systems

Technical data

Minimum discharge rate	1 l/s
Maximum discharge rate	25 l/s
Maximum head of water	50 mm

Characteristics

- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector made of PE-HD, can be shortened

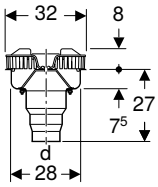
Scope of delivery

- Outlet grating with function disc
- Base unit with contact sheet made of 304 stainless steel (DIN 1.4301)
- Condensation insulation ring

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.100.00.1	1431093	90	304 stainless steel (DIN 1.4301)	90

Roof outlets up to 100 l/s

Geberit Pluvia roof outlet for gutters



Application purposes

- For collecting and draining off rainwater from roofs
- For gutters with a minimum width of 35 cm
- For connecting metallic product materials
- For syphonic roof drainage systems

Technical data

Discharge rate	45 l/s
Minimum discharge rate	7 l/s
Maximum head of water	80 mm

Characteristics

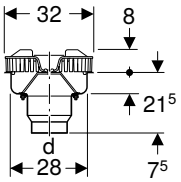
- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector permanently mounted, ø 110 mm, made of PE-HD
- Outlet grating with integrated function disc
- Base unit with built-in outlet disc

Scope of delivery

- Outlet grating with function disc
- Base unit with contact rim made of 304 stainless steel (DIN 1.4301)
- Wing nut and prevailing torque nuts, made of 304 stainless steel (DIN 1.4301)

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.342.00.1	1433544	100	304 stainless steel (DIN 1.4301)	110

Geberit Pluvia roof outlet for gutters



Application purposes

- For collecting and draining off rainwater from roofs
- For gutters with a minimum width of 35 cm
- For connecting metallic product materials
- For syphonic roof drainage systems

Technical data

Discharge rate	60 l/s
Minimum discharge rate	8 l/s
Maximum head of water	85 mm

Characteristics

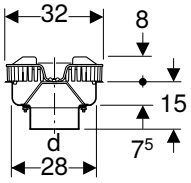
- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector permanently mounted, ø 125 mm, made of PE-HD
- Outlet grating with integrated function disc
- Base unit with built-in outlet disc

Scope of delivery

- Outlet grating with function disc
- Base unit with contact rim made of 304 stainless steel (DIN 1.4301)
- Wing nut and prevailing torque nuts, made of 304 stainless steel (DIN 1.4301)

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.343.00.1	1433143	125	304 stainless steel (DIN 1.4301)	125

Geberit Pluvia roof outlet for gutters



Application purposes

- For collecting and draining off rainwater from roofs
- For gutters with a minimum width of 35 cm
- For connecting metallic product materials
- For syphonic roof drainage systems

Technical data

Discharge rate	100 l/s
Minimum discharge rate	14 l/s
Maximum head of water	105 mm

Characteristics

- Vertical outlet
- Straight connector can be reduced directly or extended
- Straight connector permanently mounted, ø 160 mm, made of PE-HD
- Outlet grating with integrated function disc
- Base unit with built-in outlet disc

Scope of delivery

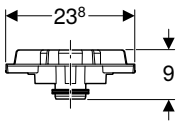
- Outlet grating with function disc
- Base unit with contact rim made of 304 stainless steel (DIN 1.4301)
- Wing nut and prevailing torque nuts, made of 304 stainless steel (DIN 1.4301)
- Protection box cover

Art. no.	Reece no.	DN	Sealing of connection	d, ø [mm]
359.344.00.1	1433144	155	304 stainless steel (DIN 1.4301)	160

Emergency overflows

For roof outlets up to 12 l/s

Geberit Pluvia emergency overflow



Application purposes

- For Geberit Pluvia roof outlets with discharge rate of 9 l/s and 12 l/s
- Not suitable for Geberit Pluvia roof outlets with outlet grating made of aluminium cast

Technical data

Maximum head of water at 12 l/s	80 mm
Overflow height	55 mm

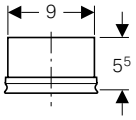
Scope of delivery

- Overflow section made of PP
- 2 grey rotating lock bars
- Lip seal made of EPDM

Art. no.	Reece no.
359.114.00.1	1431079

For roof outlets up to 25 l/s

Geberit Pluvia emergency overflow



Application purposes
- For Geberit Pluvia roof outlets with discharge rate of 19 l/s

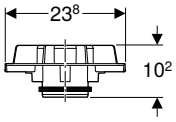
Technical data

Maximum head of water at 19 l/s	70 mm
Overflow height	55 mm

Scope of delivery
- 2 rotary latching sliders, grey
- Lip seal made of EPDM

Art. no.	Reece no.
359.036.00.1	1433729

Geberit Pluvia emergency overflow



Application purposes
- For Geberit Pluvia roof outlets with discharge rate of 25 l/s
- Not suitable for Geberit Pluvia roof outlets with outlet grating, grating aperture 8 x 2 cm

Technical data

Maximum head of water at 25 l/s	95 mm
Overflow height	65 mm

Scope of delivery
- Overflow section made of PP
- 2 grey rotating lock bars
- Lip seal made of EPDM

Art. no.	Reece no.
359.101.00.1	1431094

Accessories

For roof outlets

Geberit Pluvia set of mounting clips for function disc

Application purposes
- For fixing of the Geberit Pluvia function disc without outlet grating
- Exclusively suitable for use with Geberit Pluvia supplementary sets, suitable for parking decks or promenade decks

Scope of delivery
- Set of 2 pieces

Art. no.	Reece no.
358.060.00.1	1430249


GEBERIT

Tools

Tools for Geberit Silent-db20 / Geberit HDPE

Electrofusion welding tools

Geberit electrofusion machine ESG 3, 230 V

Application purposes
- For electrofusion welding of Geberit HDPE and Geberit Silent-db20 pipes and fittings up to ø 315 mm
- For Geberit electrofusion tapes up to ø 315 mm
- For electrofusion welding of up to three electrofusion couplings ≤ ø 110 mm simultaneously

Technical data

Protection class	I
Protection degree	IP55
Load resistance	5–68 Ohm
Fuse	12.5 A
Nominal voltage	100–240 V AC
Mains frequency	50–60 Hz
Maximum welding current	5 A
Power consumption	1085–1810 W
Mains cable length	4 m
Coupling connection cable length	4 m
Operating temperature	-10 – +50 °C
Welding cycle for electrofusion couplings	80 s
Welding cycle for electrofusion couplings with thermal fuse	420 s
Welding cycle for electrofusion tapes	80 s
Weight	5.9 kg

Characteristics
- With remote control
- With integrated fall impact cushioning
- CE-compliant

Scope of delivery
- Connecting cable for electrofusion coupling
- Cable for electrofusion couplings with integrated thermal fuse
- Connecting cable for electrofusion couplings and electrofusion tapes

Art. no.
359.911.P6.1

Pipe processing tools

Geberit handheld pipe scraper

Application purposes
- For preparing electro welding
- For removing the oxide layer on Geberit HDPE and Geberit Silent-db20 pipes and fittings

Art. no.	Reece no.
356.118.00.1	1431632

Geberit handheld pipe scraper, in case

Application purposes
- For preparing electro welding
- For removing the oxide layer on Geberit HDPE and Geberit Silent-db20 pipes and fittings of dimensions ø 63–160 mm

Scope of delivery
- Spare blade
- Case

Art. no.	d, ø [mm]
359.912.00.1	63–160

Accessories
- Geberit scraping knife for pipe scraper

Geberit handheld pipe scraper

Application purposes
- For removing the oxide layer on Geberit HDPE and Geberit Silent-db20 pipes and fittings of dimensions ø 56–135 mm
- For preparing electro welding

Characteristics
- Blades exchangeable

Art. no.
356.120.00.1

Geberit pipe scraper, in case

Application purposes
- For removing the oxide layer on Geberit HDPE and Geberit Silent-db20 pipes and fittings of dimensions ø 110 mm
- For use with cordless drill

Scope of delivery
- Case
- Case insert
- Pipe scraper ø 110 mm

Art. no.	d, ø [mm]
359.915.00.1	110

Accessories
- Geberit scraping knife for pipe scraper

Accessories for pipe processing tools

Geberit scraping knife for pipe scraper

Art. no.
242.997.00.1

Appendix

Abbreviations

Abbreviation	Designation
A	projection (cm)
a	partial dimension (cm)
A1	projection (cm)
a1	partial dimension (cm)
AB	connection area (mm)
AB1	connection area (mm)
AB2	connection area (mm)
Acm²	clear cross-sectional area (cm²)
AD	connecting distance (cm)
AD1	connecting distance (cm)
arc	angle (°)
B	width (cm)
b	partial dimension (cm)
B1	width (cm)
c	flange hole diameter (mm)
D	outer diameter (cm)
d, ø	outer diameter (mm)
D1	outer diameter (cm)
d1, ø	outer diameter (mm)
d2, ø	outer diameter (mm)
d3, ø	outer diameter (mm)
da	outer pipe diameter (mm)
di, ø	inner diameter (mm)
DN	nominal width
DN	nominal width
DN/OD	nominal width
E	insertion depth (cm)
E1	insertion depth (cm)
G	pipe thread (")
G1	pipe thread (")
G2	pipe thread (")
H	height (cm)
h	height, partial dimension (cm)
H1	height (cm)
h1	height, partial dimension (cm)
h2	height, partial dimension (cm)
h3	height, partial dimension (cm)
IK	grip length, screw (cm)
k	flange, diameter of bolt circle (cm)
K	maximum cutting (cm)
K1	maximum cutting (cm)
K2	maximum cutting (cm)
K3	maximum cutting (cm)
KL	cable length (cm)

Abbreviation	Designation
L	length (cm)
l	length, partial dimension (cm)
L	L / length (m)
l1	length, partial dimension (cm)
L1	length (cm)
L2	length (cm)
l2	length, partial dimension (cm)
L3	length (cm)
l3	length, partial dimension (cm)
La	linear expansion (cm)
M	metric thread (mm)
m	bolt hole diameter (cm)
n	number of bolts, flange connection (PC)
PN	nominal pressure (bar)
R	taper external thread (")
r	radius (cm)
R1	taper external thread (")
Rg	round thread (")
Rp	taper internal pipe thread (")
Rp1	taper internal pipe thread (")
Rp2	taper internal pipe thread (")
S	pipe series
s	wall thickness (mm)
s ISO	wall thickness (for labels) (mm)
s1	wall thickness (mm)
SW	spanner width (mm)
UNC	inch thread
V	measuring range, volumetric flow rate (l/min)
X	leg length / L-dimension (cm)
X1	leg length / L-dimension (cm)
X2	leg length / L-dimension (cm)
X3	leg length / L-dimension (cm)
X4	leg length / L-dimension (cm)
X5	leg length / L-dimension (cm)
X6	leg length / L-dimension (cm)
Z	Z-dimension (cm)
Z1	Z-dimension (cm)
Z2	Z-dimension (cm)
Z3	Z-dimension (cm)
Z4	Z-dimension (cm)
Z5	Z-dimension (cm)
Z6	Z-dimension (cm)

Information, instructions and measures for handling hazardous substances

Hazardous substance	Hazard symbol	Signal word	Information, instructions and measures
Lemon perfume block		Attention	**Contains:** • citral (CAS no. 5392-40-5) **Hazard information:** • H317 - May cause an allergic skin reaction. **Safety notes:** • P272 - Contaminated work clothing should not be allowed out of the workplace. • P280 - Wear protective gloves. • P302 + P352 - IF ON SKIN: Wash with plenty of water. • P333 + P313 - If skin irritation or a rash occurs: Get medical advice/attention. • P362 + P364 - Take off contaminated clothing and wash it before reuse. **Disposal instruction:** • P501 - Dispose of contents/system trap at an authorised waste collection point.
Tangit PVC-U special adhesive		Danger	**Contains:** • tetrahydrofuran (CAS no. 109-99-9) • butanone (CAS no. 78-93-3) • cyclohexanone (CAS no. 108-94-1) **Hazard information:** • H225 - Highly flammable liquid and vapour. • H315 - Causes skin irritation. • H318 - Causes serious eye damage. • H335 - May cause respiratory irritation. • H336 - May cause drowsiness or dizziness. • H351 - Suspected of causing cancer. **Safety notes:** • P102 - Keep out of reach of children. • P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. • P260 - Do not breathe mist/vapours. • P271 - Use only outdoors or in a well-ventilated area. • P280 - Wear protective gloves/eye protection. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. • P310 - Immediately call a POISON CENTER or doctor/ physician. **Disposal instructions:** • P501 - Dispose of contents/container in accordance with official local regulations. Only containers that are completely empty and free of solvent vapours may be sent to the recycling collection point. European Waste Catalogue (EWC) number: 080409
Geberit AquaClean nozzle cleaner, as of 2018		Attention	**Contains:** • less than 5% non-ionic tensides, amphoteric tensides • water preservatives (methylisothiazolinone, benzisothiazolinone) **Hazard information:** • H319 - Causes serious eye irritation. **Safety notes:** • P102 - Keep out of reach of children. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Hazardous substance	Hazard symbol	Signal word	Information, instructions and measures
Geberit AquaClean nozzle cleaner, up to 2017		Attention	**Contains:** • less than 5% non-ionic tensides, amphoteric tensides • citric acid (CAS no. 5949-29-1) **Hazard information:** • H319 - Causes serious eye irritation. **Safety notes:** • P102 - Keep out of reach of children. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Geberit AquaClean cleaning agent		Attention	**Contains:** • less than 5% anionic tensides, non-ionic tensides • citric acid (CAS no. 77-92-9) **Hazard information:** • H319 - Causes serious eye irritation. **Safety notes:** • P102 - Keep out of reach of children. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Geberit mineral sealing compound FSH 90		Danger	**Contains:** • portland cement (CAS no. 65997-15-1) **Hazard information:** • H315 - Causes skin irritation. • H318 - Causes serious eye damage. • H335 - May cause respiratory irritation. **Safety notes:** • P101 - If medical advice is needed, have product container or label at hand. • P102 - Keep out of reach of children. • P103 - Read label before use. • P261 - Avoid breathing dust. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. • P310 - Immediately call a POISON CENTER or doctor/ physician. • P321 - Specific treatment: – After inhalation: In case of unconsciousness, put the patient into the recovery position before moving them. Ensure a supply of fresh air. If symptoms persist, seek medical attention. – After contact with skin: Immediately wash with water and soap and rinse thoroughly. – After ingestion: Do not induce vomiting; immediately seek medical attention. • P405 - Store locked up. **Other hazards:** Product has severe alkaline reaction with water. **Disposal instruction:** • P501 - Dispose of contents/container in accordance with official local regulations.

Hazardous substance	Hazard symbol	Signal word	Information, instructions and measures
Tangit ABS special adhesive		Danger	**Contains:** • butanone (CAS no. 78-93-3) • n-butyl acetate (CAS no. 123-86-4) **Hazard information:** • H225 - Highly flammable liquid and vapour. • H319 - Causes serious eye irritation. • H336 - May cause drowsiness or dizziness. • EUH066 - Repeated exposure may cause skin dryness or cracking. **Safety notes:** • P102 - Keep out of reach of children. • P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. • P260 - Do not breathe mist/vapours. • P271 - Use only outdoors or in a well-ventilated area. • P280 - Wear eye protection. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. **Disposal instructions:** • P501 - Dispose of contents/container in accordance with official local regulations. European Waste Catalogue (EWC) number: 080409
Micropur Forte MF, liquid (water preservative for Geberit hygiene filter)		-	**Contains:** • sodium hypochlorite solution (CAS no. 7681-52-9) • silver (CAS no. 7440-22-4) • sodium nitrate < 0.1% (CAS no. 7631-99-4) **Hazard information:** • H411 - Toxic to aquatic life with long-lasting effects. **Safety notes:** • P102 - Keep out of reach of children. • P273 - Avoid release to the environment. • P391 - Collect spillage. **Disposal instructions:** • P501 - Dispose of contents/container in accordance with official local regulations.
Geberit AquaClean descaling agent		Attention	**Contains:** • phosphoric acid (CAS no. 7664-38-2) • hydrochloric acid (CAS no. 7647-01-0) **Hazard information:** • H315 - Causes skin irritation. • H319 - Causes serious eye irritation. **Safety notes:** • P102 - Keep out of reach of children. • P280 - Wear protective gloves/eye protection. • P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. • P332 + P313 - If skin irritation occurs: Get medical advice/ attention. • P337 + P313 - If eye irritation persists: Get medical advice/ attention. **Disposal instructions:** Completely empty, cleaned containers may be sent to the recycling collection point.

Hazardous substance	Hazard symbol	Signal word	Information, instructions and measures
DropIn blue in-cistern block		Attention	**Contains:** • benzenesulphonic acid, C10-13-alkyl derivatives (CAS no. 68411-30-3) • cocomonoethanolamide (CAS no. 90622-77-8) • pine oil 99 ≤ 2.5% **Hazard information:** • H315 - Causes skin irritation. • H319 - Causes serious eye irritation. • H412 - Harmful to aquatic life with long lasting effects. **Safety notes:** • P101 - If medical advice is needed, have product container or label at hand. • P102 - Keep out of reach of children. • P280 - Wear protective gloves/eye protection. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. • P314 - Get medical advice/attention if you feel unwell. **Disposal instructions:** Smaller quantities can be diluted and rinsed away with plenty of water. Larger quantities must be disposed of in accordance with official local regulations.
Scented strainer for Geberit urinals		Attention	**Contains:** • 3-(3,4-Methylenedioxyphenyl)-2-methylpropanal (CAS no. 1205-17-0) • Benzyl salicylate (CAS no. 118-58-1) • (R)-p-mentha-1,8-diene (CAS no. 5989-27-5) • linalool (CAS no. 78-70-6) • 1-(2,6,6-trimethyl-3-cyclohexen-1-yl)-2-buten-1-one (CAS no. 57378-68-4) • tetramethyl-4-methyleneheptan-2-one (CAS no. 81786-75-6) • reaction mixture comprising 1-(1,2,3,4,5,6,7,8-octahydro-2,3,8;8-tetramethyl-2-naphthyl)ethan-1-one and 1-(1,2,3,4,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one and 1-(1,2,3,5,6,7,8,8a-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one (CAS no. 54464-57-2) **Hazard information:** • H317 - May cause an allergic skin reaction. • H412 - Harmful to aquatic life with long lasting effects. **Safety notes:** • P261 - Avoid breathing vapours, spray. • P273 - Avoid release to the environment. • P280 - Wear protective gloves. • P302 + P352 - If on skin: Wash with plenty of water. • P333 + P313 - If skin irritation or a rash occurs: Get medical advice/attention. **Disposal instructions:** • P501 - Dispose of contents/container in accordance with official local regulations.

Hazardous substance	Hazard symbol	Signal word	Information, instructions and measures
Kolo SmartFresh stick		Attention	**Contains:** • 15–30% anionic tensides • < 5% amphoteric tensides • fragrances **Hazard information:** • H315 - Causes skin irritation. • H319 - Causes serious eye irritation. **Safety notes:** • P101 - If medical advice is needed, have product container or label at hand. • P102 - Keep out of reach of children. • P280 - Wear protective gloves. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. • P332 + P313 - If skin irritation occurs: Get medical advice/ attention. • P337 + P313 - If eye irritation persists: Get medical advice/ attention.
Geberit DuoFresh stick		Attention	**Contains:** • 15–30% anionic tensides • 5–15% non-ionic tensides • fragrances; GERANIOL; LINALOOL **Hazard information:** • H303 - May be harmful if swallowed.* • H315 - Causes skin irritation. • H319 - Causes serious eye irritation. • H401 - Toxic to aquatic life.* • H412 - Harmful to aquatic life with long lasting effects. **Safety notes:** • P101 - If medical advice is needed, have product container or label at hand. • P102 - Keep out of reach of children. • P273 - Avoid release to the environment. • P280 - Wear protective gloves. • P302 + P352 - If on skin: Wash with plenty of water. • P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. • P362 + P364 - Take off contaminated clothing and wash it before reuse.* **Disposal instructions:** • P501 - Dispose of contents/container in accordance with official local regulations. The items ending in * are only applicable to countries outside of the EU, such as Russia, Serbia, and Bosnia and Herzegovina.

HDPE Installation Guide

System

System description

Geberit HDPE

Geberit HDPE is the complete solution for all types of drainage, both above and below ground. It has high thermal and chemical resistance. The pipes and fittings are manufactured from high density polyethylene and offer numerous advantages compared to conventional piping systems. Geberit HDPE has a high impact and abrasion resistance, is flexible and offers multiple connection options. These combined properties make it ideal for prefabrication, high traffic areas and trade waste applications where quality and reliability are important.

Application range

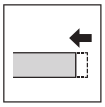
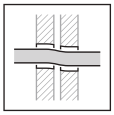
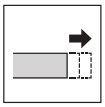
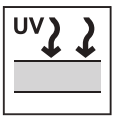
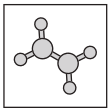
Table 1: Application range

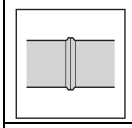
Application	Geberit HDPE
Siphonic and Conventional rainwater pipes	✓
Trade waste	✓
Concrete embedded pipes	✓
Industrial applications	✓
Pump pressure pipes	✓ [1)]

[1)] Without mechanical load max. 1.5 bar internal pressure at max 30 °C, 10 years, ø 40 – 160; Refer to pressure guide.

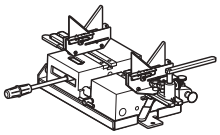
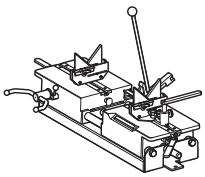
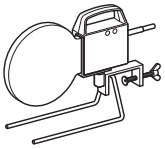
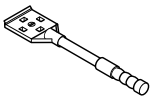
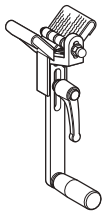
Characteristics

Comments on the individual properties

	Geberit High Density Polyethylene HDPE: Density 951 – 955 kg/m^3	The density of various polyethylene types can be 910 – 960 kg/m^3. Geberit fittings and pipe are up to 955 kg/m^3 one of the strongest available. HDPE is lighter and more flexible than many alternate materials, which is beneficial particularly with regard to transportation and installation.
	Reduced reversion	Geberit licensed manufacturing process produces HDPE with a reversion less than 15 mm per metre. This leads to less shrinkage and a more robust installation.
	Resistance to cold	Geberit HDPE will not break when the water in the pipes freezes. The pipes will expand as the water freezes and then return to their original shape.
	Elasticity	The flexibility of the piping material can be a key selection criteria with certain applications, especially when pipes are exposed to movement from vibration, earthquake or ground subsidence.
	Resistance to radioactive effluents	There is no risk of damage as a result of medical waste. However, please ask the manufacturer for more information relevant to the particular application.
	Resistance to abrasion	A pipe's resistance to abrasion is a particularly important factor in branch lines, sewer stacks and ground pipes. HDPE is highly resistant to abrasion; its extra thick walls offer additional protection.
	Heat expansion	Heat expansion of HDPE needs to be considered in the design and installation. As a rule of thumb, for every 50 °C increase in temperature, an expansion of 15 mm per metre of pipe can be anticipated.
	Resistance to hot water	Geberit HDPE can be safely used as waste pipe with no mechanical load, up to 80 °C. Temperatures of up to 100 °C for short periods (e.g. surges of steam) are permissible.
	Resistance to impact	Geberit HDPE is unbreakable at room temperature. Its resistance to impact is very high even at extremely low temperatures (down to approx. -40 °C) making ideal for installation in car parks and trafficable areas.
	Non-conductive	Plastics are good insulators of electricity.
	Sealing material	Chemical resistance of the rubber seal is different to HDPE. Refer to the chemical compatibility guide or contact Geberit for assistance on the best joining method.
	Solar radiation	Geberit HDPE pipes are protected against ageing and embrittlement caused by UV rays by the addition of a stabiliser. Consider the heat and expansion in exposed areas.
	Noise	HDPE is a soft material with a low Young's modulus. HDPE limits solid-borne conduction, but airborne noise should be insulated. This can be done by means of a duct or lagging.
	Chemical resistance	Because of its structure, Geberit HDPE is highly resistant to chemicals. Its resistance can be summarized briefly as follows: Geberit HDPE is insoluble in all solutions at 20 °C. Geberit HDPE is only soluble in aliphatic and aromatic carbons and their chlorinating products at over 90 °C. The material will be attacked by heavily oxidized media (conc. HN03, conc. H2 S04) when exposed over long periods at room temperature.

	Tightness	Many years of experience with welding HDPE pipes have shown that butt and electrofusion welds form a watertight bond that is stronger than the pipe. When installed correctly the joint will remain watertight for the life of the building.
	Protection against blockages	HDPE's low surface tension and hydrophobic properties are highly beneficial in preventing blockages commonly caused by solid deposits and low flow of water.
	Welding temperature	HDPE require a low energy input to produce when compared to many other materials. The welding temperature for HDPE is approximately 230 °C, making welding easier and more reliable than some other joining methods.
	Non-toxic	Plastics are well suited for use in the food industry as packaging material, containers, bottles etc. Geberit HDPE pipes are widely used in the food service and packaging industry.
	Painting	HDPE is not suitable for painting. Its water repellent properties and the flexibility of the material limits the adhesive properties of the paint. If painting is unavoidable, the paint product to be used should be tested for compatibility with the HDPE.

Overview of tools

 Geberit welding machine Media	Butt welding of ø 40–315 mm can be performed with the Geberit welding machines Media and Universal: • Media: ø 40–160 mm • Universal: ø 40–315 mm
 Geberit welding machine Universal	
 Geberit welding plate	For Geberit welding machines Media and Universal , or separately
 Geberit electrofusion machine ESG 3	The Geberit electrofusion machine ESG 3 is for welding Geberit HDPE pipes and fittings with: • Electrofusion sleeve couplings ø 40–160 mm • Electrofusion couplings with integrated thermal fuses ø 200–315 mm (only 230 V) • Electrofusion tapes ø 50–315 mm Voltage range: 110–230 V
 Geberit pipe scraper	The Geberit handheld pipe scraper is used for removing the oxide coating on Geberit HDPE pipes and fittings as preparation for electrofusion welding
 Geberit lubricant	For lubricating the seals of push-fit connections
 Geberit pipe chamfering tool	For chamfering Geberit HDPE pipes ø 40–160 mm

Geberit HDPE

System components

The complete proven and practical product range consists of:
- Pipes
- Fittings
- Connections
- Fastenings

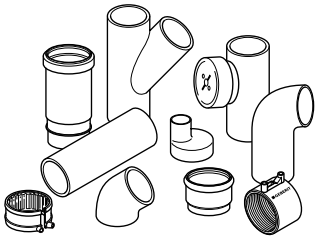


Figure 1: Geberit HDPE product range

Chemical resistance list

The following information is always required for calculating the chemical resistance:
- Conveyed medium (composition, chemical designation)
- Proportion (concentration in %)
- Temperature in °C
- Information about the duration of exposure, frequency, flow rate
- Other conveyed media

Geberit HDPE can be used between pH 0 and pH 14.

The behaviour of the fitting seal ring (EPDM) relating to the chemical resistance is different to Geberit HDPE.

The way in which the Geberit HDPE pipes and fittings behave when coming into contact with the materials flowing through them is classified as follows:

Resistant (+):	The pipe wall material is generally deemed to be suitable.
Resistant to a certain extent (0):	The suitability of the pipe wall material must be verified for the specific application; further testing may be required.
Not resistant (-):	The pipe wall material is generally deemed to be unsuitable.

The resistance of the seals differs from the resistance of the HDPE pipes and fittings. Geberit HDPE can be used between pH 0 and pH 14.

Table 2: Designations used for the composition of the flow substances

%	Percentage values refer to the percentage by weight
VL	Aqueous solution with percent by weight ≤10 %
L	Aqueous solution with percent by weight > 10 %
GL	At 20 °C, saturated aqueous solution
TR	Chemical is, at a minimum, technically pure
H	Commercially available composition
S	Traces < 0.1 %
G	Typically used percent by weight
All	Saturated solution and every dilution

The information given in the following table is based on immersion tests without mechanical stress and correspond to the current level of knowledge. For example, a mixture of different flow substances may lead to new assessment criteria which are not covered by the table below.
The information given makes no assertions. No warranty claims may be derived from it.
Even if Geberit HDPE has been deemed resistant to a substance, swelling may occur (extension of the pipe); consideration must also be given to the fact that a number of substances could measurably diffuse through Geberit HDPE .

Table 3: Resistance list

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
1.2 dibromethane		0		-	-
2-ethylhexanol		+		0	+
4-methyl-2-pentanol		+		0	+
Acetaldehyde	40	+	+	0	0
Acetaldehyde	TR	+	0	0	0
Acetaldehyde + acetic acid	90:10:00	+			0
Acetamide	TR	+	+	+	+
Acetic acid	70	+	+	+	-
Acetic acid	100	+	0	0	-
Acetic acid butyl ester		+		0	0
Acetic acid ethyl ester (ethyl acetate)	TR	+	0	0	0
Acetic anhydride	TR	+	0	0	0
Acetic anhydride (ethanoic anhydride)	TR	+	0	0	0
Acetoacetic ester		+			0
Acetone	VL	+	+	+	+
Acetone	TR	+	+	0	+
Acetophenone	TR	+			+
Acetylene		+			+
Acronal dispersions	H	+		0	+
Acronal solutions	H	0			-
Acrylic acid emulsions		+	+	+	+
Acrylonitrile	TR	+	+	+	+
Activin (chloramine 1 %)		+	+	+	+
Adipic acid ester		+		0	+
Adipic acids	GL	+	+	+	+
Allyl acetate		+		0	0
Allyl alcohol	96	+	+	+	+
Allyl chloride		0		-	-
Alum (potassium-aluminium sulphate)	All	+	+	+	+
Aluminium chloride	VL	+	+	+	+
Aluminium chloride	GL	+	+	+	+
Aluminium chloride, solid		+	+	+	+
Aluminium fluoride	GL	+	+	+	+

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Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Aluminium hydroxide		+	+	+	+
Aluminium meta phosphate		+	+	+	+
Aluminium sulphate	All	+	+	+	+
Aluminium sulphate, solid		+	+	+	+
Amido sulphate (amido sulphonic acid salts)	All	+	+	+	+
Amido sulphonic acid	All	+	+	+	+
Amino acids		+	+	+	+
Ammonia solution (aqueous ammonia)	All	+	+	+	+
Ammonia, gaseous	100	+	+	+	+
Ammonia, liquid	100	+	+	+	+
Ammonium acetate	All	+	+	+	+
Ammonium carbonate	All	+	+	+	+
Ammonium carbonate and hydrogen carbonate	GL	+	+	+	+
Ammonium chloride	All	+	+	+	+
Ammonium chloride (salmiac)	All	+	+	+	+
Ammonium dihydrogen phosphate	GL	+	+	+	+
Ammonium fluoride	L	+	+	+	+
Ammonium hydrogen sulphate	All	+	+	+	+
Ammonium hydrosulphide	All	+	+	+	+
Ammonium hydroxide (aqueous ammonia)	All	+	+	+	+
Ammonium iron (II) sulphate	GL	+	+	+	+
Ammonium meta phosphate		+	+	+	+
Ammonium nitrate	All	+	+	+	+
Ammonium phosphate	All	+	+	+	+
Ammonium sulphide	All	+	+	+	+
Ammonium thiocyanate		+	+	+	+
Amyl alcohol	TR	+	+	+	+
Amyl chloride	100	0		-	-
Amyl phthalate		+		0	0
Aniline (phenylamine)	GL	0	0	0	-
Aniline chlorine hydrate	All	+	0	0	0
Animal glue (bone glue)	H	+	+	+	+
Anise oil	TR	0	0	-	-
Anon (cyclohexanone)	TR	+	0	0	-
Anthraquinone sulphonic acid	1	+	+	+	+
Antiformin (benzaldoxime)	2	+			0
Antifreeze agent (motor vehicles)	H	+	+	+	+
Antimony pentachloride		+	+	+	+
Antimony trichloride	90	+	+	+	+
Antimony trichloride, anhydrous		+	+	+	+
Apple juice	H	+	+	+	+
Aqua regia	TR	-	-	-	-
Aqueous ammonia (ammonia water, ammonium hydroxide)	All	+	+	+	+
Arklone = Freon, Frigen (fluorochlorinated hydrocarbons CFC)	100	0	-		-
Arsenic acid	All	+	+	+	+
Arsenic acid anhydride		+	+	+	+

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Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Ascorbic acid (Vitamin C)		+	+	+	+
Asphalt		+		0	-
Barium carbonate chem. 98/99 %	All	+	+	+	+
Barium hydroxide	All	+	+	+	+
Barium salt	All	+	+	+	+
Battery acid (sulphuric acid 34 %)	H	+	+	+	+
Beef fat		+	+	0	0
Beer	H	+	+	+	+
Beer caramel	H	+	+	+	+
Beeswax	H	+	+	-	-
Benzaldehyde	All	+	+	0	0
Benzaldehyde in isopropanol	1	+	+	+	-
Benzaldoxime (antiformin)	2	+			+
Benzene	TR	0	0	-	-
Benzene sulphonic acid		+	+	+	+
Benzoic acid	All	+	+	+	+
Benzoic acid sodium (sodium benzoate)	36	+	+	+	+
Benzoyl chloride	TR	0	0	0	-
Benzyl alcohol	TR	+	+	+	0
Benzyl chloride		0		-	-
Bichromate sulphuric acid (chromic acid/sulphuric acid)	TR	-	-	-	-
Bismuth nitrate, aqueous	All	+	+	+	+
Bismuth salts		+	+	+	+
Bisulphite lye		+	+	+	+
Bitumen		+		0	-
Bone glue (animal glue)	H	+	+	+	+
Bone oil		+	+	+	-
Borax (disodium tetraborate)	All	+	+	+	+
Boric acid	All	+	+	+	+
Boric acid methyl ester		+		-	0
Boron trifluoride		+		0	-
Brake fluid		+	+	+	0
Brandy (spirits)	H	+	+	+	+
Brandy	H	+	+		+
Bromic acid	40	-	-	-	-
Bromine, liquid and gaseous	All	-	-	-	-
Bromochloromethane		-	-	-	-
Butadiene	50	+			-
Butadiene, gaseous	TR	+			-
Butanediol	All	+	+	+	+
Butanetriol	All	+	+	+	+
Butanol	All	+	+	+	+
Butanone		+		-	+
Butoxyl (methoxybutyl acetate)		+		0	0
Butter		+	+	+	0
Butter milk		+			+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Butyl acetate	TR	+	0	0	0
Butyl acrylate		+		0	0
Butyl alcohol		+	+	+	+
Butyl benzyl phthalate		+	+	+	0
Butylene glycol	TR	+	+	+	+
Butylene, liquid	TR	-	-	-	-
Butylphenol	TR	0			-
Butynediol	100	+	+	+	+
Butyric acid	All	+	+	0	0
Calcium carbide		+	+	+	+
Calcium carbonate	GL	+	+	+	+
Calcium chloride	All	+	+	+	+
Calcium hydroxide	GL	+	+	+	+
Calcium hypochlorite (chlorinated lime)	GL	0	0	-	0
Calcium nitrate	50	+	+	+	+
Calcium oxide (powder)		+	+	+	+
Calcium phosphate		+	+	+	+
Calcium sulphate (gypsum)	GL	+	+	+	+
Calgon (sodium hexametaphosphate)	All	+	+	+	+
Camphor	TR	+		0	-
Camphor		+		0	-
Camphor oil	TR	-	-	-	-
Cane sugar		+	+	+	+
Carbazole		+	+	+	0
Carbolic acid	All	+	+	+	0
Carbolic acid (phenol)	All	+	0	0	-
Carbon disulphide	TR	0	-	-	-
Carbon tetrachloride	TR	-	-	-	-
Carbonic acid (carbon dioxide, soda water)	All	+	+	+	+
Caster oil	TR	+	+	+	0
Caustic potash	50	+	+	+	+
Caustic soda (sodium hydroxide)	All	+	+	+	+
Caustic soda (sodium hydroxide)	All	+	+	+	+
Cetyl alcohol (hexadecanol)		+	+	+	0
Chloracetic acid	All	+	+	+	0
Chloral hydrate	All	+	+	+	0
Chloramine T	TR	+			+
Chloramine T	1	+	+	+	+
Chloric acid	1	+	+	+	0
Chloric acid	10	+	+	+	0
Chloric acid	20	0		-	0
Chlorinated carbonic acid ester		+		0	-
Chlorinated lime (calcium hypochlorite)	GL	0	0	-	0
Chlorinated water	VL	+		0	0
Chlorinated water	GL	0	0	-	0
Chlorine, gaseous, damp	0.5	0		-	0

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Chlorine, gaseous, damp	1.0	-	-	-	-
Chlorine, gaseous, damp	97	-	-	-	-
Chlorine, gaseous, dry	TR	0	0	-	-
Chlorine, liquid	TR	-	-	-	-
Chlorobenzene	TR	0		-	-
Chloroethanol	TR	+	+	+	0
Chloroform	TR	-	-	-	-
Chloromethane	TR	-	-	-	-
Chloromethyl, gaseous	TR	0	-	-	-
Chloroparaffin	100	+	0	-	-
Chloropicrin		0		+	-
Chlorosulphonic acid	TR	-	-	-	-
Chrome alum	All	+	+	+	+
Chrome anode slime		+	+	+	+
Chromic acid	20	+	+	0	0
Chromic acid	50	+	0	-	0
Chromic acid/sulphuric acid	15/35	-	-	-	-
Chromic sulphuric acid	TR	-	-	-	-
Chromic sulphuric acid	All	-	-	-	-
Chromium salt	All	+	+	+	+
Chromium trioxide	50	+	0	-	0
Cider	H	+	+	+	+
Citraconic acid	All	+	+	+	
Citrate (citric acid salts)	All	+	+	+	+
Citric acid	10	+	+	+	+
Citric acid	All	+	+	+	+
Citron aldehyde	TR	+		0	0
Citrus juice		+	+	+	+
Citrus juices		+	+	+	+
Clophene (polychlorinated biphenyl PCB)	100	+	0	-	-
Clove oil			+	0	0
Coal gas, benzene-free	H	+			-
Coca Cola		+			+
Cocoa	G	+	+	+	+
Coconut oil	TR	+	+	0	-
Coconut oil alcohol	TR	+	0	0	0
Cod liver		+		0	0
Coffee	G	+	+	+	+
Cognac		+	+	+	+
Cola concentrates		+	+	+	+
Colouring		+	+	+	0
Compressed air, oleiferous		+	+		-
Cooking oil, vegetable and animal		+	+	+	0
Copper chloride	GL	+	+	+	+
Copper cyanide	All	+	+	+	+
Copper fluoride		+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Copper nitrate	30	+	+	+	+
Copper nitrate	GL	+	+	+	+
Copper sulphate	All	+	+	+	+
Corn oil	TR	+	+	0	-
Corsolin (disinfectant; chlorophenol soap solution)	VL	+	+	+	
Coumarone resin		+	+	+	+
Creosote		+	+	+	0
Creosote		+		0	0
Cresol	90	+	+	0	-
Cresol	100	+	+	0	-
Crotonic aldehyde	TR	+		0	+
Crude oil		+		0	-
Cuprous salt	GL	+	+	+	+
Cyclanone	H	+	+	+	+
Cyclanone (fatty alcohol sulphate)	L	+	+	+	+
Cyclohexane	TR	+	+	+	-
Cyclohexanone	TR	+	0	0	-
Decahydronaphthalene (decaline)	TR	0	0	-	-
Defoamers		+		0	+
Detergents		+	+	+	+
Developer solutions (photography)		+	+	+	0
Dextrin	18	+	+	+	+
Dextrose (grape sugar, glucose)	All	+	+	+	+
Di-2-ethylhexylphthalate (DOP)		0			0
Dibutyl ether	TR	+	0	-	0
Dibutyl phthalate	TR	+	0	0	0
Dibutyl sebacate	TR	+		0	0
Dichloroacetic acid	50	+	+	+	0
Dichloroacetic acid	TR	+	+	0	0
Dichloroacetic methyl ester	TR	+	+	+	0
Dichlorobenzene	TR	0		-	-
Dichlorodiphenyltrichloroethane (DDT, powder)		+	+	+	+
Dichloroethane (ethylenchloride)		0	-	-	0
Dichloroethylene	TR	-	-	-	-
Dichloropropane		0		-	-
Dielectric (transformer oil)	100	0	0		-
Diesel fuel	H	0	0	0	-
Diethyl ketone		+		0	-
Diethylene glycol		+	+	+	+
Diethylether (ether, ethyl ether)	TR	0	0	0	-
Diglycolic acid 30 %	30	+	+	+	+
Diglycolic acid saturated	GL	+			+
Dihexyl phthalate	TR	+		0	-
Diisobutyl ketone	TR	+		-	-
Diisopropyl ether		0	0	-	-
Dimethyl sulfoxide		+	+	+	+

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Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Dimethylamine	TR	+	0	0	+
Dimethylformamide	TR	+	+	0	0
Dinonyl phthalate	TR	0			0
Dioctyl phthalate	TR	0			0
Dioxane	TR	+	+	+	0
Diphenylamine		+		0	
Diphenyloxide		+		0	-
Disodium phosphate		+	+	+	+
Disodium sulphate		+	+	+	+
Disodium tetraborate (borax)	All	+	+	+	+
Dispersions		+			
Dodecyl benzene sulphonic acid		+		0	+
Dripping		+	+	+	0
Electrolyte baths for electroplating		0		0	-
Emulsifiers		+	+	+	+
Emulsifiers (tensides)	All	+	+	+	+
Emulsions (photographic)	H	+	+	+	+
Engine oil (HD oil)		+		0	-
Epichlorohydrin		+	+	+	0
Essential oils		-	-	-	-
Ester, aliphatic	TR	+		0	0
Ethane		+	+	+	-
Ethanol (rectified spirit, ethyl alcohol, alcohol)	96	+	+	+	+
Ether (ethyl ether, diethyl ether)	TR	0	0	0	-
Ethyl acetate	100	+	0	-	0
Ethyl acetate	TR	+	0	0	0
Ethyl alcohol (ethanol, rectified spirit, alcohol)	96	+	+	+	+
Ethyl alcohol (fermentation slurry)	G	+		0	+
Ethyl alcohol, denatured (2 % toluol)	96	0			0
Ethyl alcohol+acetic acid (fermentation mix)		+	+	+	+
Ethyl bromide		0		-	0
Ethyl chloride (dichlorethane)		0	0	0	0
Ethyl chloroacetate	TR	+	+	+	-
Ethylbenzene	TR	0			-
Ethylchloride	TR	0			0
Ethylene		+		0	-
Ethylene glycol	TR	+	+	+	+
Ethylene oxide (oxirane), gaseous	TR	+	+	+	0
Ethylene oxide (oxirane), liquid	TR	-	-	-	0
Ethylenediamine	TR	+	+	+	+
Ethylenediamine-tetra acetic acid		+	+	+	+
Ethylether (ether, diethyl ether)	TR	0	0	0	-
Exhaust gases containing carbon dioxide	All	+	+	+	+
Exhaust gases containing carbon monoxide	All	+	+	+	+
Exhaust gases containing hydrochloric acid	All	+	+	+	+
Exhaust gases containing hydrogen fluoride	S	+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Exhaust gases containing oleum	S	-	-	-	-
Exhaust gases containing oleum	≤ 5	-	-	-	-
Exhaust gases containing sulphur dioxide	All	+	+	+	+
Exhaust gases containing sulphur trioxide (oleum)	S	-	-	-	0
Exhaust gases containing sulphuric acid	All	+	+	+	+
Exhaust gases containing sulphuric acid, damp	All	+	+	+	0
Exhaust gases, nitrous (nitric oxide)	S	+	+	+	+
Exhaust gases, nitrous (nitric oxide)	≤ 5	+	+	+	+
Exhaust gases, nitrous (nitric oxide)	> 5			-	+
Exsiccator fat		+		0	0
Fatty acid amides		+		0	0
Fatty acids	TR	+	+	0	-
Fatty acids, techn. pure	100	+	0		-
Fatty alcohol sulphate	H	+	+	+	+
Fatty alcohol sulphate (cyclanone)	L	+	+	+	+
Fatty alcohols		+		0	0
Fermentation compound (ethyl alcohol + acetic acid)	G	+	+	+	+
Fermentation slurry (ethyl alcohol)	G	+		0	+
Ferric chloride	All	+	+	+	+
Fixing salt (sodium thiosulphate)	All	+	+	+	+
Floor wax		+		0	-
Fluorine	TR	-	-	-	-
Fluoroboric acid		+		0	0
Fluorosilicic acid	40	+	+	+	+
Fluorosilicic acid	32	+	+	+	0
Formaldehyde (FORMALIN)	40	+	+	+	+
Formalin (aqueous formaldehyde)	40	+	+	+	+
Formamide	TR	+	+	+	+
Formic acid	10	+	+	+	+
Formic acid	50	+	+	+	+
Formic acid	85	+	+	+	0
Formic acid	TR	+	+	+	0
Frigen 12 (Freon 12)	100	0		-	0
Fruit juices	G	+	+	+	+
Fruit juices, fermented		+	+	+	+
Fruit juices, unfermented		+	+	+	+
Fruit pulp	H	+	+	+	+
Fruit wine	H	+	+	+	+
Furfurol		+		0	0
Furfuryl alcohol	TR	+	+	+	0
Furniture polish		+		0	-
Gelatine	All	+	+	+	+
Gin	40	+			+
Glucose (grape sugar, dextrose)	All	+	+	+	+
Glue		+	+	+	+
Glycerine	All	+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Glycerine chlorohydrin		+	+	+	0
Glycine	VL	+	+	+	+
Glycol	H	+	+	+	+
Glycolic acid	37	+	+	+	+
Glycolic acid	70	+	+	+	+
Glycolic acid butyl ester		+	+	+	0
Glysantine		+	+	+	+
Grape sugar (glucose, dextrose)	All	+	+	+	+
Gravy		+	+	+	+
Gypsum (calcium sulphate)	GL	+	+	+	+
Hair shampoo		+	+	+	+
Halothane		0		-	-
Heating oil	H	0	-	-	-
Heptane	TR	+	0	0	-
Hexadecanol (cetyl alcohol)		+	+	+	0
Hexafluorosilic acid	All	+	+	+	0
Hexahydrophenol	TR	+	+	+	-
Hexamethylenetetramine	All	+	+	+	+
Hexane	TR	+	0	0	-
Hexanetriol	TR	+	+	+	+
Honey		+	+	0	+
Hydrazine hydrate	TR	+	+	+	+
Hydrazinium hydroxide	L	+	+	+	+
Hydrochloric acid	≤ 28	+	+	+	+
Hydrochloric acid	> 28	+	+	0	+
Hydrocyanic acid	TR	+	+	+	0
Hydrocyanic acid	TR	+	+	+	0
Hydrocyanic acid (hydrogen cyanide)	10	+	+	+	+
Hydrocyanic acid (prussic acid)	10	+	+	+	+
Hydrofluoric acid		+			-
Hydrofluoric acid	70	+		0	-
Hydrofluoric acid (fluorhydric acid)	50	+	+	0	-
Hydrogen	TR	+	+	+	+
Hydrogen bromide acid	50	+	+	+	+
Hydrogen bromide, gaseous	TR	+	+	+	+
Hydrogen chloride gas, damp and dry	TR	+	+	+	+
Hydrogen peroxide	10	+	+	+	0
Hydrogen peroxide	30	+	0	0	0
Hydrogen peroxide	90	+	0	-	0
Hydrogen peroxide	30	+	0	0	0
Hydrogen peroxide	90	+	0	-	0
Hydrogen sulphide		+	+	+	0
Hydrogen sulphide, gaseous	GL	+	+	0	0
Hydroquinone	L	+	+	+	0
Hydrosulfite	VL	+	+	+	+
Hydroxylamine sulphate	12	+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Hypochlorous acid		0	0	0	0
Hypochlorous acid		0	0	0	0
Hypophosphite (salt of hypophosphorous acid)	All	+	+	+	
Ink		+	+	+	+
Iodine tincture DAB6	H	+	+	0	0
Iodine-potassium iodide (3 % iodine)		+	+	0	0
i-propanol	TR	+	+	+	+
Iron (II) chloride	GL	+	+	+	+
Iron (II) sulphate	All	+	+	+	+
Iron (III) chloride	All	+	+	+	+
Iron (III) nitrate	L	+	+	+	+
Iron (III) sulphate	GL	+	+	+	+
Iron salt	All	+	+	+	+
Isobutyl alcohol		+	+	+	+
Iso-butyric aldehyde (technically pure)	100	+		-	0
Iso-octane	TR	+	0	0	-
Isopropanol (isopropyl alcohol)	TR	+	+	+	+
Isopropyl acetate	100	+		0	0
Isopropyl ether	TR	0		-	0
Javelle water (sodium hypochlorite)	5	0	0	0	-
Jelly		+	+	+	+
Kaolin elutriated/ground	All	+	+	+	+
Kerosene (petroleum)	TR	0	0	0	-
Ketone		0	0	0	0
Lactic acid	All	+	+	+	0
Lactose		+	+	+	+
Lanolin (wool fat)	TR	0	0	0	0
Latex (rubber dispersions)		+	+	+	+
Lead (II) acetate	All	+	+	+	+
Lead tetraethyl	TR	+			0
Lemon aroma		+			0
Lemon juice		+	+	+	+
Lemon zest oil		+			-
Lemonades		+			+
Levoxin 15 (hydrazine hydrate)	TR	+	+	+	+
Lime water		+	+	+	+
Limescale (calcium carbonate)	GL	+	+	+	+
Linseed oil	TR	+	+	+	0
Lipoides (lecithins; emulsifiers)	All	+	+	+	
Liquid soap		+	+	+	+
Lithium bromide		+	+	+	+
Lubricating oils	H	0	0	0	-
Lysoform (disinfectant; aqueous solution div. higher aldehydes)	VL	+	+	0	
Lysol (cresol soap solution)		+		0	+
Machine oil (free from aromatic compounds)	TR	0		0	-
Magnesium carbonate	GL	+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Magnesium chloride	All	+	+	+	+
Magnesium fluosilicate		+	+	+	+
Magnesium hydroxide	GL	+	+	+	+
Magnesium iodide		+	+	+	+
Magnesium salts	All	+	+	+	+
Magnesium sulphate	All	+	+	+	+
Magnesium sulphate (Epsom salt)	All	+	+	+	+
Maleic acid	GL	+	+	+	0
Malic acid	1	+	+	+	+
Malic acid	50	+	+	+	+
Malic acid	GL	+	+	+	+
Manganese sulphate		+	+	+	+
Margarine		+	+	+	-
Marmelade	H	+	+	+	+
Mashed potatoes		+	+	+	+
Mayonnaise		+			0
Menthol	TR	+	+	0	-
Mercury	TR	+	+	+	+
Mercury chloride	TR	+	+	+	+
Mercury salt	GL	+	+	+	+
Mersol D (compound of higher paraffin sulfonate acid chlorides)	100	-			
Metal soaps		+	+	+	+
Metallic mordants		+			+
Methacrylic acid		+	+	+	0
Methane, gaseous	TR	+			-
Methanol (methyl alcohol)	All	+	+	+	+
Methol (4-methylaminopheno sulphate) (photo developer)	VL	+			0
Methoxybutanol	TR	+	+	0	0
Methoxybutyl acetate (butoxyl)		+		0	0
Methyl acrylate		+	+	+	-
Methyl alcohol (methanol)	All	+	+	+	+
Methyl benzene (toluol)	TR	0	-	-	-
Methyl bromide, gaseous	TR	0	0	-	-
Methyl chloride	TR	0	-	-	-
Methyl chloroacetate	TR	+	+	+	-
Methyl ethyl ketone	TR	+	0	-	0
Methyl glycol		+	+	+	0
Methyl methacrylate		+	+	+	-
Methyl propyl ketone		+		0	0
Methyl salicylate		+		0	-
Methyl sulphuric acid	50	+	+	+	-
Methyl sulphuric acid	100	0			-
Methylacetate	TR	+	+		-
Methylamine	32	+			+
Methylcyclohexane		0		-	-
Methylene chloride	TR	0	0	-	-

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	%	20 °C	40 °C	60 °C	20 °C
Methylisobutylketone		+		-	0
Milk	H	+	+	+	0
Mineral water	H	+	+	+	+
Mixed acid I (sulphuric acid/nitric acid/water):					
- 48/49/3		-	-	-	-
- 50/50/0		-	-		-
- 10/87/3		-			-
- 50/31/19		-			-
- 50/33/17		-			-
- 10/20/70		0			0
Mixed acid II (sulphuric acid/phosphoric acid/water): - 30/60/10		+	0		0
Molasses		+	+	+	+
Mono ethylamine	All	+	+	+	+
Monochlorbenzene		0		-	-
Monochloroacetic ethylester	100	+	+	+	-
Monochloroacetic methylester	100	+	+	+	-
Morpholine	TR	+	+	+	0
Mowilith dispersions		+	+	+	+
Nail polish		+		0	+
Nail polish remover		+		0	0
Naphta	H	0		0	-
Naphthalene	TR	0		0	-
Natural gas	H	+			-
Nekal BX (wetting agent; sodium salts div. isopropyl naphtalene sulphonic acids)	All	+	+	+	
Nickel chloride	GL	+	+	+	+
Nickel nitrate	GL	+	+	+	+
Nickel salts	GL	+	+	+	+
Nickel sulphate	All	+	+	+	+
Nicotine		+	+	+	-
Nicotinic acid	VL	+	+		+
Nitric acid	6.3	+	+	+	+
Nitric acid	25	+	+	+	+
Nitric acid	40	0	0	-	0
Nitric acid	50	0	0	-	0
Nitric acid	65	0	-	-	-
Nitric acid	75	-	-	-	-
Nitrobenzol	TR	+	+	0	-
Nitrocellulose		+			0
Nitrogen (gaseous)	All	+	+	+	+
Nitrotoluenes	TR	+	+	0	-
Nitrous gases	≤ 5	+	+	+	+
N-methylpyrrolidone		+	+	+	0
Nolan diluter		+	+		-
Nolan varnish		+	+		
Nonyl alcohol (Nonanol)		+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Nut oil		+		0	0
Nutrient salt	All	+	+	+	+
Octylcresol	TR	0		-	-
Oils, ethereal		0		-	-
Oils, mineral without additives		0		0	-
Oils, mineral, free from aromatic compounds	H	0	0	0	-
Oils, vegetable and animal	H	+	0	0	-
Oleic acids	TR	+		0	-
Olein (oleic acid)		+	-	0	-
Oleum vapours	TR	-	-	-	0
Oleum vapours (sulphur trioxide)	≤ 5	-			0
Oleum, 10 % SO3		-	-	-	-
Optical brighteners		+	+	+	+
Orange juice		+	+	+	+
Orange peel oil		+			-
Oxalic acid	GL	+	+	+	0
Oxygen	TR	+	+	0	+
Ozone	GL	0	-	-	+
Ozone, gaseous 2 %		0	-	-	+
Ozone, gaseous 50 pphm		0		-	+
P 3 7221	VL	+	+		+
P 3 Galvaclean 20	VL	+	+		+
P 3 Galvaclean 42 = P 3 S	VL	+	+		+
P 3 Galvaclean 44	VL	+	+		+
P 3 Galvaclean 45	VL	+	+		+
P 3 Galvaclean 65	VL	+	+		+
P 3 Manuvo hand cleaner	VL	+	+		+
P 3 Saxim	VL	+	+		+
P 3 Standard	VL	+	+		+
Palm kernel fatty acid	TR	+		-	-
Palm kernel oil		+	+	0	0
Palm oil	H	+	+	0	0
Palmitic acid		+	+	+	-
Palmityl alcohol		+	+	+	0
Paraffin	100	+	+	+	-
Paraffin emulsion	H	+	+	0	0
Paraffin oil	TR	+	+	0	-
Paraformaldehyde		+	+	+	+
p-Butylphenol	TR	0			-
Pectin	GL	+	+	+	+
Pentanol	TR	+	+	+	+
Peppermint oil	TR	+			-
Perchlorethylene	TR	0	0	-	-
Perchloric acid	20	+	+	+	0
Perchloric acid	50	+		0	0
Perchloric acid	70	+	0	-	-

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Perfume		+			-
Perhydrol (hydrogen peroxide, aqueous solution)	40	+	0	0	0
Pesticide	G	+	+	+	0
Petrolether	TR	+	0	0	-
Petroleum (kerosene)	TR	0	0	0	-
Petroleum (normal)	H	+	0	0	-
Petroleum ether (benzine, free from aromatic compounds)	100	+	0	0	-
Petroleum spirit (white spirit)	TR	0	0	0	-
Petroleum without additives		0		0	-
Petroleum, free from aromatic substances	H	0	0	0	-
Petroleum, unleaded and free from aromatic compounds	H	0	0	0	-
Petroleum-benzene compound	80/20	0		0	-
Phenol	All	+	+	+	-
Phenol (carbolic acid)	All	+	0	0	-
Phenolic resin moulding compound		+	+	+	0
Phenylamine (aniline)	GL	0	0	0	-
Phenylethyl alcohol		+	+	+	-
Phenylhydrazine	TR	0		-	-
Phenylhydrazine hydrochloride		+		-	+
Phenylsulphonate (sodium dodecylbenzene sulphonate)		+	+	+	+
Phosgene, gaseous	TR	-	-	-	-
Phosgene, liquid	TR	-			-
Phosphate	All	+	+	+	+
Phosphoric acid	50	+	+	+	+
Phosphoric acid	85	+	+	0	+
Phosphoric pentoxide	100	+	+	+	+
Phosphoric trichloride	TR	+	+	0	+
Phosphorous oxychloride		+	+	0	+
Photo developer	H	+	+	+	0
Photo fixing bath	H	+	+		+
Photographic developer	H	+	+	+	+
Photographic emulsion	H	+	+	+	+
Phthalic acid	50	+	+	+	+
Phthalic acid	GL	+	+	+	+
Phthalic acid ester		+		0	0
Picric acid	10	+	+		0
Picric acid	GL	+	+		0
Pinda oil		+	+	+	-
Pine needle oil	H	+	0	0	-
Pine needle oil		+		0	-
Pineapple juice		+	+	+	+
Polychlorinated diphenyl (PCB)		+		-	-
Polyester resins		0		-	-
Polyester softener		+		0	0
Polyglycol		+	+	+	+
Potash (potassium carbonate)	All	+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Potassium aluminium sulphate (alum)	All	+	+	+	+
Potassium bichromate (potassium dichromate)	All	+	+	+	+
Potassium bisulphate	All	+	+	+	+
Potassium borate	10	+	+	+	+
Potassium borate	GL	+	+	+	+
Potassium bromate	VL	+	+	+	+
Potassium bromate	GL	+	+	0	+
Potassium bromide	All	+	+	+	+
Potassium cadmium cyanide	All	+	+	+	+
Potassium carbonate	All	+	+	+	+
Potassium carbonate (potash)	All	+	+	+	+
Potassium chlorate	All	+	+	+	+
Potassium chloride	All	+	+	+	+
Potassium chromate	40	+	+	+	+
Potassium chromate	GL	+	+	+	+
Potassium cyanide	All	+	+	+	+
Potassium cyanide	All	+	+	+	+
Potassium dichromate (potassium bichromate)	All	+	+	+	+
Potassium ferricyanide	All	+	+	+	+
Potassium ferrocyanide (yellow prussiate of potash)	All	+	+	+	+
Potassium fluoride	All	+	+	+	+
Potassium hydroxide (caustic potash)	50	+	+	+	+
Potassium hydroxide (caustic potash)	50	+	+	+	+
Potassium iodide	All	+	+	+	+
Potassium nitrate	All	+	+	+	+
Potassium perborate		+	+	+	+
Potassium perchlorate	GL	+	+	+	+
Potassium permanganate	20	+	+	+	+
Potassium permanganate	GL	+	+	0	+
Potassium persulphate	All	+	+	+	+
Potassium phosphate	All	+	+	+	+
Potassium sulphate	All	+	+	+	+
Potassium sulphite	L	+	+	+	+
Potassium sulphite		+	+	+	+
Potassium tetracyanocuprate		+	+	+	+
Potassium thiosulphate		+	+	+	+
Propane, gaseous	TR	+	+	+	-
Propane, liquid	TR	+	+		-
Propargyl alcohol	7	+	+	+	+
Propionic acid	50	+	+	+	0
Propionic acid	TR	+	0	0	0
Propylene chloride	100	-			-
Propylene glycol	TR	+	+	+	+
Propylene oxide	TR	+	+	+	-
Prussiate of potash (yellow and red)	All	+	+	+	+
Pseudocumol		0		0	-

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Pure acetic acid	TR	+	0	0	-
Pyridin	TR	+	0	0	-
Quinine		+	+	+	+
Rectified spirit (ethanol, ethyl alcohol, alcohol)	96	+	+	+	+
Red prussiate of potash	All	+	+	+	+
Roaster gases, dry	All	+	+	+	+
Rubber dispersions (latex)		+	+	+	+
Rum	40	+	+	+	+
Saccharic acid	GL	+			+
Salicylic acid	GL	+	+	+	+
Salicylic acid methyl ester (methyl salicylate)		+		0	-
Salt (sodium chloride)	All	+	+	+	+
Saturated vapour concentration		+	+	+	+
Scented oils		0		-	-
Sea water	H	+	+	+	+
Sea water (Salt water)	H	+	+	+	+
Sebum	TR	+	+	0	-
Shoe polish		+		0	-
Silicic acid	All	+	+	+	+
Silicone oil	TR	+	+	+	+
Silver nitrate	All	+	+	+	+
Silver salts	GL	+	+	+	+
Slurry		+	+	+	+
Soap solution	All	+	+	+	+
Soda (sodium carbonate)	All	+	+	+	+
Soda water (carbonic acid)	All	+	+	+	+
Sodium acetate	All	+	+	+	+
Sodium aluminium sulphate		+	+	+	+
Sodium benzoate	36	+	+	+	+
Sodium benzoate (benzoic acid sodium)	GL	+	+	+	+
Sodium bisulphite (sodium hydrogen sulphate)	GL	+	+	+	+
Sodium borate		+	+	+	+
Sodium bromate	L	+	0		+
Sodium bromide	L	+	+	+	+
Sodium carbonate (soda)	All	+	+	+	+
Sodium carbonate (sodium hydrogen carbonate)	GL	+	+	+	+
Sodium chlorate	All	+	+	+	+
Sodium chloride (salt)	All	+	+	+	+
Sodium chlorite	VL	+			0
Sodium chlorite	20	+	0	-	0
Sodium chlorite bleach	H	0		-	-
Sodium chromate	VL	+			+
Sodium copper cyanide	All	+	+		+
Sodium cyanide	GL	+	+	+	+
Sodium dichromate	GL	+	+	+	+
Sodium disulphite (sodium bisulphite)	All	+	+	+	+

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Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Sodium dithionite	VL	+	+	+	+
Sodium dodecyl benzene sulphonate (phenylsulphonate)		+	+	+	+
Sodium ferricyanide	GL	+	+	+	+
Sodium fluoride	GL	+	+	+	+
Sodium hydrogen carbonate (sodium bicarbonate)	GL	+	+	+	+
Sodium hydrogen sulphate (sodium bisulphate)	10	+	+	+	+
Sodium hydrogen sulphate (sodium bisulphate)	All	+	+	+	+
Sodium hydroxide (caustic soda)	All	+	+	+	+
Sodium hypochlorite	12.5	0	-	-	-
Sodium hypochlorite (javel water)	5	+	0	0	0
Sodium hypochlorite solution with 12.5 % active chlorine		0	-	-	-
Sodium iodide	L	+			+
Sodium iron cyanide		+	+	+	+
Sodium nitrate	All	+	+	+	+
Sodium nitrite	All	+	+	+	+
Sodium oxalate	GL	+			+
Sodium perborate	All	+		0	+
Sodium perchlorate		+	+	+	+
Sodium peroxide	10	+	+	+	0
Sodium peroxide	GL	0			0
Sodium peroxodisulphate (sodium persulphate)	GL	+	+	+	+
Sodium phosphate	GL	+	+	+	+
Sodium silicate (soluble glass)	All	+	+	+	+
Sodium sulphate	All	+	+	+	+
Sodium sulphate (Glauber salt)	All	+	+	+	+
Sodium sulphide	All	+	+	+	+
Sodium sulphite	GL	+	+	+	+
Sodium thiosulphate (fixing salt)	All	+	+	+	+
Soft soap		+	+	+	+
Soluble glass (sodium silicate)	All	+	+	+	+
Soya oil		+	+	+	0
Spermaceti		+		0	-
Spindle oil	TR	0	0	0	-
Spirit of wine (ethyl alcohol, ethanol, rectified spirit)	96	+	+	+	+
Spirits	H	+		+	+
Stain removal		0	0	0	-
Starch	All	+	+	+	+
Starch syrup	All	+	+	+	+
Stearic acid	TR	+	+	0	+
Styrol		0		-	-
Sublimed sulphur (elementary sulphur in powder form)	TR	+	+	+	+
Succinic acid	All	+	+	+	+
Suet		+	+	0	0
Sugar solutions	All	+	+	+	+
Sugar syrup	H	+	+	+	+
Sulfuryl chloride	TR	-	-	-	0

Resistant (+): The pipe wall material is generally deemed to be suitable.

Resistant to a certain extent (0): The suitability of the pipe wall material must be verified for the specific application; further testing may be required.

Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Sulphate	All	+	+	+	+
Sulphur	TR	+	+	+	+
Sulphur dioxide, gaseous, dry and damp	TR	+	+	+	+
Sulphur dioxide, liquid	TR	0		0	+
Sulphur trioxide	TR	-	-	-	-
Sulphur trioxide (oleum vapours)	≤ 5	-			0
Sulphuric acid	10	+	+	+	+
Sulphuric acid	70	+	+	+	0
Sulphuric acid	90	0	0	-	-
Sulphurous acid	GL	+	+	+	0
Table salt, saturated (brine)	100	+	+	+	+
Tannic extract from cellulose	H	+	+	+	0
Tannic extract, vegetable	H	+			0
Tannin (Tannic acid)	10	+	+	+	0
Tannin	10	+	+	+	+
Tar		+		0	-
Tartaric acid	All	+	+	+	0
Tea	GL	+	+	+	+
Tetrabromoethane		-	-	-	-
Tetrachloroethane	TR	-	-	-	-
Tetrachloroethylene	TR	0	0	-	-
Tetrahydrofuran	TR	-	-	-	-
Tetralin	TR	0	0	-	-
Thionyl chloride	TR	-	-	-	+
Thiophene	TR	0	0	-	-
Thiourea	All	+	+		+
Tin (II) chloride	All	+	+	+	0
Tiutol (hypochlorite) (chlorine bleaching, Javelle water)	12.5	0	-	-	-
Toluene		+		0	-
Toluol (methylbenzene)	TR	0	-	-	-
Tomato juice		+	+	+	+
Transformer oil	TR	0		0	-
Treacle	H	+	+	+	0
Treacle	All	+	+	+	+
Tri-2-chloroethyl phosphate		+	+	+	-
Tributyl phosphate	TR	+	+	+	+
Trichloroacetic acid	50	+	+	+	0
Trichloroacetic acid	TR	+	0	-	0
Trichlorobenzene		-	-	-	-
Trichloroethane	TR	0			-
Trichloroethane, gaseous	100	0	-	-	-
Trichloroethylene	TR	0	-	-	-
Trichlorofluorethane (Frigen 11, Sdp. 24 °C)	100	0	-		-
Tricresylphosphate	TR	+	+	+	0
Triethylene glycol		+	+	+	+
Trilon		+	+	+	+

Resistant (+): The pipe wall material is generally deemed to be suitable.

Resistant to a certain extent (0): The suitability of the pipe wall material must be verified for the specific application; further testing may be required.

Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Trimethylborate		+		-	0
Trimethylolpropane		+	+	+	+
Trioctyl phosphate	TR	+	+	0	0
Trisodium phosphate		+	+	+	+
Turpentine oil	TR	0	0	0	-
Two-stroke oil		0		0	-
Typewriter oil		+	+	0	-
Universal dilution		0	0		-
Urea nitrate	33	+	+	+	+
Uric acid	GL	+	+	+	+
Urine		+	+	+	+
Vaseline oil	TR	0	0	0	-
Vinegar (wine vinegar)	H	+	+	+	0
Vinyl acetate	TR	+	+	0	-
Viscose spinning solutions		+	+	+	-
Vitamin C (ascorbic acid)		+	+	+	+
Walnut oil		+		0	0
Washing detergent	G	+	+	+	+
Washing-up liquid		+	+	+	+
Washing-up liquid	H	+	+	+	+
Water, chlorinated drinking water		+	+	+	+
Water, de-ionised		+	+	+	+
Water, demineralised		+	+	+	+
Water, distilled		+	+	+	+
Water, ozonised drinking water		+			+
Wax		+		0	0
Wax alcohols	TR	0	0	-	0
Wetting agent	5	+			+
Whey		+	+	+	+
Whisky	H	+			+
White spirit	TR	0	0	0	-
Wine	H	+	+	+	+
Wine vinegar (vinegar)	H	+	+	+	0
Wood stain	G	+		0	0
Wool fat (lanolin)	TR	0	0	0	0
Xylol (mixed isomers)	TR	-	-	-	-
Yeast	All	+	+	+	+
Yeast wort (aqueous solution of maltose and dextrines)	L	+	+	+	+

Resistant (+): The pipe wall material is generally deemed to be suitable.

Resistant to a certain extent (0): The suitability of the pipe wall material must be verified for the specific application; further testing may be required.

Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Flow substance	Share	Geberit PE Behaviour at			EPDM seal Behaviour at
	%	20 °C	40 °C	60 °C	20 °C
Zapon dilution		0	0		-
Zinc carbonate	GL	+	+	+	+
Zinc chloride	All	+	+	+	+
Zinc dust	All	+	+	+	+
Zinc oxide	GL	+	+	+	+
Zinc salts	All	+	+	+	+
Zinc sludge		+	+	+	+
Zinc stearate		+	+	+	+
Zinc sulphate	All	+	+	+	+

Resistant (+): The pipe wall material is generally deemed to be suitable.

Resistant to a certain extent (0): The suitability of the pipe wall material must be verified for the specific application; further testing may be required.

Not resistant (-): The pipe wall material is generally deemed to be unsuitable.

Technical data

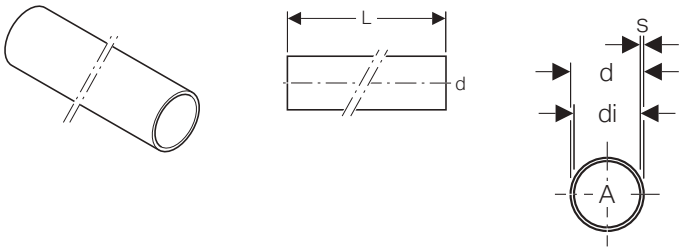
Permitted internal pressure

The Geberit HDPE product range was essentially designed for drainage systems. Geberit has configured the maximum permitted load values for the low pressure range (e.g. pump pressure pipes) to ensure a service life of 10 years.

Pressure	max. 1.5 kPa, up to dimension ø 160
Temperature	30 °C

All connections must be made tension resistant.

Geberit HDPE system



dø [mm]	di [mm]	A [m²]	s [mm]	Permitted internal negative pressure [1] [kPa]	Pressure nominal [2] PN [bar]	Series (ISO) S	Weight per m empty [kg]	Weight per m full [kg]	Article no.	Reece code
40	34	0.0009	3	960	8.1	6.3	0.33	1.23	360.000.16.0	1430000
50	44	0.00152	3	470	6.4	8.3	0.46	1.98	361.000.16.0	1430002
56	50	0.00196	3	330	5.7	-	0.48	2.44	363.000.16.0	1430004
63	57	0.00254	3	230	5	10	0.61	3.15	364.000.16.0	1430006
75	69	0.00373	3	130	4.1	12.5	0.73	4.46	365.000.16.0	1430008
90	83	0.00541	3.5	120	4	12.5	0.96	6.37	366.000.16.0	1430010
110	101.4	0.00807	4.3	120	4	12.5	1.49	9.56	367.000.16.0	1430012
125	115.2	0.01045	4.9	130	4	12.5	1.90	12.35	368.000.16.0	1430014
160	147.6	0.01711	6.2	110	4	12.5	3.00	20.11	369.000.16.0	1430016
200	187.6	0.02764	6.2	60	3.2	16	3.62	31.26	370.000.16.0	1430018
200	184.6	0.02684	7.7	110	4	12.5			370.050.16.0	1430027
250	234.4	0.04315	7.8	60	3.2	16	5.48	48.63	371.000.16.0	1430020
250	230.6	0.04182	9.7	120	4	12.5			371.050.16.0	1430028
315	295.4	0.06853	9.8	60	3.2	16	9.66	78.19	372.000.16.0	1430022
315	290.6	0.06638	12.2	120	4	12.5			372.050.16.0	1430029

[1] Pressure at max. 20 °C and 50 years' service life with a safety factor of 2.0

[2] Nominal pressure refers to pipe only, not to fittings

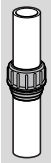
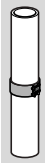
Standards:

- Australia AS/NZS 4401/AS/NZS 5065
- International ISO 8770 / 8772
- European CEN / TC 155 / CEN EN 12056
- Switzerland SN 592 000
- Germany DIN 8075 / 19535 / 19537
- Austria B 5177
- France NF T 54 072
- Italy UNI 8451
- Belgium NBN 42-112
- Netherlands NEN 7008
- Denmark NKB Nr. 8
- Great Britain BS /6367/5572/6437/5114
- Singapore PSB/ENV

Connection types

The numerous Geberit connection technologies offer solutions for every situation and every connection type.

Table 4: Connection types

Connection type		Tension resistant		Non-tension resistant
		removable	unremovable	removable
	Butt welding		✓	
	Electrofusion sleeve coupling		✓	
	Electrofusion coupling with integrated thermal fuse		✓	
	Expansion socket			✓
	Ring seal socket			✓
	Flange	✓		
	Screw connection without flange bushing			✓
	Screw connection with flange bushing	✓		
	Clamp			✓

Installation rules

HDPE pipes embedded in concrete

For pipelines which are firmly welded and completely embedded in concrete, the expansion on heating and shrinkage on cooling of HDPE is absorbed by the material itself, due to its high elasticity. The forces which apply when expansion is prevented are considerable for large dimensions.

The fittings must withstand these forces alone as the pipe does not absorb any adhesive force with the concrete. The fittings should therefore be embedded in concrete in a particularly compact matter.

- Reduced branch fittings must be secured by installing electrofusion sleeve couplings
- Connections must be made with butt welding or electrofusion sleeve couplings
- Geberit HDPE pipes and fittings should be inserted in such a way that they are held in position when embedding in concrete, e.g. by fastening on to the formwork
- Pipe must be filled with water during the curing process
- Maximum allowable operating fluid temperature of 40 ° C for pipes encased in concrete must be observed

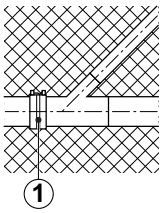


Figure 2: Design with electrofusion sleeve coupling

1 Electrofusion sleeve coupling

Do not install any expansion sockets.

Design for an anchor bracket on a pipe section embedded in concrete in a straight line:

- Electrofusion sleeve coupling
- Flange bushing
- Equal branch fitting embedded in concrete

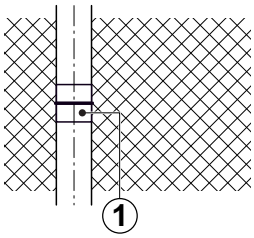


Figure 3: Design with flange bushing

1 Flange bushing

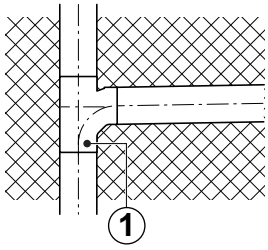


Figure 4: Design with equal branch fitting embedded in concrete

1 Equal branch fitting

AS/NZS 2033:2008 specifies:
Clause 5.3.6 Encasement in concrete
Where pipes are to be encased in concrete precautions shall be taken to prevent movement, flotation or deformation of pipes while pouring concrete.
Setting of Geberit HDPE pipes in concrete
All rigidly jointed pipework (e.g. butt and electrofusion welded) may be completely enclosed in concrete within the building structure without a protection layer (e.g. lagging). The installation and the structure have to be designed for such total enclosure. The thrust forces generated from the expansion and contraction of the pipework have to be taken into consideration with this installation method. The manufacturer's and engineer's recommendations shall be strictly followed in such applications.

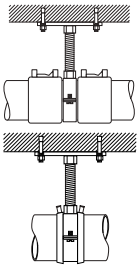
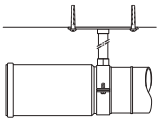
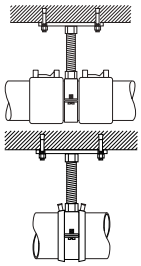
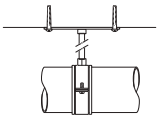
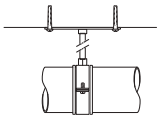
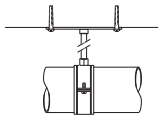
Refer also to AS/NZS3500.2
For additional information contact Geberit Pty Ltd.

Overview of fastening

The thermal expansion or contraction caused through temperature differences is 0.2 mm/m·K for HDPE.

The fixing method used to manage thermal expansion is controlled in different ways depending on the application.

Table 5: Overview of pipe fixation

Rigid installation (Pluvia, in slab installations, some vertical stack installations)	Sliding installation (trade waste and conventional drainage installations)	
	Fastening with expansion socket	Fastening with deflection leg
The thermal expansion needs to be transfered through the anchor brackets into the building.	The change in length caused by thermal expansion needs to be considered in the pipe routing to prevent deflection.	
 Anchor bracket, constructed with electrofusion sleeve couplings	 Anchor bracket	 Anchor bracket, constructed with electrofusion sleeve couplings
 Guide bracket	 Guide bracket	 Guide bracket

Geberit recommends fastening with expansion socket.

Fastening with expansion socket

Fixing bracket clearances from ceiling and walls with expansion sockets

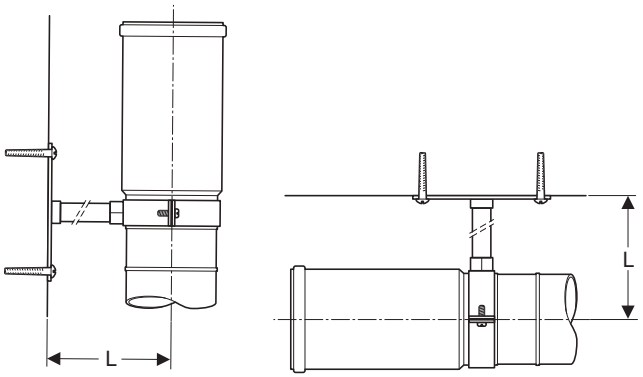


Figure 5: Anchor bracket

Table 6: Pipe nipple diameters and distance from ceiling and walls

Ceiling distance L [mm]	Diameters of Geberit HDPE pipe: ø 50/56/63/75/90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
	Pipe nipple used						
100	13	13	13	–	–	–	–
150	13	13	13	13	–	–	–
200	13	13	13	13	19	25	–
250	13	13	13	13	25	25	32
300	13	13	13	19	25	32	32
350	13	13	13	25	25	32	40
400	13	13	19	25	25	32	40
450	13	13	19	25	32	32	40
500	13	19	19	25	32	40	50
550	13	19	19	25	32	40	50
600	13	19	25	25	32	40	50

Geberit HDPE expansion socket

The change in length of the pipes and fittings must be controlled in the expansion socket. Anchor brackets and sliding brackets must be used for this form of installation type.

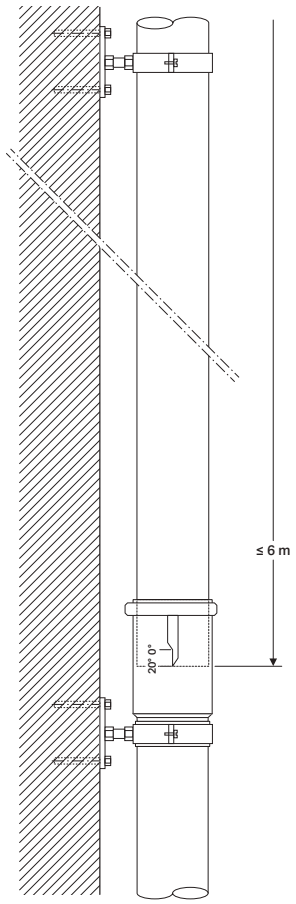


Figure 6: An expansion socket is required every 6 m or pipe length

Geberit HDPE expansion socket insertion depth

The slide-in length depends on the installation temperature. At an installation temperature of 20 °C, the slide-in depth is 105 mm, at 0 °C, it is only 80 mm.

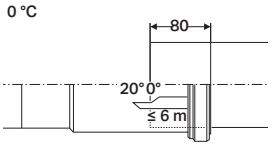


Figure 7: The insertion depth of the expansion socket at 0 °C ambient temperature

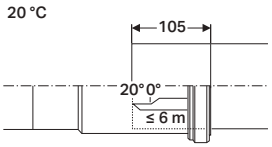
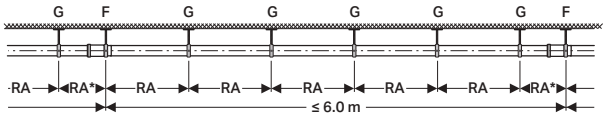


Figure 8: The insertion depth of the expansion socket at 20 °C ambient temperature

Table 7: Insertion depth

dø [mm]	Ambient temperature			
	–10 °C	±0 °C	+10 °C	+20 °C
	Insertion depth [mm]			
50–160	60	80	90	105
200–315	170	180	190	205

Sliding and anchor brackets when fastening on the ceiling

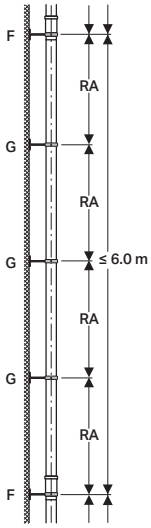


G Sliding bracket
F Anchor bracket
RA Distance between pipe brackets
RA* Distance of anchor bracket to next sliding bracket

Table 8: Fastening distances on ceilings

dø [mm]	RA [m]	RA* [m]
40	0.8	0.4
50	0.8	0.4
56	0.8	0.4
63	0.8	0.4
75	0.8	0.4
90	0.9	0.5
110	1.1	0.6
125	1.3	0.7
160	1.6	0.8
200	2.0	1.0
250	2.0	1.0
315	2.0	1.0

Sliding and anchor brackets when fastening on the wall



G Sliding bracket
F Anchor bracket
RA Distance between pipe brackets

Table 9: Fastening distances on walls

dø [mm]	RA [m]
40	1.0
50	1.0
56	1.0
63	1.0
75	1.2
90	1.4
110	1.7
125	1.9
160	2.4
200	3.0
250	3.0
315	3.0

Anchor bracket when fastening on the ceiling

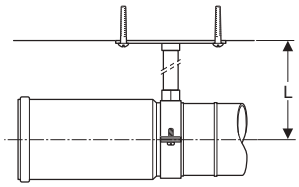


Table 10: Anchor bracket when fastening on the ceiling, fastening with expansion sockets

Ceiling distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	13	13	13	13	13	13	13	13	–	–	–	–
200	13	13	13	13	13	13	13	13	19	25	25	25
300	13	13	13	13	13	13	13	19	25	25	32	50
400	13	13	13	13	13	13	19	19	25	32	32	50
500	13	13	13	13	13	19	19	25	25	32	40	50
600	13	13	13	13	19	19	19	25	32	32	50	50

Anchor bracket when fastening on the wall

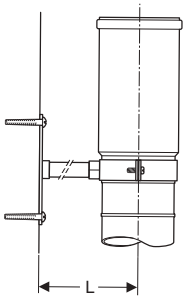


Table 11: Anchor bracket when fastening on the wall, fastening with expansion sockets

Wall distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	13	13	13	13	13	13	13	13	–	–	–	–
200	13	13	13	13	13	13	13	19	19	25	32	32
300	13	13	13	13	13	13	19	19	25	32	32	40
400	13	13	13	13	13	19	19	25	25	32	40	50
500	13	13	13	13	19	19	25	25	32	40	50	50
600	13	13	19	19	19	19	25	25	32	40	50	–

Commercially available products can be used to create the anchor brackets.

Sliding bracket when fastening on the ceiling

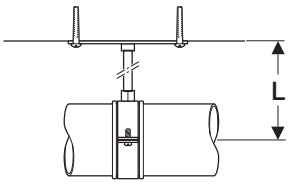


Table 12: Sliding bracket when fastening on the ceiling

Ceiling distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	M10	M10	M10	M10	M10	M10	M10	M10	–	–	–	–
200	M10	M10	M10	M10	M10	M10	M10	M10	M10	M20	M20	M20
300	M10	M10	M10	M10	M10	M10	M10	M10	M12	M20	M20	M20
400	M10	M10	M10	M10	M10	M10	M10	M12	M12	M20	M20	M20
500	M10	M10	M10	M10	M10	M10	M12	M12	M12	M20	M20	M20
600	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20

Sliding bracket when fastening on the wall

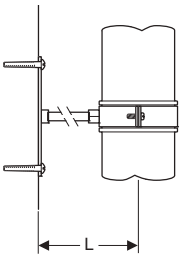


Table 13: Sliding bracket when fastening on the wall

Wall distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	M10	M10	M10	M10	M10	M10	M10	M10	–	–	–	–
200	M10	M10	M10	M10	M10	M10	M10	M12	M12	M20	M20	M20
300	M10	M10	M10	M10	M10	M10	M12	M12	M12	M20	M20	M20
400	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20
500	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20
600	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20

Fastening with deflection leg

Pipe laying with deflection leg

- The thermal expansion is controlled with the use of anchor brackets and the deflection leg
- The pipe straps must be used in the area of the deflection leg to allow for movement
- The deflection leg must be calculated for each pipe section which branches off or changes direction

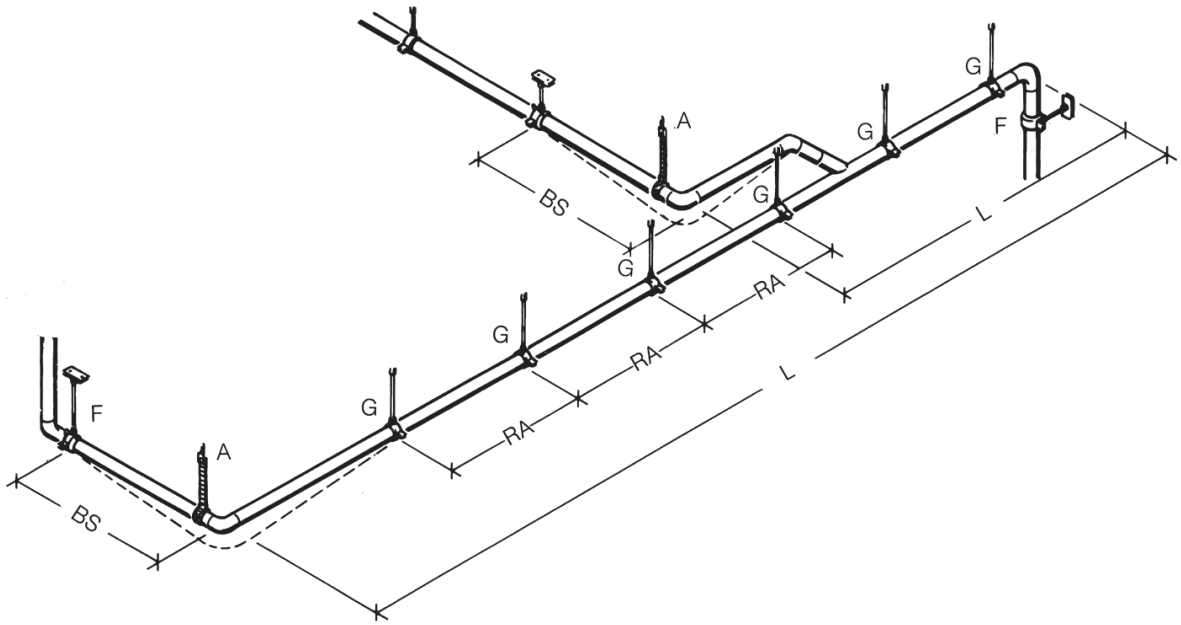


Figure 9: Pipe laying with deflection leg

F Anchor bracket
A Suspension, pipe strap
G Sliding bracket
RA Distance between pipe brackets
BS Deflection leg
L Pipe section in which a change in length can occur

Calculating the deflection leg

1. Determining the thermal expansion

The thermal expansion can be determined using figure 10 on page 107:

Given
Maximum temperature = 80 °C
Installation temperature = 20 °C
Temperature differential Δt = 60 °C
Pipe length DS = 4 m

Result
Thermal expansion ΔL = 4.8 cm

2. Calculating the deflection leg

The deflection leg can be determined using figure 11 on page 108 or as follows:

Given
Thermal expansion ΔL = 4.8 cm at ø = 110 mm

Calculation

$$BS = 10 \cdot \sqrt{4{,}8\ \text{cm} \cdot 11\ \text{cm}} = 73\ \text{cm}$$

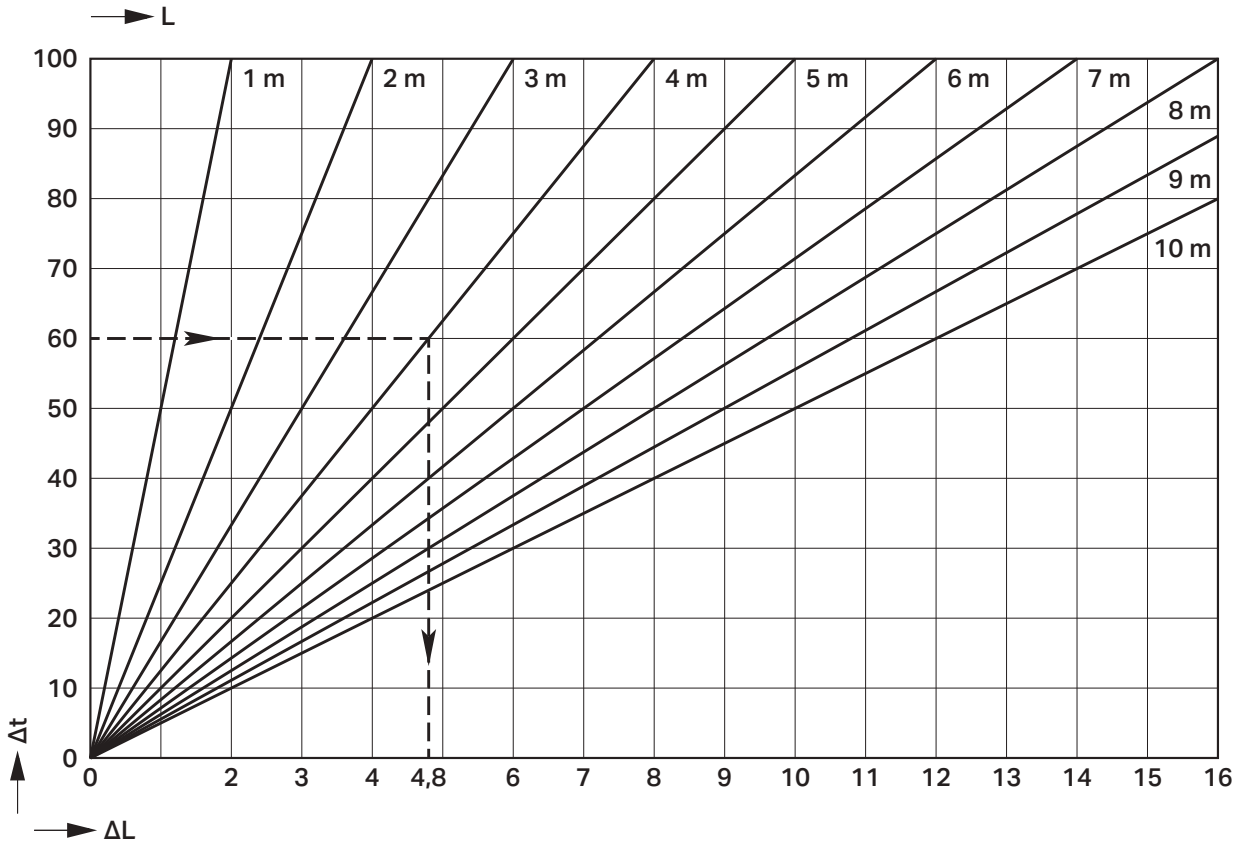


Figure 10: Determining the thermal expansion for HDPE (average linear expansion coefficient: 0.2 mm/m°C)

L Pipe length
Δt Temperature differential [°C]
ΔL Linear expansion or shrinkage [cm]

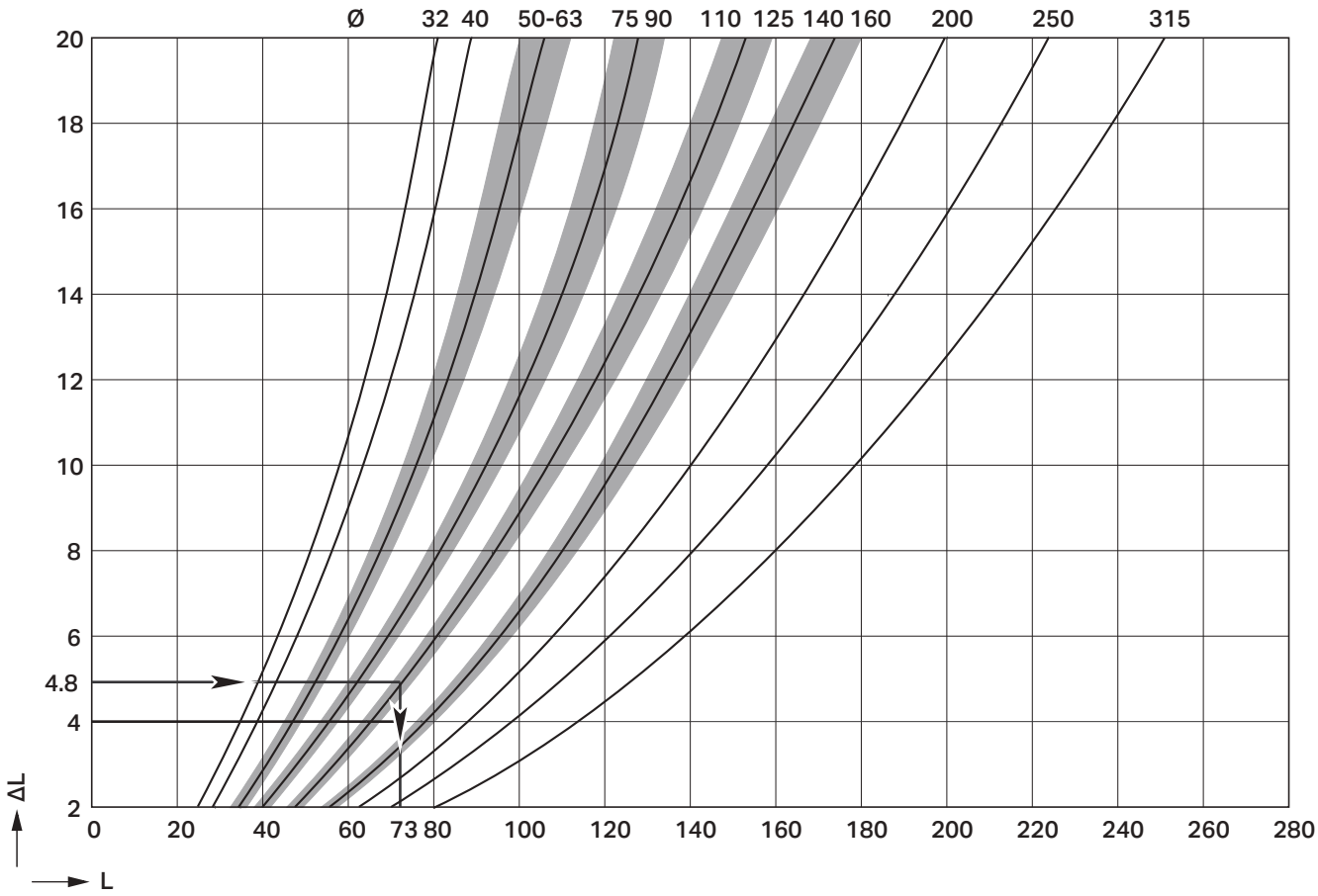


Figure 11: Determining the deflection leg for HDPE

ø Outer diameter
ΔL Change in length of the expansion leg [cm]
L Deflection leg length in [cm]

Sliding bracket when fastening on the ceiling

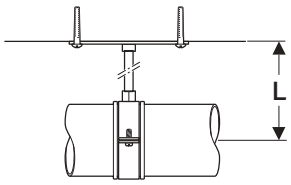


Table 14: Sliding bracket when fastening on the ceiling

Ceiling distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	M10	M10	M10	M10	M10	M10	M10	M10	–	–	–	–
200	M10	M10	M10	M10	M10	M10	M10	M10	M10	M20	M20	M20
300	M10	M10	M10	M10	M10	M10	M10	M10	M12	M20	M20	M20
400	M10	M10	M10	M10	M10	M10	M10	M12	M12	M20	M20	M20
500	M10	M10	M10	M10	M10	M10	M12	M12	M12	M20	M20	M20
600	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20

Sliding bracket when fastening on the wall

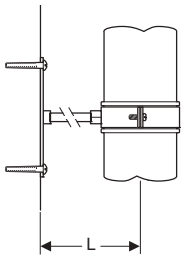
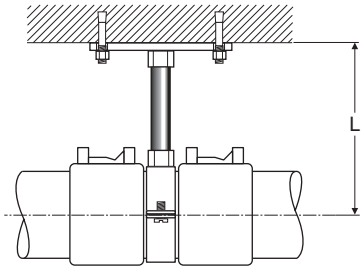


Table 15: Sliding bracket when fastening on the wall

Wall distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	M10	M10	M10	M10	M10	M10	M10	M10	–	–	–	–
200	M10	M10	M10	M10	M10	M10	M10	M12	M12	M20	M20	M20
300	M10	M10	M10	M10	M10	M10	M12	M12	M12	M20	M20	M20
400	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20
500	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20
600	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20

Anchor bracket with Geberit electrofusion sleeve coupling or electrofusion tape



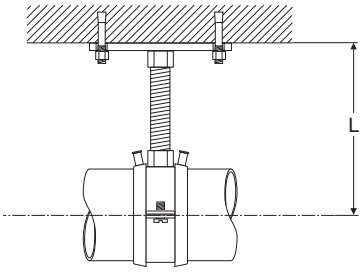
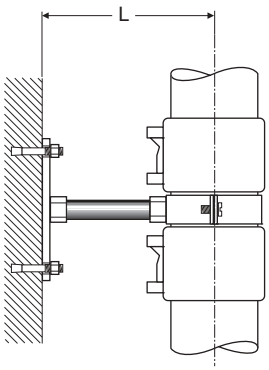


Table 16: Anchor bracket on ceilings, fastening with deflection leg

Ceiling distance L [mm]	Dimension								
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160
100	19	25	25	25	25	32	40	50	–
200	32	32	32	40	40	50	–	–	–
300	32	40	40	50	50	–	–	–	–
400	40	50	50	50	50	–	–	–	–
500	50	50	50	–	–	–	–	–	–
600	50	50	–	–	–	–	–	–	–



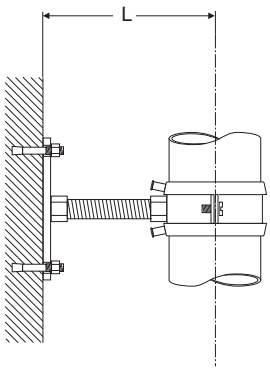


Table 17: Anchor bracket on walls, fastening with deflection leg

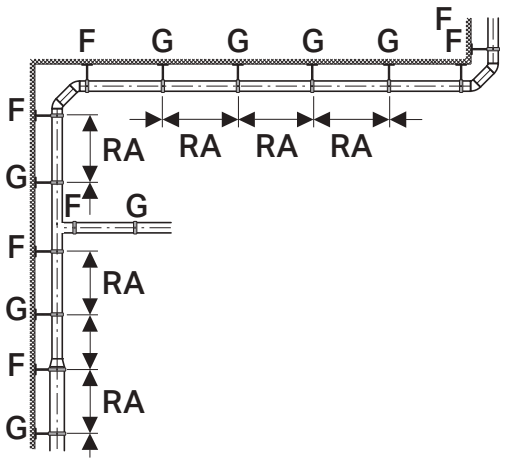
Wall distance L [mm]	Dimension								
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160
100	13	13	13	19	19	25	25	32	–
200	19	19	25	25	25	32	32	40	–
300	25	25	25	25	32	32	50	50	–
400	25	25	32	32	32	40	50	–	–
500	25	32	32	32	40	50	50	–	–
600	32	32	40	40	40	50	–	–	–

Commercially available products can be used to create the anchor brackets.

Conventional rigid installation

For rigid installation, pipe brackets with appropriate struts must be used on the building structure after the forces have been calculated. It is important to ensure that the fastening screws withstand the forces imposed.

- Rigid installation is used for horizontal and vertical pipelines
- Rigid installation is recommended up to DN 125 (ø 125)
- The expansion forces which are produced from thermal changes in length are transferred to the building
- The specific transfer of force takes place at the anchor brackets



G Sliding bracket
F Anchor bracket
RA Distance between pipe bracket

dø [mm]	RA [m]
40	0.8
50	0.8
56	0.8
63	0.8
75	0.8
90	0.9
110	1.1
125	1.3
160	1.6
200	2.0
250	2.0
315	2.0

Routing guidelines

- An anchor bracket must be attached immediately before and after each branch fitting and at each outlet from a branch fitting
- An anchor bracket must be attached immediately before and after each reducer

Sliding bracket when fastening to the ceiling

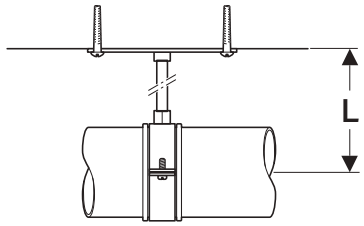


Table 18: Sliding bracket when fastening to the ceiling

Ceiling distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	M10	M10	M10	M10	M10	M10	M10	M10	–	–	–	–
200	M10	M10	M10	M10	M10	M10	M10	M10	M10	M20	M20	M20
300	M10	M10	M10	M10	M10	M10	M10	M10	M12	M20	M20	M20
400	M10	M10	M10	M10	M10	M10	M10	M12	M12	M20	M20	M20
500	M10	M10	M10	M10	M10	M10	M12	M12	M12	M20	M20	M20
600	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20

Sliding bracket when fastening on the wall

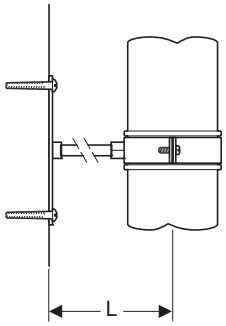


Table 19: Sliding bracket when fastening on the wall

Wall distance L [mm]	Dimension											
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160	ø 200	ø 250	ø 315
100	M10	M10	M10	M10	M10	M10	M10	M10	–	–	–	–
200	M10	M10	M10	M10	M10	M10	M10	M12	M12	M20	M20	M20
300	M10	M10	M10	M10	M10	M10	M12	M12	M12	M20	M20	M20
400	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20
500	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20
600	M12	M12	M12	M12	M12	M12	M12	M12	M12	M20	M20	M20

Anchor bracket with Geberit electrofusion sleeve coupling

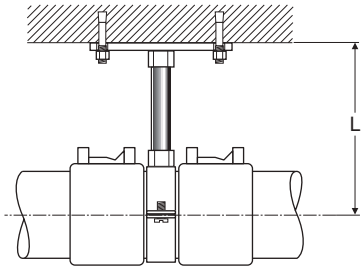


Table 20: Anchor brackets on ceilings, rigid installation

Ceiling distance L [mm]	Dimension								
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160
100	19	25	25	25	25	32	40	50	–
200	32	32	32	40	40	50	–	–	–
300	32	40	40	50	50	–	–	–	–
400	40	50	50	50	50	–	–	–	–
500	50	50	50	–	–	–	–	–	–
600	50	50	–	–	–	–	–	–	–

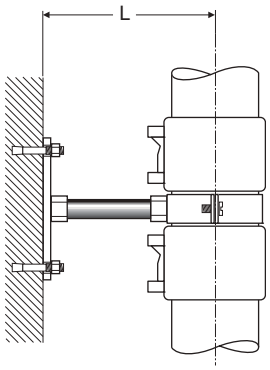


Table 21: Anchor brackets on walls, rigid installation

Wall distance L [mm]	Dimension								
	ø 40	ø 50	ø 56	ø 63	ø 75	ø 90	ø 110	ø 125	ø 160
100	13	13	13	19	19	25	25	32	–
200	19	19	25	25	25	32	32	40	–
300	25	25	25	25	32	32	50	50	–
400	25	25	32	32	32	40	50	–	–
500	25	32	32	32	40	50	50	–	–
600	32	32	40	40	40	50	–	–	–

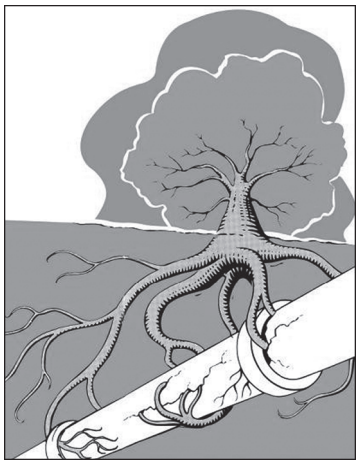
Commercially available products can be used to create the anchor brackets.

Special applications

Pipe laying outside of buildings

Pipe laying in the ground

1. **Tightness**
   Geberit HDPE is a reliable water drainage system where the welded joints are 100% water tight. Peace of mind for all.
2. **Resistance to chemicals**
   Geberit HDPE provides the assurance of universal resistance to the greatly diversified types of chemical attack by the disposal water, as well as by external factors (acidic soils).
3. **Elasticity**
   Geberit HDPE is a flexible, operationally reliable drainage system, even in soils in which a certain degree of settling of ground must be anticipated.
4. **Material**
   Drainage material selected for in ground applications needs to consider the soil, environmental factors and attack from inside and out.



5. **Friendly to the environment**
   The Geberit HDPE drainage systems comply with environmental regulations.

When laying HDPE pipes and fittings in the ground, the local regulations and standards must be observed and applied. We refer to the standards listed below for reference:

- AS 3500
- AS/NZS 2566
- DIN EN 1610
- DIN EN 12056
- DIN 1986-3-4-30-100
- DIN EN 752

It is important that the pipeline zone is correctly designed so that is can withstand the load capacity of the Geberit HDPE pipes and fittings in the ground.

The pipeline zone is the filling in the area of the Geberit HDPE pipe and consists of bedding, side filling and the covering zone.

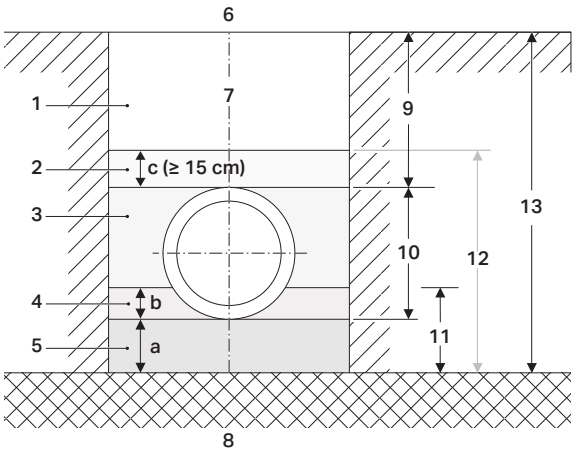


Figure 12: Pipeline zone

1 Main filling
2 Covering zone
3 Side filling
4 Upper bedding layer
5 Lower bedding layer
6 Surface
7 Trench walls
8 Trench floor
9 Depth of cover
10 Pipe outside diameter
11 Bedding
12 Pipeline zone
13 Trench depth

Pipe feed-through for building connection

According to DIN EN 12056, load on a discharge pipe due to different levels of subsidence of the building must be avoided using suitable measures. Geberit HDPE absorbs different levels of subsidence due to the flexibility of the material. In addition, insulation must be applied which is thicker than the expected subsidence.

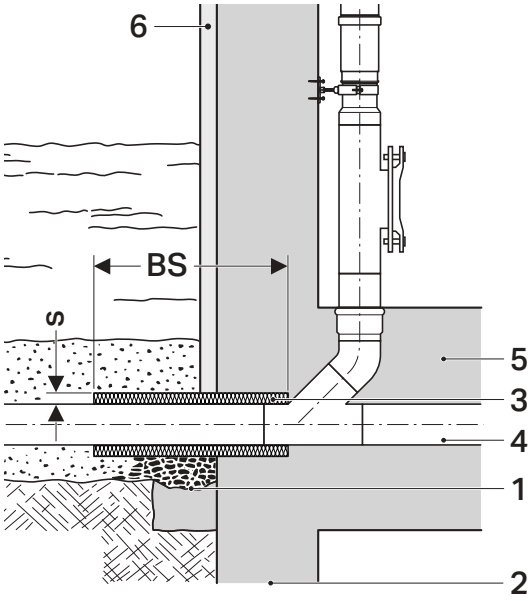


Figure 13: Pipe feed-through for building connection

1 Seepage water drain pipe
2 Subsidence
3 Insulation against subsidence
4 Geberit HDPE pipe
5 Foundation slab
6 Filter plate
BS Deflection leg
s Insulation thickness
ΔS Subsidence expected

The deflection leg length (BS) depends on the expected shifting of the terrain (ΔS) and on the diameter of the pipe (DN):

$$BS = 10 \cdot \sqrt{\Delta S \cdot DN}$$

Trench profiles

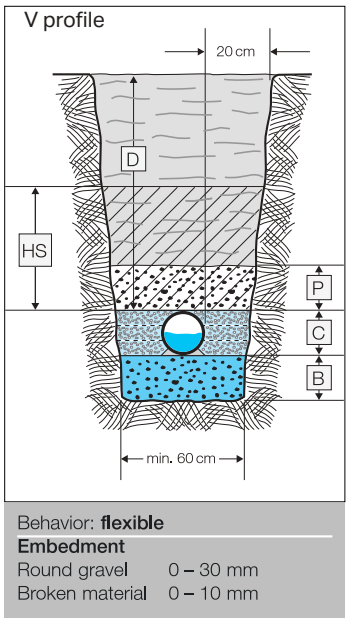


Figure 14: V profile

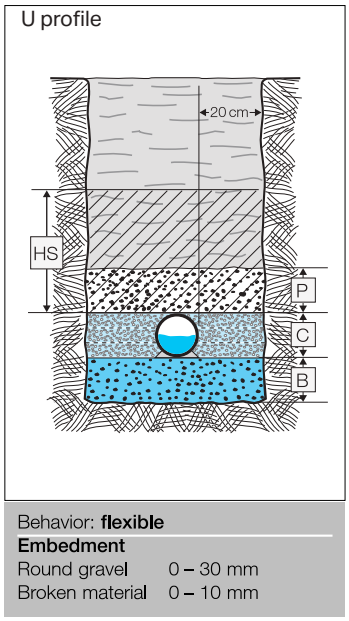
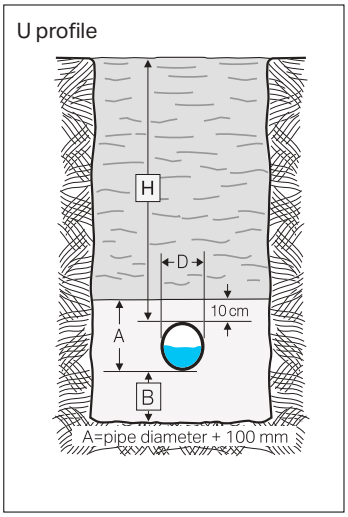
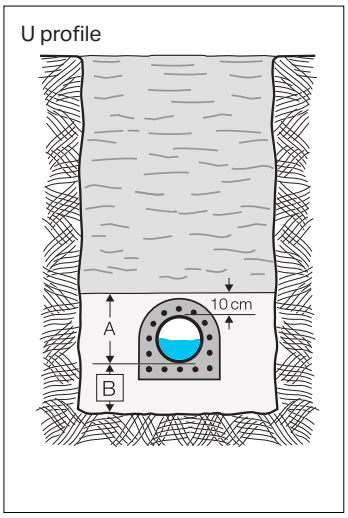


Figure 15: U profile



Behavior: **rigid**
Embedment
in concrete
PC 200 kg/m3

Figure 16: U profile



Behavior: **rigid**
Embedment
in reinforced concrete
PC 250 kg/cm3

Figure 17: U profile

B Bedding, 100 mm
C Consolidation
P Protective layer, 300 mm
HS Safety height
D Consolidation stratum depth

Bedding:
- Pipe must have a bedding of at least

Consolidation
- Side fill to upper edge of pipe

Protective layer
- With trench profile 1A cover to above top edge of pipe over entire width of trench

Safety height (when using mechanical compactors)
- Vibration compactor (1,000 N)
  - HS = 0.4 m
- Vibration roller (3,000 N)
  - HS = 0.3 m
- Vibration roller (15,000 N)
  - HS = 0.5 m

Consolidation stratum depth (min. covering)
- In area of road
  - D = 0.8 m
- Outside road area
  - D = 0.5 m

Max. covering:
- Up to 6 m without problem
- In cases of minimum coverings or heavy loading, measures such as load distribution plates or appropriate trench profiles are to be used.

Traffic loads (Protective layer P):
- Heavy traffic
  - Load = 9 tons
- Normal traffic
  - Load = 6 tons

Away from roads (Protective layer P):
- Always
  - Load = 3 tons

Filling material (Grain size)
- Round gravel
  - O = 30 mm
- Broken material
  - O = 30 mm

For all trenching work, local guidelines, standards and regulations must be observed.

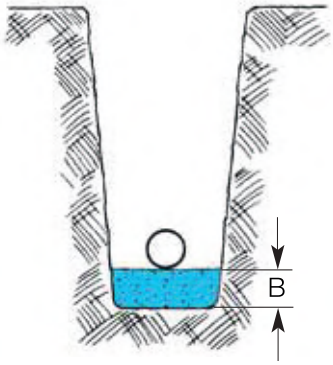
Important for underground installation is correct laying of the pipe in the trench, as well as careful consolidation.

Guidelines for laying drainage pipes

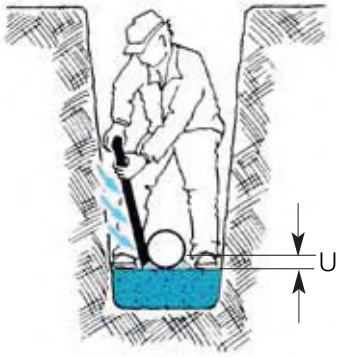
For all trenching work, local guidelines, standards and regulations must be observed.

The trench is to be dug as narrow as possible – but not narrower than the pipe diameter + 40 cm. The floor of the trench must be level and free from rocks and loose clumps. Correct elevation and slope are also important.

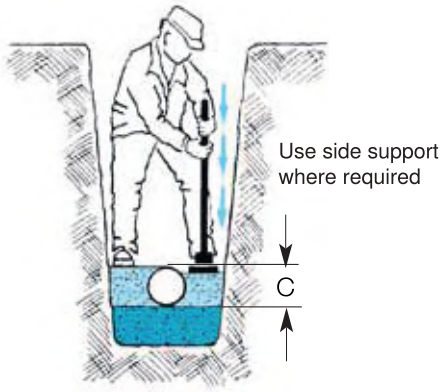
B = Bedding
Under normal soil conditions the trench is provided with a bedding layer of round gravel (grading up to 30 mm) or of broken material (grading up to 10 mm) of a thickness of approx. 100 mm. The bedding layer must be compacted and tamped. In certain cases it will be neccessary to reinforce the ground.



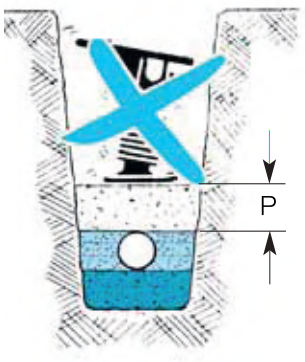
U = Underpinning
After the pipe has been laid, recesses are to be provided for sockets and flanges so that the pipe is supported along its entire length. The underpinning is to be done with a tamping post or the like. It must be done very carefully. If several pipes are laid, make sure that the lowest one is fully covered before the one above is placed. The pipe must lay flat, and it must be installed with the correct slope.



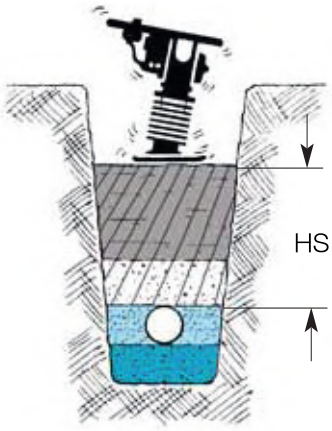
C = Consolidation layer
The material is to be filled in layers of approx. 100 mm thickness. Tamping can be done by stamping with the feet, or with a special tool. The purpose of this material is to help prevent the pipe from deforming, so that it must be compacted well on both sides at the same time.



P = Protective layer
Now fill in a layer of the same material (must not contain rocks which could cause point loading of the pipe) of at least 300 cm. Attention: To prevent the pipe from rising the trench is to be finish-filled on the same day up to and including the protection layer.



HS = Safety margin height
For the further filling the available material is to be used. The trench must not contain rocks which cannot be lifted by hand. As soon as permitted by the safety margin height, this compacting can be done by machine. The regulations and byelaws on the refilling of trenches are to be observed.



Distribution of ground pressure

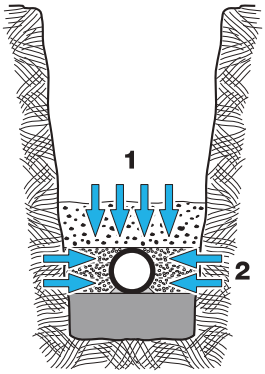
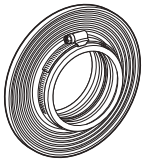


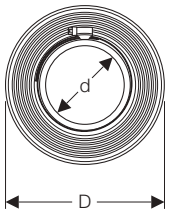
Figure 18: Distribution of ground pressure

1 Ground load and possible traffic load
2 Shoring pressure

The ground pressure and ground load distribution are governed essentially by the compaction. For calculation the appropriate standards and the local building and safety regulations are to be observed. Refer to AS/NZS 2566.1.

Penetration through walls



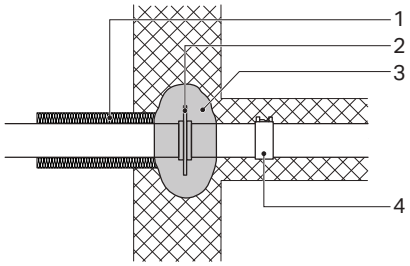


Dimension

Pipe size [mm]	D [mm]	Article No.	Reece code
110	210	348.227.00.1	1433725
160	260	348.229.00.1	1433726

Application range

- For sealing pipes in the walls, ceilings and ground
- Compression proof up to 8 bar
- For protection against moisture
- For Geberit HDPE



1 Insulation against subsidence
2 Geberit puddle flange
3 All-round concrete covering min. 8 cm
4 Electrofusion sleeve coupling as an anchor bracket

Moisture protection

Moisture sealing is used everywhere where pipelines are routed through masonry, floors or ceilings, and the penetration of moisture must be prevented.

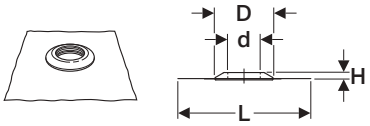


Figure 19: Moisture sealing

Table 22: Dimensions

dø [mm]	D [mm]	H [mm]	L [mm]
50	13.5	2.5	50
56	13.5	2.5	50
75	19.5	2.5	50
90	19.5	2.5	50
110	19.5	2.5	50
125	21	2.5	50

Application range	• Moisture pressure up to 0.1 bar • For applications where water does not reach a depth greater than 100 mm
Design	• Geberit moisture sealing with Resistit foil • Geberit moisture sealing with Sarnafil foil PVC
Pipe dimensions	ø 50, 56, 75, 90, 110, 125

Ceiling feed-through with moisture sealing

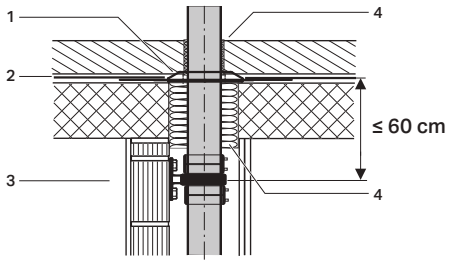


Figure 20: Ceiling feed-through with moisture sealing

1 Moisture protection
2 Sealing collar
3 Anchor bracket with 2 Geberit electrofusion sleeve couplings
4 Insulation hose
5 Insulation hose

Wall feed-through with moisture sealing

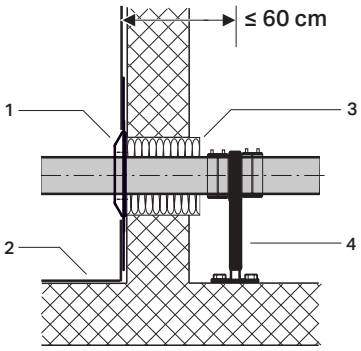


Figure 21: Wall feed-through with moisture sealing

1 Moisture protection
2 Sealing collar
3 Insulation hose
4 Anchor bracket with 2 Geberit electrofusion sleeve couplings

Floor feed-through with moisture sealing

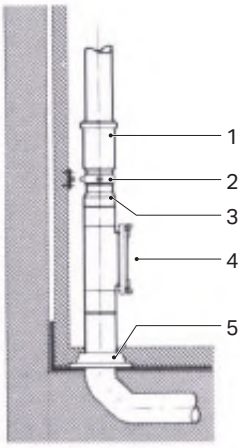


Figure 22: Floor feed-through with moisture sealing

1 Expansion socket
2 Anchor Bracket
3 Reducer
4 Access pipe
5 Sealing collar

Connections to ducts

Connection to ducts should only be made using a duct lining or specially prefabricated duct connector. Because subsidence always has to be taken into consideration, the connection must be designed to be flexible.

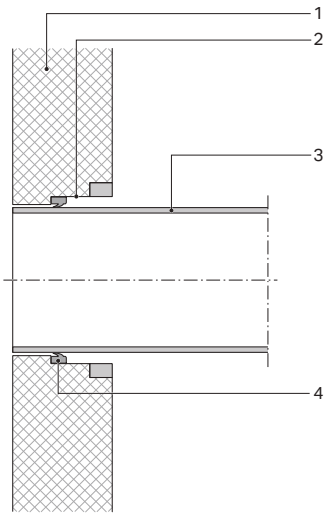


Figure 23: Connection with prefabricated duct connector

1 Concrete duct prefabricated
2 Recess for seal (using the steel ring fitted in the formwork with the defined outer diameter)
3 Geberit HDPE pipe
4 EPDM seal

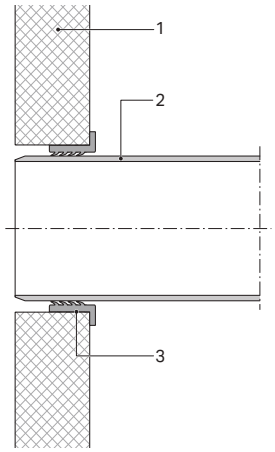


Figure 24: Connection with sealing of connection

1 Concrete duct with appropriate core hole
2 Geberit HDPE pipe, bevelled, treated with lubricant
3 Multi-lip sleeve with stopper inserted into the core hole from outside

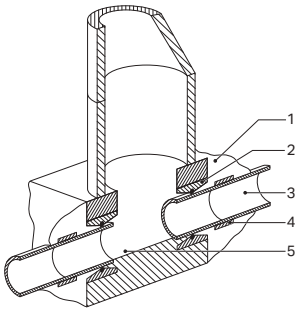


Figure 25: Open guidance bar

1 Concrete
2 Duct lining
3 Geberit HDPE pipe
4 Anchor bracket required if necessary
5 Bench

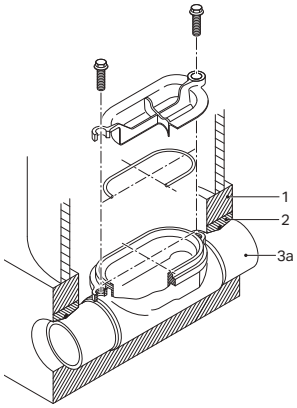


Figure 26: Geberit HDPE access pipe 90° with oval access cover

1 Concrete
2 Duct lining
3 Access pipe

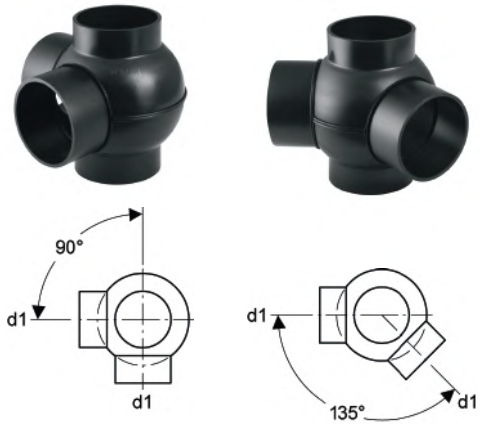
Ball Junctions

The Geberit ball junctions allow designers and plumbers the opportunity to create compact installations. The increased diameter of the intersection area provides for a smoother and less critical side entry of the waste water into the stack. In particular, installations where the branch lines have the same diameter as the stack.

Refer to AS3500 for correct applications.

Offset Ball Junctions

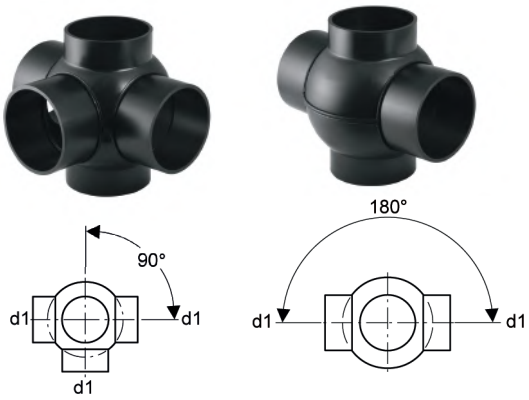
The offset ball junction is generally the best way of connecting different types of fixtures to the stack. Fixtures of different types, unequal fixture unit rating and different diameters may be connected using a ball junction.



Opposite Connections

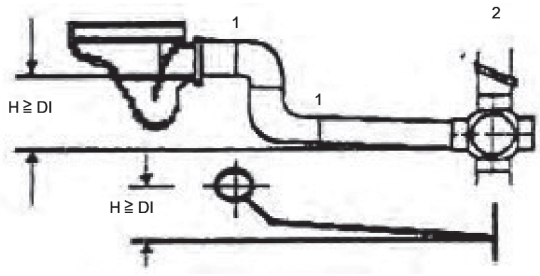
Connections directly opposite (180°) on a ball junction should only be used in accordance to AS3500.

It is essential to consider the impact of the hydraulic action of directly opposed connections.



Height difference

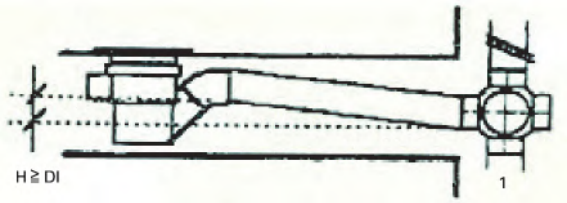
Any fixture trap connected to a ball junction should have a minimum height difference of the inside diameter (DI) of the connecting pipe. This is measured from the lowest point where the pipe is joined onto the stack to the water seal of the fixture trap. This can be achieved via a step up in the pipe work with appropriate fittings before the fixture trap.



1 Fittings
2 Stack

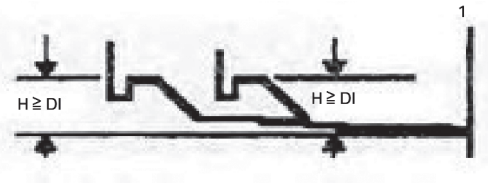
If the total gradient (height difference) of the pipe work from stack to the water seal of the fixture trap meets the required height difference.

The maximum allowable gradient or distance to the stack should not be exceeded.



1 Stack

If there is more than one fixture connected to the same line, the outlined requirements must be met for each fixture trap.

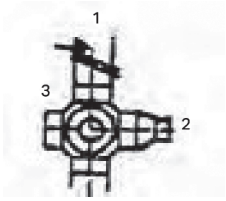


1 Stack

Branch line connections

All branch line connections to a ball junction should be made with concentric reducers at the same centre line.

No stacks should be connected to the side entry of a ball junction.



1 Stack
2 Concentric reducer
3 Centre line

Installation recommendation

AS/NZS3500.2 amendment 3 2010 clause 6.6.1, 6.6.2 and 6.6.3.1. In Australia currently some local authorities ask for additional restrictions or do not allow the use of ball junctions at all. Enquire directly with the appropriate authority prior to starting any planning or installation.

Clause 6.6.1 Types

Any of the following types of junctions may be used to connect fixture, branch or common discharge pipes to a stack, the following apply:

1. 45° junctions
2. Sweep junctions
3. Aerator junctions
4. Ball junctions
5. Square junctions

No fixture shall be connected to the branch or common discharge pipe within 500 mm in length from the stack if the entry is at grade.

Clause 6.6.2 Restrictions

Where any fixture trap is connected to a ball junction, the weir of the fixture trap shall be at the same height or above the top of the branch junction fitting. Where a square or ball junction is used and any discharge pipe is less than 500 mm in length from the stack, one of the following shall apply:

1. A self-sealing device shall be fitted to the fixture
2. An S-trap shall be fitted to the fixture and a vertical dropper provided in the discharge pipe between the fixture and the stack junction
3. A P-trap shall be fitted to the fixture, and the discharge pipe graded at not less than 6.65 % (1 in 15)

Clause 6.6.3.1 Opposed connections at the same level

Opposed connections at ball junctions or aerator junction fittings may be used only where the opposing pipes are connected to equal numbers of the same type of fixtures.

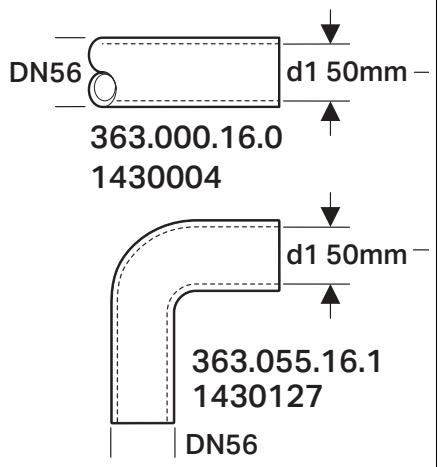
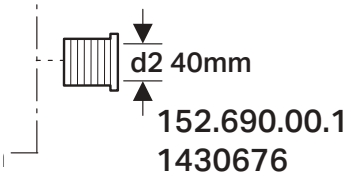
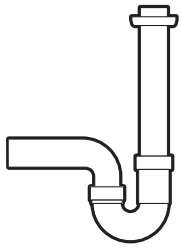
Opposed connections, other than at ball type junctions or aerator junction fittings, shall only be made using double 45° junctions or double sweep junctions.

Clause 6.6.3.2 Opposed connections at different levels

Grade fixture or common discharge pipes that are located at lower level than any other opposed similar pipes shall not be connected to a stack within a restricted entry zone unless the lower pipe enters the stack at an angle of 45°.

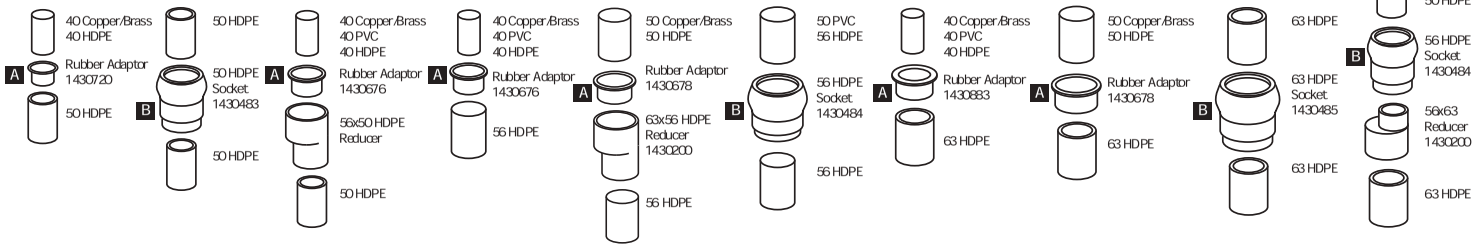
Trap connection with Geberit rubber collar

Geberit HDPE

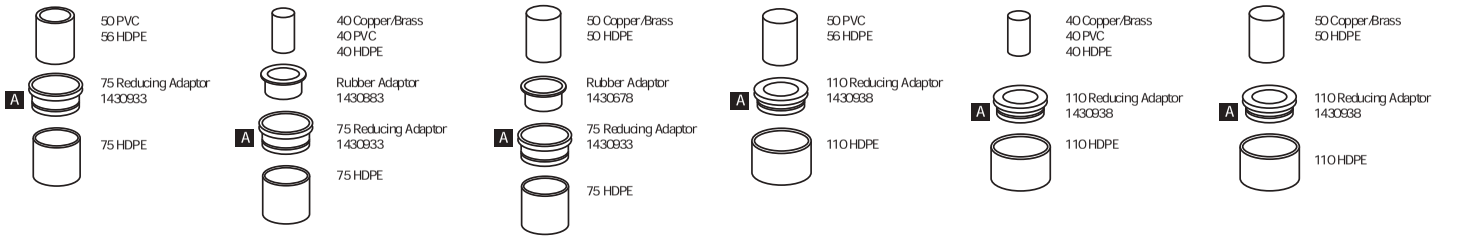
Geberit HDPE pipe section / connection bend	Geberit rubber collar	Trap
		

Adaptors

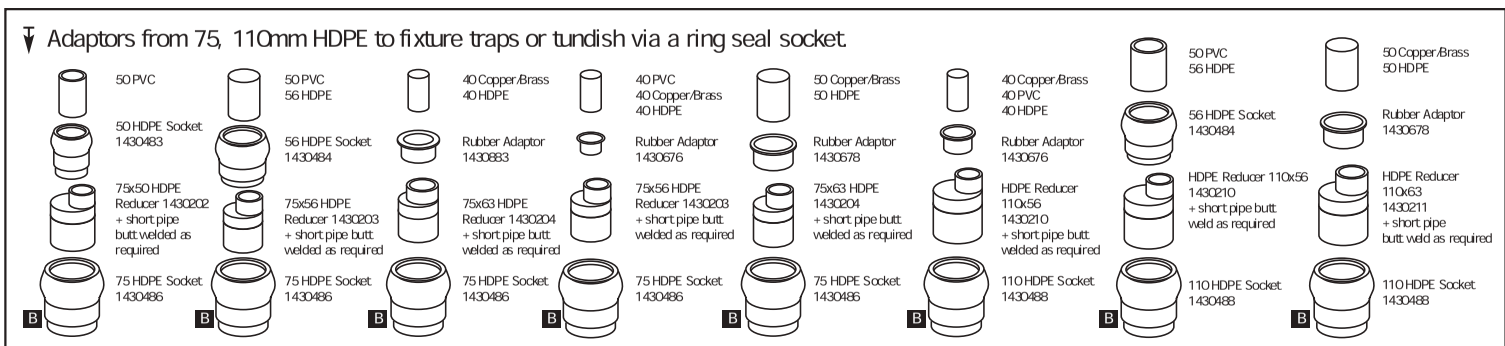
Adaptors from 50, 56, 63mm HDPE to the fixture trap or tundish.



Adaptors from 75, 110mm HDPE to fixture traps or tundish.



Adaptors from 75, 110mm HDPE to fixture traps or tundish via a ring seal socket.



A Can generally be fitted after the main pipe work has been installed, but before the floor coverings.

B Have to be installed at the same time as the main pipe work

Low pressure application

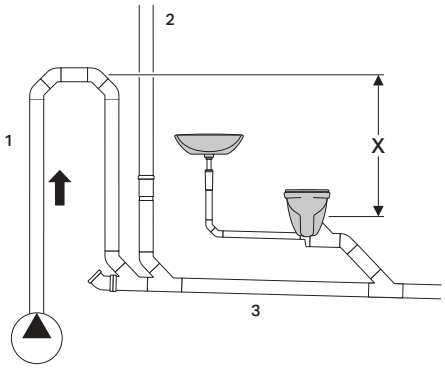
The Geberit HDPE product range can also be used for the discharge pipe of a pump assembly. The prerequisite for this is that the mechanical load is low and has only a short duration, and that no thermal medium (such as hot water) is pumped.

Pressure	≤1.5 bar
Temperature	≤ 30 °C

All connections must be created using butt welding, electrofusion sleeve coupling or flange connection.

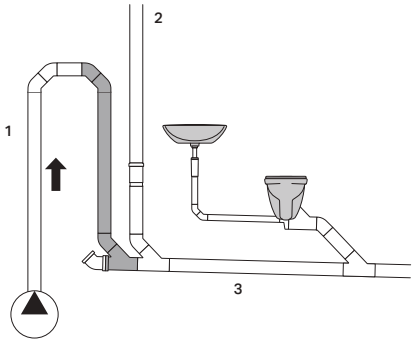
Bear the following important points in mind when planning discharge pipes for drainage systems:

- The discharge pipe must be installed higher than the lowest device (height X) using a pipe loop.



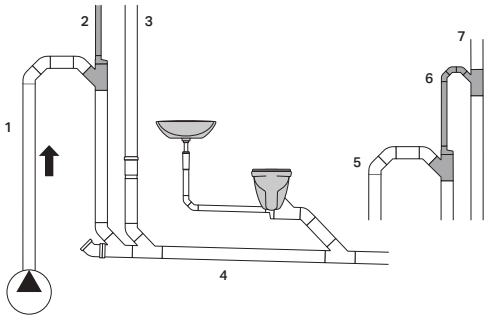
1 Pressurized pump pipe
2 Vertical duct
3 Collector pipe

- If the flow rate is less than 5 l/s the vertical section of the pipe loop must be extended.



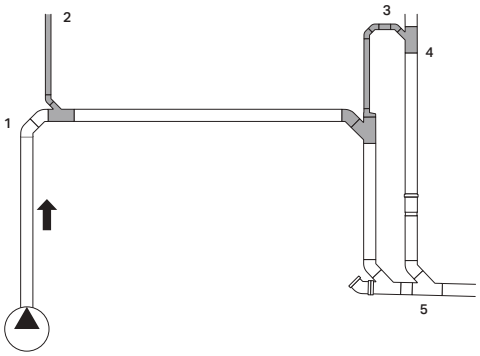
1 Pressurized pump pipe
2 Vertical duct
3 Collector pipe

- If the flow rate is more than 5 l/s the vertical duct must be ventilated with a ventilation pipe with an inside diameter of at least 50 mm.



1 Pressurized pump pipe V > 5 l/s
2 Ventilation
3 Vertical duct
4 Collector pipe
5 Pressurized pump pipe
6 Lateral ventilation
7 Vertical duct

- Long horizontal collector pipes must be ventilated. The ventilation pipe must have a minimum inside diameter of 57 mm or be two sizes smaller than the discharge pipe. The ventilation pipe must be higher than then delivery height of the pump and must go over the roof.



1 Pressurized pump pipe
2 Ventilation
3 Lateral ventilation
4 Vertical outlet duct
5 Collector pipe

Installation instructions

Manufacturing pipe joints by welding

Welding joints can be created by various processes:

Types of welding

- Electrofusion sleeve coupling
- Butt welding

General information about welding

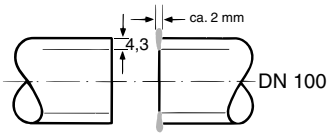
Up to ø 75, welding can be done by hand; from ø 90, we recommend welding using the Geberit welding machines Universal or Media.

When welding Geberit HDPE pipes and fittings, the quality of the connection is primarily dependent on:
- The material characteristics
- The manufacturing specifications
- The tolerances

This applies particularly to electrofusion welding. The electrofusion sleeve couplings and the pipes and fittings must be matched to the automatic welding control by the electrofusion machine.

The Geberit electrofusion machine, electrofusion sleeve couplings and fittings are a self-contained manufacturer-specific system, which cannot be replaced with external products. Geberit can therefore only guarantee the suitability of pipes, fittings and electrofusion sleeve couplings for welding if Geberit products are exclusively connected to other Geberit products.

The welding bead should be about half as thick as the pipe wall thickness.



Creating a butt welding joint

A welding plate is required as a processing tool:

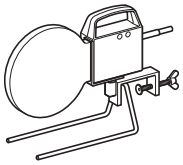


Table 23: Reference values for welding Geberit HDPE

dø	Welding allowance per weld seam	Heating up time	Time until full pressure buildup	Welding and cooling time	Welding pressure
[mm]	[cm]	[min]	[s]	[min]	[N]
40	0.3	0,40	4	3	60
50	0.3	0,40	4	3	70
56	0.3	0,40	4	3	80
63	0.3	0,40	4	3	90
75	0.3	0,40	4	4	100
90	0.4	0,50	5	5	150
110	0.5	1,00	5	5	220
125	0.5	1,11	5	5	280
160	0.7	1,30	5	5	450
200	0.7	1,50	5	5	570
250	0.8	2,00	5	5	900
315	1.0	2,30	6	6	1400

Prerequisite

- Ambient temperature: -10 °C to +40 °C
- Clean welding plate surface
- Welding plate temperature: 220 °C signal lamp green
- Up to ø 75 mm the welding can be done by hand. From ø 90 mm the Geberit welding machines Universal or Media must be used.

Creating butt welding manually

1 Cut the pipes to size at right angles to the pipe axis and if necessary clean them.

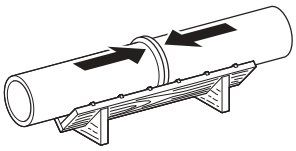
2 Heat the pipe ends.

3 Press the pipe ends lightly on the plate.

4 Only hold the pipe ends so that heat can flow evenly.

5 Immediately push the pipe ends together after welding beads form.

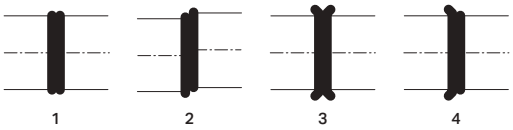
6 Increase the welding pressure slowly to the reference value. See Table 23: (page 128) for reference.



Do not accelerate the cooling process by applying cold items or water.

7 Examine the butt welding.

Result

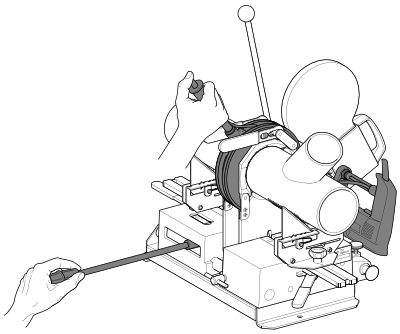


1 Correct
2 Incorrect, off the axis
3 Incorrect, welding pressure too high at the beginning of welding
4 Incorrect, uneven welding temperature

Creating butt welding by machine

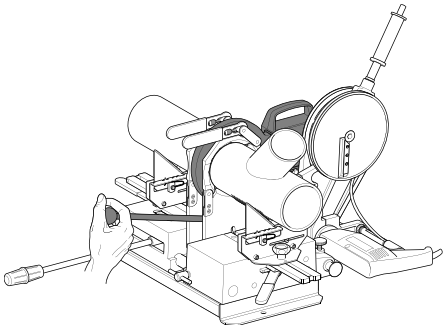
1 Align and clamp the fittings or pipe ends which have been cut at right angles and deburred in the welding machine.

2 Plane the ends to the required dimensions.



3 Press the pipe ends lightly on the plate.

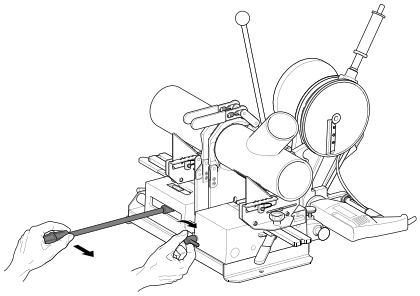
4 Only hold the pipe ends so that heat can flow evenly.



5 Remove the welding plate after the welding bead has formed.

6 Immediately push the pipe ends together.

7 Increase the welding pressure slowly to the reference value.



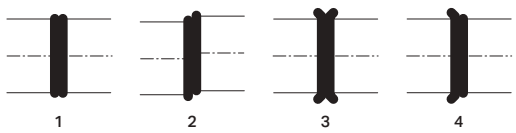
Do not accelerate the cooling process by applying cold items or water.

8 Allow the pipe ends to cool.

9 Unclamp the pipe assembly after the welding and cooling time.

10 Examine the butt welding.

Result



1 Correct
2 Incorrect, off the axis
3 Incorrect, welding pressure too high at the beginning of welding
4 Incorrect, uneven welding temperature

Creating an electrofusion sleeve coupling welding joint

- Geberit electrofusion sleeve couplings with integrated thermal fuses are required.

Figure 27: Geberit electrofusion sleeve coupling (height 60 mm)

- The Geberit electrofusion welding machine ESG 3 is required as a processing tool.

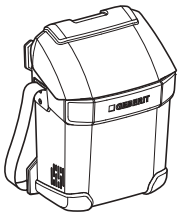


Figure 28: Geberit electrofusion welding machine ESG 3

The Geberit electrofusion welding machine is only designated for welding Geberit HDPE pipes and fittings with electrofusion sleeve couplings ø 40–160 mm. Can do up to 3 connections at the same time ø 40–110 mm and one ø 125–315 mm.

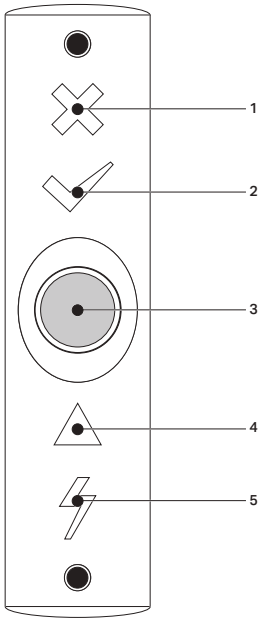


Figure 29: Operating interfaces of the electrofusion machine

1 General malfunction display
2 Welding complete display
3 Start display and actuation
4 Ready for welding display
5 Mains connection display

Prerequisite

- Permissible ambient temperature: -10 °C to +40 °C
- Mains voltage: 185–265 V / 50–60 Hz, power consumption max. 1100 W
- Fuse: Electronic overflow protection. The machine is equipped with a mechanism which prevents a double weld when a sleeve connection cable is connected
- Operation with emergency generator unit: Minimum power 1500 W

DANGER
Danger of fatal electric shock

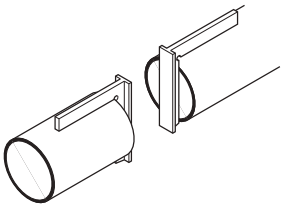
- Welding must not be carried out.
- Stop the water flow.
- Dry pipelines and electrofusion sleeve couplings.

Creating electrofusion sleeve coupling welding joints 40–160 mm

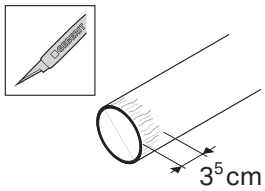
Correctly performed electrofusion weldings must only be carried out once.

All pipes and fittings must be clean and dry during the welding process

1 Cut the pipes to size at right angles to the pipe axis and roughly clean dirty surfaces.

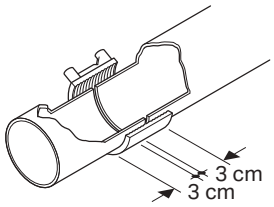


2 Scrape the pipe section/fitting surface in the insertion area of the electrofusion sleeve coupling, Emery cloth must be used to remove the oxidised layer from the pipe. An approved pipe scraper is also acceptable and is recommended for larger pipe sizes, 160–315 mm.



The small amounts of HDPE residue left over from this process will not affect the quality of the connection. No further cleaning procedures are required.

3 Mark clean pipe sections/fittings in the insertion area of the electrofusion sleeve coupling with an insertion depth of 3 cm.



4 Insert the pipe sections/fittings into the electrofusion sleeve coupling and examine the insertion depth: The axes of the welding ends must match.

Only connect the sleeve connection cable with the electrofusion sleeve coupling/electrofusion tape after clean, dry Geberit HDPE pipes or fittings have been inserted.

5 Connect the device to the mains voltage. Display ϟ lights up.

6 Connect the sleeve connection cable with electrofusion sleeve coupling/electrofusion tape. Display ▲ lights up.

DANGER
Risk of burns
- Do not touch the pipeline, electrofusion sleeve coupling or electrofusion tape during the welding process or during the cooling-down phase.

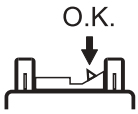
7 Press the start button ● . Display ● lights up and display ▲ goes out. Welding is completed after approximately 80 seconds. The start button display ● goes out and the display ✔ lights up.

Keep the pipeline in an unstressed position during the entire welding procedure.

Result

Welding has been performed correctly and is finished.

Completed welding is indicated by the protruding yellow indicator.



Creating an electrofusion coupling 200–315 mm

- Geberit electrofusion couplings with integrated thermal fuses and indicators are required

Figure 30: Geberit electrofusion sleeve coupling (height 150 mm) with integrated thermalfuse

- The Geberit electrofusion welding machine ESG T2 or ESG 3 is required as a processing tool

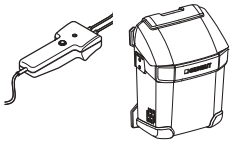


Figure 31: Geberit electrofusion welding machine ESG T2 or ESG 3

The Geberit electrofusion welding machine ESG T2 is solely intended to be used for welding Geberit HDPE pipes and fittings with 200–315 mm electrofusion couplings with integrated thermal fuses.

Prerequisite

- Permissible ambient temperature: -10 °C to +40 °C
- Mains voltage: 220–240 V / 50 Hz
- Power consumption: 2500 W
- Fuse: The electrofusion couplings with integrated thermal fuses have two fuses that switch off the welding current once the corresponding temperature is reached. The same electrofusion coupling with integrated thermal fuse cannot be welded a second time
- Operation with emergency generator unit: Minimum power 2.5 kW. No other devices can be connected during the welding process. The starter switch voltage under load is at least 200 V
- Recommendation: Always mount Geberit pressure ring

DANGER
Moisture or water-filled pipelines
Fatal danger!

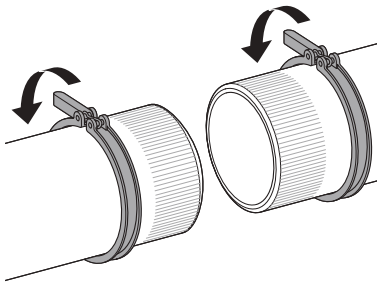
- Welding must not be carried out.
- Stop the water flow.
- Dry pipelines and electrofusion couplings with integrated thermal fuses.

An isolation transformer (230 V / 2.5 kW) must be included in the circuit when carrying out welding work in damp areas.

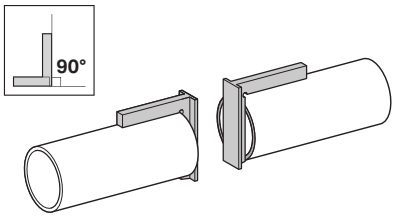
Creating electrofusion coupling with integrated thermal fuse welding joint

Correctly performed electrofusions with integrated thermal fuses must only be carried out once.

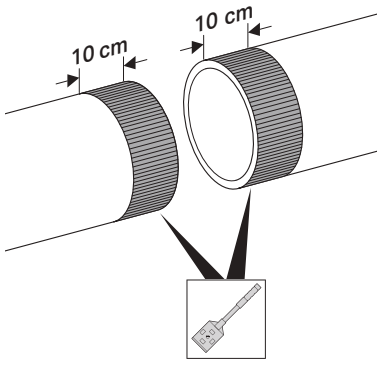
1 Attach pressure rings to the pipes. Once the welding time has elapsed, the pressure rings must remain mounted for 15 minutes.



2 Cut the pipes to size at right angles to the pipe axis and roughly clean dirty surfaces.

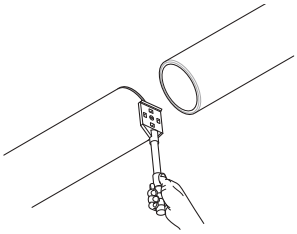


3 Scrape the pipe section/fitting surface in the insertion area of the electrofusion coupling with integrated thermal fuse with the Geberit pipe scraper.

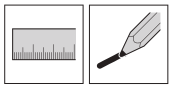


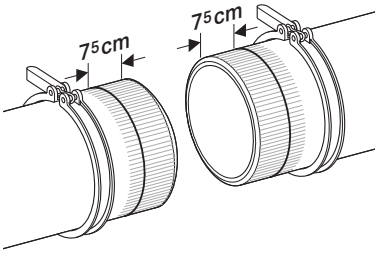
Remove only the uppermost oxide layer evenly and thinly. No recesses must arise.

4 Remove any burrs and slightly chamfer the pipe ends.

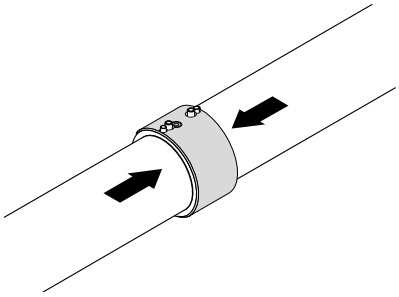


5 Mark clean pipe sections/fittings in the insertion area of the electrofusion coupling with integrated thermal fuse with an insertion depth of 7.5 cm.





6 Insert the pipe sections/fittings into the electrofusion coupling with integrated thermal fuse and check the insertion depth. The axes of the welding ends must match.



Do not remove the thermofilm. Only connect the connection cable with the jointing nut after clean, dry Geberit HDPE pipes or fittings have been inserted.

7 Connect device to mains voltage and sleeve connection cable to the electrofusion coupling with integrated thermal fuse.

CAUTION
Risk of burns

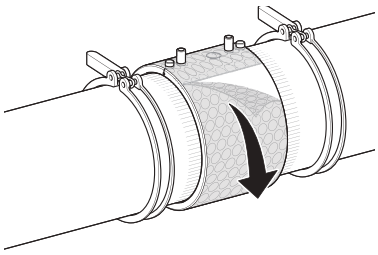
- Do not touch the pipeline and the electrofusion coupling with integrated thermal fuse during the welding process and the cooling down phase.

8 Press the start button briefly. The "weld" signal lamp lights up. Welding current flows through the connected electrofusion coupling with integrated thermal fuse for the next few minutes. The "weld" signal lamp goes out. The welding process is ended.

Keep the pipeline in an unstressed position during the entire welding process.

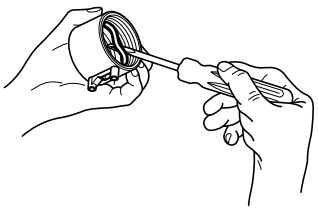
9 Examine the welding: Press the start button briefly. If the lamp goes out when you let go, the welding process has been carried out correctly. If the lamp remains lit up when you let go, the welding time was interrupted and must be repeated once the jointing nut has cooled down.

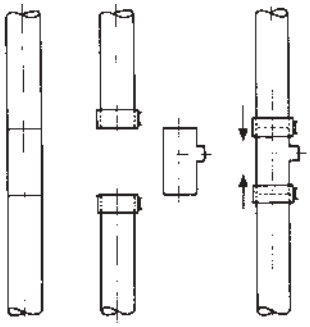
10 Remove the thermofilm approx. 15 minutes after welding end.



Creating a slide-over electrofusion sleeve coupling

To change the electrofusion sleeve coupling into a slide-over sleeve, remove the central ring. This process can also be used for repairs.





Other Geberit HDPE jointing methods

Ring-seal socket joint

Figure 32: Ring seal socket joint (available ø 40 - 160 mm)

Connection properties
- Removable
- Non-tension-resistant

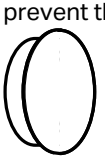
Use

Ring-seal socket joints can be used to provide a connection between various prefabricated parts for simpler assembly.

Assembly

May be used either vertically or horizontally. The small overall dimensions provide an advantage where space is limited. Can easily be assembled or released even where access is difficult.

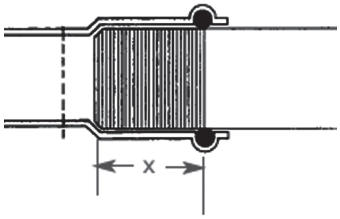
Ring-seal sockets are provided with a yellow protection cap to prevent the ingress of debris during installation.



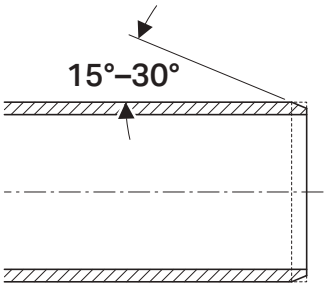
Assembly instructions are the same for both ring-seal sockets and screw-threaded joints, the sleeve lengths are the same for corresponding diameters. The effective sleeve length, i. e. the measurement – X – from the O-ring to the base of the socket governs the maximum length of pipe which can be connected by individual joints.

For HDPE approximately 15 mm of spigot should be allowed for every 1 m of pipe.

The pipe must be fully inserted into the socket, because the socket does not act as an expander. Owing to the pipe thickness and the low thermal conductivity of HDPE, the socket seal has very satisfactory resistance to heat and no shrinkage of the O-ring occurs.
The O-ring has a round seat regardless of pipe movements. The O-ring remains fixed in the seat and is always in contact with the pipe.



X Length varies with the diameter



Ideal fitting is obtained by chamfering the pipe end to approximately 15°, lubricating it with soft soap, Silicone or Vaseline. Do not use mineral oil or grease which can damage the rubber seal

Screw-threaded joint

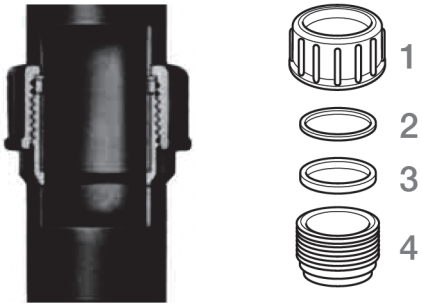


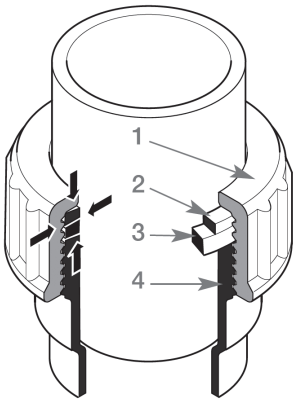
Figure 33: Screw-threaded joint without flange bushing (available ø 40–110 mm)

1 Nut
2 Washer
3 Seal
4 Thread

Connection properties
- Removable
- Non-tension-resistant

Use

Screw-threaded joints are used for assembly of various prefabricated parts when it is necessary to easily dismantle and also as the connection to sink traps and shower trays.



1 Nut
2 Washer
3 Seal
4 Thread

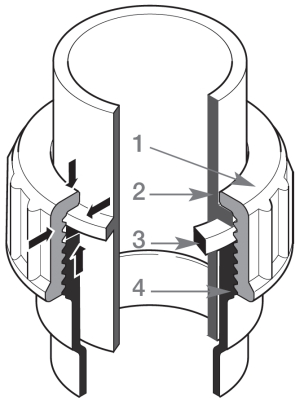
The seal is pressed against the thread. A minimum surface area of the seal is in contact with water.

Figure 34: Screw-threaded joint with flange bushing (available ø 40–110 mm)

1 Nut
2 Flange bushing
3 Seal
4 Thread

Use

Wherever there is to allow for service or removal of a component within the system. Flange connections are also used when changing materials such as copper or cast iron.



1 Nut
2 Flange bushing
3 Seal
4 Thread

The seal is pressed against the flange bushing and the thread.

Flanged joint

Figure 35: Flanged joint (available ø 50–315 mm)

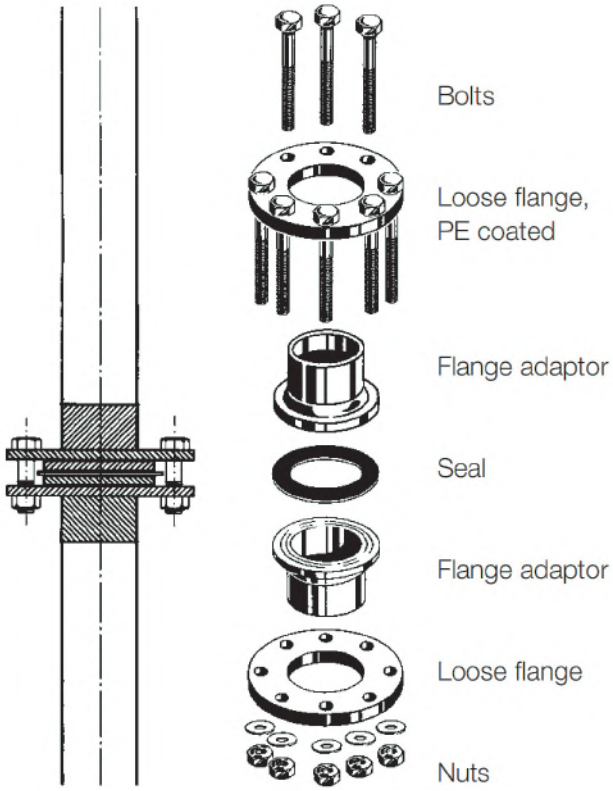
Connection properties
- Removable
- Tension-resistant

Use

Flanges are normally used as removable joint for low pressure installations (industrial plant, pump connection, tanks and swimming pools).

The flange connection system offers easy connection to existing copper and stainless steel installations.

As inspection access opening made by using a blind flange. Flanges are sintered, i.e. they are coated with polyethylene, and have standard dimensions (PN 3.2–PN 10).



Geberit HDPE contraction sleeve

This product is special order and may require longer lead time.

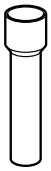
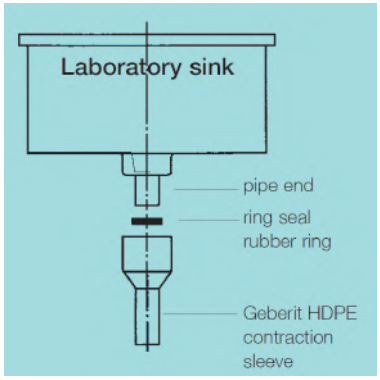


Figure 36: Geberit HDPE contraction sleeve (available ø 50–160 mm)



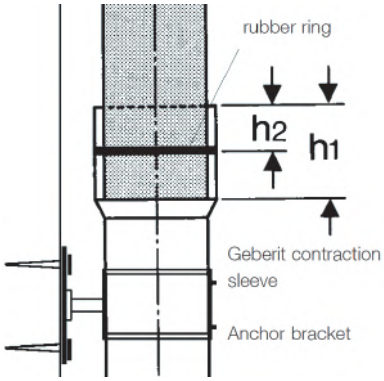
Connection properties
- Rigid, non-removable
- Non-tension-resistant

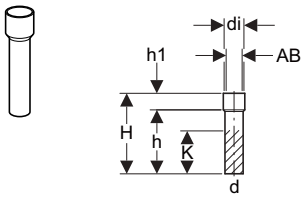
Use

The Geberit HDPE contraction sleeve is a convenient connection possibility for most uneven, irregular or special materials.
A common additional application method is also the connection from HDPE to different clay ware apparatus, e. g. for Laboratory sinks.

Installation

The enclosed rubber ring will be placed over the pipe end. Make sure that the rubber ring will be placed in the middle of the sleeve length (h2). Then push the contraction sleeve over the pipe end. Apply low heat (approx. 125 °C) evenly around the socket, moving the blow lamp constantly. The sleeve will now shrink and give an absolute watertight and strong connection. Afterwards fix the contraction sleeve pipe with an anchor bracket.





d [mm]	di [mm]	AB1 [mm]	H [cm]	h [cm]	h1 [cm]	K [cm]	Art. No.
50	60	53–54	30	24	6	17	152.651.16.1
50	70	60–67	27,5	22	5,5	17	152.197.16.1
50	80	67–74	28,5	23	5,5	17	152.198.16.1
50	90	80–84	30,5	23,5	7	17	152.652.16.1
50	100	90–94	31	24	7	17	152.653.16.1
56	70	60–67	24,5	19	5,5	14	152.149.16.1
56	80	67–74	24,5	19	5,5	14	152.150.16.1
56	60	53–54	26,5	20,5	6	14	152.654.16.1
63	73	60–67	26,5	20,5	6	14	152.657.16.1
63	80	67–74	26,5	19	7,5	14	152.658.16.1
75	90	80–84	24,5	17,5	7	12	152.151.16.1
75	80	67–74	25	19	6	12	152.152.16.1
75	100	90–94	28	19	9	12	152.661.16.1
90	110	84–98	17	7	10	0	366.550.16.1
110	125	102–111	16	6	10	0	367.551.16.1
110	140	102–126	18	8	10	0	367.550.16.1
125	150	116–136	18	8	10	1	368.550.16.1
160	195	148–180	20	8	12	1	369.550.16.1
160	230	189–212	30	12	18	5	369.551.16.1

Geberit HDPE adapter clamp

This product is special order and may require longer lead time.

Figure 37: Geberit HDPE Adapter Clamp

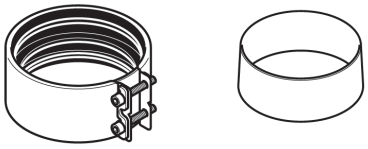


Figure 38: Geberit HDPE Adapter Clamp

Connection properties
- Removable
- Non-tension-resistant

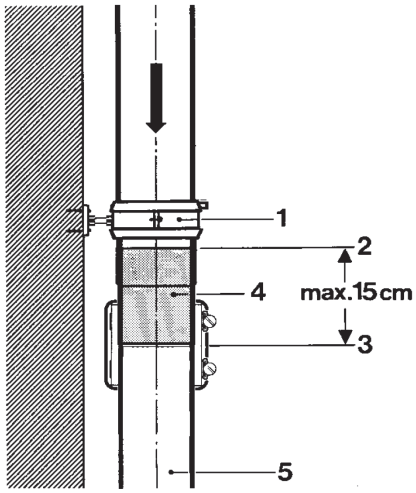
Use

The adapter clamps have multiple functions and can consequently be used as adapters to other materials as well as any other types of connection.

Installation

It is necessary to insert an appropriate reinforcement ring into the ends of the HDPE pipe first when these clamps are used as adapters to HDPE pipes or for HDPE pipe connections.

Important:
If the joint from HDPE to steel – cast iron or earthenware – is made with a coupling, it has to be secured by an anchor bracket. Install the anchor bracket as close as possible to the coupling (maximum 15 cm).



1 Anchor bracket
2 Butt weld seam
3 Coupling
4 HDPE adaptor with reinforcement ring
5 Steel, cast iron, clay, fibre cement pipes

Geberit HDPE adaptors

Table 24: Pipe threads (for detail information see HDPE catalogue)

Pipe threads	Connection to	Thread diameter	Geberit diameter	Material
	Male pipe thread	1/2"–2 1/2"	40–75 mm	HDPE with steel ring reinforcement
	Female pipe thread		1 1/4"–2 1/2"	50–75 mm HDPE with steel ring reinforcement
	Female pipe thread		1 1/4"–2 1/2"	50/56 mm adaptor in brass + HDPE nut
	Male pipe thread	2"–3"	56/75 mm	Adaptor in brass + HDPE nut

Table 25: Threaded pipe ends (for detail information see HDPE catalogue)

Pipe threads	Connection to	Thread diameter	Geberit diameter	Material
	Male-thread	1 1/4"–2"	40/50 mm	HDPE, upon request also available with nut in brass
	Male-thread	60 x 1/8"	40/50 mm	HDPE
	Female-thread	1/2"–1"	40/50 mm	HDPE, with brass nipple

Table 26: Soldering / Welding (for detail information see HDPE catalogue)

Pipe threads	Connection to	Pipe diameter	Geberit diameter	Material
	Lead	50/60	56 mm	Brass with HDPE nut for soldering
	Lead	50/60	56 mm	Lead with HDPE nut for welding or soldering
	PVC	50/63	56 mm	PVC for solvent cement joint + HDPE nut

Additional information

Physical characteristics of Geberit HDPE

Table 27: Physical characteristics of Geberit HDPE

Characteristics	Unit	Test method	Test specimen	Value
Density	g/cm^3	DIN 53479	Plate	0.953...0.955
Reduced specific viscosity (viscosity coefficient)	dl/g	ISO/R 1191	0.1% solution	3.0
Melt-flow index MFI 190/5	g/10 mins.	DIN 53735	in decalin granulate	0.4...0.7
Mechanical characteristics, measured under standard climatic conditions 23 °C, 50% relative air humidity				
Tensile strength	N/mm^2	DIN 53455. ISO/R 527; test velocity 125mm/min	Test specimen 3 with measurements in the ratio 1:4	22
Elongation at yield stress	%			15
Ultimate tensile strength	N/mm^2			32
Elongation at break	%			>800
Limit bending strengt	N/mm^2	DIN 53452	Standard small bar injection moulded	28
Torsional rigidity	N/mm^2	DIN 53447	60 mm x 6.35 mm x 2 mm	240
Bending creep modulus 1 minute value	N/mm^2	Bending creep test ob 3 N/mm^2	120 mm x 20 mm x 6 mm	800
Indentation hardness 30 second value	N/mm^2	DIN 53546, Test strengt 132, 4 N	Sheet, 4 mm	40
Shore hardness D	-	DIN 53505	Sheet, 4 mm	60
Impact strengt	mJ/mm^2	DIN 53453	Standard small bar, moulded	15
Impact strengt at +23 °C and -40 °C	mJ/mm^2	DIN 53453	Standard small bar, injection moulded	
Thermal characteristics				
Crystallite melting range	°C	Polarisation microscope	Microtone section	127...131
Mean linear expansion coefficient between 20 °C and 90 °C	K-1	DIN 52328; ASTM D 696	50 mm x 4 mm x 4 mm	$1.7 \cdot 10^{-4}$
Heat conductivity at 20 °C	Wm ·k	DIN 52612 sheet method	Plate, 8 mm Injection, moulded	0.43

Characteristics	Unit	Test method	Test specimen	Value
Electrical properties, measured under standard climatic conditions of 23 °C, 50% relative air humidity				
Specific transmission resistance	Ω · cm	DIN 53482, VDE 0303 Part3	Foil, 0.2 mm	>1016
Surface resistance	Ω	DIN 53482, VDE 0303 Part 3	Sheet, 1 mm	>1013
Electric strength	kV/cm	DIN 53481, VDE 0303 Part 2	Foil, 0.2 mm	700
Dielectric index εr, (relative dielectric constant) at 2,106 Hz	-	DIN 53483, VDE 0303 Part 4 (immersion method)	Foil, 0.2 mm	2.50
Dielectric loss factor tan δ at 50 Hz	- 103 Hz 104 Hz 105 Hz	DIN 53483, VDE 0303 Part 4 - - -	Foil, 0.2 mm	$6 \cdot 10^{-4}$ $5 \cdot 10^{-4}$ $5 \cdot 10^{-4}$ $6 \cdot 10^{-4}$
Track resistance		DIN 53480, VDE 0303 Part 1	Sheet 3 mm	KA 3c KC > 600
Arc resistance		DIN 53484, VDE 0303 Part 5	120 mm x 120 mm x 10 mm	L4

In a number of countries, a tensile test is carried out on a test specimen taken in longitudinal (or transversed) direction of the pipe, e.g. in Great Britain according to BS 3284. The values thereby obtained do not necessarily need to agree with those given table, which applies especially for the in the elongation at break.

The values given above relate exclusively to the corresponding test methods or test specimens. Results which are obtained with specimens taken from pipes may not agree.In contrast with injection, moulded specimens are free from flow orientations. This strongly influences the test result. Measurement with moulded bars is therefore preferred.

Ecological properties of Geberit HDPE

Polyethylene (HDPE) is a simple compound of carbon and hydrogen atoms, harmless to humans, animals and plants.

HDPE environmental loads relate to the fields of manufacture and disposal. In addition to the raw material crude oil, energy is used for the preparation of the plastic granulate and in the manufacture of the products.

HDPE is the perfect material for drainage systems from an ecological point of view. It has a long life span, no toxic gases rises from incineration (e. g. hydrochloric acid HCL from PVC) during disposal. It consumes much smaller quantities of energy during fabrication process and transport than steel, cast iron or copper pipes.

For more information about environment and sustainability, please order our report :

Life Cycle Assessment Drainage pipes for buildings

Geberit named in top 10 most sustainable companies globally

Geberit is a proven international leader in the area of sustainability. Having recently been named among the top 10 most sustainable companies in the world from a study conducted by media company, Corporate Knights, further “supports and validates Geberit’s continuing commitment to be environmentally responsible in everything we do,” said Managing Director of Geberit Australia. Saving water, resource efficiency and sustainable construction are core areas of concern for the Geberit organisation both globally and locally. A key focus for Geberit Australia is to continually update, integrate and effectively implement a sustainable strategy that will make a positive impact today and tomorrow.

Geberit believes that sustainability must be lived in all company sectors. Geberit aims to be a role model to and set standards for partners, customers and suppliers. This includes safe, environmentally friendly and resource efficient production with an increasing proportion of renewable energies, procurement and logistics with high environmental and ethical standards ensuring that the entire manufacturing process of all products comply with the highest standards in environmental protection, social responsibility and ethical action.

Sustainability means satisfying the needs of today’s generation in a manner that will ensure a solid basis for the livelihoods of future generations. To assist in achieving this, Geberit provides 100% recyclable HDPE Polyethylene (PE), which is a simple compound of carbon and hydrogen atoms, harmless to humans, animals and plants. HDPE is the perfect ecological solution as it has a long life span and does not excrete toxic gases during incineration during disposal and consumes much smaller quantities of energy. All Geberit manufacturing sites are compliant to the latest ISO standard (ISO 9001 & 14001).

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