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Agrément Certificate
86/1751
Product Sheet 1

BLÜCHER DRAINAGE SYSTEM

BLÜCHER FLOOR DRAINS

This Agrément Certificate Product Sheet⁽¹⁾ relates to Blücher Floor Drains, a range of stainless steel drains and accessories for internal use to receive wastewater from wet floors and/or domestic/industrial appliances on the same floor level.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



KEY FACTORS ASSESSED

Mechanical resistance and stability — the drains will resist the likely loadings in service and during installation (see section 6).

Hygiene, health and the environment — the products will allow disposal of wastewater without clogging (see section 7).

Safety in use — the products are safe in use (see section 8).

Durability — the products have adequate durability with a life in excess of 50 years (see section 10).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Second issue: 3 September 2015

Originally certificated on 16 October 1986

Brian Chamberlain

Head of Technical Excellence

Claire Curtis-Thomas

Chief Executive

The BBA is a UKAS accredited certification body — Number 1113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, Blücher Floor Drains, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	H1(1)	Foul water drainage
Comment:		The products will convey the flow of foul or surface water and minimise the risk of blockages or leakage. See sections 7.1 to 7.3 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See sections 10.1 to 10.3 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Durability, workmanship and fitness of materials
Comment:		The use of the products satisfies the requirements of this Regulation. See sections 9.1 to 9.3 and 10.1 to 10.3 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.7	Wastewater drainage
Comment:		The products will meet the relevant requirements of this Standard, with reference to clauses 3.7.10 ⁽¹⁾ and 3.7.11 ⁽²⁾ . See sections 7.1, 7.3 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products can contribute to satisfying the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23	Fitness of materials and workmanship
Comment:		The products are acceptable. See sections 10.1 to 10.3 and the <i>Installation</i> part of this Certificate.
Regulation:	81	Underground foul drainage
Comment:		The products will meet the relevant requirements of this Regulation. See sections 7.1 to 7.3 of this Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, Principal Designer/CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.2) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of Blücher Floor Drains, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 8.1 *Internal services — Soil and waste systems* D16-D17.

Technical Specification

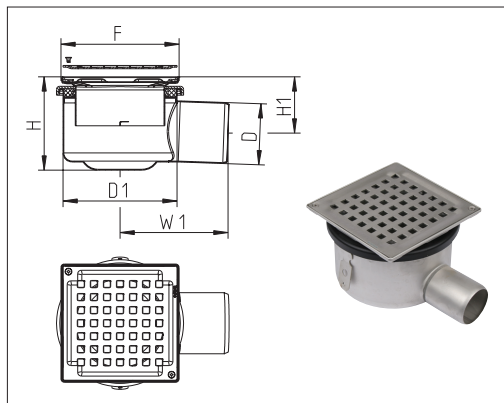
1 Description

1.1 Blücher Floor Drains are a range of stainless steel drains and accessories and available in the sizes and dimensions shown in Figures 1 to 3 as either washdown/shower outlet floor drains or industrial floor drains.

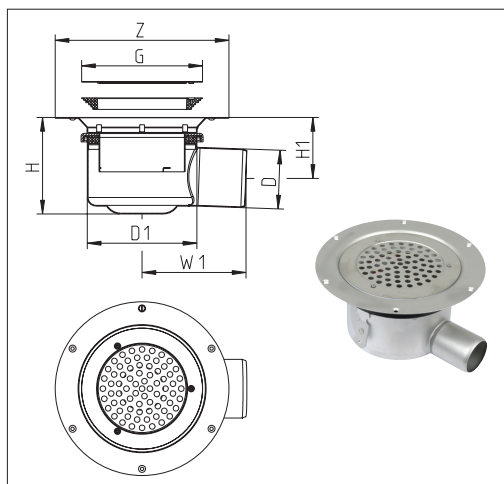
1.2 The washdown/shower outlet floor drains are produced from 1 mm thick austenitic stainless steel sheet to BS EN 10095 : 1999, grade 304 or 316L. The side inlets (where provided), have adaptors to 1¼" or 1½" for push-fit. Water traps (50 mm minimum depth of seal) are of the removable type and outlets are 50 mm, 75 mm or 110 mm in diameter. The washdown/shower outlet gratings have a polished finish and are nominally 150 mm square and 2 mm thick for tiled floors and 155 mm diameter and 1 mm thick for vinyl floors.

1.3 The industrial floor drains are produced from 1.25 mm thick steel sheet (not polished) to the same material specification as the washdown/shower outlet floor drains. Water traps (52 mm minimum depth) are of the removable type. The industrial floor drains are available with round or square tops and have interchangeable polished gratings from 3 mm thick with slotted holes to 10 mm thick with perimeter opening.

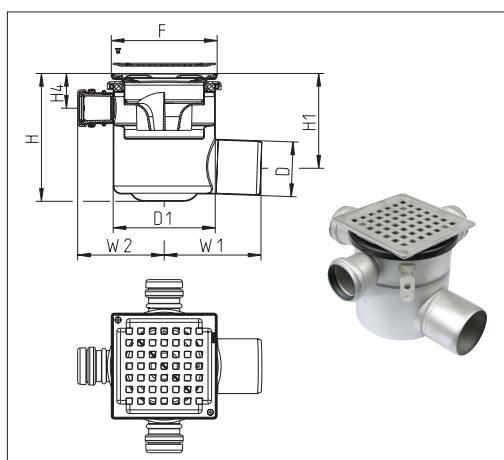
Figure 1 Floor drains (all dimensions in mm)



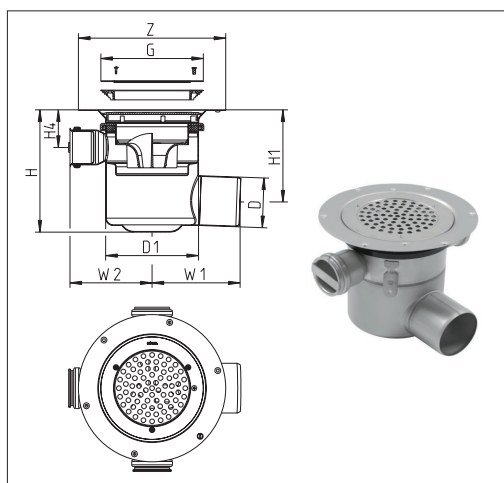
Type No	D	D1	F	H	H1	W1
110.300.050	50	140	145	115-145	81-111	128
110.300.075	75	140	145	115-145	69-99	133



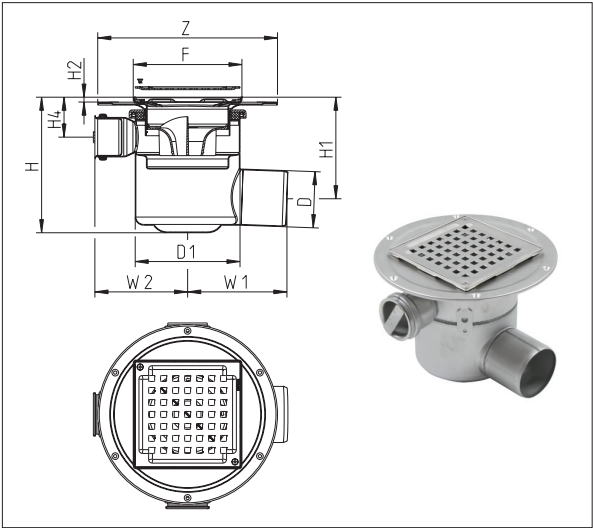
Type No	D	D1	G	Z	H	H1	W1
210.300.050	50	140	155	222	123-153	90-120	128
210.300.075	75	140	155	222	123-153	78-108	133



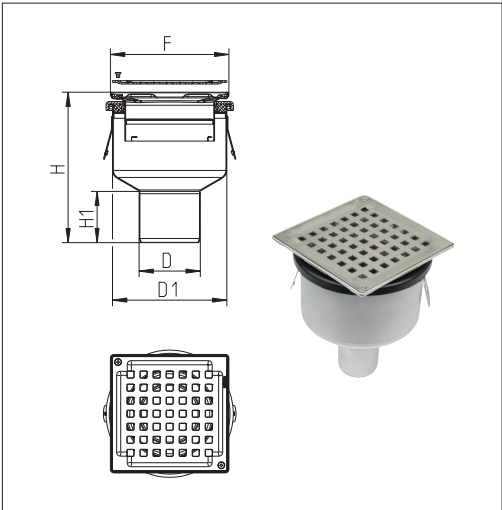
Type No	D	D1	F	H	H1	H4	W1	W2
111.303.075	75	140	145	175-185	130-140	48-58	133	119



Type No	D	D1	G	Z	H	H1	H4	W1	W2
211.303.075	75	140	155	222	183-193	139-149	57-67	133	124



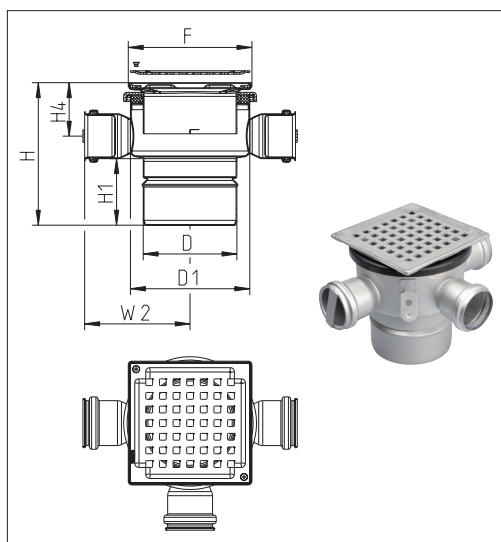
Type No	D	D1	F	Z	H	H1	H2	H4	W1	W2
311.303.075	75	140	145	240	181-211	136-166	6.5-21	53-83	133	124



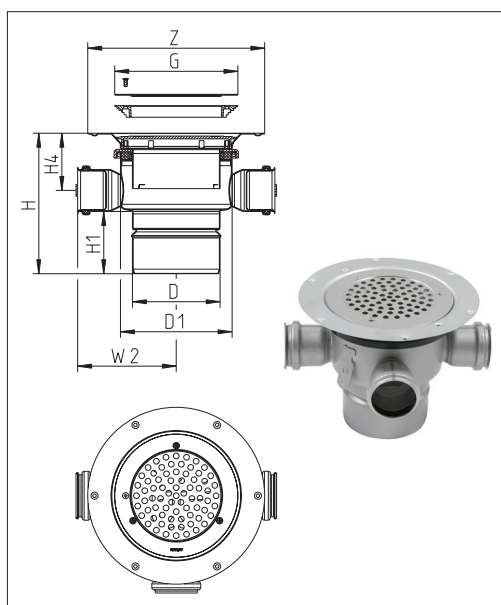
Type No	D	D1	H	H1	F
150.300.050	50	140	189-219	58	145
150.300.075	75	140	185-215	63	145
150.300.110	110	140	152-182	79	145



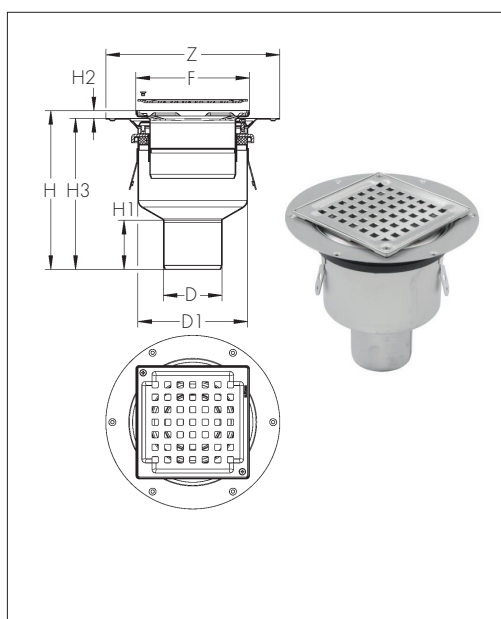
Type No	D	D1	G	Z	H	H1
250.300.050	50	140	155	222	197-227	58
250.300.075	75	140	155	222	193-223	63
250.300.110	110	140	155	222	161-191	79



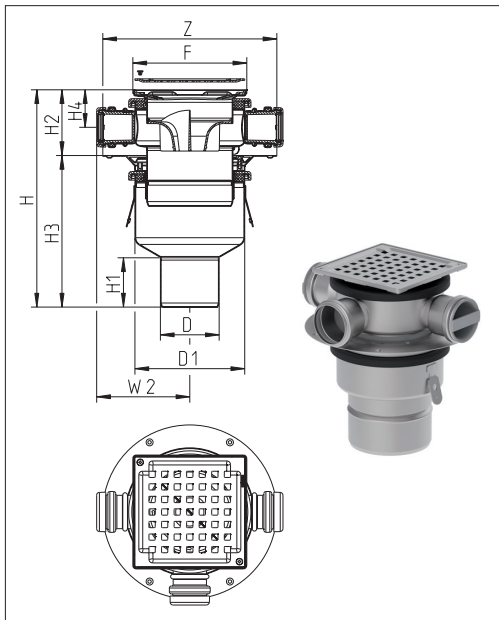
Type No	D	D1	F	H	H1	H4	W2
151.303.110	110	140	145	167-197	79	63-93	124



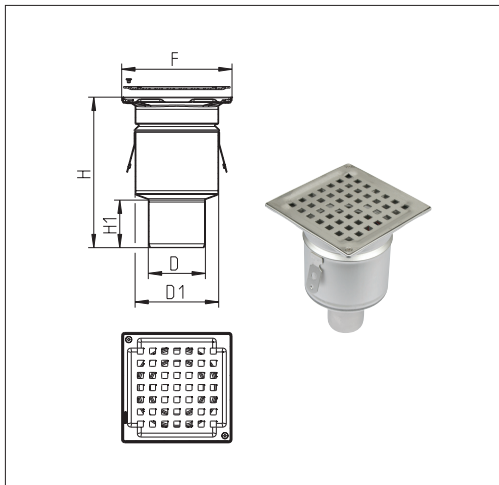
Type No	D	D1	G	Z	H	H1	H4	W2
251.303.110	110	140	155	222	176-206	79	72-102	124



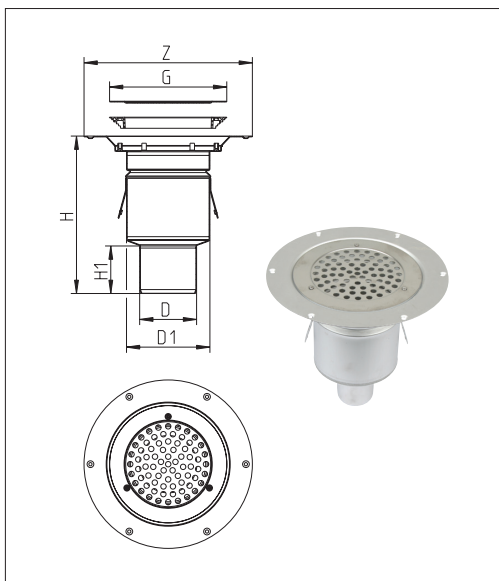
Type No	D	D1	F	Z	H	H1	H2	H3
352.300.110	75	140	145	222	203-258	63	10-50	193-208
352.300.110	100	140	145	222	171-226	79	10-50	161-176



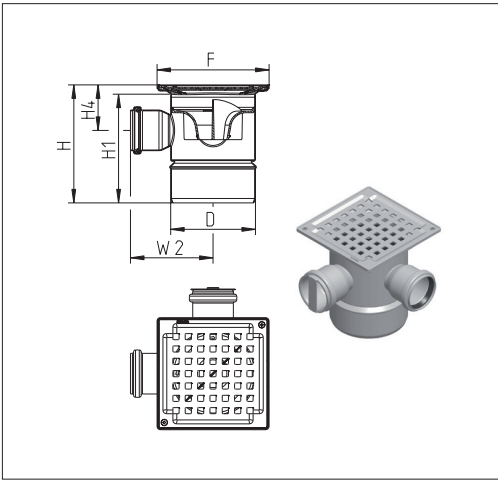
Type No	D	D1	F	Z	H	H1	H2	H3	H4	W2
353.300.075	75	140	145	222	269-334	63	76-126	193-208	48-58	119
353.300.110	110	140	145	222	237-302	79	76-126	161-176	48-58	119



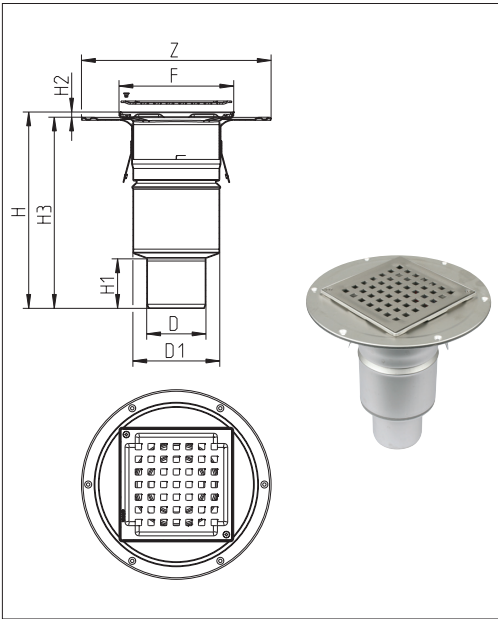
Type No	D	F	H	D1	H1
160.300.050	50	145	193	110	60
160.300.075	75	145	198	110	63
160.300.110	110	145	91	110	79



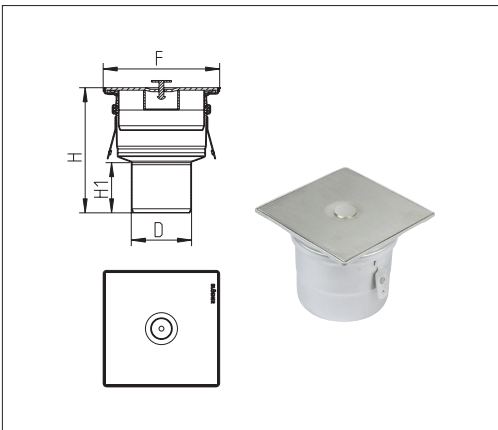
Type No	D	D1	G	Z	H	H1
260.300.50	50	110	155	222	203	60
260.300.075	75	110	155	222	208	63
260.300.110	110	110	155	222	101	80



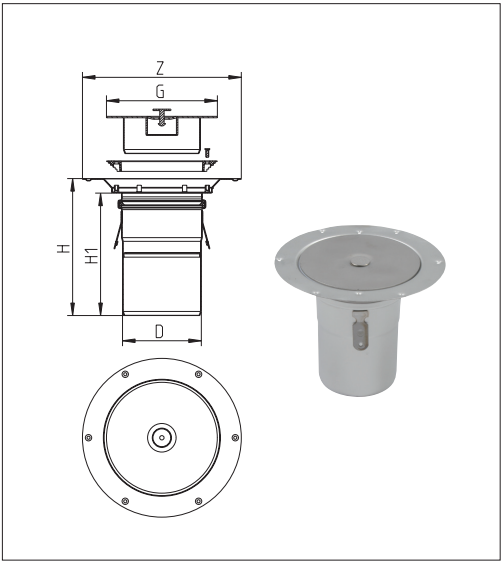
Type No	D	F	H	H1	H4	W2
161.303.110	110	145	153	141	59	107



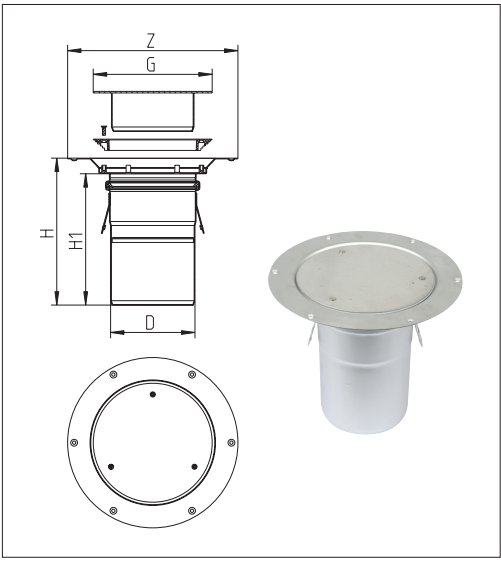
Type No	D	D1	Z	F	H	H1	H2	H3
360.300.050	50	110	240	145	224-259	60	6.5-21	237
360.300.075	75	110	240	145	249-264	63	6.5-21	242
360.300.110	110	110	240	145	142-157	—	6.5-21	135



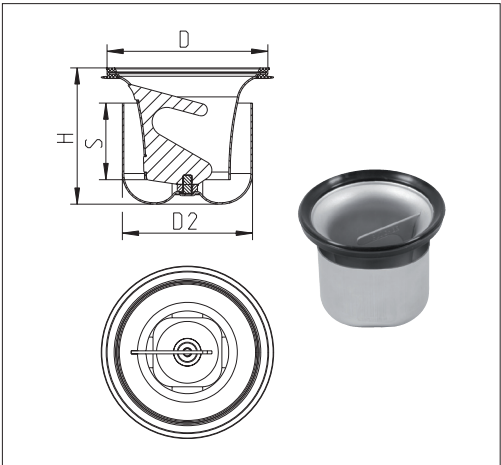
Type No	D	H	H1	F
144.150.075	75	156	63	145
144.150.110	110	120	—	145
144.200.160	160	159	—	200



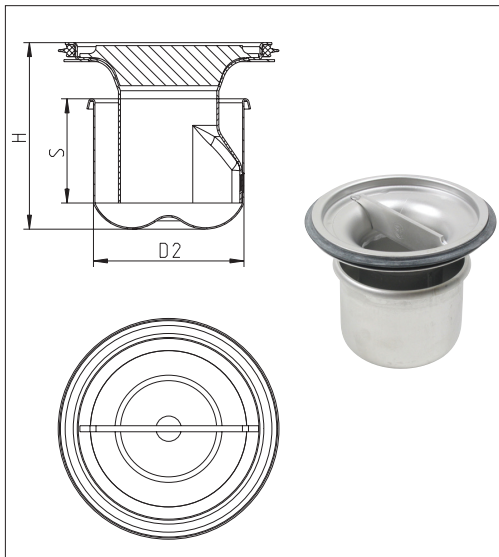
Type No	D	H	H1	Z	G
244.150.110	110	192	171	222	155



Type No	D	H	H1	G	Z
244.155.110	110	192	171	155	222

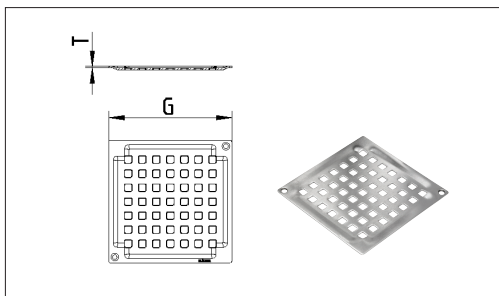


Type No	S	H	D2	D
502.050.110	50	89	85	108



Type No	D2	S	H
502.052.110	75	52	93

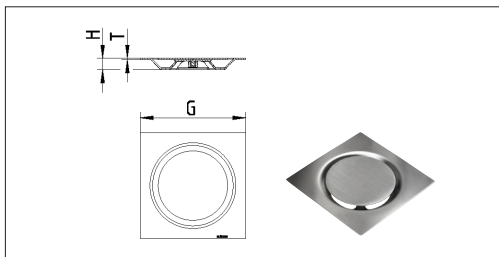
Light duty grating



Type No	G	T
610.155.421	140	2

To suit nominal 155 mm square topped floor drains.

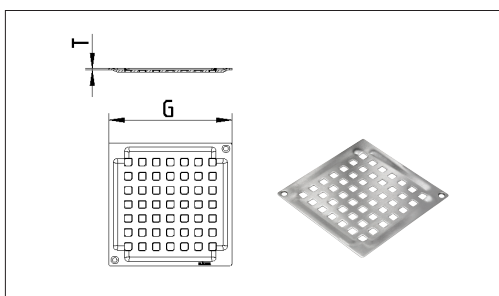
'O' grating



Type No	G	T	H
610.155.521	140	2	16

To suit nominal 155 mm square topped floor drains.

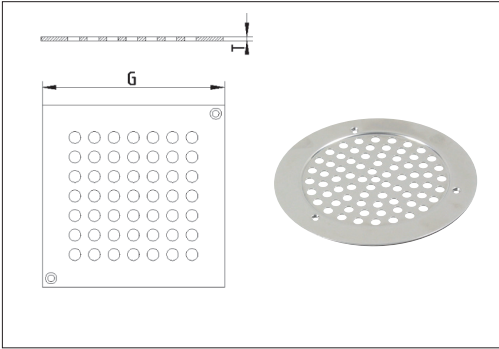
Medium duty grating



Type No	G	T
610.155.425	140	3

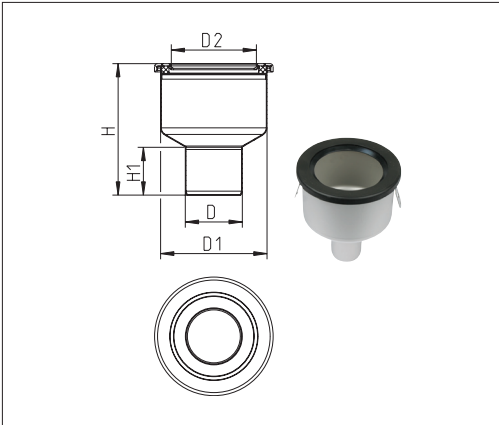
To suit nominal 155 mm square topped floor drains.

Light/Medium duty grating



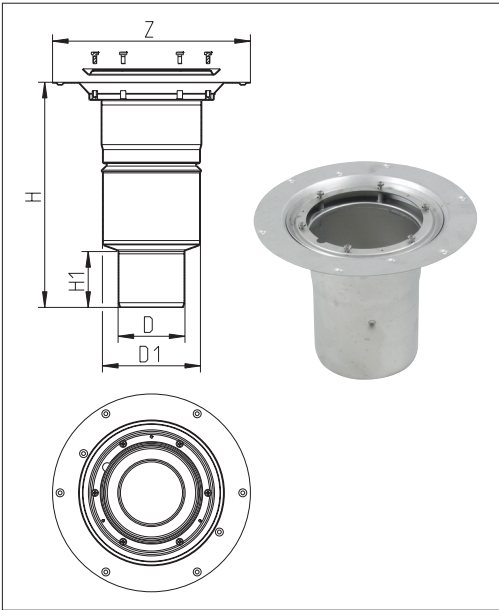
Type No	T	G
610.155.011	1	155

Reducing type

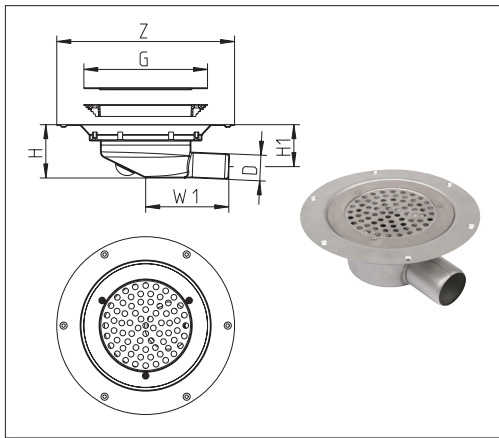


Type No	D	D2	D1	H	H1
150.000.050	50	113	140	177	58
150.000.075	75	113	140	173	63
150.000.110	110	113	140	141	79

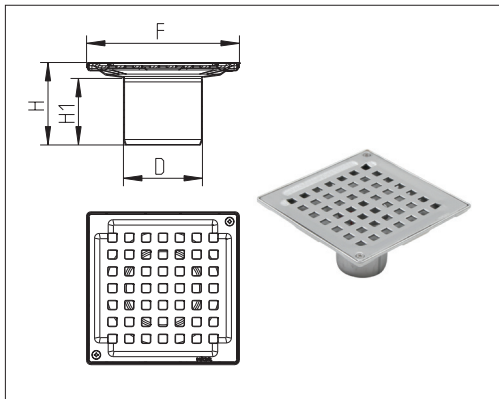
Membrane flange type



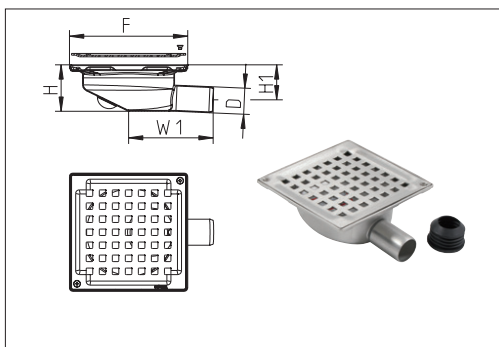
Type No	D	D1	Z	H	H1
440.226.110	75	110	222	253	63
440.226.110	110	110	222	146	—



Type No	D	Z	H	H1	G	W1
281.300.032	32	222	67	52	155	104

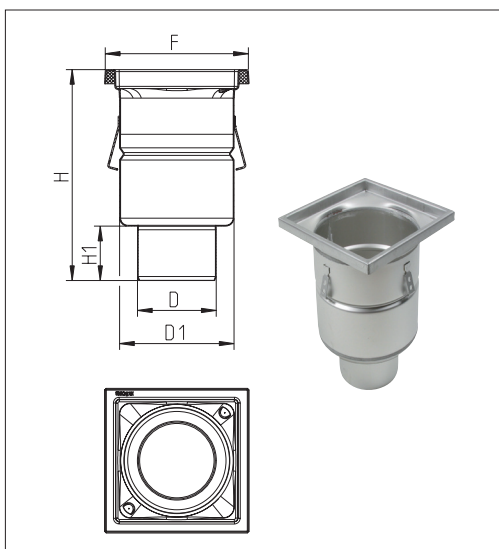


Type No	D	H	H1	F
140.300.032	1 1/4"	39	23	145
140.300.040	40	65	49	145
140.300.050	50	74	58	145
140.300.075	75	78	63	145

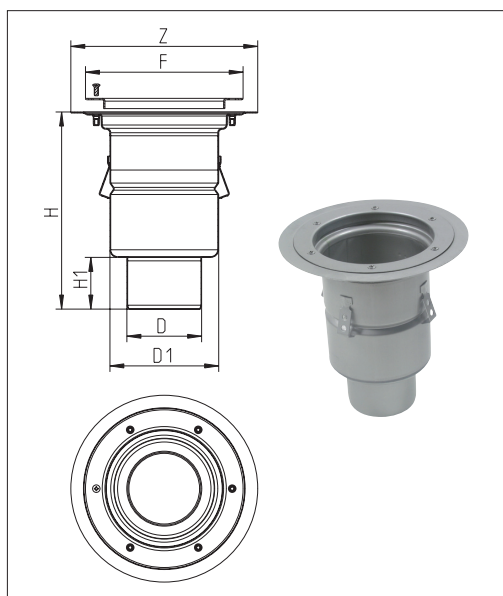


Type No	D	H	H1	F	W1
181.300.032	32/40	57	43	145	104

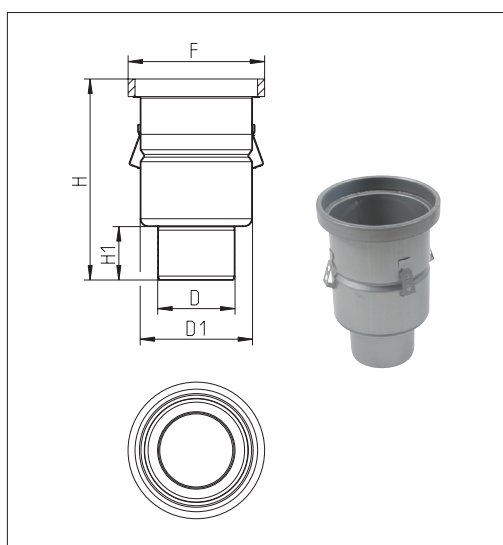
Figure 2 Industrial floor drains (all dimensions in mm)



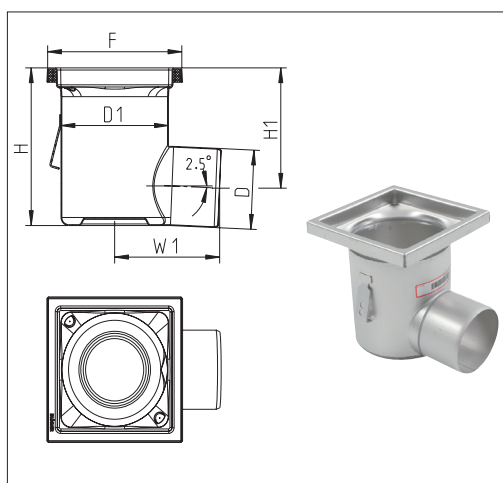
Type No	D	D1	H	H1	F
760.402.075	75	160	284	65	200
760.402.110	110	260	295	76	200
760.401.075	75	160	286	65	250
760.401.110	110	160	297	76	250
760.403.110	110	260	341	76	300
760.403.160	160	260	360	95	300



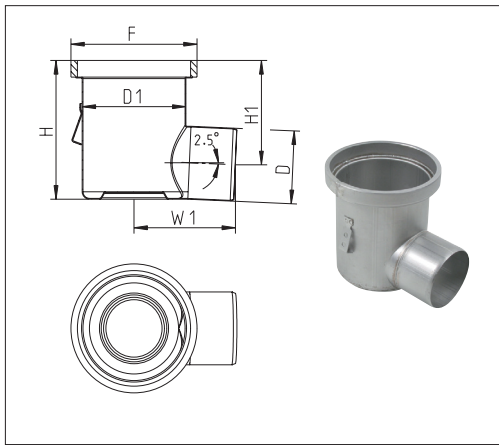
Type No	D	F	Z	D1	H1	H
760.602.075	75	232	275	160	65	279
760.602.110	110	232	275	160	76	290
760.603.110	110	332	375	260	76	336
760.603.160	160	332	375	260	95	355



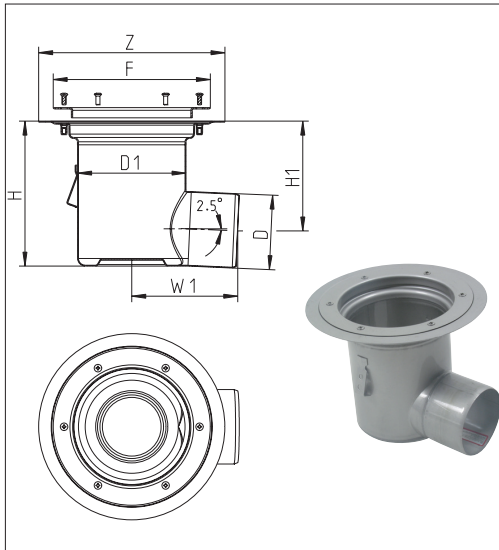
Type No	D	F	D1	H1	H
760.502.075	75	195	160	65	275
760.502.110	110	195	160	76	286
760.503.110	110	295	260	76	327
760.503.160	160	295	260	95	346



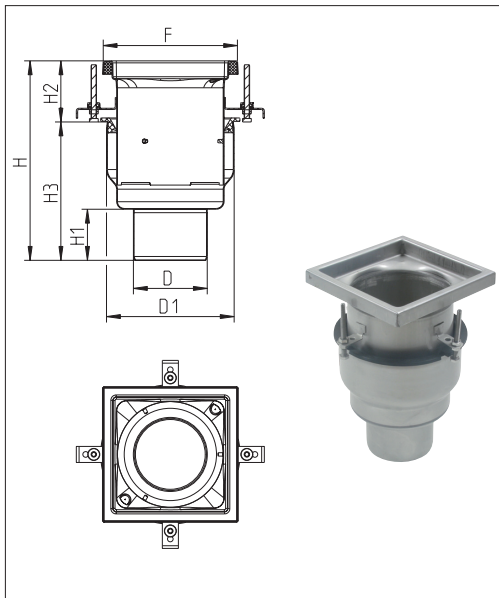
Type No	D	D1	H1	H	W1	F
763.402.075	75	160	182	219	253	200
763.402.110	110	160	167	219	156	200
763.401.075	75	160	184	221	253	250
763.401.110	110	160	169	221	156	250
763.403.110	110	260	193	245	206	300
763.403.160	160	260	177-220	245	341	300



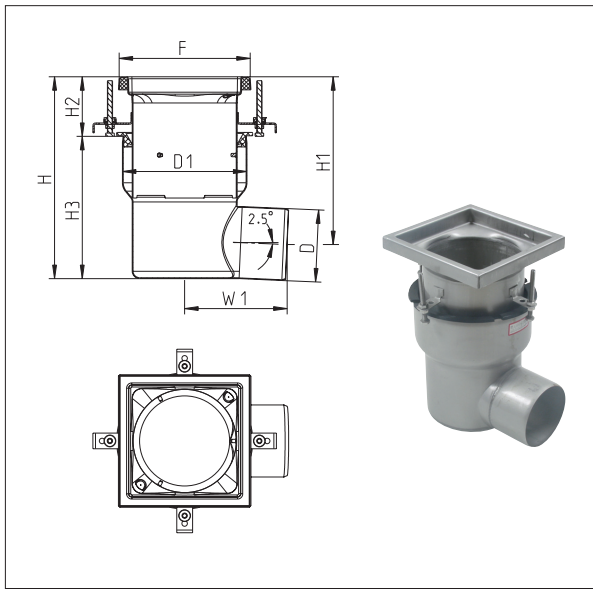
Type No	D	F	D1	H1	H	W1
763.502.075	75	195	160	176	209	253
763.502.110	110	195	160	157	209	156
763.503.110	110	295	260	176	228	206
763.503.160	160	295	260	160-203	228	341



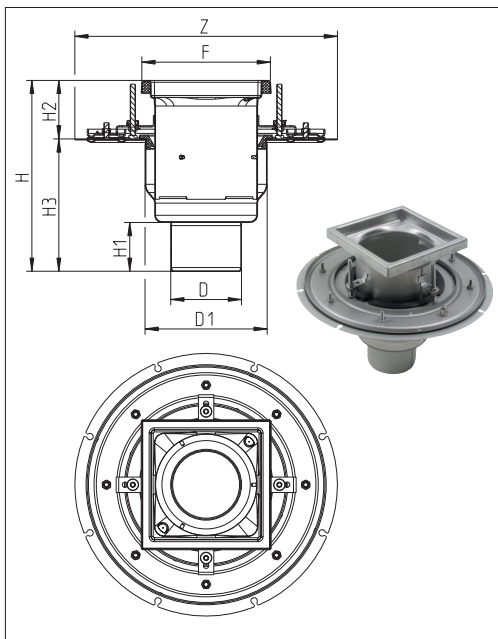
Type No	D	F	Z	D1	H1	H	W1
763.602.075	75	232	275	160	181	214	253
763.602.110	110	232	275	160	162	214	156
763.603.110	110	332	375	260	188	240	206
763.603.160	160	332	375	260	172-215	240	341



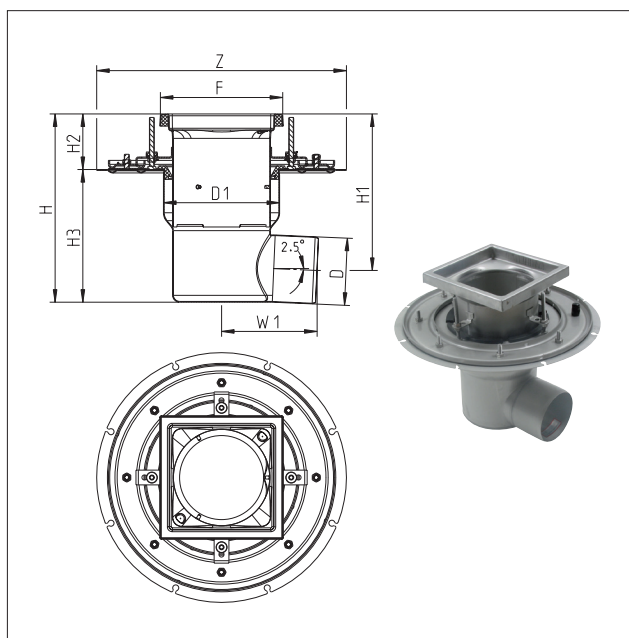
Type No	D	D1	H2	H3	H	H1	F
740.402.075	75	190	91-151	195	286-346	65	200
740.402.110	110	190	91-151	206	297-357	76	200
740.403.110	110	290	91-151	250	342-402	76	300
740.403.160	160	291	91-151	270	361-421	95	300



Type No	D	D1	H2	H3	H1	H	W1	F
743.402.075	75	190	91-151	217	275-335	308-368	253	200
743.402.110	110	190	91-151	217	256-316	308-368	156	200
743.403.110	110	291	91-151	222	261-321	313-375	206	300
743.403.160	160	291	91-151	222	245-348	313-348	341	300

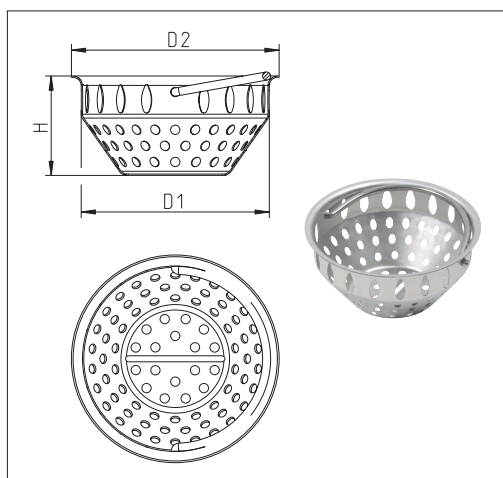


Type No	D	Z	D1	H2	H3	H	H1	F
743.402.075	75	409	190	91-151	195	286-346	65	200
743.402.110	110	409	190	91-151	206	297-357	76	200
743.403.110	110	507	291	91-151	251	342-402	76	300
743.403.160	160	507	291	91-151	270	361-421	95	300

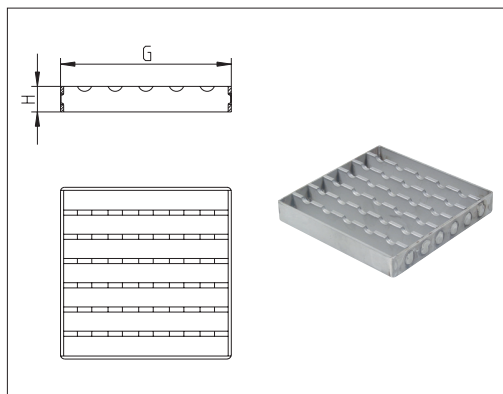


Type No	D	Z	D1	H2	H3	H1	H	W1	F
771.402.075	75	409	190	91-151	217	275-335	308-368	253	200
771.402.110	110	409	190	91-151	217	256-316	308-368	156	200
771.403.110	110	507	291	91-151	222	261-321	313-373	206	300
771.403.160	160	507	291	91-151	222	245-348	313-373	341	300

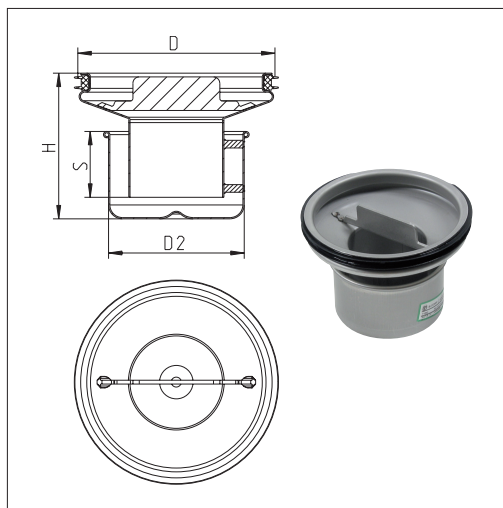
Figure 3 Water traps, grates and filters for industrial drains



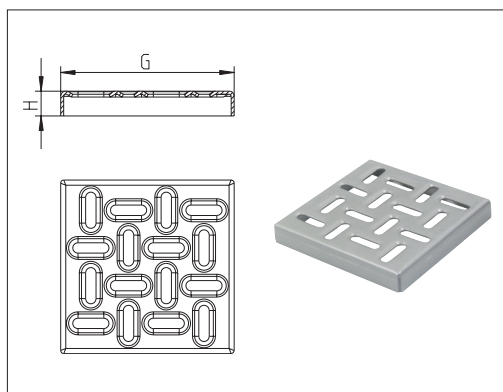
Type No	D1	D2	H
780.002.000.05	140	155	74
780.003.000.05	238	253	75



Type No	H	G
790.168.000.25	25	168
790.218.000.25	25	168
790.268.000.25	40	268



Type No	D2	D	S	H
562.002.000	107	157	52	115
562.003.000	197	297	52	128



Type No	H	G
790.168.000.03	24	168
790.218.000.03	24	218
790.268.000.03	24	268

2 Manufacture

2.1 The drains are cold formed from sheet and seam joints are made using TIG (tungsten inert gas) welding.

2.2 Continuous quality control is carried out throughout the manufacturing process, including visual and dimensional checks and loading tests, in accordance with EN ISO 9001 : 2008.

2.3 Sealing rings are bought in to the Certificate holder's specification.

2.4 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.5 The management systems of Blücher Metal A/S have been assessed and registered as meeting the requirements of EN ISO 9001 : 2008 by the Danish Standards Association (Certificate DSC00035).

3 Delivery and site handling

3.1 Blücher Floor Drains are supplied in cardboard boxes.

3.2 The products are of robust construction but rough handling (eg dropping on concrete) could cause distortion of the seal areas. Any items suffering this damage should be discarded.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Blücher Floor Drains.

Design Considerations

4 General

4.1 Blücher Floor Drains are for internal use to receive internal wastewater from wet floors and/or domestic/industrial appliances on the same floor level.

4.2 The products are for use in domestic, commercial, industrial and public buildings in accordance with BS EN 12056-1 : 2000, BS EN 12056-2 : 2000, BS EN 12056-3 : 2000 and BS EN 12056-5 : 2000 for the conveyance of surface water and domestic sewage as is permitted to be discharged into public sewers by the Water Industry Act 1991, and surface water and sewage as is permitted and defined by the Sewerage (Scotland) Act 1968 and the Water and Sewerage Services (Northern Ireland) Order 1973.

4.3 It is important for designers, planners, contractors and/or installers to ensure that the installation of the drains is in accordance with the Certificate holder's instructions and the information given in this Certificate.

5 Practicability of installation

The drains are designed to be installed by a competent general builder, or a contractor experienced with this type of product.

6 Mechanical resistance and stability

The drains will have adequate resistance to the likely loadings associated with installation and normal service conditions. Maximum load values are given in Table 1.

Table 1 Grate loadings

Grating type	load type	maximum load weight (kg)
polished wash down/shower outlet gratings	pedestrian	200
3 mm thick industrial gratings	wheel	750
10 mm thick industrial gratings	wheel	4500

7 Hygiene, health and the environment



7.1 The floor drains have satisfactory flow characteristics. The flow capacities are listed in Table 2.

Table 2 Flow capacities of traps⁽¹⁾

Trap type	Flow capacity (l·s ⁻¹) with 20 mm head
562.202.000	2.8–3.3
562.003.000	3.0–7.8

(1) The flow capacity given here is the worst case for the 110 mm and 160 mm outlet drain with the trap, filter basket and grating in place.

7.2 The joints between the product and pipework will not be adversely affected by thermal movement when correctly made.

7.3 The joints between the product and pipework will remain watertight under conditions of pipeline movement in excess of those expected to occur in normal good drainage practice.

8 Safety in use

8.1 The products are free from sharp edges that can impair performance or cause injury to persons.

8.2 The gratings have apertures suitable for adequate performance and safety.

9 Maintenance

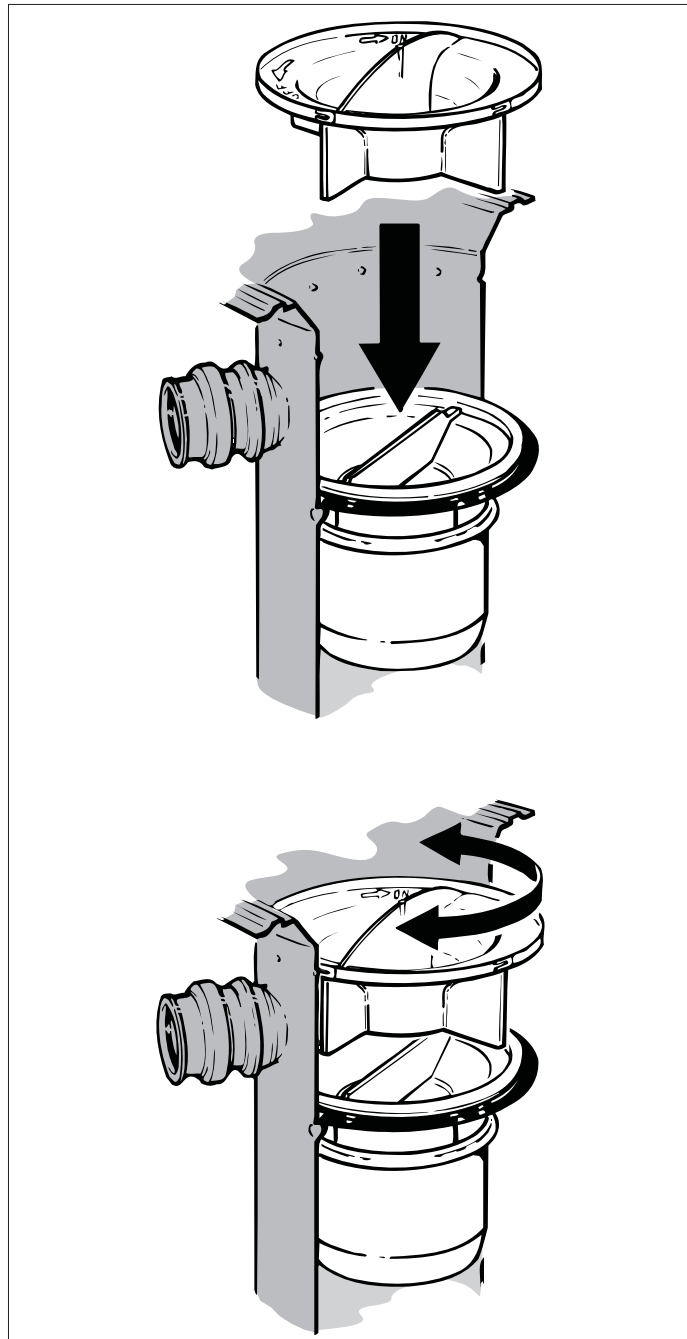


9.1 Where required, sections of the system can be removed and replaced.

9.2 With the traps removed the pipework to the drains can be rodded using either cane or polypropylene rods with a cleaning coil head.

9.3 The removable traps can be readily cleaned (see Figure 4).

Figure 4 Removable water trap



10 Durability



10.1 When used within the conditions and recommendations given in this Certificate, the products will have adequate durability, with a life in excess of 50 years.

10.2 The products will have adequate resistance to the temperatures likely to occur in the effluents defined in this Certificate.

10.3 The stainless steel products will be unaffected by those types and quantities of chemicals likely to be found in waste water from wet floors or effluents from domestic or industrial appliances.

11 Reuse and recyclability

The stainless steel material can be recycled.

Installation

12 General

12.1 Installation of Blücher Floor Drains must be carried out in accordance with the Certificate holder's fixing instructions and BS EN 12056-1, BS EN 12056-2, BS EN 12056-3 and BS EN 12056-5 : 2000.

12.2 Floors fitted with Blücher Floor Drains must be designed to allow the water to flow freely to the gratings and incorporate an effective damp-proof membrane in accordance with CP 102 : 1973, BS 8102 : 1990 and BS 8215 : 1991.

13 Procedure

13.1 Drain outlet spigot ends are slightly chamfered to facilitate making the joints. To make the joint, the spigot end must be smeared with lubricant and the pipe pushed fully home into the socket and withdrawn by 2 mm.

13.2 If Blücher EuroPipe is used (see Product Sheet 2) and requires trimming, the pipe must cut with either the Blücher cutting and bevelling tool or a fine-toothed metal saw. When a saw is used the pipe end should be cut square, deburred and chamfered prior to jointing.

13.3 It is important to ensure that EuroPipe pipes are adequately supported at every connection at a maximum spacing of 3 m. Additional brackets are required at junction positions and changes of direction.

13.4 Connections to other pipe materials (eg vitrified clay, cast iron) are possible, being either compatible or by the use of adaptors.

Technical Investigations

14 Tests

Tests were carried out to determine:

- dimensional accuracy
- ease of jointing
- resistance to loading
- flow capacity
- watertightness.

15 Investigations

15.1 An evaluation of data was made to assess:

- impact resistance
- flow characteristics
- resistance to chemicals
- practicability of installation
- ease of cleaning
- effect of elevated temperatures
- durability.

15.2 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 8102 : 1990 *Code of practice for protection of structures against water from the ground*

BS 8215 : 1991 *Code of practice for design and installation of damp-proof courses in masonry construction*

CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*

BS EN 10095 : 1999 *Heat resisting steels and nickel alloys*

BS EN 12056-1 : 2000 *Gravity Drainage Systems inside Buildings — General and performance requirements*

BS EN 12056-2 : 2000 *Gravity Drainage Systems inside Buildings — Sanitary pipework, layout and calculation*

BS EN 12056-3 : 2000 *Gravity Drainage Systems inside Buildings — Roof drainage, layout and calculation*

Conditions of Certification

16 Conditions

16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page — no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

16.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

16.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

16.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

16.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.