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Agrément Certificate
86/1751
Product Sheet 1

BLÜCHER DRAINAGE SYSTEM

BLÜCHER FLOOR DRAINS

PRODUCT SCOPE AND SUMMARY OF CERTIFICATE

This Certificate relates to Blücher Floor Drains, for internal use to receive wastewater from wet floors and/or domestic appliances on the same floor level.

AGRÉMENT 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

Strength — the drains will resist the likely loadings in service and during installation (see section 5).

Performance of joints — joints will remain watertight under movement and temperature (see section 7).

Durability — the products are durable (see section 11).



The BBA has awarded this Agrément Certificate to the company named above for the product described herein. This product has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of First issue: 11 June 2009

Originally certified on 16 October 1986

Brian Chamberlain
Head of Approvals — Engineering

Greg Cooper
Chief Executive

The BBA is a UKAS accredited certification body — Number 113. 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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website: www.bbacerts.co.uk

Regulations

In the opinion of the BBA, Blücher Floor Drains, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements of the following Building Regulations:



The Building Regulations 2000 (as amended) (England and Wales)

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, 7.2, 8 and 9 of this Certificate.
Requirement:	H3	Rainwater 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, 7.2, 8 and 9 of this Certificate.
Requirement:	Regulation 7	Materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The use of the products satisfies the requirements of this Regulation. See sections 10.1 to 10.3 and 11 and the <i>Installation</i> part of this Certificate.
Regulation:	9	Building standards — construction
Standard:	3.7	Wastewater drainage
Comment:		The system will meet the relevant requirements of this Regulation, with reference to clauses 3.7.10 ⁽¹⁾ and 3.7.11 ⁽²⁾ . See sections 7.1, 7.2, 8 and 9 of this Certificate. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-domestic).



The Building Regulations (Northern Ireland) 2000 (as amended)

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
Regulation:	B3(2)	Suitability of certain materials
Comment:		The products are acceptable. See sections 10.1 to 10.3 of this Certificate.
Regulation:	N4	Underground foul drainage
Comment:		The system will meet the relevant requirements of this Regulation. See sections 7.1, 7.2, 8 and 9 of this Certificate.
Regulation:	N7	Rain-water drainage
Comment:		See sections 7.1, 7.2, 8 and 9 of this Certificate.

Construction (Design and Management) Regulations 2007

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

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

See section: 1 *Description*.

Non-regulatory Information

NHBC Standards 2008

NHBC accepts the use of Blücher Floor Drains, when installed and used in accordance with this Certificate, in relation to *NHBC Standards*, Chapter 8.1 *Internal services*.

Zurich Building Guarantee Technical Manual 2007

In the opinion of the BBA, Blücher Floor Drains, when installed and used in accordance with this Certificate, satisfy the requirements of the *Zurich Building Guarantee Technical Manual*, Section 3 *Substructure*, Sub-section *Drainage*.

General

This Certificate relates to Blücher Floor Drains for internal use to receive wastewater from wet floors and/or domestic appliances on the same floor level.

The products are for use in domestic, commercial and public buildings in accordance with BS EN 12056-1 to 3 and 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.

The products are installed easily and joints will remain watertight under all normal service conditions.

The products are durable and will have a life in excess of 50 years.

Technical Specification

1 Description

1.1 Blücher Floor Drains are available in the sizes and dimensions shown in Figures 1 to 4 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.

1.3 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.

1.4 Side inlets, where provided, have adaptors to 1¼" or 1½" for push-fit.

1.5 Water traps (50 mm minimum depth of seal) are the removable type and outlets are 50 mm, 75 mm or 110 mm in diameter.

1.6 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, 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.

1.7 Water traps of 52 mm minimum depth for the industrial floor drains are the removable type (see Figure 4).

1.8 The drains are cold formed from sheet and seam joints are made using MIG (metal inert gas) welding.

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

1.10 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 Delivery and site handling

2.1 Blücher Floor Drains are supplied in cardboard boxes.

2.2 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

3 General

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

4 Practicability of installation

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

5 Strength

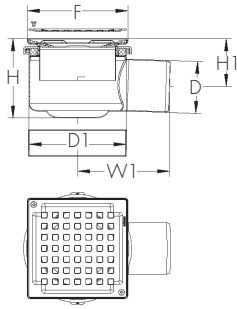
5.1 The drains will have adequate resistance to the likely loadings associated with installation and normal service conditions.

5.2 The polished washdown/shower outlet gratings are suitable for pedestrian loads of up to 200 kg.

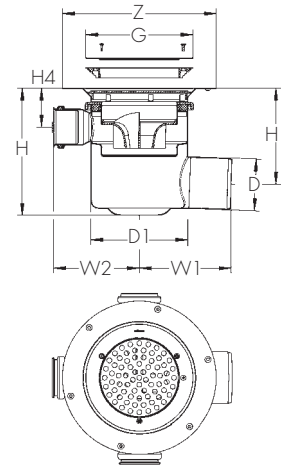
5.3 The 3 mm thick industrial gratings are suitable for wheel loads of up to 750 kg.

5.4 The 10 mm thick industrial gratings are suitable for wheel loads of up to 4500 kg.

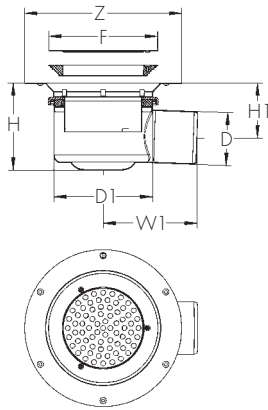
Figure 1 Floor drains (all dimensions in mm)



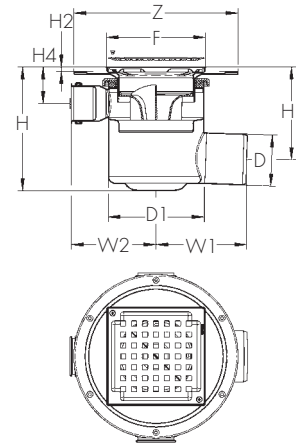
Type No	D	D1	F	H	H1	W1
110.300.050	50	140	145	115-145	81-111	128
110.300.075	75	140	145	115-145	69-99	133



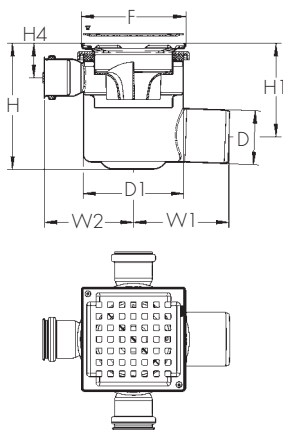
Type No	D	D1	G	Z	H	H1	H4	W1	W2
211.303.075	75	140	155	222	183-193	139-149	57-67	133	124



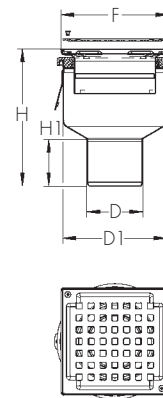
Type No	D	D1	G	Z	H	H1	W1
210.300.050	50	140	155	222	123-153	90-120	128
210.300.075	75	140	155	222	123-153	78-108	133



Type No	D	D1	F	Z	H	H1	H1	H2	H4	W1	W2
311.303.075	75	140	145	240	181-211	136-166	136-166	6.5-21	58-83	133	124



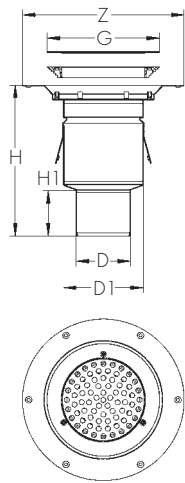
Type No	D	D1	F	H	H1	H4	W1	W2
111.303.075	75	140	145	175-185	130-140	48-58	133	124



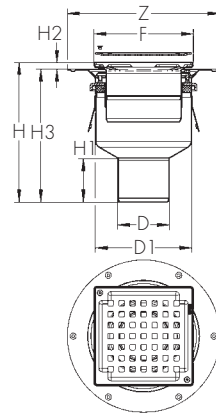
Type No	D	D1	H	H1	F
150.300.050	50	140	189-219	58	145
150.300.075	75	140	185-215	63	145
150.300.110	110	140	152-182	79	145

continued

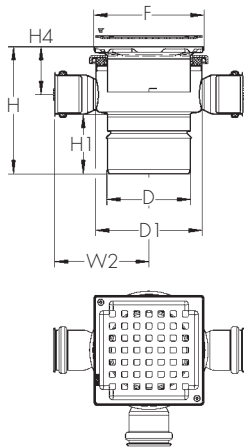
Figure 1 (continued)



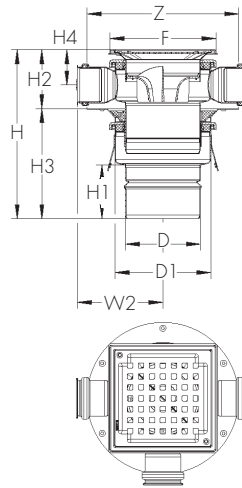
Type No	D	D1	G	Z	H	H1
250.300.050	50	140	155	222	197-227	58
250.300.075	75	140	155	222	193-223	63
250.300.110	110	140	155	222	161-191	79



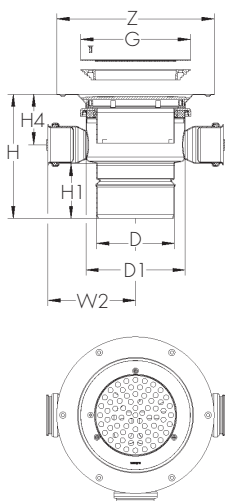
Type No	D	D1	F	Z	H	H1	H2	H3
352.300.110	75	140	145	222	203-258	63	10-50	193-208
352.300.110	100	140	145	222	171-226	79	10-50	161-176



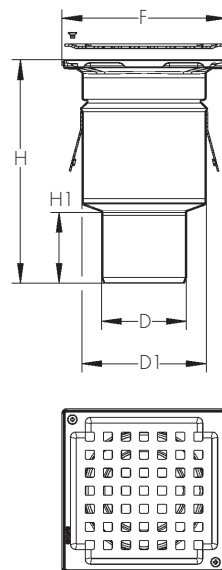
Type No	D	D1	F	H	H1	H4	W2
151.303.110	110	140	145	167-197	79	63-93	124



Type No	D	D1	F	H	H1	H2	H3	H4	Z	W2
353.303.110	110	140	155	239-304	79	80-130	161-176	50-60	222	125



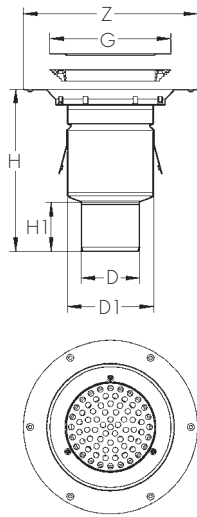
Type No	D	D1	G	Z	H	H1	H4	W2
251.303.110	110	140	155	222	176-206	79	72-102	124



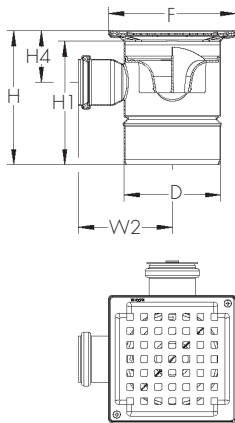
Type No	D	F	H	D1	H1
160.300.050	50	145	193	110	60
160.300.075	75	145	198	110	63
160.300.110	110	145	91	110	79

continued

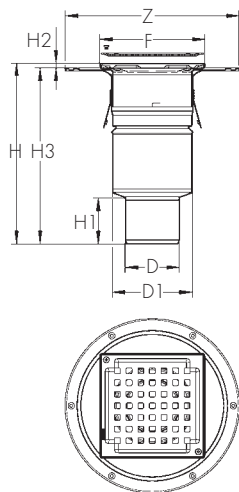
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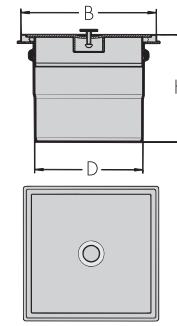
Type No	D	D1	G	Z	H	H1
260.300.50	50	110	155	222	203	60
260.300.075	75	110	155	222	208	63
260.300.110	110	110	155	222	101	80



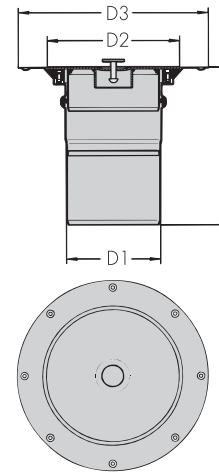
Type No	D1	F	H	H1	H4	W2
161.303.110	110	145	153	141	59	107



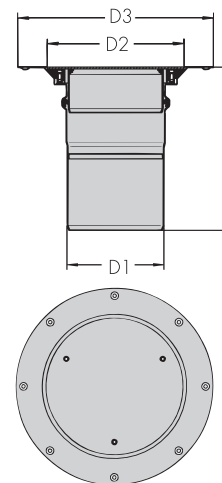
Type No	D	D1	Z	F	H	H1	H2	H3
360.300.050	50	110	240	145	224-259	60	6.5-21	237
360.300.075	75	110	240	145	249-264	63	6.5-21	242
360.300.410	110	110	240	145	142-157	—	6.5-21	135



Type No	D	B	H	Type
144.150.110 S	110	155	120	pull nipple
144.155.110 S	110	155	120	screw fixed
144.155.110.10 S	110	155	167	heavy duty
144.200.160.S	160	200	159	pull nipple
144.205.160 S	160	200	159	screw fixed



Type No	D1	D2	D3	H	Type
244.150.110	110	155	222	185	pull nipple

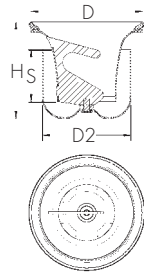


Type No	D1	D2	D3	H	Type
244.155.110	110	155	222	185	screw fixed

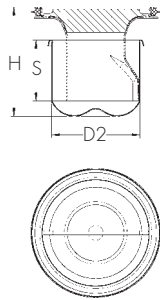
For clean room applications consult Certificate holder's technical services department. Tel: 01937 838007.

continued

Figure 1 (continued)

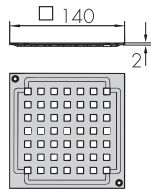


Type No	S	H	D2	D
502.050.110	50	93	85	108



Type No	D2	S	H
502.052.110	75	52	93

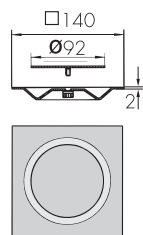
Light duty grating



Type No	Description
610.155.421	screw lock grating (2 mm)
610.155.421 BP	screw lock blank plate (2 mm)

To suit nominal 155 mm square topped floor drains.

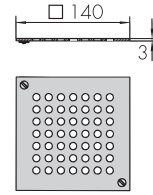
'O' grating



Type No	Description
610.155.521	'O' grating

To suit nominal 155 mm square topped floor drains.

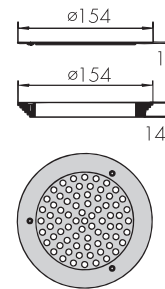
Medium duty grating



Type No	Description
610.155.425	screw lock grating (3 mm)

To suit nominal 155 mm square topped floor drains.

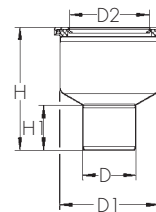
Light/Medium duty grating



Type No	Description
620.155.011	screw lock grating (1 mm)
620.155.011 BP	screw lock blank plate (1 mm)
620.155.021	screw lock grating (2 mm) ⁽¹⁾
620.155.000	nylon clamping ring only

(1) Not illustrated.

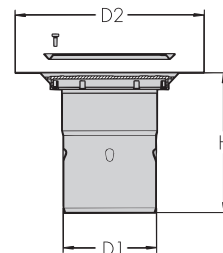
Reducing type



Type No	D	D1	D2	H1	H
150.000.050	50	140	140 ⁽¹⁾	58	189-219
150.000.075	75	140	113 ⁽²⁾	63	173
150.000.110	110	140	145 ⁽¹⁾	79	152-182

(1) Circular grating. (2) Square grating.

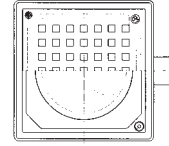
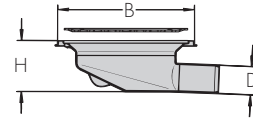
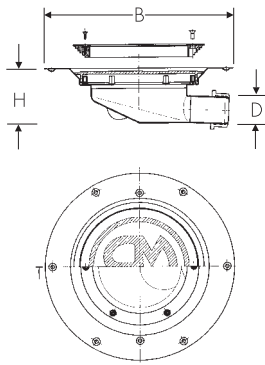
Membrane flange type



Type No	D1	D2	H
440.226.110	110	222	164

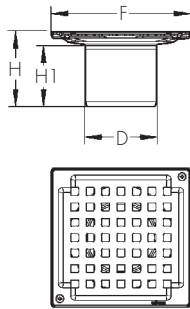
continued

Figure 1 (continued)



Type No	B	D	H
181.300.042	155	32	58

Type No	B	D	H
281.300.050	222	32	65



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

Figure 2 Removable water trap

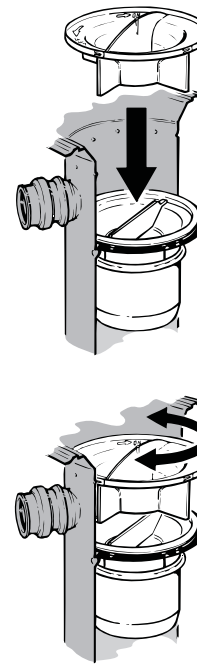
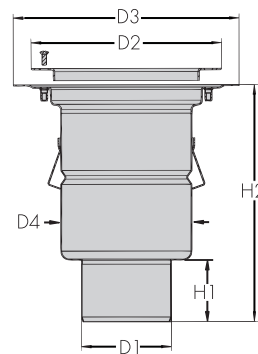
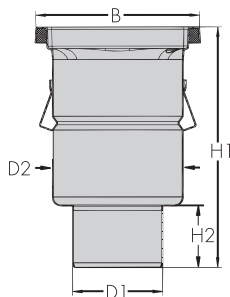


Figure 3 Industrial floor drains (all dimensions in mm)

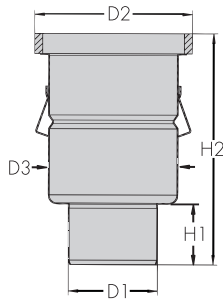


Type No	D1	D2	H1	H2	B
760.402.110	110	160	294	75	200
760.403.110	110	260	340	75	300
760.403.160	160	260	360	95	300

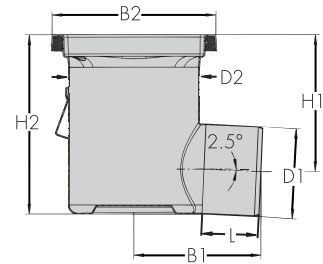
Type No	D1	D2	D3	D4	H1	H2
760.602.110	110	232	275	160	75	289
760.603.110	110	332	375	260	75	335
760.603.160	160	332	375	260	95	355

continued

Figure 3 (continued)

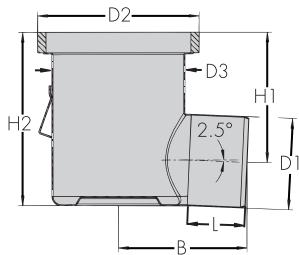


Type No	D1	D2	D3	H1	H2
760.502.110	110	195	160	75	285
760.503.110	110	295	260	75	326
760.503.160	160	295	260	95	346

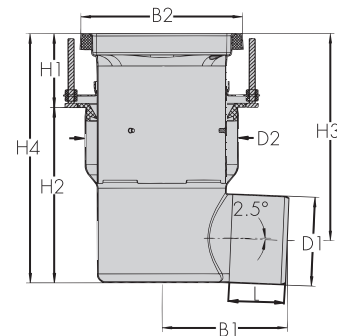


Type No	D1	D2	H1	H2	B1	B2	L
763.402.110	110	160	167	219	155	200	70
763.403.110	110	260	193	245	205	300	70
763.403.160*	160	260	171	245	336	300	93

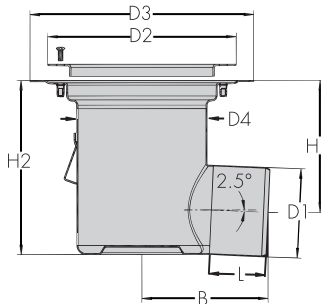
*Through use of adaptor Type No 850.110.160



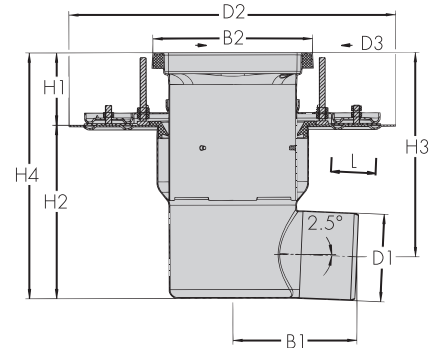
Type No	D1	D2	D3	H1	H2	B	L
763.502.110	110	195	160	157	209	155	70
763.503.110	110	295	260	176	228	205	70
763.503.160*	160	295	260	155	228	336	93



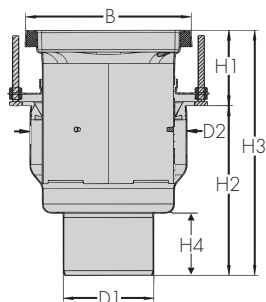
Type No	D1	D2	H1	H2	H3	H4	B1	B2	L
743.402.110	110	199	91-151	217	256-316	308-368	155	200	70
743.403.110	110	293	91-151	222	261-321	313-373	205	300	70
743.403.160*	160	293	91-151	245	256-305	313-373	336	300	93



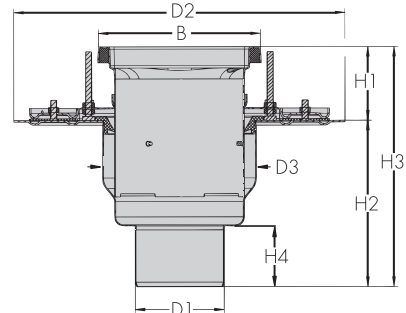
Type No	D1	D2	D3	D4	H1	H2	B	L
763.602.110	110	232	275	160	162	214	155	70
763.603.110	110	332	375	260	188	240	205	70
763.603.160*	160	332	375	260	172	240	336	93



Type No	D1	D2	D3	H1	H2	H3	H4	B1	B2	L
771.402.110	110	409	190	91-151	217	256-316	308-368	155	200	70
771.403.110	110	507	293	91-151	222	261-321	313-373	205	300	70
771.403.160*	160	507	293	91-151	222	261-321	313-373	336	300	93



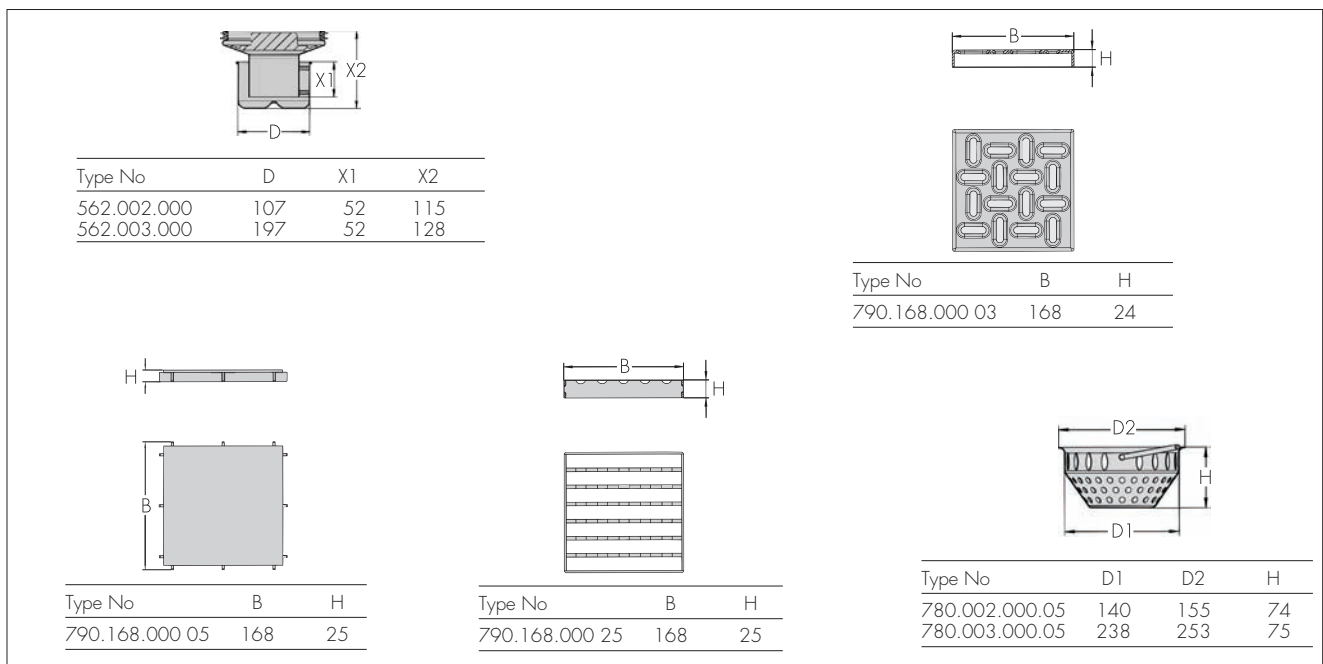
Type No	D1	D2	H1	H2	H3	H4	B
740.402.110	110	190	91-151	205	296-356	75	200
740.403.110	110	293	91-151	250	341-401	75	300
740.403.160	160	293	91-151	270	361-421	95	300



Type No	D1	D2	D3	H1	H2	H3	H4	B
775.402.110	110	409	190	91-151	205	296-356	75	200
775.403.110	110	507	293	91-151	250	341-401	75	300
775.403.160*	160	507	293	91-151	270	361-421	95	300

*Through use of adaptor Type No 850.110.160

Figure 4 Water traps, grates and filters for industrial drains



6 Flow characteristics

6.1 The floor drainage gullies have satisfactory flow characteristics.

6.2 The flow capacities are listed in Table 1.

Table 1 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 Performance of joints



7.1 The joints will not be adversely affected by thermal movement when correctly made.

7.2 The joints will remain watertight under conditions of pipeline movement in excess of those expected to occur in normal good drainage practice.

8 Resistance to chemicals



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 appliances.

9 Resistance to elevated temperatures



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

10 Maintenance



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

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

10.3 The removable traps are cleaned easily.

11 Durability



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.

Installation

12 General

12.1 Installation must be carried out in accordance with the Certificate holder's fixing instructions and BS EN 12056-1 to 3 and 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 a EuroPipe pipe has to be cut, this must be undertaken 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, etc) are possible, being either compatible or by the use of adaptors.

Additional Information

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 No DSC00035.

Technical Investigations

14 Tests

Tests were carried out to determine:

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

15 Other 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 examined, 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*

BS EN 12056-5 : 2000 *Gravity Drainage Systems inside Buildings — Installation and testing. Instructions for operation, maintenance and use*

EN ISO 9001 : 2008 *Quality systems. Model for quality assurance in design, development, production, installation and servicing*

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 granted only to the company, firm or person named on the front page — no other company, firm or person may hold or claim any entitlement to this Certificate
- 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 and documents referred to in this Certificate are those that the BBA deems to be relevant at the date of issue or re-issue of this Certificate and include any: Act of Parliament; Statutory Instrument; Directive; Regulation; British, European or International Standard; Code of Practice; manufacturers' instructions; or any other publication or document similar or related to the aforementioned.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and the manufacture and/or fabrication including all related and relevant 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 In granting this Certificate, the BBA is not responsible for:

- 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
- individual installations of the product/system, including the nature, design, methods and workmanship of or related to the installation
- the actual works in which the product/system is installed, used and maintained, including the nature, design, methods and workmanship of such works.

16.5 Any information relating to the manufacture, supply, installation, use and maintenance 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 and maintained. It does not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date 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. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the manufacture, supply, installation, use and maintenance of this product/system.