Blucher Australia Pty Ltd

Product Appraisal Report TWA 1007

WATER SERVICES ASSOCIATION OF AUSTRALIA

Industrial Drains

Published – 8th February, 2011

Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak body of the Australian urban water industry. Its 30 members and 31 associate members provide water and wastewater services to approximately 16 million Australians and to many of our largest industrial and commercial enterprises. WSAA membership also includes two members and one associate member from New Zealand.

Urban water service providers have a critical role in ensuring that Australians have access to adequate and high quality water services. As Australia's population continues to grow, with most of this growth occurring in cities, that role becomes increasingly important.

WSAA's vision is for Australian urban water utilities to be valued as leaders in the innovative, sustainable and cost effective delivery of water services. WSAA strives to achieve this vision by promoting knowledge sharing, networking and cooperation amongst members. WSAA identifies emerging issues and develops industry-wide responses. WSAA is the national voice of the urban water industry, speaking to government, the broader water sector and the Australian community.

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2. Executive Summary

BLUCHER Australia provides the ultimate in high quality stainless steel plumbing products for industrial, commercial and residential drainage systems throughout Australia and New Zealand.

Products are individualised by code numbers, with the first three digits indicating drain bowl type, the second set of digits indicating the frame size and the last three digits indicating the outlet outside diameter in millimeters. A similar method is applied to the gratings and filter baskets.

All BLUCHER Industrial Drain production and quality assurance are in accordance with the internationally recognised ISO 9001 standard.

BLUCHER Industrial Drains require little maintenance. In most environments, little or no maintenance is necessary. This would include wet areas, shower rooms and kitchens.

It is recommended that WSAA Members and Associates, subject to any specific requirements of the Member or Associate, accept or authorise the Blucher Australia Pty Ltd product range as detailed in this report for use in sewer networks provided design, installation, acceptance testing and commissioning are in accordance with relevant WSAA Codes, WSAA Member Integrated Codes, and the manufacturer's requirements.

3. Company Overview

BLUCHER Australia provides high quality stainless steel plumbing products for industrial, commercial and residential drainage systems throughout Australia and New Zealand. Over the past 40 years,

Blucher has become one of the world's leading stainless steel drainage products and system specialists.

Blucher Australia is a wholesaler for Blucher Denmark who manufactures all Blucher products. Blucher Australia therefore does not require a QA management system certification to 9001:2000 standards.

Blucher Australia is a wholly subsidiary of Equity & Advisory LTD (EAL). EAL is listed on the stock exchange and complies with all required disclosure documents including financial audit. Most recent accounts are publically listed on the Australian Stock Exchange website www.asx.com.au under (EAL).

4. Scope of this Appraisal

Products are individualised by code numbers, with the first three digits indicating drain bowl type, the second set of digits indicating the frame size and the last three digits indicating the outlet outside diameter in millimeters. A similar method is applied to the gratings and filter baskets.

These drains are used with a number of different accessories to customise the drain to suit the intended use of the product. For example, grating selection is important to the type of loadings that it will be subjected to and the style that suits the type of traffic that will be passing over it.

These specially designed accessories are used within the drain bowl itself for the BLUCHER Industrial Drain system. Each accessory is fitted within the drain bowl, as shown in the sectional diagram. The following table overviews the product range.

		OPTION A	OPTION B	OPTION C	OPTION D
DRAIN BOWL:	Code Number:	760.402.110s	760.403.110s	760.403.160s	766.402.110s
	Size of Top:	200mm square	300mm square	300mm square	200mm square
Full height drain bowls can fit both the filter basket and removable water trap at the same time. 1/2 height drain bowls can only fit the filter basket and must be used with a P-Trap beneath the drain bowl if a trap is required.	Size of Drain Bowl:	Full Height	Full Height	Full Height	1/2 Height
	Floor Type:	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Outlet Size (mm):	110	110	160	110
	Outlet Direction:	Vertical	Vertical	Vertical	Vertical
	3mm Grate	790.168.000.03s	790.268.000.03s	790.268.000.03s	790.168.000.03s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
GRATE (OPTIONS):	Opening Size (mm):	10x35	10x35	10x35	10x35
Only one grate is required per	Flow Area (mm2):	5,257	11,827	11,827	5,257

drain bowl. Each grate type has a different use, flow and load rating. Grate product code shown for each grate type.	10mm Slot Grate	790.168.000.10s	790.268.000.10s	790.268.000.10s	790.168.000.10s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	148x10	248x10	248x10	148x10
	Flow Area (mm2):	5,435	14,144	14,144	5,435
	Mesh Grate	790.168.000.22s	790.268.000.22s	790.268.000.22s	790.168.000.22s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	25x25	25x25	25x25	25x25
	Flow Area (mm2):	22,336	57,609	57,609	22,336
	Cast Grate	790.168.000.60	790.268.000.60	790.268.000.60	790.168.000.60
	Material:	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel
	Opening Size (mm):	Various	Various	Various	Various
	Flow Area (mm2):	14,952	35,893	35,893	14,952
	Ladder Grate	790.168.000.25s	790.268.000.25s	790.268.000.25s	790.168.000.25s
	Material:	316 stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	163x19	128x19	128x19	163x19
	Flow Area (mm2):	22,174	53,805	53,805	22,174
	Wedge Wire Grate	790.168.000.63s	790.268.000.63s	790.268.000.63s	790.168.000.63s
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Opening Size (mm):	21x5	21x5	21x5	21x5
	Flow Area (mm2):	13,817	36,836	36,836	13,817
	Gas Tight Cover	n/a	n/a	n/a	n/a
	Material:				
	Opening Size (mm):				
	Flow Area (mm2):				
FILTER BASKET:	Code Number:	780.200.000.03	780.300.000.03	780.300.000.03	780.200.000.03

	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Volume (mm3):	753,167	1,897,563	1,897,563	753,167
	Hole Size (mm):	3.8 dia.	3.8 dia.	3.8 dia.	3.8 dia.
	No of Holes:	1,789	3,413	3,413	1,789
	Flow Area (mm2):	20,289	38,707	38,707	20,289
REMOVABLE WATER TRAP (OPTION)	Code Number:	562.002.000s	562.003.000s	562.003.000s	n/a
Used instead of a P-Trap when space beneath the drain bowl is not sufficient to fit a P-Trap.	Material:	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.	
	Flow Capacity (L/sec):	2.7 - 3.4 L/s	6.0 - 7.3 L/s	6.0 - 7.3 L/s	
SECONDARY STRAINER:	Code Number:	780.110.002.03	780.110.002.03	780.160.002.03	780.110.002.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Hole Size (mm):	3.8 dia	3.8 dia	3.8 dia	3.8 dia
	No of Holes:	301	301	733	301
	Flow Area (mm2):	3,413	3,413	8,313	3,413
P-TRAP (OPTION):	Code Number:	525.090.110s	525.090.110s	525.090.160s	525.090.110s
	Diameter (mm):	110mm	110mm	160mm	110mm
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Flow Rate (L/sec):	5.0 L/s	5.0 L/s	13.5 L/s	5.0 L/s

		OPTION E	OPTION F	OPTION G	OPTION H
DRAIN BOWL:	Code Number:	766.403.110s	766.403.160s	763.402.110s	763.403.110s
	Size of Top:	300mm square	300mm square	200mm square	300mm square
Full height drain bowls can fit both the filter basket and removable water trap at the same time. 1/2 height drain bowls can only fit the filter basket and must be used with a P-Trap beneith the	Size of Drain Bowl:	1/2 Height	1/2 Height	Full Height	Full Height

drain bowl if a trap is required.					
	Floor Type:	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Outlet Size (mm):	110	160	110	110
	Outlet Direction:	Vertical	Vertical	Horizontal	Horizontal
GRATE (OPTIONS):	3mm Grate	790.268.000.03s	790.268.000.03s	790.168.000.03s	790.268.000.03s
Only one grate is required per drain bowl. Each grate type has a different use, flow and load rating. Grate product code shown for each grate type.	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	10x35	10x35	10x35	10x35
	Flow Area (mm2):	11,827	11,827	5,257	11,827
	10mm Slot Grate	790.268.000.10s	790.268.000.10s	790.168.000.10s	790.268.000.10s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	248x10	248x10	148x10	248x10
	Flow Area (mm2):	14,144	14,144	5,435	14,144
	Mesh Grate	790.268.000.22s	790.268.000.22s	790.168.000.22s	790.268.000.22s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	25x25	25x25	25x25	25x25
	Flow Area (mm2):	57,609	57,609	22,336	57,609
	Cast Grate	790.268.000.60	790.268.000.60	790.168.000.60	790.268.000.60
	Material:	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel
	Opening Size (mm):	Various	Various	Various	Various
	Flow Area (mm2):	35,893	35,893	14,952	35,893
	Ladder Grate	790.268.000.25s	790.268.000.25s	790.168.000.25s	790.268.000.25s

	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	128x19	128x19	163x19	128x19
	Flow Area (mm2):	53,805	53,805	22,174	53,805
	Wedge Wire Grate	790.268.000.63s	790.268.000.63s	790.168.000.63s	790.268.000.63s
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Opening Size (mm):	21x5	21x5	21x5	21x5
	Flow Area (mm2):	36,836	36,836	13,817	36,836
	Gas Tight Cover	n/a	n/a	n/a	n/a
	Material:				
	Opening Size (mm):				
	Flow Area (mm2):				
FILTER BASKET:	Code Number:	780.300.000.03	780.300.000.03	780.200.000.03	780.300.000.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Volume (mm3):	1,897,563	1,897,563	753,167	1,897,563
	Hole Size (mm):	3.8 dia.	3.8 dia.	3.8 dia.	3.8 dia.
	No of Holes:	3,413	3,413	1,789	3,413
	Flow Area (mm2):	38,707	38,707	20,289	38,707
REMOVABLE WATER TRAP (OPTION)	Code Number:	n/a	n/a	562.002.000s	562.003.000s
Used instead of a P-Trap when space beneath the drain bowl is not sufficient to fit a P-Trap.	Material:			316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.
	Flow Capacity (L/sec):			2.7 - 3.4 L/s	6.0 - 7.3 L/s
SECONDARY STRAINER:	Code Number:	780.110.002.03	780.160.002.03	780.110.002.03	780.110.002.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Hole Size (mm):	3.8 dia	3.8 dia	3.8 dia	3.8 dia

	No of Holes:	301	733	301	301
	Flow Area (mm2):	3,413	8,313	3,413	3,413
P-TRAP (OPTION):	Code Number:	525.090.110s	525.090.160s	n/a	n/a
	Diameter (mm):	110mm	160mm		
	Material:	316L stainless steel	316L stainless steel		
	Flow Rate (L/sec):	5.0 L/s	13.5 L/s		

		OPTION I	OPTION J	OPTION K	OPTION L
DRAIN BOWL:	Code Number:	760.502.110s	760.503.110s	760.503.160s	766.502.110s
	Size of Top:	200mm Ø round	300mm Ø round	300mm Ø round	200mm Ø round
Full height drain bowls can fit both the filter basket and removable water trap at the same time. 1/2 height drain bowls can only fit the filter basket and must be used with a P-Trap beneith the drain bowl if a trap is required.	Size of Drain Bowl:	Full Height	Full Height	Full Height	1/2 Height
	Floor Type:	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Outlet Size (mm):	110	110	160	110
	Outlet Direction:	Vertical	Vertical	Vertical	Vertical
GRATE (OPTIONS):	3mm Grate	790.173.000.03s	790.273.000.03s	790.273.000.03s	790.173.000.03s
Only one grate is required per drain bowl. Each grate type has a different use, flow and load rating. Grate product code shown for each grate type.	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	10x35	10x35	10x35	10x35
	Flow Area (mm2):	2,957	10,513	10,513	2,957
	10mm Slot Grate	790.173.000.10s	790.273.000.10s	790.273.000.10s	790.173.000.10s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	71x10	123x10	123x10	71x10
	Flow Area (mm2):	4,747	4,747	8,222	4,747
	Mesh Grate	790.173.000.22s	790.273.000.22s	790.273.000.22s	790.173.000.22s

	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	25x25	25x25	25x25	25x25
	Flow Area (mm2):	18,550	47,269	47,269	18,550
	Cast Grate	790.173.000.60	790.273.000.60	790.273.000.60	790.173.000.60
	Material:	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel
	Opening Size (mm):	Various	Various	Various	Various
	Flow Area (mm2):	12,614	16,934	16,934	12,614
	Ladder Grate	790.173.000.25s	790.273.000.25s	790.273.000.25s	790.173.000.25s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	69x19	96x19	96x19	69x19
	Flow Area (mm2):	17,297	43,992	43,992	17,297
	Wedge Wire Grate	790.173.000.63s	790.273.000.63s	790.273.000.63s	790.173.000.63s
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Opening Size (mm):	21x5	21x5	21x5	21x5
	Flow Area (mm2):	11,546	30,229	30,229	11,546
	Gas Tight Cover	790.173.000.GT	790.273.000.GT	790.273.000.GT	790.173.000.GT
	Material:	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.
	Opening Size (mm):	n/a	n/a	n/a	n/a
	Flow Area (mm2):	n/a	n/a	n/a	n/a
FILTER BASKET:	Code Number:	780.200.000.03	780.300.000.03	780.300.000.03	780.200.000.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Volume (mm3):	753,167	1,897,563	1,897,563	753,167
	Hole Size (mm):	3.8 dia.	3.8 dia.	3.8 dia.	3.8 dia.
	No of Holes:	1,789	3,413	3,413	1,789
	Flow Area (mm2):	20,289	38,707	38,707	20,289
REMOVABLE WATER TRAP	Code Number:	562.002.000s	562.003.000s	562.003.000s	n/a

(OPTION)					
Used instead of a P-Trap when space beneath the drain bowl is not sufficient to fit a P-Trap.	Material:	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.	
	Flow Capacity (L/sec):	2.7 - 3.4 L/s	6.0 - 7.3 L/s	6.0 - 7.3 L/s	
SECONDARY STRAINER:	Code Number:	780.110.002.03	780.110.002.03	780.160.002.03	780.110.002.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Hole Size (mm):	3.8 dia	3.8 dia	3.8 dia	3.8 dia
	No of Holes:	301	301	733	301
	Flow Area (mm2):	3,413	3,413	8,313	3,413
P-TRAP (OPTION):	Code Number:	525.090.110s	525.090.110s	525.090.160s	525.090.110s
	Diameter (mm):	110mm	110mm	160mm	110mm
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Flow Rate (L/sec):	5.0 L/s	5.0 L/s	13.5 L/s	5.0 L/s

		OPTION M	OPTION N	OPTION O	OPTION P
DRAIN BOWL:	Code Number:	766.503.110s	766.503.160s	763.502.110s	763.503.110s
	Size of Top:	300mm Ø round	300mm Ø round	200mm Ø round	300mm Ø round
Full height drain bowls can fit both the filter basket and removable water trap at the same time. 1/2 height drain bowls can only fit the filter basket and must be used with a P-Trap beneith the drain bowl if a trap is required.	Size of Drain Bowl:	1/2 Height	1/2 Height	Full Height	Full Height
	Floor Type:	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors	Concrete and Tiled floors
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Outlet Size (mm):	110	160	110	110
	Outlet Direction:	Vertical	Vertical	Horizontal	Horizontal
GRATE (OPTIONS):	3mm Grate	790.273.000.03s	790.273.000.03s	790.173.000.03s	790.273.000.03s
Only one grate is required per drain bowl. Each grate type has a different use, flow and load rating. Grate product code shown for each grate type.	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	10x35	10x35	10x35	10x35
	Flow Area (mm2):	10,513	10,513	2,957	10,513
	10mm Slot Grate	790.273.000.10s	790.273.000.10s	790.173.000.10s	790.273.000.10s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	123x10	123x10	71x10	123x10
	Flow Area (mm2):	8,222	8,222	4,747	8,222
	Mesh Grate	790.273.000.22s	790.273.000.22s	790.173.000.22s	790.273.000.22s

	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	25x25	25x25	25x25	25x25
	Flow Area (mm2):	47,269	47,269	18,550	47,269
	Cast Grate	790.273.000.60	790.273.000.60	790.173.000.60	790.273.000.60
	Material:	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel
	Opening Size (mm):	Various	Various	Various	Various
	Flow Area (mm2):	16,934	16,934	12,614	16,934
	Ladder Grate	790.273.000.25s	790.273.000.25s	790.173.000.25s	790.273.000.25s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	96x19	96x19	69x19	96x19
	Flow Area (mm2):	43,992	43,992	17,297	43,992
	Wedge Wire Grate	790.273.000.63s	790.273.000.63s	790.173.000.63s	790.273.000.63s
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Opening Size (mm):	21x5	21x5	21x5	21x5
	Flow Area (mm2):	30,229	30,229	11,546	30,229
	Gas Tight Cover	790.273.000.GT	790.273.000.GT	790.173.000.GT	790.273.000.GT
	Material:	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.
	Opening Size (mm):	n/a	n/a	n/a	n/a
	Flow Area (mm2):	n/a	n/a	n/a	n/a
FILTER BASKET:	Code Number:	780.300.000.03	780.300.000.03	780.200.000.03	780.300.000.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Volume (mm3):	1,897,563	1,897,563	753,167	1,897,563
	Hole Size (mm):	3.8 dia.	3.8 dia.	3.8 dia.	3.8 dia.
	No of Holes:	3,413	3,413	1,789	3,413
	Flow Area (mm2):	38,707	38,707	20,289	38,707
REMOVABLE WATER TRAP	Code Number:	n/a	n/a	562.002.000s	562.003.000s

(OPTION)					
Used instead of a P-Trap when space beneath the drain bowl is not sufficient to fit a P-Trap.	Material:			316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.
	Flow Capacity (L/sec):			2.7 - 3.4 L/s	6.0 - 7.3 L/s
SECONDARY STRAINER:	Code Number:	780.110.002.03	780.160.002.03	780.110.002.03	780.110.002.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Hole Size (mm):	3.8 dia	3.8 dia	3.8 dia	3.8 dia
	No of Holes:	301	733	301	301
	Flow Area (mm2):	3,413	8,313	3,413	3,413
P-TRAP (OPTION):	Code Number:	525.090.110s	525.090.160s	n/a	n/a
	Diameter (mm):	110mm	160mm		
	Material:	316L stainless steel	316L stainless steel		
	Flow Rate (L/sec):	5.0 L/s	13.5 L/s		

		OPTION Q	OPTION R	OPTION S	OPTION T
DRAIN BOWL:	Code Number:	760.602.110s	760.603.110s	763.602.110s	763.603.110s
	Size of Top:	200mm Ø round	300mm Ø round	200mm Ø round	300mm Ø round
Full height drain bowls can fit both the filter basket and removable water trap at the same time. 1/2 height drain bowls can only fit the filter basket and must be used with a P-Trap beneith the drain bowl if a trap is required.	Size of Drain Bowl:	Full Height	Full Height	Full Height	Full Height
	Floor Type:	Vinyl floors	Vinyl floors	Vinyl floors	Vinyl floors
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Outlet Size (mm):	110	110	110	110
	Outlet Direction:	Vertical	Vertical	Horizontal	Horizontal
GRATE (OPTIONS):	3mm Grate	790.173.000.03s	790.273.000.03s	790.173.000.03s	790.273.000.03s
Only one grate is required per drain bowl. Each grate type has a different use, flow and load rating. Grate product code shown for each grate type.	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	10x35	10x35	10x35	10x35
	Flow Area (mm2):	2,957	10,513	2,957	10,513
	10mm Slot Grate	790.173.000.10s	790.273.000.10s	790.173.000.10s	790.273.000.10s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	71x10	123x10	71x10	123x10
	Flow Area (mm2):	4,747	8,222	4,747	4,747
	Mesh Grate	790.173.000.22s	790.273.000.22s	790.173.000.22s	790.273.000.22s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel

	Opening Size (mm):	25x25	25x25	25x25	25x25
	Flow Area (mm2):	18,550	47,269	18,550	47,269
	Cast Grate	790.173.000.60	790.273.000.60	790.173.000.60	790.273.000.60
	Material:	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel
	Opening Size (mm):	Various	Various	Various	Various
	Flow Area (mm2):	12,614	16,934	12,614	16,934
	Ladder Grate	790.173.000.25s	790.273.000.25s	790.173.000.25s	790.273.000.25s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	69x19	96x19	69x19	96x19
	Flow Area (mm2):	17,297	43,992	17,297	43,992
	Wedge Wire Grate	790.173.000.63s	790.273.000.63s	790.173.000.63s	790.273.000.63s
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Opening Size (mm):	21x5	21x5	21x5	21x5
	Flow Area (mm2):	11,546	30,229	11,546	30,229
	Gas Tight Cover	790.173.000.GT	790.273.000.GT	790.173.000.GT	790.273.000.GT
	Material:	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.
	Opening Size (mm):	n/a	n/a	n/a	n/a
	Flow Area (mm2):	n/a	n/a	n/a	n/a
FILTER BASKET:	Code Number:	780.200.000.03	780.300.000.03	780.200.000.03	780.300.000.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Volume (mm3):	753,167	1,897,563	753,167	1,897,563
	Hole Size (mm):	3.8 dia.	3.8 dia.	3.8 dia.	3.8 dia.
	No of Holes:	1,789	3,413	1,789	3,413
	Flow Area (mm2):	20,289	38,707	20,289	38,707
REMOVABLE WATER TRAP (OPTION)	Code Number:	562.002.000s	562.003.000s	562.002.000s	562.003.000s

Used instead of a P-Trap when space beneath the drain bowl is not sufficient to fit a P-Trap.	Material:	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.	316L stainless steel with EPDM ring seal.
	Flow Capacity (L/sec):	2.7 - 3.4 L/s	6.0 - 7.3 L/s	2.7 - 3.4 L/s	6.0 - 7.3 L/s
SECONDARY STRAINER:	Code Number:	780.110.002.03	780.110.002.03	780.110.002.03	780.110.002.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Hole Size (mm):	3.8 dia	3.8 dia	3.8 dia	3.8 dia
	No of Holes:	301	301	301	301
	Flow Area (mm2):	3,413	3,413	3,413	3,413
P-TRAP (OPTION):	Code Number:	525.090.110s	525.090.110s	n/a	n/a
	Diameter (mm):	110mm	110mm		
	Material:	316L stainless steel	316L stainless steel		
	Flow Rate (L/sec):	5.0 L/s	5.0 L/s		

		OPTION U	OPTION V	OPTION W	OPTION X
DRAIN BOWL:	Code Number:	760.603.160s	766.602.110s	766.603.110s	766.603.160s
	Size of Top:	300mm Ø round	200mm Ø round	300mm Ø round	300mm Ø round
Full height drain bowls can fit both the filter basket and removable water trap at the same time. 1/2 height drain bowls can only fit the filter basket and must be used with a P-Trap beneith the drain bowl if a trap is required.	Size of Drain Bowl:	Full Height	1/2 Height	1/2 Height	1/2 Height
	Floor Type:	Vinyl floors	Vinyl floors	Vinyl floors	Vinyl floors
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Outlet Size (mm):	160	110	110	160
	Outlet Direction:	Vertical	Vertical	Vertical	Vertical
GRATE (OPTIONS):	3mm Grate	790.273.000.03s	790.173.000.03s	790.273.000.03s	790.273.000.03s
Only one grate is required per drain bowl. Each grate type has a different use, flow and load rating. Grate product code shown for each grate type.	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	10x35	10x35	10x35	10x35
	Flow Area (mm2):	10,513	2,957	10,513	10,513
	10mm Slot Grate	790.273.000.10s	790.173.000.10s	790.273.000.10s	790.273.000.10s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	123x10	71x10	123x10	123x10
	Flow Area (mm2):	8,222	4,747	8,222	8,222
	Mesh Grate	790.273.000.22s	790.173.000.22s	790.273.000.22s	790.273.000.22s
	Material:	316L stainless steel	316L stainless steel	790.273.000.22s	316L stainless steel

	Opening Size (mm):	25x25	25x25	25x25	25x25
	Flow Area (mm2):	47,269	18,550	47,269	47,269
	Cast Grate	790.273.000.60	790.173.000.60	790.273.000.60	790.273.000.60
	Material:	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel	CF-8 stainless steel
	Opening Size (mm):	Various	Various	Various	Various
	Flow Area (mm2):	16,934	12,614	16,934	16,934
	Ladder Grate	790.273.000.25s	790.173.000.25s	790.273.000.25s	790.273.000.25s
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Opening Size (mm):	96x19	69x19	96x19	96x19
	Flow Area (mm2):	43,992	17,297	43,992	43,992
	Wedge Wire Grate	790.273.000.63s	790.173.000.63s	790.273.000.63s	790.273.000.63s
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Opening Size (mm):	21x5	21x5	21x5	21x5
	Flow Area (mm2):	30,229	11,546	30,229	30,229
	Gas Tight Cover	790.273.000.GT	790.173.000.GT	790.273.000.GT	790.273.000.GT
	Material:	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.	316L stainless steel with EPDM O-ring seal.
	Opening Size (mm):	n/a	n/a	n/a	n/a
	Flow Area (mm2):	n/a	n/a	n/a	n/a
FILTER BASKET:	Code Number:	780.300.000.03	780.200.000.03	780.300.000.03	780.300.000.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Volume (mm3):	1,897,563	753,167	1,897,563	1,897,563
	Hole Size (mm):	3.8 dia.	3.8 dia.	3.8 dia.	3.8 dia.
	No of Holes:	3,413	1,789	3,413	3,413
	Flow Area (mm2):	38,707	20,289	38,707	38,707
REMOVABLE WATER TRAP (OPTION)	Code Number:	562.003.000s	n/a	n/a	n/a

Used instead of a P-Trap when space beneath the drain bowl is not sufficient to fit a P-Trap.	Material:	316L stainless steel with EPDM ring seal.			
	Flow Capacity (L/sec):	6.0 - 7.3 L/s			
SECONDARY STRAINER:	Code Number:	780.160.002.03	780.110.002.03	780.110.002.03	780.160.002.03
	Material:	316 stainless steel	316 stainless steel	316 stainless steel	316 stainless steel
	Hole Size (mm):	3.8 dia	3.8 dia	3.8 dia	3.8 dia
	No of Holes:	733	301	301	733
	Flow Area (mm2):	8,313	3,413	3,413	8,313
P-TRAP (OPTION):	Code Number:	525.090.160s	525.090.110s	525.090.110s	525.090.160s
	Diameter (mm):	160mm	110mm	110mm	160mm
	Material:	316L stainless steel	316L stainless steel	316L stainless steel	316L stainless steel
	Flow Rate (L/sec):	13.5 L/s	5.0 L/s	5.0 L/s	13.5 L/s

5. Appraisal Criteria

This Appraisal Report has been compared against the requirements of the WSAA Specification WSA PS – 841 Floor Waste Arrestor

6. Quality Assurance Requirements

The WSAA product appraisal network accepts system (ISO 9001) and product certification by a Certification Body at the manufacturing site of strategic products to appropriate Australian or internationally recognised standards. The Certification Body shall have relevant accreditation by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) or by an equivalent international accreditation system recognised by JAS-ANZ.

The manufacturer Blucher Australia Pty Ltd is ISO9001:2002 compliant.

All BLUCHER Industrial Drain production and quality assurance are in accordance with the internationally recognised ISO 9001 standard. This standard is actively participant at the levels of administrative systems, development and design, purchasing, acceptance inspection, production, inspection of finished goods, stocks, sales, quality assurance and training.

Our products are exposed to a strenuous quality assurance standard to which all products sold have passed. This is covered under the internationally recognised ISO 9001 standard to which BLUCHER operates by. Quality control begins from the supply of material from suppliers through the whole fabrication process to finally the dispatch of product to the customer.

In our case, the products are checked both before dispatch in Denmark and Australia, before any product is allowed to leave for installation. This is done by both electronic and manual methods. Users and installers are still required to inspect all products as a final check prior to installing and using all products.

7. Compliance to the Appraisal Criteria

7.1 Materials of Construction

BLUCHER uses stainless steel exclusively in the manufacturing of our Industrial Drains, which is a form of austenitic chromium-nickel steel.

The designation “stainless’ steel” applies to a number of alloys with different properties. Common to all stainless steels is the fact they contain at least 12% chromium. BLUCHER uses the following grades of austenitic stainless steel:

AISI grade 304, AISI grade 316, AISI grade 316L, AISI grade CF-8 stainless steel.

Austenitic stainless steel contains at least 18% chromium and 8% nickel. In general, corrosion resistance is increased in line with the increased chromium content. Stainless steels with 12-13% chromium have a passive layer strong enough to prevent the steel from rusting when exposed to normal or slightly aggressive media. The alloying element nickel mainly affects the steels structure and mechanical properties. With a sufficiently high content of nickel, the structure of the stainless steel provides improved mechanical properties such as increased impact resistance and ductility, high resistance to thermal stress and an improved ability to weld.

Austenitic stainless steel is acid resistant steel, resisting a number of organic and inorganic acids. However, acid resistant steels are only partially resistant to solutions containing chlorides.

The high tensile strength of stainless steel makes the material resistant to impact damage at all temperatures. Severe blows to the material may in certain cases cause dents, they are however unlikely to fracture the material.

Stainless steel is non-combustible, which means that pipes and drains made of stainless steel may penetrate floor partitions without the need for special fire insulation (eg. intumescent fire collars). Furthermore, no toxic fumes or substances are released from stainless steel in the event of fire.

Due to the very low heat expansion coefficient of stainless steel, BLUCHER Industrial Drains are not adversely affected by temperature fluctuations occurring in drainage installations. There are therefore no special constraints that determine at what temperature BLUCHER products should be stored or installed.

From practical experience in hygiene installations it is documented that bacterial growth on stainless steel is significantly lower than alternative materials (eg. plastics). In addition, an unused piece of stainless steel pipe has a very low surface roughness (K=0.0015mm). This low surface roughness minimises not only bacterial growth, but also the danger of sediments building up which may later lead to blockages.

BLUCHER drainage products are all produced in thin walled stainless steel sheet making the most of the material’s high weight to strength ratio.

All BLUCHER products are chemically descaled and passivated in order to enhance the natural corrosion resistance and provide a uniform surface finish.

7.2 SYNTHETIC RESIN INFIL:

For optimum strength and hygiene, the underside of the drain frame is reinforced with a synthetic resin infill providing rigidity, a high loading capacity and a hygienic structure without any cavities thus preventing bacteria growth. This material called Polyoxymethylene or POM-C

The resin infill is mixed, installed and applied to the underside of the drain bowl frame before arriving in Australia. This forms as a hard solid and is a stable material, appearing light brown in its mixed state. Refer to Appendix F.

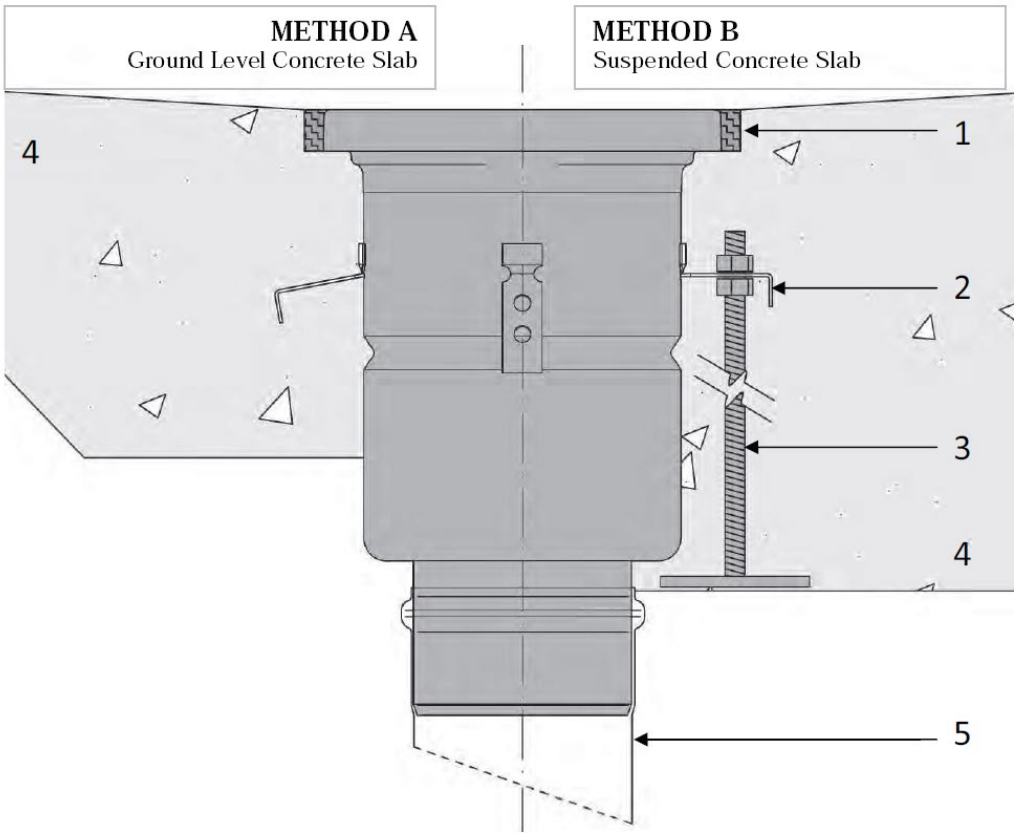
8. Specifications and Drawings

The product specifications and drawings are included in Appendix B.

9. Installation Requirements

9.1 General

The two common options for installing the industrial drains are shown below. The anchor tags, located on the sides of the drain bowl can be used alone, or in conjunction with a threaded rod stand depending on the installation. This is shown diagrammatically as method A or B.



1. 20mm X 10mm wide recess formed in concrete by attaching styrene foam to top. Remove foam after the concrete has set. Recess is then filed with recommended or equivalent sealant.

2. Anchor tags.

3. M10 Threaded Rod Stand.

4. Concrete Slab.

5. Attach Blucher Drainage System (shown) or equivalent drainage plumbing to the drain bowl.

9.2 Installing Instructions

Ensure drainage piping is set up at correct height to suit depth of floor drain chosen. (Refer to technical information for measurements.)

If Industrial drain is being connected to BLUCHER EuroPipe, outlet spigot will push in to EuroPipe collar. For HDPE and PVC use an expansion socket, for Cast Iron use an Ensign joining socket. Refer to BLUCHER Australia for connection to other materials.

Install 10mm thick x 20mm deep styrene foam to outside perimeter of Industrial drain. (Refer to Section 8.0 drain installation diagram)

1. METHOD A: For Ground Level Concrete Slab installations:

   (See previous page for diagram)

   a. Fold Industrial drain anchor tangs out.
   b. Insert Industrial drain into drainage pipe and ensure top of drain is at correct height and is level.
   c. Tie anchor tangs to steel re-enforcement to prevent possible movement or floating during concreting.
   d. Check again Industrial drain is at correct height and is level.
   e. Cover Industrial drain opening with duct tape to ensure concrete etc does not enter drain during construction.

2. METHOD B: For Suspended Concrete Slab installations:
   (See previous page for diagram)

   a. Fold Industrial drain anchor tangs out.
   b. Cut M10 threaded rod to required length and fix to formwork by either drilling through and tightening a M10 nut on both sides, or a fixing plate with M10 nut attached for threaded rod to screw into.
   c. Install 1 x M10 nut to top end of threaded rod.
   d. Pass threaded rod through fixing hole in anchor tag.
   e. Install second M10 nut above anchor tang.
   f. Adjust to required height and ensure top of drain is level.
   g. Tighten top M10 nuts to lock drain in to place
   h. Tie anchor tangs to steel re-enforcement to prevent possible movement during concreting.
   i. Check again Industrial drain is at correct height and is level.
   j. Outlet spigot may have to be lengthened, or boxed out to enable connection to drainage piping.
   k. Cover Industrial drain opening with Duct tape to ensure concrete etc does not enter drain during construction.

l. After concrete is set, and before final floor cover is applied, remove styrene foam from around outside perimeter of Industrial drain. (Refer to Section 8.0)

m. Install Sikaflex®-11FC Polyurethane Sealant as per manufacturer's instructions and ensuring installation procedures are adhered to. Refer to Section 14.2 of this manual

These instructions are based on common installation situations. If conditions, requirements and/or situations vary, contact BLUCHER Australia for advice before installing.

10. Product Maintenance

BLUCHER Industrial Drains require little maintenance. In most environments, little or no maintenance is necessary. This would include wet areas, shower rooms and kitchens.

In specially demanding environments, such as food processors, chemical industries and agriculture, it may be necessary to clean the installation to avoid coating that could lead to corrosion later. Cleaning can be carried out with high-pressure cleaning or high pressure flushing equipment.

Where there is heavy coating, plastic or brass tools can be used. With especially persistent coating, diluted citric acid can be used to loosen the deposit. This must be flushed with large quantities of water afterwards. Cleaning of drains, including the emptying of filter basket, is to be performed at least once every shift and when required.

In cases of difficulty, users should consult BLUCHER (Australia).

11. Identification

Each product is fitted with either an identification sticker or imprinted marking showing information such as the unique BLUCHER logo, material composition, the year of manufacture and the product code of the product.

12. Warranty/Life Expectancy

The products mentioned in this manual have a five year warranty from when the customer places their order for the product. However, we accept no responsibility for misuse, additions or alterations of any kind, change in uses or any other circumstance where the product is not the determination of the fault.

13. Outcomes of WSAA Network Review

13.1 TBA Answer -TBA

14. WSAA Member and Field Reports

At the time of publication a WSAA member field report was not available and this item has been referred as a future works and referenced in part 16 Future Works.

15. Future Works

15.1 TBA

16. Discussion

Examination of all of the submitted documented material provides an expectation that the products described here in sourced and distributed by Blucher Australia Pty Ltd are 'fit for purpose' in the applications described in this report subject to future works items.

17. Report Recommendation

It is recommended that WSAA Members and Associates, subject to any specific requirements of the Member or Associate, accept or authorise the Blucher Australia Pty Ltd product range as detailed in this report for use in sewer networks provided design, installation, acceptance testing and commissioning are in accordance with relevant WSAA Codes, WSAA Member Integrated Codes, and the manufacturer's requirements.

18. Disclaimer

This Appraisal Report is issued by the Water Services Association of Australia Ld. on the understanding that :

a) This appraisal applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this appraisal.

b) To maintain the recommendations of this appraisal any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the appraisal report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

c) WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

d) The following information explains a number of very important limits on your ability to rely on the information in this Product Appraisal Report. Please read it carefully and take it into account when considering the contents of this Product Appraisal Report

e) Any inquiries regarding this report should be directed to the Appraisal Project Manager, Grant Leslie, Phone: 02 9221 5966 - E-mail grant.leslie@wsaa.asn.au

18.1 Issue of Report

This Product Appraisal Report (Report) has been published and/or prepared by the Water Services Association of Australia, Inc and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher[s] and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

18.2 Limits on Reliance on Information and Recommendations

18.3 Disclaimer of liability

Neither the Publisher[s] nor any person involved in the preparation of the Report accept[s] any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do any thing) relating in any way to the Report or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Report or any errors or omissions.

18.4 Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith. However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher[s].

This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it (Product). The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

18.5 No updating

Neither the Publisher[s] nor any person involved in the preparation of this Report [has][have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher[s] or the Product or any other matter.

18.6 No warranty

The Publisher[s] do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

Appendix A Product Specifications

PRODUCT SPECIFICATION

WSA PS – 841 FLOOR WASTE ARRESTOR

841.1 SCOPE

This specification is intended to provide a technical specification for the appraisal of floor waste arrestors.

841.2 REQUIREMENTS

a) Floor waste arrestors must have WaterMark Certification to AS 3500:2003 – *Plumbing and Drainage*, and comply with the principals of the following standards:
   i. AS 5200 - 2005 – *Procedures for certification of plumbing and drainage products*,
   ii. AS/NZ 4494:1998 – *Discharge of commercial and industrial liquid waste to sewer – General performance requirements.*
   iii. AS 3996:2006 – Access Covers and Grates – Class D (Third party certification or an engineers certificate must be provided)

b) A removable basket must be supplied for use in conjunction with a fixed screen and/or a failsafe cut-off mechanism

c) The fixed screen must be in place or failsafe mechanism used below the removable basket. The fixed screen and or the failsafe cut-off mechanism must be robust to prevent its removal and intentional damage or bypass.

d) The basket should have a handle or other group to allow easy removal from the apparatus.

e) The design of the top of the basket and apparatus should be such that the waste water flow will be into the basket rather than down the side of the basket.

f) The flow rate through the removable basket in situ with the fixed screen must comply with AS/NZS 3500:2003 minimum waterway area (mm^2). Where the grating has a waterway less than that identified in Table 1, the flow rate is to be greater than the maximum flow rate from a tap outlet as specified in AS/NZS 3500:2003

Table 1 Minimum Waterway Area (mm^2)

Floor Outlet Nominal Size (DN)	Minimum Waterway Area (mm^2)
32	250
40	450
50	800
65	800
80	800
90	1000
100	1200
150	2000

g) The hole size for the basket and fixed screen must not be greater than 4 mm
h) Replacement screens must be available as part of the product range
i) The surface of the device including the basket must not have any sharp edges
j) The size of the basket must be sufficiently greater than a standard Floor strainer and be suitable to capture solids. The basket should hold at minimum of 0.2 L of strained material.
k) The mode of operation of the in Floor basket trap shall be such that it can be easily mastered by maintenance personnel.
l) The number and size/dimension of the holes is required for both the fixed screen and the removable basket.

841.3 FORMAT OF THE APPLICATION AND SUPPORTING INFORMATION

The appraisal application is to be presented in both hard and soft copy. The hard copy should be contained in a 3 ring binder and the soft copy on either a USB storage device or CD in files that are no larger than 2MB in size.

Your application should address the following in the order shown below:

a) Introduction
    a. An overview of the manufacturer and or distributor
    b. Overview of the product

b) Quality control
    a. Quality Management System Certification
    b. Evidence of conformance with the requirements (800.2) of this Specification
    c. Any additional approvals
    d. Any additional testing programmes and results.

c) Applicability
    a. Waste water generation activity applicable to the product
    b. Provide a product schedule of all products in the range (e.g. 32mm to 150mm), which includes sizing, maximum nominal flow rate (litres/sec), and operational weight (kg) of each model.

d) Specifications and Drawings
    a. Detailed scale drawings of all components of the product in sufficient detail to permit accurate determination of all relevant volumes, internal/external diameters and air spaces, pipe connections, arrangement and dimensions of

screens and any other component essential to the operation of the product. All drawings are to be in millimetres.

b. Materials of construction are to be provided.
c. Detailed of the products means of connection is to be provided

e) Installation Requirements
   a. Details of the installation requirements for the product range is to be supplied, including, but not limited to product handling,
   b. Location guidance for installations,
   c. Details on any building code requirements
   d. Drainage diagram for connection to discharge pipe work
   e. Any non-standard installation applications.

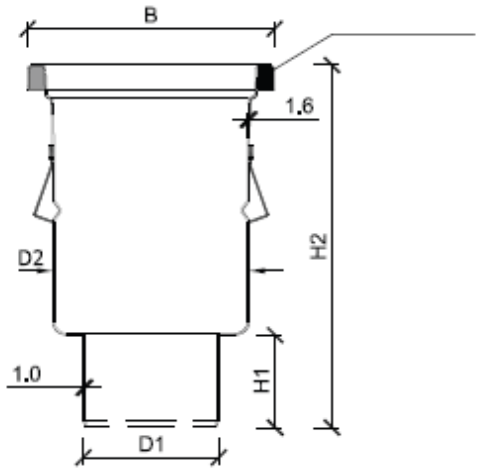
f) Operation and Maintenance
   a. Operating Manual
   b. Maintenance schedule detailing all maintenance procedures and frequency
   c. Cleaning procedures

g) Identification
   a. Compliance Plate – A compliance plate must be fitted to each unit, constructed of a robust and durable material, placed in a location where it will remain visible after installation and legible for the life of the unit. The compliance plate must be fitted before leaving the factory and must contain the following information:
      i. Brand or Manufacturers name
      ii. Contact phone number of the manufacturer
      iii. Model Number
      iv. WSAA Appraisal Number
      v. Date of Manufacture
      vi. Rating per day

h) Warranty
   a. The product is to have a warranty of a minimum of 5 years

Documentary evidence of all aspects of this technical specification will be required to be provided for consideration by the WSAA product appraisal committee. The product appraisal committee is made up of technical experts drawn from WSAA members.

Appendix B Standard Drawings



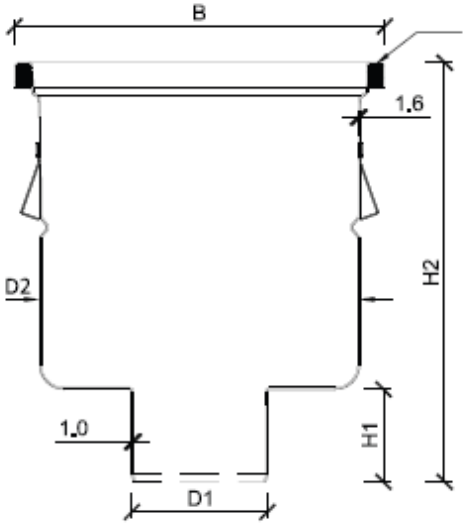
POLYOXYMETHYLENE IN FILL (SECTION 10.1)

NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL

200mm SQUARE INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

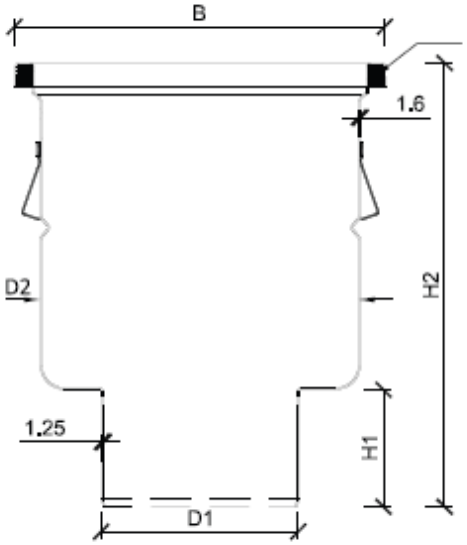
STANDARD HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
760.402.110 S	110Ø	160Ø	75mm	294mm	200mm



POLYOXYMETHYLENE IN FILL (SECTION 10.1)

300mm SQUARE INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
760.403.110 S	110Ø	260Ø	75mm	340mm	300mm



POLYOXYMETHYLENE IN FILL (SECTION 10.1)

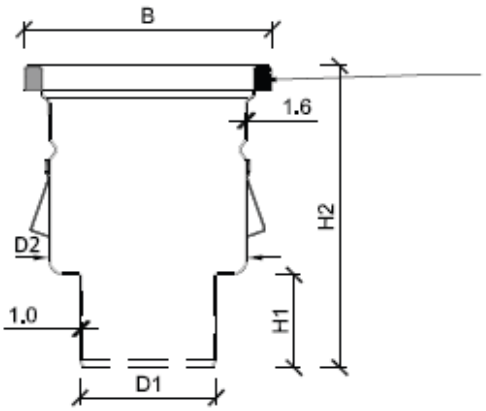
300mm SQUARE INDUSTRIAL FLOOR WASTE WITH 160Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
760.403.160 S	160Ø	260Ø	95mm	360mm	300mm

SCALE: 1:5

NOTES;

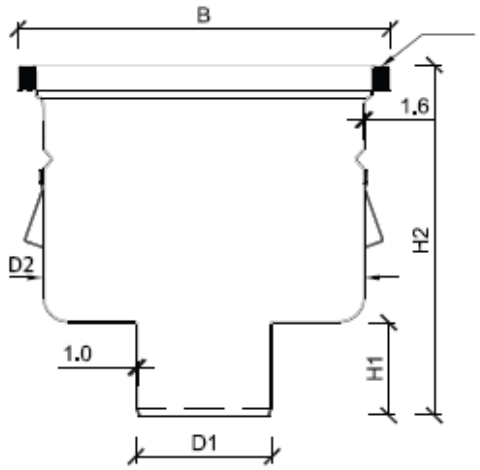
BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL



POLYOXYMETHYLENE IN FILL (SECTION 10.1)

200mm SQUARE INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

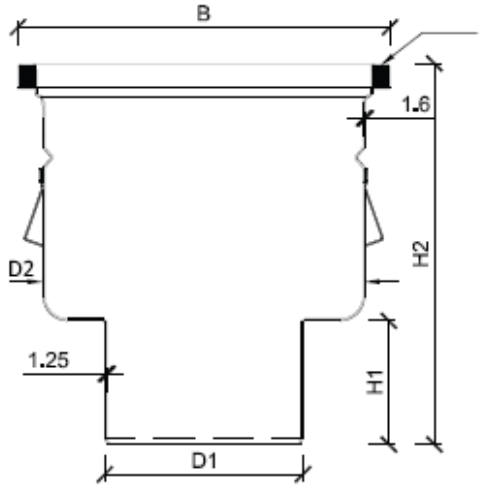
SHALLOW HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
766.402.110 S	110Ø	160Ø	75mm	244mm	200mm



POLYOXYMETHYLENE IN FILL (SECTION 10.1)

300mm SQUARE INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
766.403.110 S	110Ø	260Ø	75mm	283mm	300mm

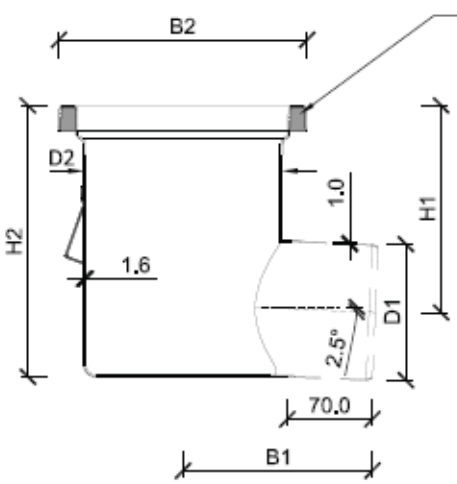


POLYOXYMETHYLENE IN FILL (SECTION 10.1)

300mm SQUARE INDUSTRIAL FLOOR WASTE WITH 160Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
766.403.160 S	160Ø	260Ø	95mm	303mm	300mm

SCALE: 1:5



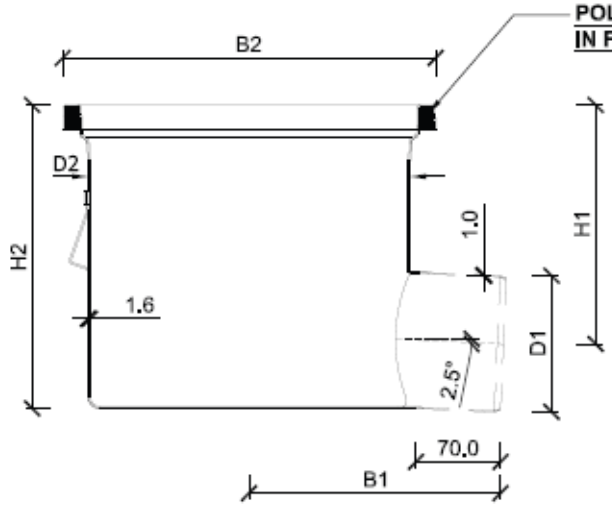
POLYOXYMETHYLENE IN FILL (SECTION 10.1)

NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL

200mm SQUARE INDUSTRIAL FLOOR WASTE WITH 110Ø HORIZONTAL OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION.

STANDARD HEIGHT MODEL - HORIZONTAL OUTLET						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
763.402.110 S	110Ø	160Ø	167mm	219mm	155mm	200mm

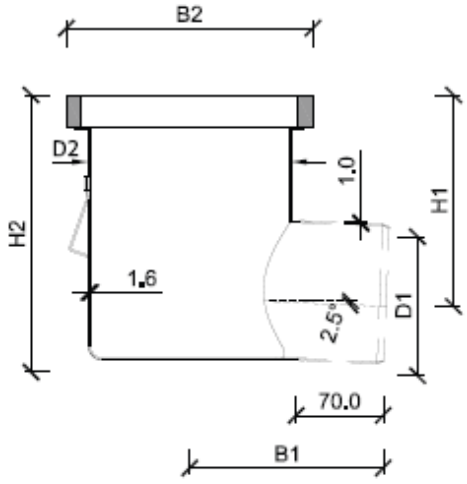


POLYOXYMETHYLENE IN FILL (SECTION 10.1)

300mm SQUARE INDUSTRIAL FLOOR WASTE WITH 110Ø HORIZONTAL OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION.

STANDARD HEIGHT MODEL - HORIZONTAL OUTLET						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
763.403.110 S	110Ø	260Ø	193mm	245mm	205mm	300mm

SCALE: 1:5

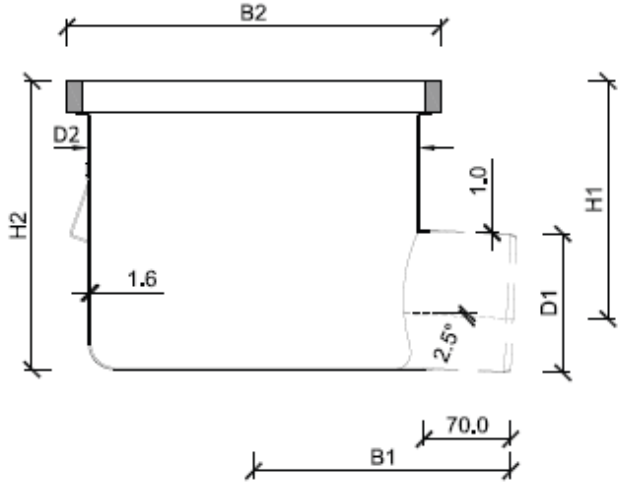


NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL

200mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø HORIZONTAL OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION.

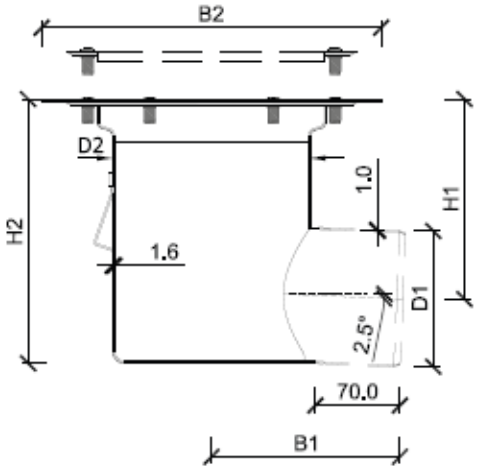
STANDARD HEIGHT MODEL - HORIZONTAL OUTLET						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
763.502.110 S	110Ø	160Ø	167mm	219mm	155mm	195Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø HORIZONTAL OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION.

STANDARD HEIGHT MODEL - HORIZONTAL OUTLET						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
763.503.110 S	110Ø	260Ø	185mm	228mm	205mm	295mm

SCALE: 1:5

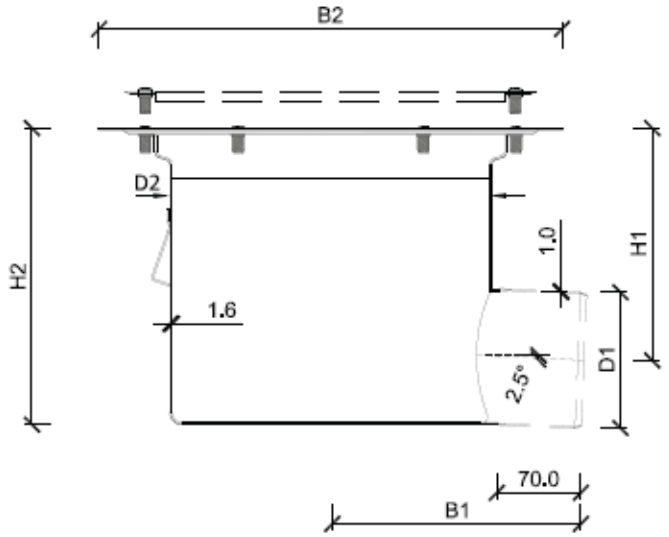


NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL

200mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø HORIZONTAL OUTLET, TO BE USED IN VINYL FLOOR CONSTRUCTION.

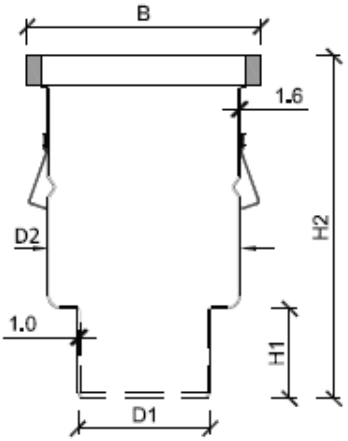
STANDARD HEIGHT MODEL - HORIZONTAL OUTLET						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
763.602.110 S	110Ø	160Ø	167mm	214mm	155mm	275Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø HORIZONTAL OUTLET, TO BE USED IN VINYL FLOOR CONSTRUCTION.

STANDARD HEIGHT MODEL - HORIZONTAL OUTLET						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
763.503.110 S	110Ø	260Ø	185mm	245mm	205mm	375mm

SCALE: 1:5

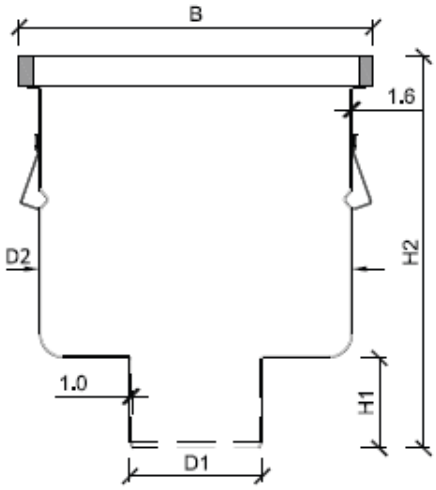


NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL

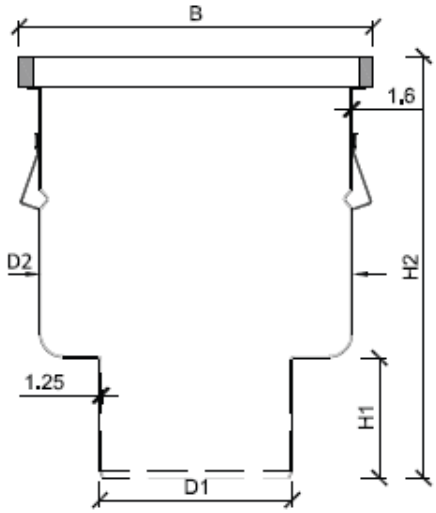
200mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
760.502.110 S	110Ø	160Ø	75mm	285mm	195Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
760.503.110 S	110Ø	260Ø	75mm	326mm	295Ø



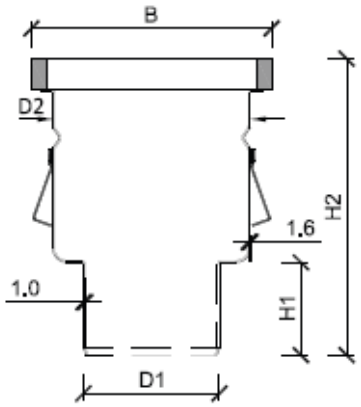
300mm ROUND INDUSTRIAL FLOOR WASTE WITH 160Ø OUTLET, TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
760.503.160 S	160Ø	260Ø	95mm	346mm	295Ø

SCALE: 1:5

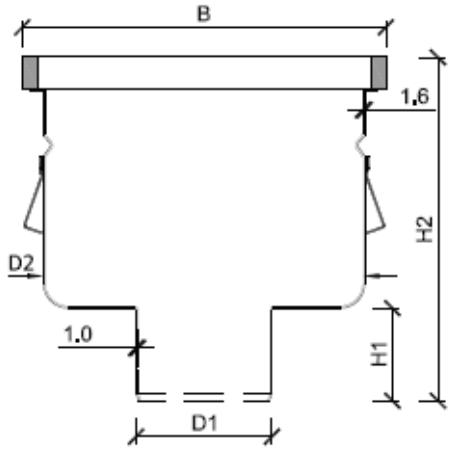
NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1,6mm THICK 2B 316 STAINLESS STEEL



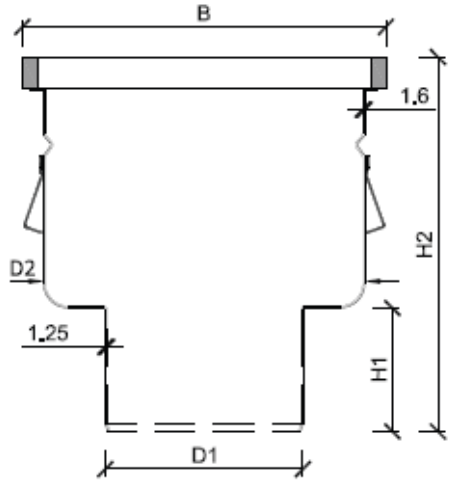
200mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
766.502.110 S	110Ø	160Ø	75mm	240mm	195Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

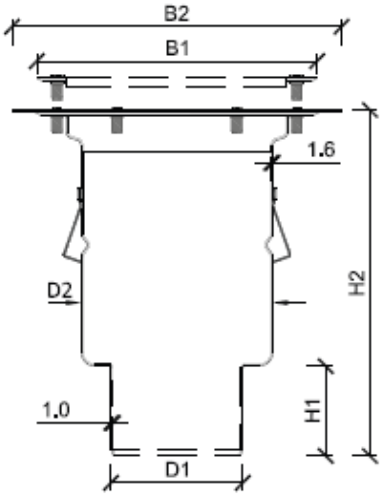
SHALLOW HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
766.503.110 S	110Ø	260Ø	75mm	278mm	295Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 160Ø OUTLET. TO BE USED IN CONCRETE AND EPOXY FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL					
MANUFACTURING NUMBER	D1	D2	H1	H2	B
766.503.160 S	160Ø	260Ø	95mm	298mm	295Ø

SCALE: 1:5

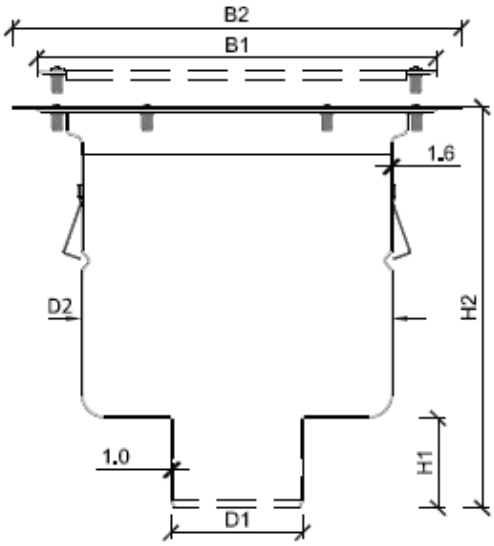


NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1,6mm THICK 2B 316 STAINLESS STEEL

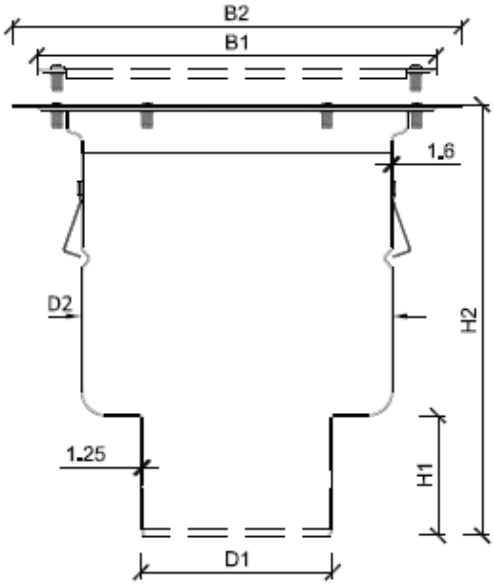
200mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN VINYL FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
760.602.110 S	110Ø	160Ø	75mm	289mm	232Ø	275Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN VINYL FLOOR CONSTRUCTION

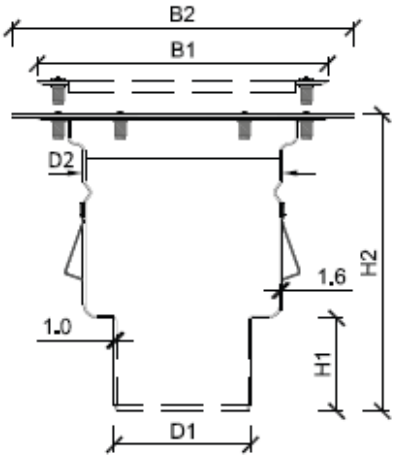
STANDARD HEIGHT MODEL						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
760.603.110 S	110Ø	260Ø	75mm	335mm	332Ø	375Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 160Ø OUTLET. TO BE USED IN VINYL FLOOR CONSTRUCTION

STANDARD HEIGHT MODEL						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
760.603.160 S	160Ø	260Ø	95mm	355mm	332Ø	375Ø

SCALE: 1:5

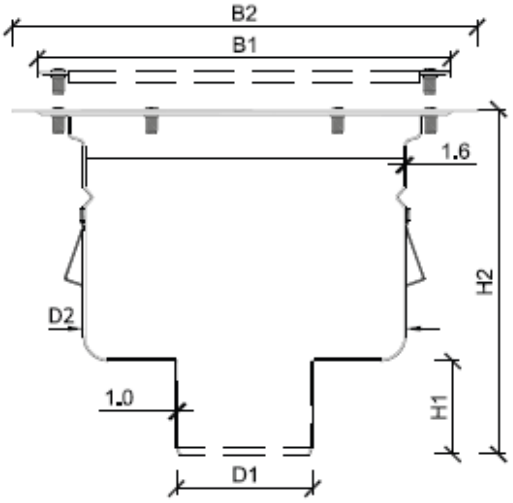


NOTES:

BLUCHER INDUSTRIAL DRAINS ARE MADE FROM 1.6mm THICK 2B 316 STAINLESS STEEL

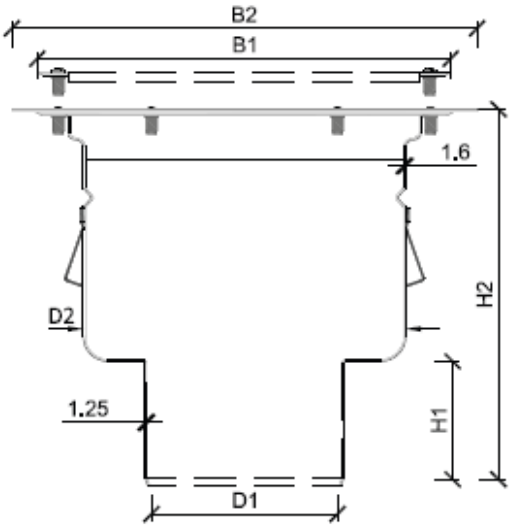
200mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN VINYL FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
766.602.110 S	110Ø	160Ø	75mm	239mm	232Ø	275Ø



300mm ROUND INDUSTRIAL FLOOR WASTE WITH 110Ø OUTLET. TO BE USED IN VINYL FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
766.603.110 S	110Ø	260Ø	75mm	278mm	332Ø	375Ø



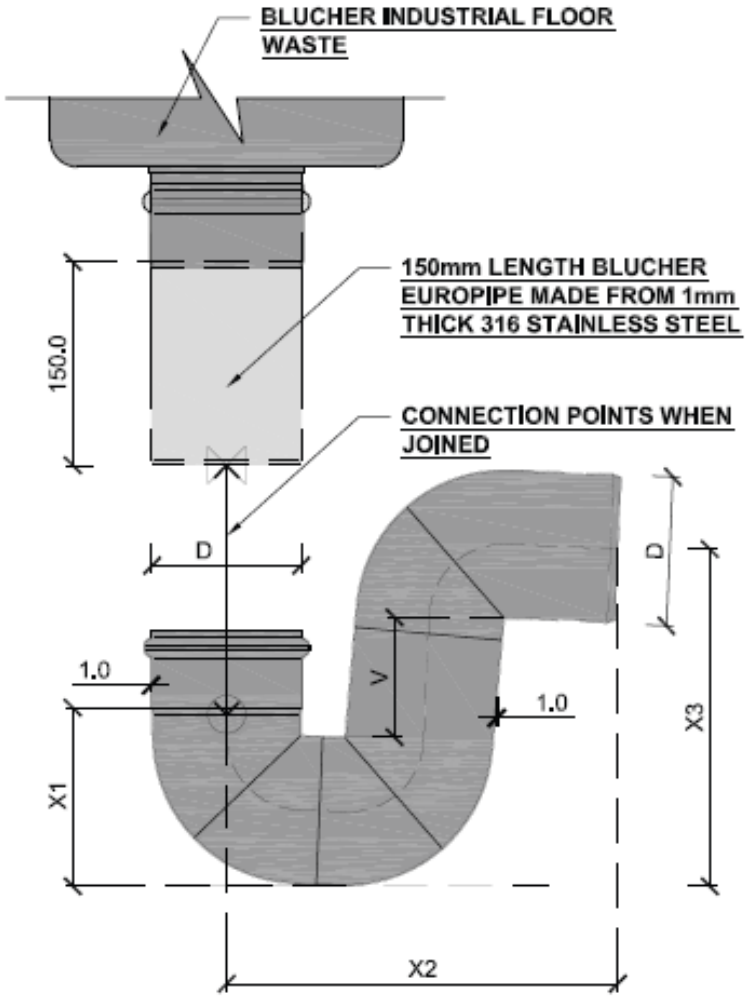
300mm ROUND INDUSTRIAL FLOOR WASTE WITH 160Ø OUTLET. TO BE USED IN VINYL FLOOR CONSTRUCTION

SHALLOW HEIGHT MODEL						
MANUFACTURING NUMBER	D1	D2	H1	H2	B1	B2
766.603.160 S	160Ø	260Ø	95mm	298mm	332Ø	375Ø

SCALE: 1:5

NOTES:

BLUCHER 525.090.110 S HAS A WALL THICKNESS OF 1mm AS SHOWN. BLUCHER 525.090.160 S HOWEVER HAS A WALL THICKNESS OF 1,25mm



"P" TRAP TYPE NUMBER (525) AVAILABLE AS AN ALTERNATIVE OPTION TO A REMOVABLE WATER TRAP (TYPE 562). *MUST BE USED WITH 150mm LENGTH BLUCHER (316 STAINLESS STEEL EUROPIPE).

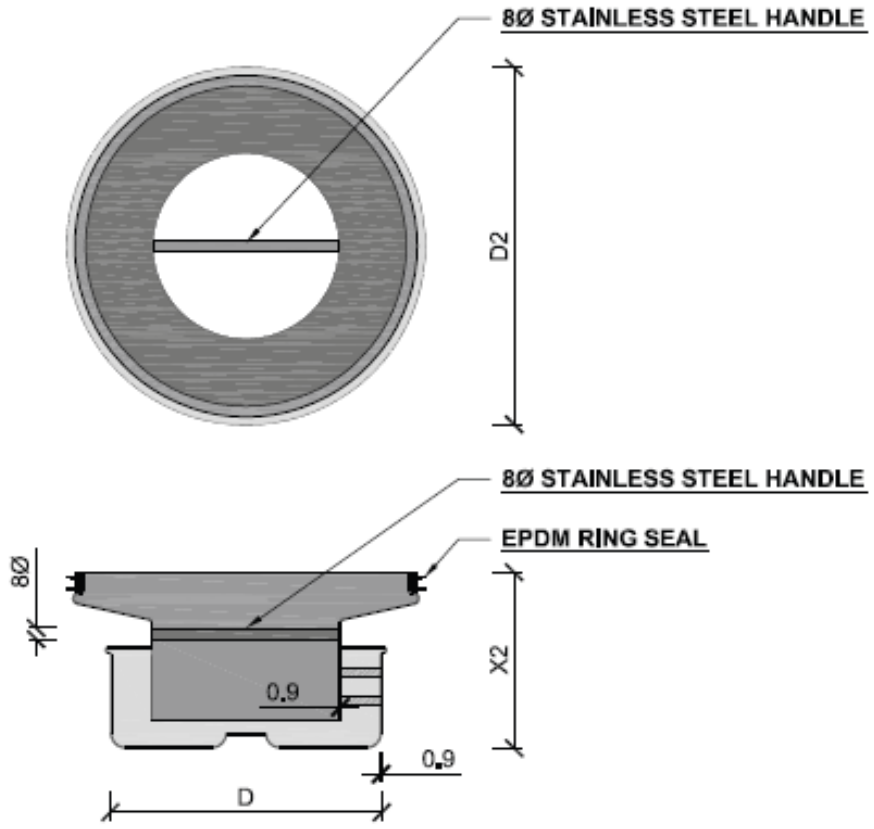
TYPE NO. 525 - 87,5° "P" TRAP					
MANUFACTURING NUMBER	D	X1	X2	X3	V
525.090.110 S	110Ø	132mm	289mm	249mm	89mm
525.090.160 S	160Ø	184mm	388mm	338mm	105mm

THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

SCALE: 1:5

NOTES:

EPDM - STANDARD RING SEAL (TEMPERATURES -40° - +100°)
USED FOR BLACK WATER, VACUUM SYSTEMS, GREY WATER,
DILUTED ACIDS & BASES

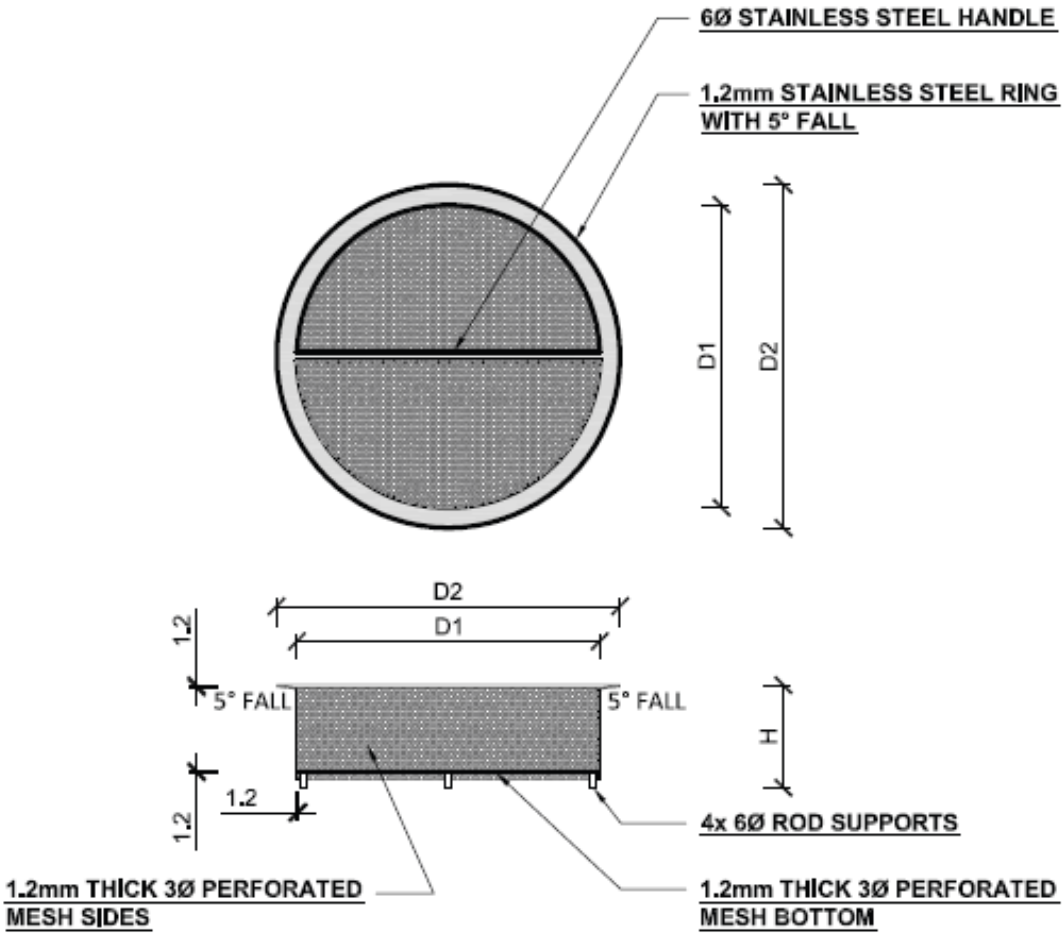


REMOVABLE WATER TRAP (TYPE 562) AVAILABLE AS AN ALTERNATIVE TO A "P" TRAP TYPE NUMBER (525)

TYPE NO. 562 - REMOVABLE WATER TRAP				
MANUFACTURING NUMBER	D	X2	D2	FLOW CAPACITY
562.002.000 S	107Ø	115mm	160Ø	2.7 - 3.4 L/s
562.003.000 S	197Ø	128mm	260Ø	6.0 - 7.3 L/s

THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

SCALE: 1:5

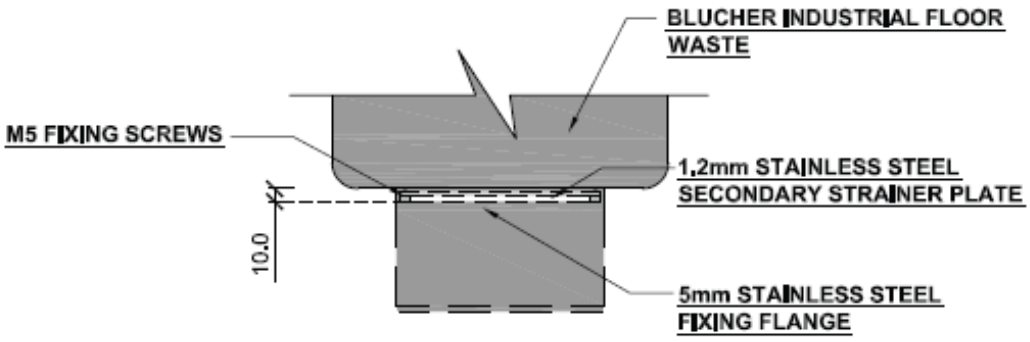


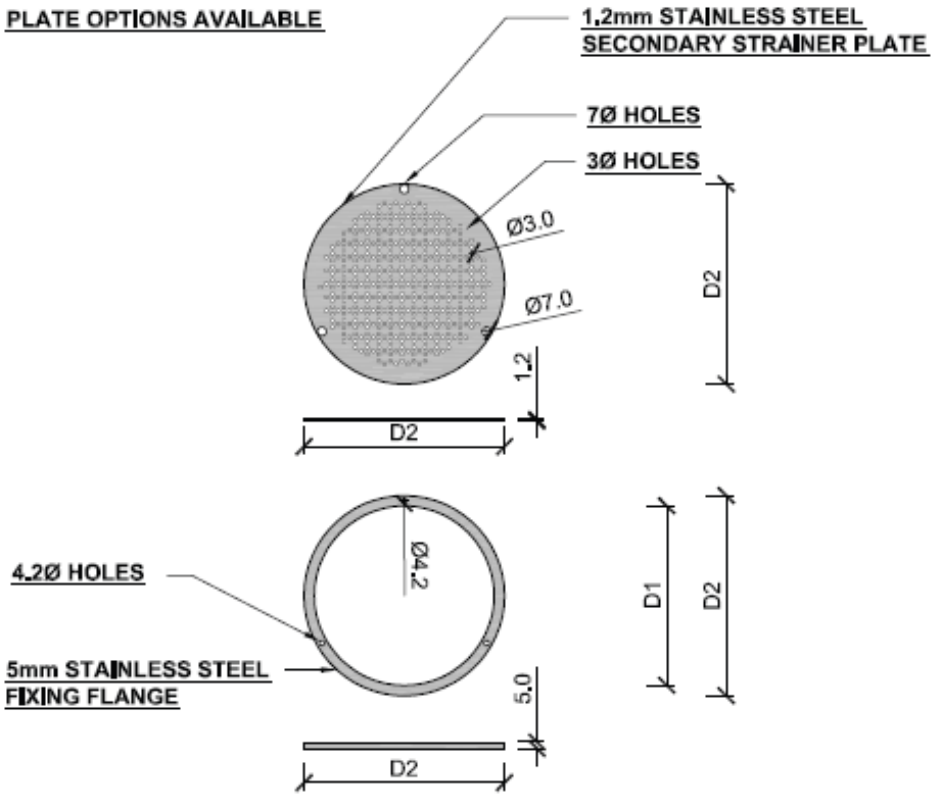
REMOVABLE FILTER BASKET (TYPE 780)

TYPE NO. 780 - REMOVABLE FILTER BASKETS				
MANUFACTURING NUMBER	D1	D2	H	FLOW CAPACITY
780.200.000.03 S	125Ø	155Ø	76mm	0.9 L
780.300.000.03 S	225Ø	255Ø	76mm	2.3 L

THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

SCALE: 1:5

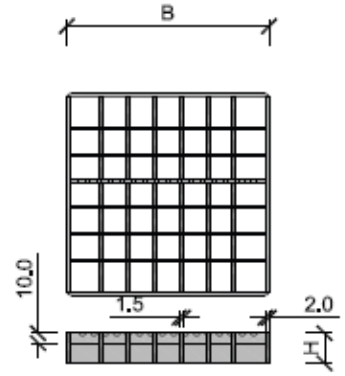




TYPE NO. 780 - FIXED SECONDARY STRAINER		
MANUFACTURING NUMBER	D1	D2
780.200.000.03 S	90Ø	106Ø
780.300.000.03 S	139Ø	255Ø

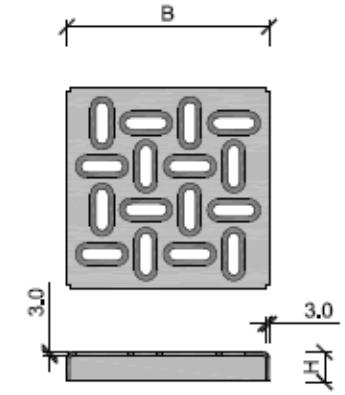
THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

SCALE: 1:5



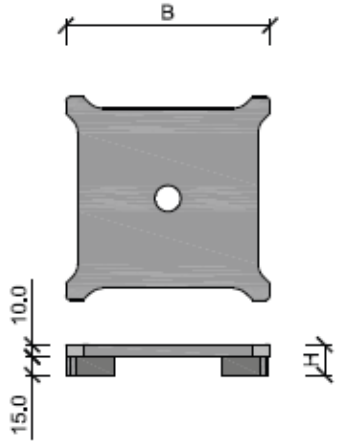
SQUARE GRATING - TYPE 790

TYPE NO. 790 - MESH GRATING			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.168.000.22 S	168mm	25mm	A
790.268.000.22 S	268mm	25mm	A



SQUARE GRATING - TYPE 790

TYPE NO. 790 - 3mm GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.168.000.03 S	168mm	24mm	A
790.268.000.03 S	268mm	24mm	A

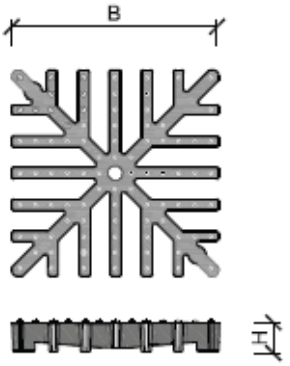


SQUARE GRATING - TYPE 790

TYPE NO. 790 - 10mm SLOT GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.168.000.10 S	170mm	25mm	D
790.268.000.10 S	270mm	25mm	D

THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

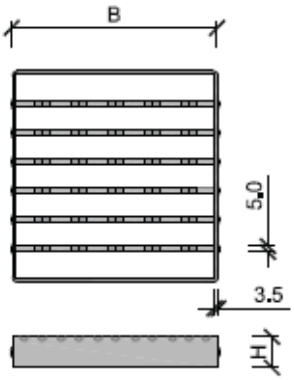
SCALE: 1:5



SQUARE GRATING - TYPE 790

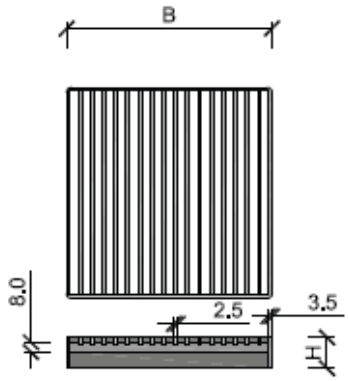
TYPE NO. 790 - CAST STAINLESS STEEL GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.168.000.60	170mm	24mm	D
790.268.000.60	270mm	24mm	D

MADE FROM AISI CF-8 STAINLESS STEEL



SQUARE GRATING - TYPE 790

TYPE NO. 790 - LADDER GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.168.000.25 S	168mm	25mm	C
790.268.000.25 S	268mm	25mm	C

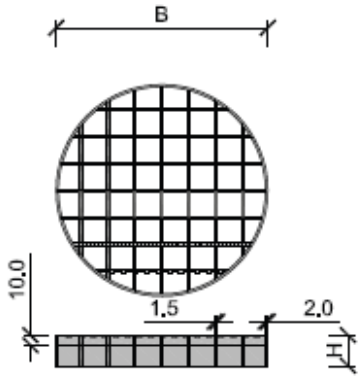


SQUARE GRATING - TYPE 790

TYPE NO. 790 - WEDGE GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.168.000.63 S	168mm	24mm	B
790.268.000.63 S	268mm	24mm	B

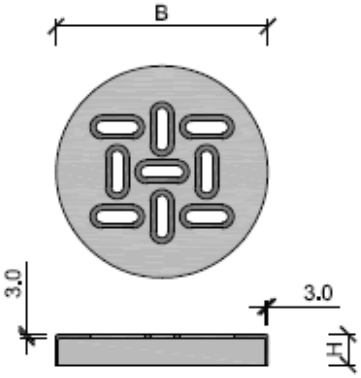
THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

SCALE: 1:5



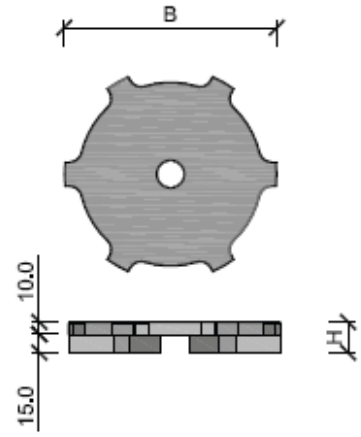
ROUND GRATING - TYPE 790

TYPE NO. 790 - MESH GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.173.000.22 S	170Ø	25mm	A
790.273.000.22 S	270Ø	25mm	A



ROUND GRATING - TYPE 790

TYPE NO. 790 - 3mm GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.173.000.03 S	173Ø	25mm	A
790.273.000.03 S	273Ø	25mm	A

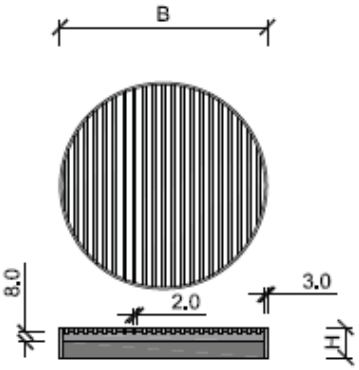


ROUND GRATING - TYPE 790

TYPE NO. 790 - 10mm SLOT GRATE			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.173.000.10 S	174Ø	25mm	D
790.173.000.10 S	274Ø	25mm	D

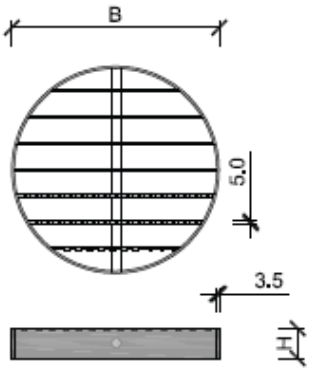
THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

SCALE: 1:5



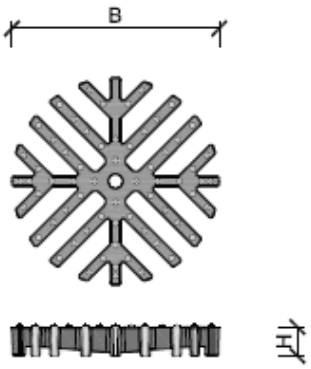
ROUND GRATING - TYPE 790

TYPE NO. 790 - WEDGE WIRE GRATING			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.173.000.63 S	170Ø	24mm	B
790.273.000.63 S	270Ø	24mm	B



ROUND GRATING - TYPE 790

TYPE NO. 790 - LADDER GRATING			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.173.000.25 S	173Ø	25mm	C
790.273.000.25 S	273Ø	25mm	C



ROUND GRATING - TYPE 790

TYPE NO. 790 - CAST GRATING			
MANUFACTURING NUMBER	B	H	LOAD CLASS AS 3996
790.173.000.60	173Ø	25mm	D
790.273.000.60	273Ø	25mm	D

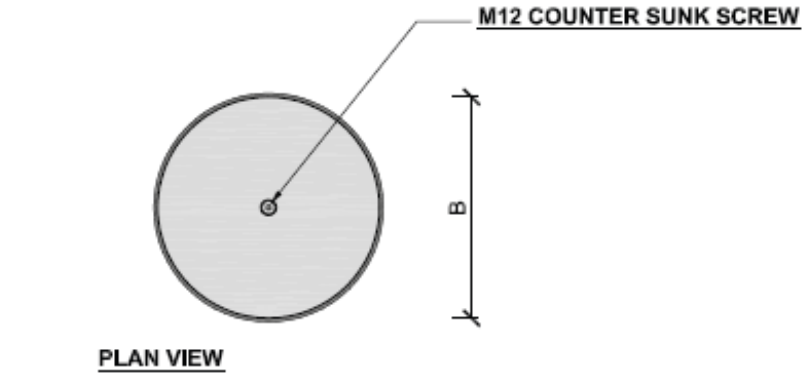
MADE FROM AISI CF-8 STAINLESS STEEL

THE S AT THE END OF THE PRODUCT CODE DENOTES - MADE FROM 316 STAINLESS STEEL

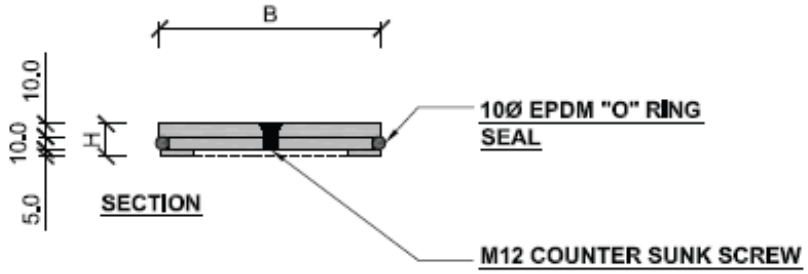
SCALE: 1:5

NOTES:

EPDM - STANDARD RING SEAL (TEMPERATURES -40° - +100°)
USED FOR BLACK WATER, VACUUM SYSTEMS, GREY WATER, DILUTED ACIDS & BASES



PLAN VIEW



SECTION

ROUND GRATING - TYPE 790

TYPE NO. 790 - GAS TIGHT / BLANK COVER			
MANUFACTURING NUMBER	**B**	**H**	**LOAD CLASS AS 3996**
790.173.000.GT.S	173Ø	25mm	D
790.273.000.GT.S	273Ø	25mm	D

THE S AT THE END OF THE PRODUCT CODE DENOTES -
MADE FROM 316 STAINLESS STEEL

SCALE: 1:5

Appendix C Engineers Reports

According to the BBA (British Board Of Agreement – Approval Inspection Testing Certification TECHNICAL APPROVALS FOR CONSTRUCTION) Agreement Certificate number 86/1751 states that the Blucher Floor Drains are satisfactory for use to receive waste water from wet floors and/or domestic appliances on the same floor level. The product is designed to be installed by a competent general builder, or contractor, experienced with this type of product. The drains will have adequate resistance to the likely loadings associated with installation and normal service conditions. Refer to the following data sheet.

CI/SfB
(52) lh3

BRITISH BOARD OF AGRÉMENT
TECHNICAL APPROVALS FOR CONSTRUCTION

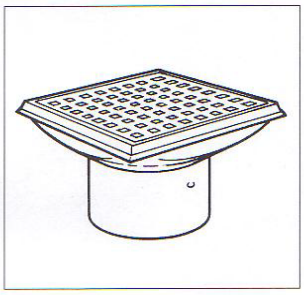
BLÜCHER UK Ltd

Certificate No 86/1751

DETAIL SHEET 5

BLÜCHER FLOOR DRAINS

Product



- *THIS DETAIL SHEET REPLACES DETAIL SHEET 3 AND RELATES TO BLÜCHER FLOOR DRAINS.*
- *The products are installed easily and joints will remain watertight under all normal service conditions.*
- *The floor drains are for internal use to receive wastewater from wet floors and/or domestic appliances on the same floor level.*
- *Installations will require prior approval from the appropriate Local Authority Environmental Health Department.*

This Detail Sheet must be read in conjunction with the Front Sheets, which give the products' position regarding the Building Regulations, general information relating to the product and the Conditions of Certification, *respectively.*

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, grade 304 or 316L, to BS 1449-2 : 1983.

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" BSP thread (female).

1.5 Water traps (50 mm minimum depth) are the removable type (see Figure 2) and outlets are 50 mm, 75 mm or 110 mm 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.

1.7 Industrial floor drains have interchangeable polished gratings either 3 mm thick with slotted holes or 10 mm thick with perimeter opening.

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

1.9 Blücher Floor Drains are cold formed from sheet and seam joints are made using MIG (metal inert gas) welding.

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

1.11 Continuous quality control is carried out throughout the manufacturing process, including visual and dimensional checks and loading tests.

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.

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 Strength

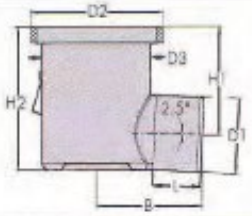
4.1 Blücher Floor Drains will have adequate resistance to the likely loadings associated with installation and normal service conditions.

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

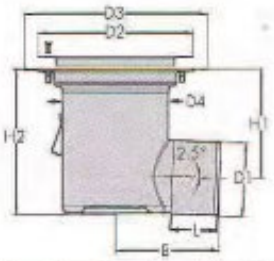
4.3 The 3 mm thick industrial gratings are suitable for wheel loads of up to 750 kg.

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

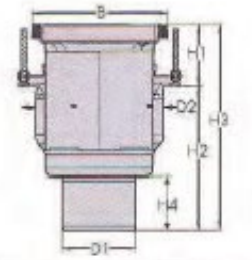
Figure 3 (continued)



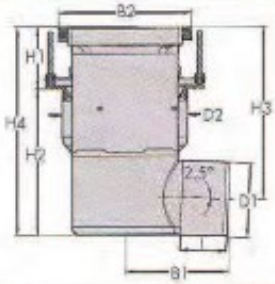
Type No	D1	D2	D3	H1	H2	B	L
763.502.110	110	195	160	157	209	155	70
763.503.110	110	295	260	176	228	205	70
763.503.160*	160	295	260	155	228	336	93



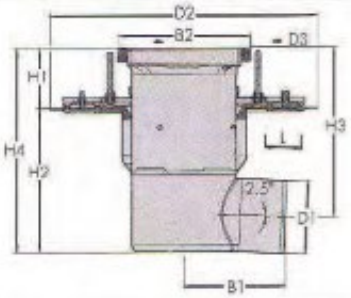
Type No	D1	D2	D3	D4	H1	H2	B	L
763.602.110	110	232	275	160	162	214	155	70
763.603.110	110	332	375	260	188	240	205	70
763.603.160*	160	332	375	250	172	240	336	93



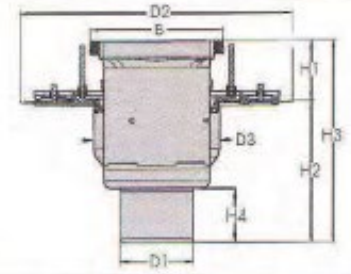
Type No	D1	D2	H1	H2	H3	H4	B
740.402.110	110	190	91–151	205	296–356	75	200
740.403.110	110	293	91–151	250	341–401	75	300
740.403.160	160	293	91–151	270	361–421	95	300



Type No	D1	D2	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



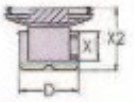
Type No	D1	D2	D3	H1	H2	H3	H4	B1	B2	L
771.402.110	110	409	190	91–151	217	256–316	308–368	155	200	70
771.403.110	110	507	293	91–151	222	261–321	313–373	205	300	70
771.403.160*	160	507	293	91–151	222	261–321	313–373	336	300	93



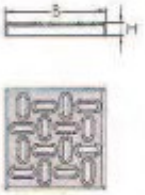
Type No	D1	D2	D3	H1	H2	H3	H4	B
775.402.110	110	409	190	91–151	205	296–356	75	200
775.403.110	110	507	293	91–151	250	341–401	75	300
775.403.160*	160	507	293	91–151	270	361–421	95	300

*Through use of adaptor Type No 850.110.160

Figure 4 Water traps, grates and filters for industrial drains



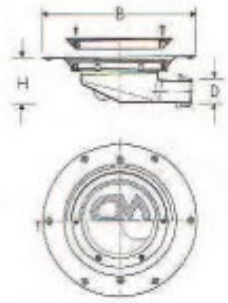
Type No	D	X1	X2
562.002.000	107	52	115
562.003.000	197	52	128



Type No	B	H
790.168.000.03	168	24

continued

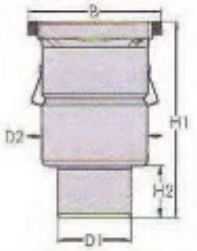
Figure 1 (continued)



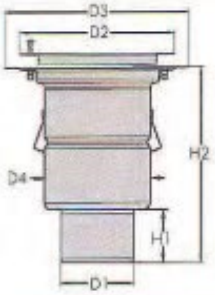
Type No	B	D	H
281.300.050	222	32	65

Figure 2 Removable water trap

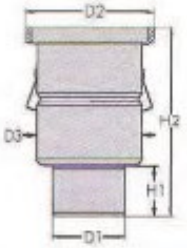
Figure 3 Industrial floor drains (all dimensions in mm)



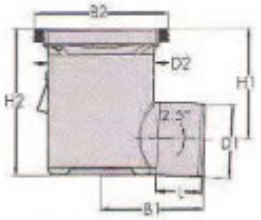
Type No	D1	D2	H1	H2	B
760.402.110	110	160	294	75	200
760.403.110	110	260	340	75	300
760.403.160	160	260	360	95	300



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



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

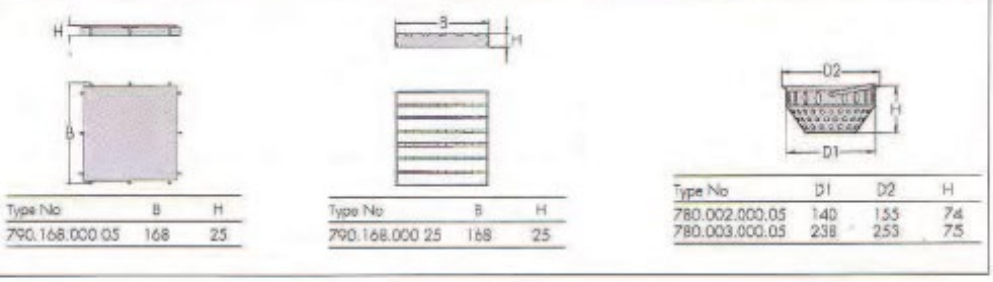


Type No	D1	D2	H1	H2	B1	B2	L
763.402.110	110	160	167	219	155	200	70
763.403.110	110	260	193	245	205	300	70
763.403.160*	160	260	171	245	336	300	93

*Through use of adaptor Type No 850.110.160

continued

Figure 4 *(continued)*



Type No	B	H
790.168.000 05	168	25

Type No	B	H
790.168.000 25	168	25

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

5 Flow characteristics

5.1 The floor drainage gullies have satisfactory flow characteristics.

5.2 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
562.003.000	5.7

(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.

Technical Investigations

The following is a summary of the technical investigations carried out in relation to Blücher Floor Drains.

6 Tests

Tests were carried out to determine:

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

7 Other investigations

7.1 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.

7.2 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 1449 *Steel plate, sheet and strip*
BS 1449-2 : 1983 *Specification for stainless and heat-resisting steel plate, sheet and strip*

BBA BRITISH BOARD OF AGREMENT

On behalf of the British Board of Agrément

Date of issue: 28th September 2001

Chief Executive

British Board of Agrément
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LGA QualiTest GmbH
Sanitär- und Abscheidetechnik

DAP-PL-1524.23 Durch die DAP Deutsches Akkreditierungssystem Prüfwesen GmbH akkreditiertes Prüflaboratorium

Zertifiziert nach DIN EN ISO 9001/14001

LGA-Certificate No. 7381035 c

LGA-Certificate: Type tested and monitored

Holder of certificate:

Blücher Metalvare APS
Pugdalvej 1
7480 VILDBJERG
DÄNEMARK

Products:

Industry gullies
DN 75 up to DN 160
of stainless steel

The above mentioned respectively the overleaf listed products have been tested according to the standard and are regularly third party controlled. They are in accordance with the requirements of DIN EN 1253.

The detailed results of the regular inspection 2008 in the manufacturing plant is shown in the test report no. 7381035-14 of the LGA.

This certificate is valid until 31.12.2009.

The manufacturer is allowed to mark the overleaf listed products with the LGA-sign "Type-tested and monitored".

Würzburg, 03.09.2008

LGA QualiTest GmbH
Zertifizierungsstelle für Sanitärprodukte und Abscheider

Dipl.-Ing. (FH) Fries
stellvertr. Leiter der Zertifizierungsstelle

LGA Type-tested and monitored guaranteed with tested quality

LGA QualiTest GmbH • TÜV Rheinland Group • Dreikronenstraße 31 • 97082 Würzburg •
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Sitz und Registergericht Nürnberg HRB 20544
Geschäftsführer: Hans-Hermann Ueffing,
Michael F. Jungnitsch)

LGA QualiTest GmbH
Sanitär- und Abscheidetechnik

Designation		type-no.
Industry gully, 1-piece, quadratic grating frame, without flange, vertical	DN 75	760.402.075
like before	DN 110	760.402.110
like before	DN 110	760.403.110
like before	DN 160	760.403.160
Industry gully, 1-piece, round grating frame, without flange, vertical	DN 75	760.502.075
like before	DN 110	760.502.110
like before	DN 110	760.503.110
like before	DN 160	760.503.160
Industry gully, 1-piece, round grating frame, with flange, vertical	DN 75	760.602.075
like before	DN 110	760.602.110
like before	DN 110	760.603.110
like before	DN 160	760.603.160
Industry gully, 1-piece, quadratic grating frame, without flange, vertical	DN 75	766.402.075
like before	DN 110	766.402.110
like before	DN 75	766.403.075
like before	DN 110	766.403.110
like before	DN 160	766.403.160
Industry gully, 1-piece, round grating frame, without flange, vertical	DN 75	766.502.075
like before	DN 110	766.502.110
like before	DN 75	766.503.075
like before	DN 110	766.503.110
like before	DN 160	766.503.160
Industry gully, 1-piece, round grating frame, with flange, vertical	DN 75	766.602.075
like before	DN 110	766.602.110
like before	DN 75	766.603.075
like before	DN 110	766.603.110
like before	DN 160	766.602.160
Industry gully, 1-piece, quadratic grating frame, without flange, horizontal	DN 110	763.402.110
like before	DN 110	763.403.110
Industry gully, 1-piece, round grating frame, without flange, horizontal	DN 110	763.502.110
like before	DN 110	763.503.110
Industry gully, 1-piece, round grating frame, with flange, horizontal	DN 110	763.602.110
like before	DN 110	763.603.110
Industry gully, 1-piece, quadratic grating frame, without flange, horizontal	DN 110	726.402.110
like before	DN 110	726.403.110
Industry gully, 1-piece, round grating frame, without flange, horizontal	DN 110	726.502.110
like before	DN 110	726.503.110
Industry gully, 1-piece, round grating frame, with flange, horizontal	DN 110	726.602.110
like before	DN 110	726.603.110
Industry gully, 1-piece, quadratic grating frame, with solvent-adhesive flange, vertical	DN 75	761.402.075
like before	DN 110	761.402.110
like before	DN 110	761.403.110
like before	DN 160	761.403.160
Industry gully, 1-piece, quadratic grating frame, with solvent-adhesive flange, vertical	DN 75	767.402.075
like before	DN 110	767.402.110
like before	DN 75	767.403.075
like before	DN 110	767.403.110
like before	DN 160	767.403.160
Industry gully, lower part, without flange, horizontal	DN 75	110.000.075
Industry gully, lower part, without flange, vertical	DN 75	150.000.075
like before	DN 110	150.000.110
like before	DN 75	760.002.075
like before	DN 110	760.002.110
like before	DN 110	760.003.110
like before	DN 160	760.003.160
Industry gully, lower part, without flange, horizontal	DN 110	763.002.110
wie vor – like before	DN 110	763.003.110
Industry gully, lower part, with flange, horizontal	DN 110	769.002.110
like before	DN 110	769.003.110
like before	DN 110	771.002.110
like before	DN 110	771.003.110
Industry gully, lower part, with flange, vertical	DN 75	774.002.075
like before	DN 110	774.002.110

Designation		type-no.
like before	DN 110	774.003.110
like before	DN 160	774.003.160
like before	DN 75	775.002.075
like before	DN 110	775.002.110
like before	DN 110	775.003.110
like before	DN 160	775.003.160
Industry gully, lower part, without flange		710.402.000
like before		710.403.000
like before		710.502.000
like before		710.503.000
Industry gully, top part, with flange		710.602.000
like before		710.603.000
Industry gully, top part, without flange		774.402.000
like before		774.403.000
like before		774.412.000
like before		774.413.000
like before		774.402.000
Industry gully, top part, with solvent-adhesive flange		774.422.000
like before		774.423.000
Industry gully, top part, without flange		774.502.000
like before		774.503.000
like before		774.512.000
like before		774.513.000
Industry gully, top part, with flange		774.602.000
like before		774.603.000
like before		774.612.000
like before		774.613.000
Industry gully, solvent-adhesive flange		326.302.000
Industry gully, top part, with flange		777.002.000
like before		777.003.000
like before		779.002.000
like before		779.003.000
Siphon		502.052.110
like before		562.002.110
like before		562.003.110
filter basket		780.002.000.05
like before		780.003.000.05
like before		780.002.001.05
like before		780.003.001.05
Sand bucket		780.002.000.00
like before		780.003.000.00
Grating quadratic (cartridge grating)		790.168.000.03
like before		790.268.000.03
Grating quadratic (slot grating)		790.168.000.10
like before		790.268.000.10
Grating quadratic (mesh grating)		790.168.000.22
like before		790.268.000.22
Grating quadratic (ladder grating)		790.168.000.25 / 28
like before		790.268.000.25 / 28
Grating quadratic (cast grating)		790.168.000.60
like before		790.268.000.60
Grating round (cartridge grating)		790.173.000.03
like before		790.273.000.03
Grating round (slot grating)		790.173.000.10
like before		790.273.000.10
Grating round (mesh grating)		790.173.000.22
like before		790.273.000.22
Grating round (ladder grating)		790.173.000.25 / 28
like before		790.273.000.25 / 28

Appendix D Supplier Contacts

BLUCHER Australia Pty Ltd

Stainless Steel Drainage and Pressure Systems

POSTAL ADDRESS:	26 BENNET AVENUE, MELROSE PARK SA 5039
PHONE NUMBER:	08 8374 3426
FAX NUMBER:	08 8374 3428
E – MAIL:	blucher@blucher.com.au
Web:	www.blucher.com.au

Appendix E Usage References

- Coca Cola Amatil (Australia) Pty Ltd
- 128 Briens Road, Northmead, NSW, 2152
- Damon Sayers – Engineering Manager

- Castlemaine Perkins XXXX Breweries
- Finchley Street, Milton, QLD, 4064
- Pat Chandler – Plant Plumber

- Murray Goulburn Victoria Processing – Dairy
- 140 Dawson Road, Brunswick, VIC, 3056
- Ben Cusack – Project Engineer

- Goodman Feilder Victoria Processing – General Food
- 1 Roberts Street, West Footscray, VIC, 3012
- Colin Brewster – Reliability Engineering Packaging

- Kraft Foods South Australia Processing – Dairy
- Pinehall Avenue, Mount Gambier, SA, 5290
- Lyle Sharam – Chief Engineer

- Cadbury Schweppes VIC - General Food Processing
- 636 Saint Kilda Road, Saint Kilda, VIC, 3004
- Andrew Secomb – Plant Engineer

- Swift Australia Queensland Processing - Meat
- 173 River View Road, Dinmore, QLD, 4303
- Steve Thompson – Engineer

- Nestle (Australia) Pty Ltd
- Building D, 1 Homebush Bay Drive, Rhodes, NSW, 2138
- Jurg Summer

- Teys Brothers Pty Ltd – SA, QLD – Meat Processing
- Russell Mills – Project Engineer

- Dairy Famers Pty Ltd – NSW,QLD,SA,VIC – Dairy
- Ian Matheson – Senior Project Engineer

- George Weston Foods Processing – General Food
- Gordon Douglas

- Beringer Blass Wine Estates
- 97 Sturt Highway, Nurioopta, SA, 5355
- Mirek Janousek – Consulting Engineer

Appendix F Synthetic Resin Infill Data Sheet

Technical Data Sheet
Polyoxymethylene POM-C

GEHR

I. Physical Properties

	Test method	Unit	Value
1. Specific gravity (ρ)	ISO 1183	g/cm³	1,39
2. Water absorption	DIN 53495	%	0,2
3. Maximum permissible service temp	-	-	-
(no stronger mechanical stress involved)			
Upper temperature limit	-	°C	110
Lower temperature limit	-	°C	-50

II. Mechanical Properties

	Test method	Unit	Value
1. Tensile strength at yield	ISO 527	MPa	63
2. Elongation at yield. (ε_S)	ISO 527	%	10
3. Tensile strength at break (σ_R)	ISO 527	MPa	-
4. Elongation at break (ε_R)	ISO 527	%	31
5. Impact strength (a_n)	ISO 179	kJ/m²	no break
6. Notch impact strength (a_k)	ISO 179	kJ/m²	6
7. Ball indentation / Rockwell hardness	ISO 2039-1	MPa	135
8. Shore-D	DIN 53505		85
9. Flexural strength ($\sigma_{B\,3.5\,\%}$)	ISO 178	MPa	-
10. Modulus of elasticity (E_t)	ISO 527	MPa	2600

III. Thermal Properties

		Test method	Unit	Value
1. Vicat-softening point	VST/B/50	ISO 306	°C	150
	VST/A/50	ISO 306	°C	-
2. Heat deflection temperature	HDT/B	ISO 75	°C	155
	HDT/A	ISO 75	°C	95
3. Coefficient of linear thermal expansion α		DIN 53752	$K^{-1}*10^{-4}$	1,1
4. Thermal conductivity at 20 °C (λ)		DIN 52612	W/(m*K)	0,31

IV. Electrical Properties

	Test method	Unit	Value
1. Volume resistivity	VDE 0303	Ω*cm	$\geq 10^{13}$
2. Surface resistivity (R_o)	VDE 0303	Ω	$\geq 10^{13}$
3. Dielectric constant at 1MHz (ε_r)	DIN 53483	-	3,8
4. Dielectric loss factor at 1 MHz (tanδ)	DIN 53483	-	0,005
5. Dielectric strength	VDE 0303	kV/mm	40
6. Tracking resistance	DIN 53480	-	CTI 600

V. Additional Data

	Test method	Unit	Value
1. Bond ability	-	-	fair
2. Friction coefficient	DIN 53375	-	0,35
3. Flammability	UL 94	-	HB
4. UV stabilisation	-	-	fair

All values are attributes of the used raw materials.
The physical data contained in this table are typical values. They are obtained on test specimens under specific conditions and represent average values of a large number of tests. The results obtained on this tests specimens cannot be applied to finished parts without reservations, as behaviour is influenced by processing and shaping. Reproduction only with our definite permission.

Appendix G Flow Rate Certification Report

TYPE TESTING

Approval No.:
VA 2.42/12262

Product:
Capacity testing of industrial floor gullies

Carried out for:
Blücher Metal A/S
Pugdalvej 1
D-7480 Vildbjerg

Date:
26 April 2001

Consultant:
Niels Leo Frederiksen

Ref. No.:
270-1-0373-51

Testing is carried out in accordance with:
EN 1253 -1, April 1999

Energy Division

DANAK

Reg.nr. 300

DANISH TECHNOLOGICAL INSTITUTE

Teknologiparken
Kongsvang Allé 29
DK-8000 Århus C
Tel. +45 72 20 10 00
Fax +45 72 20 10 19

info@teknologisk.dk
www.teknologisk.dk

VA-No: 2105

Test report

Date: 26 April 2001
Ref. No: 270-1-0373-51
Sign.: LEF/ANR
No of appendixes: 16

Requested by:

Blücher Metal A/S
Pugdalvej 1
DK-7480 Vildbjerg

On the conditions stated overleaf testing was carried out on the following product(s):

Blücher industrial floor gullies with type numbers indicated under capacity testing.

in compliance with the test specifications:

EN 1253-1 item 8.11.1 of April 1999 and ETA-Danmark A/S's letter of 2001.01.23.

with the following results:

The requirements specified in the above test specifications were met.

Conditions: Testing has been carried out on the conditions stated overleaf in compliance with the Danish Technological Institute's General Terms and Conditions regarding Commissioned Work Accepted by the Danish Technological Institute. August 1999. The test results apply to the tested products only.

This test report may be reproduced in extract only if the report is officially available or if the Laboratory has approved the extract in writing.

Department: Danish Technological Institute, Energy
VA Testing and Inspection

Signature

Niels Leo Frederiksen
Consultant

DANAK (Danish Accreditation)

DANAK was established in 1991 in pursuance of the Industry and Trade Promotion Act No. 394 of 13 June 1990. The scheme is a continuation of the accreditation scheme established in 1973 under the auspices of the former Danish National Testing Board (STP).

The requirements to accredited testing laboratories are laid down in the Danish Agency for Development of Trade and Industry Statutory Order No. 258 of 11 April 1994 on accreditation of laboratories to perform technical testing etc.

The standards DS/EN 45001 "General criteria for the operation of testing laboratories" and DS/EN 45002 "General criteria for the assessment of testing laboratories" are integrated parts of the statutory order.

In order to obtain accreditation to perform technical testing, it is among other things, required:

- that the testing laboratory and its personnel is free from any commercial, financial and other pressures which might influence their technical judgement
- that the testing laboratory operates a quality system which is documented
- that the testing laboratory is furnished with all items of equipment required for correct performance of the tests and measurements which the laboratory is accredited to perform
- that the testing laboratory has sufficient personnel, having the necessary education, training, technical knowledge and experience for their assigned functions
- that the testing laboratory has procedures for traceable calibration of equipment used for accredited testing
- that accredited testing is performed after fully documented methods
- that the testing laboratory has records which contain sufficient information to permit repetition of the test
- that the testing laboratory is assessed and surveyed by DANAK on a regular basis
- that the accredited laboratory shall take out an insurance which will cover liability in connection with accredited testing.

Test reports carrying the logo of DANAK are used to report accredited testing and the logo shows that the testing has been performed in accordance with the rules of accreditation.

DANAK, Technical guidelines
No. 3.9.01-4 of 2 September 1994
4th edition, October 1995

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Danish Technological Institute	TEST REPORT Test outline	Sign.: LEF	Page: 2 of 2 Ref. no: 270-1-0373-51

Requested by:	Blücher Metal A/S	**Place of sampling/ inspection:**		Blücher Metal A/S			
Contact person:	Arne Skou	**Samples taken / inspected by:**		Niels Leo Frederiksen			
Tel.:	+45 9992 0800	**Date of sampling/ inspection:**		24 April 2001			
Fax:	+45 9713 3350	**Date of receipt:**		20 April 2001			
Product:	Industrial floor gullies	**Date of reply:**		25 April 2001			
Place of testing:	Blücher Metal A/S						
Certification body:	ETA-Danmark A/S	**Type testing:**	X	**Quality control:**			
Approval No:	VA 2.42/12262	**Retesting:**		**Instructive testing**			
Marking of samples::		**Inspection:**		**Other testing:**			
Specific marking appears from the enclosed appendices		**Field testing:**					

TEST OUTLINE: **According to:** EN 1253-1 April 1999	**Requirements met**		**Accredited**		**Subcontractor**
	Yes	**No**	**Yes**	**No**	**Accr. No.**
8.11.1 Capacity testing	X		X		

Danish Technological Institute	CAPACITY TESTING	Sign.: LEF	Appendix: 1 of 16
			Ref. No.: 270-0-0373-51

Type of gully	Trap	Strainer	Grating	Measured capacity l/sec.
763.402.075 *	562.002.000	780.002.000.05	790.168.000.03	3.7
763.402.075	562.002.000	780.002.000.05	790.168.000.10	3.8
760.402.075	562.002.000	780.002.000.05	790.168.000.03	3.3
760.402.075	562.002.000	780.002.000.05	790.168.000.10	3.3
763.402.110	562.002.000	780.002.000.05	790.168.000.03	2.8
763.402.110	562.002.000	780.002.000.05	790.168.000.10	2.8
760.402.110	562.002.000	780.002.000.05	790.168.000.03	3.3
760.402.110	562.002.000	780.002.000.05	790.168.000.10	3.3
763.403.110	562.003.000	780.003.000.05	790.268.000.03	5.7
763.403.110	562.003.000	780.003.000.05	790.268.000.10	5.9
760.403.110	562.003.000	780.003.000.05	790.268.000.03	5.7
760.403.110	562.003.000	780.003.000.05	790.268.000.10	7.8

Concerning construction of the individual gullies – see appendix with drawings and stated type number.

*) Type 763.402.075:
Here testings are carried out on gully with ø110 mm horizontal outlet mounted with ø110x75 mm reduction.

Appendix H Loading Certification Report

LGA Bautechnik GmbH
Ein Unternehmen der LGA® - Körperschaft des öffentlichen Rechts
Sanitär- und Abscheidetechnik

Durch die DAP Deutsches Akkreditierungssystem Prüfwesen GmbH akkreditiertes Prüflaboratorium DAP-PL-1524.14

Zertifiziert nach DIN EN ISO 9001:2000

LGA

Prüfzeugnis
Nr. BMW 0320035-14
Datum: 10.02.2004

Test certificate
No. BMW 0320035-14
Date: 10.02.2004

Hersteller:

Blücher Metalvare APS
Pugdalvej 1

DK-7480 Vildbjerg

Manufacturer:

Blücher Metalvare APS
Pugdalvej 1

DK-7480 Vildbjerg

Herstellwerk:

wie vor und

Blücher Metal A/S
Metalparken 22 - 26

DK-6500 Vojens

Productions plant:

like before and

Blücher Metal A/S
Metalparken 22 - 26

DK-6500 Vojens

Inhalt des Auftrages:

Regelüberwachung 2003
von Bodenabläufen
nach DIN 19599

Contents of order:

Regular Inspection 2003
of gullies
acc. DIN 19599

Prüfstücke:

Industrieabläufe
DN 75 bis DN 160
aus nichtrostendem Stahl

Test samples:

Industry gullies
DN 75 upto DN 160
of stainless steel

Probenahme:

05.08.2003

Sampling:

05.08.2003

Zusammenfassung:

Mit Ausnahme der werkseigenen Produktionskontrolle (Rostbelastungen) sind alle Anforderungen erfüllt.

Summary:

Apart from the internal production control (classification of gratings) all requirements are fulfilled.

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LGA Bautechnik GmbH • Dreikronenstraße 31 • 97082 Würzburg
Tel.: +49 (0) 931 4196-166 • Fax: +49 (0) 931 4196-165
E-Mail: sat@lga.de • http://www.lga.de

Sitz und Registergericht Nürnberg HRB 20586
Geschäftsführer: Peter Röckl, Hans-Hermann Uelfing
Steuer-Nr. 241/115/90733 Ust-IdNr. DE813835574

1. Prüfnorm

Die Prüfungen wurden nach den Anforderungen folgender Normen durchgeführt:

DIN 19599: 1990-11
DIN EN 1253: 2003-09

1.Test standard

The tests are carried out according to the requirements of the following standards:

DIN 19599: 1990-11
DIN EN 1253: 2003-09

2. Allgemeines

Auf Wunsch des Herstellers wurden zusätzliche Belastungsprüfungen an verschiedenen Rosten durchgeführt. Siehe Abschnitt 7 „Sonderprüfung".

Das Ablaufprogramm ist als Baukastensystem ausgelegt und besteht aus folgenden Teilen:

2. General

At the request of the manufacturer are done added tests of the classification for different gratings. See section 7 "special test".

The range of gullies is designed as a modular system and consists of the following parts:

Bezeichnung - *designation*		Typen-Nr. – *type-no.*
Industrieablauf, 1-teilig, quadratische Rostaufnahme, ohne Flansch, senkrecht – *industrygully, 1-piece, quadratic grating frame, without flange, vertical*	DN 75	760.402.075
wie vor – *like before*	DN 110	760.402.110
wie vor – *like before*	DN 110	760.403.110
wie vor – *like before*	DN 160	760.403.160
Industrieablauf, 1-teilig, runde Rostaufnahme, ohne Flansch, senkrecht – *industrygully, 1-piece, round grating frame, without flange, vertical*	DN 75	760.502.075
wie vor – *like before*	DN 110	760.502.110
wie vor – *like before*	DN 110	760.503.110
wie vor – *like before*	DN 160	760.503.160
Industrieablauf, 1-teilig, runde Rostaufnahme, mit Flansch, senkrecht – *industrygully, 1-piece, round grating frame, with flange, vertical*	DN 75	760.602.075
wie vor – *like before*	DN 110	760.602.110
wie vor – *like before*	DN 110	760.603.110
wie vor – *like before*	DN 160	760.603.160
Industrieablauf, 1-teilig, quadratische Rostaufnahme, ohne Flansch, senkrecht – *industrygully, 1-piece, quadratic grating frame, without flange, vertical*	DN 75	766.402.075
wie vor – *like before*	DN 110	766.402.110
wie vor – *like before*	DN 75	766.403.075
wie vor – *like before*	DN 110	766.403.110
wie vor – *like before*	DN 160	766.403.160
Industrieablauf, 1-teilig, runde Rostaufnahme, ohne Flansch, senkrecht – *industrygully, 1-piece, round grating frame, without flange, vertical*	DN 75	766.502.075
wie vor – *like before*	DN 110	766.502.110
wie vor – *like before*	DN 75	766.503.075
wie vor – *like before*	DN 110	766.503.110
wie vor – *like before*	DN 160	766.503.160
Industrieablauf, 1-teilig, runde Rostaufnahme, mit Flansch, senkrecht – *industrygully, 1-piece, round grating frame, with flange, vertical*	DN 75	766.602.075
wie vor – *like before*	DN 110	766.602.110
wie vor – *like before*	DN 75	766.603.075
wie vor – *like before*	DN 110	766.603.110
wie vor – *like before*	DN 160	766.602.160
Industrieablauf, 1-teilig, quadratische Rostaufnahme, ohne Flansch, waagerecht – *industrygully, 1-piece, quadratic grating frame, without flange, horizontal*	DN 110	763.402.110
wie vor – *like before*	DN 110	763.403.110

Bezeichnung - *designation*		Typen-Nr. – *type-no.*
Industrieablauf, 1-teilig, runde Rostaufnahme, ohne Flansch, waagerecht – *industrygully, 1-piece, round grating frame, without flange, horizontal*	DN 110	763.502.110
wie vor – *like before*	DN 110	763.503.110
Industrieablauf, 1-teilig, runde Rostaufnahme, mit Flansch, waagerecht – *industrygully, 1-piece, round grating frame, with flange, horizontal*	DN 110	763.602.110
wie vor – *like before*	DN 110	763.603.110
Industrieablauf, 1-teilig, quadratische Rostaufnahme, ohne Flansch, waagerecht – *industrygully, 1-piece, quadratic grating frame, without flange, horizontal*	DN 110	726.402.110
wie vor – *like before*	DN 110	726.403.110
Industrieablauf, 1-teilig, runde Rostaufnahme, ohne Flansch, waagerecht – *industrygully, 1-piece, round grating frame, without flange, horizontal*	DN 110	726.502.110
wie vor – *like before*	DN 110	726.503.110
Industrieablauf, 1-teilig, runde Rostaufnahme, mit Flansch, waagerecht – *industrygully, 1-piece, round grating frame, with flange, horizontal*	DN 110	726.602.110
wie vor – *like before*	DN 110	726.603.110
Industrieablauf, 1-teilig, quadratische Rostaufnahme, mit Klebeflansch, senkrecht – *industrygully, 1-piece, quadratic grating frame, with solvent-adhesive flange, vertical*	DN 75	761.402.075
wie vor – *like before*	DN 110	761.402.110
wie vor – *like before*	DN 110	761.403.110
wie vor – *like before*	DN 160	761.403.160
Industrieablauf, 1-teilig, quadratische Rostaufnahme, mit Klebeflansch, senkrecht – *industrygully, 1-piece, quadratic grating frame, with solvent-adhesive flange, vertical*	DN 75	767.402.075
wie vor – *like before*	DN 110	767.402.110
wie vor – *like before*	DN 75	767.403.075
wie vor – *like before*	DN 110	767.403.110
wie vor – *like before*	DN 160	767.403.160
Industrieablauf, Unterteil, ohne Flansch, waagerecht – *industrygully, lower part, without flange, horizontal*	DN 75	110.000.075
Industrieablauf, Unterteil, ohne Flansch, senkrecht – *industrygully, lower part, without flange, vertical*	DN 75	150.000.075
wie vor – *like before*	DN 110	150.000.110
wie vor – *like before*	DN 75	760.002.075
wie vor – *like before*	DN 110	760.002.110
wie vor – *like before*	DN 110	760.003.110
wie vor – *like before*	DN 160	760.003.160
Industrieablauf, Unterteil, ohne Flansch, waagerecht – *industrygully, lower part, without flange, horizontal*	DN 110	763.002.110
wie vor – *like before*	DN 110	763.003.110
Industrieablauf, Unterteil, mit Flansch, waagerecht – *industrygully, lower part, with flange, horizontal*	DN 110	769.002.110
wie vor – *like before*	DN 110	769.003.110
wie vor – *like before*	DN 110	771.002.110
wie vor – *like before*	DN 110	771.003.110
Industrieablauf, Unterteil, mit Flansch, senkrecht – *industrygully, lower part, with flange, vertical*	DN 75	774.002.075
wie vor – *like before*	DN 110	774.002.110
wie vor – *like before*	DN 110	774.003.110
wie vor – *like before*	DN 160	774.003.160
wie vor – *like before*	DN 75	775.002.075
wie vor – *like before*	DN 110	775.002.110
wie vor – *like before*	DN 110	775.003.110
wie vor – *like before*	DN 160	775.003.160

Bezeichnung - *designation*	Typen-Nr. – *type-no.*
Industrieablauf, Oberteil, ohne Flansch – *industrygully, lower part, without flange*	710.402.000
wie vor – *like before*	710.403.000
wie vor – *like before*	710.502.000
wie vor – *like before*	710.503.000
Industrieablauf, Oberteil, mit Flansch – *industrygully, top part, with flange*	710.602.000
wie vor – *like before*	710.603.000
Industrieablauf, Oberteil, ohne Flansch – *industrygully, top part, without flange*	774.402.000
wie vor – *like before*	774.403.000
wie vor – *like before*	774.412.000
wie vor – *like before*	774.413.000
wie vor – *like before*	774.402.000
Industrieablauf, Oberteil, mit Klebeflansch – *industrygully, top part, with solvent-adhesive flange*	774.422.000
wie vor – *like before*	774.423.000
Industrieablauf, Oberteil, ohne Flansch – *industrygully, top part, without flange*	774.502.000
wie vor – *like before*	774.503.000
wie vor – *like before*	774.512.000
wie vor – *like before*	774.513.000
Industrieablauf, Oberteil, mit Flansch – *industrygully, top part, with flange*	774.602.000
wie vor – *like before*	774.603.000
wie vor – *like before*	774.612.000
wie vor – *like before*	774.613.000
Industrieablauf, Klebeflansch – *industrygully, solvent-adhesive flange*	326.302.000
Industrieablauf, Oberteil, mit Flansch – *industrygully, top part, with flange*	777.002.000
wie vor – *like before*	777.003.000
wie vor – *like before*	779.002.000
wie vor – *like before*	779.003.000
Geruchverschluß - *siphon*	562.052.110
wie vor – *like before*	562.002.110
wie vor – *like before*	562.003.110
Schmutzfangkorb – *filter basket*	780.002.000.05
wie vor – *like before*	780.003.000.05
wie vor – *like before*	780.002.001.05
wie vor – *like before*	780.003.001.05
Sandfang - *sand bucket*	780.002.000.00
wie vor – *like before*	780.003.000.00
Abdeckungen quadratisch (Kassettenrost) – *grating quadratic (cartridge grating)*	790.168.000.03
wie vor – *like before*	790.268.000.03
Abdeckungen quadratisch (Plattenrost) – *grating quadratic (slot grating)*	790.168.000.10
wie vor – *like before*	790.268.000.10
Abdeckungen quadratisch (Gitterrost) – *grating quadratic (mesh grating)*	790.168.000.22
wie vor – *like before*	790.268.000.22
Abdeckungen quadratisch (Stabrost) – *grating quadratic (ladder grating)*	790.168.000.25 / 28
wie vor – *like before*	790.268.000.25 / 28
Abdeckungen quadratisch (Gußrost) – *grating quadratic (cast grating)*	790.168.000.60
wie vor – *like before*	790.268.000.60
Abdeckungen rund (Kassettenrost) – *grating round (cartridge grating)*	790.173.000.03
wie vor – *like before*	790.273.000.03
Abdeckungen rund (Plattenrost) – *grating round (slot grating)*	790.173.000.10
wie vor – *like before*	790.273.000.10
Abdeckungen rund (Gitterrost) – *grating round (mesh grating)*	790.173.000.22
wie vor – *like before*	790.273.000.22
Abdeckungen rund (Stabrost) – *grating round (ladder grating)*	790.173.000.25 / 28
wie vor – *like before*	790.273.000.25 / 28

3. Prüfungsergebnisse nach Tabelle 10 der Prüfnorm

Alle Prüfergebnisse beziehen sich auf die von der Prüfstelle geprüften Prüfstücke.

Dieses Prüfzeugnis darf nur im vollen Wortlaut veröffentlicht werden.

Jede Veröffentlichung in Kürzung oder Auszug bedarf der vorherigen Genehmigung durch die LGA Bautechnik GmbH.

3. Test results acc. to table 10 of the test standard

All test results are related on the samples tested by the test laboratory.

To be published only as complete test certificate.

Any kind of publication as shortened version or as an excerpt requires the prior approval of LGA Bautechnik GmbH.

4. Allgemeine Beschaffenheit

Die Prüfung nach Abschnitt 5.1 der Prüfnorm erfolgte durch Inaugenscheinnahme.

Anforderungen erfüllt

4. General conditions

The testing acc. clause 5.1 of the test standard has been done by visual inspection.

Requirements fulfilled

5. Maße

Die genormten und die Hauptabmessungen wurden einzeln überprüft.

Die Abläufe entsprechen den Prüfnormen und den Zeichnungen des Prüfzeugnisses Nr. MWUE 0120186-01 der LGA Bautechnik GmbH.

Anforderungen erfüllt

5. Dimensions

The standardized and the main dimensions have been checked.

The gullies correspond with the requirements of the test standards and with the drawings enclosed to the LGA Bautechnik GmbH test certificate No. MWUE 0120186-01.

Requirments fulfilled

6. Montierbarkeit

Alle Teile sind gut zusammenbaubar.

Anforderungen erfüllt

6. Ease of assembly

All parts are to be assembled easily.

Requirments fulfilled

7. Anschluß von Abdichtungen

Anforderungen nicht zutreffend.

7. Connection of sheeting (membrane)

Requirements not applicable.

8. Temperaturverhalten

Anforderungen bei metallenem Werkstoff auch ohne Prüfung eingehalten.

8. Behavior due to temperature

Requirements are met for metallic materials without testing.

9. Nachweis der Klassenzugehörigkeit (Klassifizierung)	9. Load test (classification)	
Abdeckung quadratisch (Kassettenrost) – *grating quadratic (cartridge grating)*	Art. Nr. 790.168.000.03	Klasse - *class* L 15
Abdeckung quadratisch (Kassettenrost) – *grating quadratic (cartridge grating)*	Art. Nr. 790.268.000.03	Klasse - *class* L 15
Abdeckung quadratisch (Plattenrost) – *grating quadratic (slot grating)*	Art. Nr. 790.168.000.10	Klasse - *class* L 15
Abdeckung quadratisch (Plattenrost) – *grating quadratic (slot grating)*	Art. Nr. 790.268.000.10	Klasse - *class* L 15
Abdeckung quadratisch (Gitterrost) – *grating quadratic (mesh grating)*	Art. Nr. 790.168.000.22	Klasse - *class* L 15
Abdeckung quadratisch (Gitterrost) – *grating quadratic (mesh grating)*	Art. Nr. 790.268.000.22	Klasse - *class* L 15
Abdeckung quadratisch (Stabrost) – *grating quadratic (ladder grating)*	Art. Nr. 790.168.000.25	Klasse - *class* M 125
Abdeckung quadratisch (Stabrost) – *grating quadratic (ladder grating)*	Art. Nr. 790.268.000.25	Klasse - *class* M 125
Abdeckung quadratisch (Gußrost) – *grating quadratic (cast grating)*	Art. Nr. 790.168.000.60	Klasse - *class* L 15
Abdeckung quadratisch (Gußrost) – *grating quadratic (cast grating)*	Art. Nr. 790.268.000.60	Klasse - *class* L 15
Abdeckung rund (Kassettenrost) – *grating round (cartridge grating)*	Art. Nr. 790.173.000.03	Klasse - *class* L 15
Abdeckung rund (Kassettenrost) – *grating round (cartridge grating)*	Art. Nr. 790.273.000.03	Klasse - *class* K 3
Abdeckung rund (Plattenrost) – *grating round (slot grating)*	Art. Nr. 790.173.000.10	Klasse - *class* M 125
Abdeckung rund (Plattenrost) – *grating round (slot grating)*	Art. Nr. 790.273.000.10	Klasse - *class* M 125
Abdeckung rund (Gitterrost) – *grating round (mesh grating)*	Art. Nr. 790.173.000.22	Klasse - *class* L 15
Abdeckung rund (Gitterrost) – *grating round (mesh grating)*	Art. Nr. 790.273.000.22	Klasse - *class* L 15
Abdeckung rund (Stabrost) – *grating round (ladder grating)*	Art. Nr. 790.173.000.25/28	Klasse - *class* L 15
Abdeckung rund (Stabrost) – *grating round (ladder grating)*	Art.Nr. 790.273.000.25/28	Klasse - *class* L 15

Anforderungen erfüllt

Requirements fulfilled

10. Sonderprüfung mit zusätzlicher Belastung

Die Durchführung der Prüfungen erfolgte nach DIN 19599 Abschnitt 3, jedoch mit höherer Prüfkraft gemäß Herstellervorgabe.

10. Special test with additive loading

The tests were done according to DIN 19599 section 3, but in accordance with the demands of the manufacturer with higher test load.

(1) Plattenrost (170 x 170) mm
Nr. 790.168.000.10

Lichte Weite LW des Rahmens: 165 mm
Durchmesser des Prüfstempels: 110 mm

(1) Slot grating (170 x 170) mm
no. 790.168.000.10

Clear obening LW of the frame: 165 mm
Size of test block: 110 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 50 kN Durchbiegung (mm) – *permanent set (mm)*	0,46	0,51	0,49	≤ 0,66

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 50 kN.

Anforderungen erfüllt

The gratings fulfill the requirement of class L 15.
Inner the allowed permanent set the max. load is 50 kN.

Requirements fulfilled

(2) Plattenrost (270 x 270) mm
Nr. 790.268.000.10

Lichte Weite LW des Rahmens: 260 mm
Durchmesser des Prüfstempels: 150 mm

(2) Slot grating (270 x 270) mm
no. 790.268.000.10

Clear obening LW of the frame: 260 mm
Size of test block: 150 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 40 kN Durchbiegung (mm) – *permanent set (mm)*	0,58	0,63	0,61	≤ 1,04

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 40 kN.

Anforderungen erfüllt

The gratings fulfill the requirement of class L 15.
Inner the allowed permanent set the max. load is 40 kN.

Requirements fulfilled

(3) Gitterrost (168 x 168) mm
Nr. 790.168.000.22

Lichte Weite LW des Rahmens: 165 mm
Durchmesser des Prüfstempels: 110 mm

(3) Mash grating (168 x 168) mm
no. 790.168.000.22

Clear obening LW of the frame: 165 mm
Size of test block: 110 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 13,5 kN Durchbiegung (mm) – *permanent set (mm)*	0,16	0,19	0,13	≤ 0,66

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 13,5 kN.

Anforderungen erfüllt

The gratings fulfill the requirement of class L 15.
Inner the allowed permanent set the max. load is 13,5 kN.

Requirements fulfilled

(4) Gitterrost (270 x 270) mm
Nr. 790.268.000.22

Lichte Weite LW des Rahmens: 260 mm
Durchmesser des Prüfstempels: 150 mm

(4) Mesh grating (270 x 270) mm
no. 790.268.000.22

Clear obening LW of the frame: 260 mm
Size of test block: 150 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 16 kN Durchbiegung (mm) – *permanent set (mm)*	0,51	0,62	0,57	≤ 1,04

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 16 kN.

Anforderungen erfüllt

The gratings fulfil the requirement of class L 15.
Inner the allowed permanent set the max. load is 16 kN.

Requirements fulfilled

(5) Gußrost (170 x 170) mm
Nr. 790.168.000.60

Lichte Weite LW des Rahmens: 152 mm
Durchmesser des Prüfstempels: 110 mm

(5) Cast grating (170 x 170) mm
no. 790.168.000.60

Clear obening LW of the frame: 152 mm
Size of test block: 110 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 40 kN Durchbiegung (mm) – *permanent set (mm)*	0,41	0,48	0,51	≤ 0,61

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 40 kN.

Anforderungen erfüllt

The gratings fulfil the requirement of class L 15.
Inner the allowed permanent set the max. load is 40 kN.

Requirements fulfilled

(6) Gußrost (270 x 270) mm
Nr. 790.268.000.60

Lichte Weite LW des Rahmens: 258 mm
Durchmesser des Prüfstempels: 150 mm

(6) Cast grating (270 x 270) mm
no. 790.268.000.60

Clear obening LW of the frame: 258 mm
Size of test block: 150 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 40 kN Durchbiegung (mm) – *permanent set (mm)*	0,64	0,81	0,77	≤ 1,03

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 40 kN.

Anforderungen erfüllt

The gratings fulfil the requirement of class L 15.
Inner the allowed permanent set the max. load is 40 kN.

Requirements fulfilled

(7) Kassettenrost ø 273 mm
Nr. 790.273.000.03

Lichte Weite LW des Rahmens: 260 mm
Durchmesser des Prüfstempels: 150 mm

(7) Cartridge grating ø 273 mm
no. 790.273.000.03

Clear obening LW of the frame: 260 mm
Size of test block: 150 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 5 kN Durchbiegung (mm) – *permanent set (mm)*	0,71	0,83	0,85	≤ 1,04

Die Roste entsprechen der Klasse K 3.
Innerhalb der zulässigen Verformung belastbar bis 5 kN.

Anforderungen erfüllt

The gratings fulfill the requirement of class K 3.
Inner the allowed permanent set the max. load is 5 kN.

Requirements fulfilled

(8) Gitterrost ø 170 mm
Nr. 790.173.000.22

Lichte Weite LW des Rahmens: 167 mm
Durchmesser des Prüfstempels: 110 mm

(8) Mesh grating ø 170 mm
no. 790.173.000.22

Clear obening LW of the frame: 167 mm
Size of test block: 110 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 20 kN Durchbiegung (mm) – *permanent set (mm)*	0,39	0,35	0,43	≤ 0,67

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 20 kN.

Anforderungen erfüllt

The gratings fulfill the requirement of class L 15.
Inner the allowed permanent set the max. load is 20 kN.

Requirements fulfilled

(9) Plattenrost ø 173 mm
Nr. 790.173.000.25 / 28

Lichte Weite LW des Rahmens: 167 mm
Durchmesser des Prüfstempels: 110 mm

(9) Slot grating ø 173 mm
no. 790.173.000.25 / 28

Clear obening LW of the frame: 167 mm
Size of test block: 110 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 50 kN Durchbiegung (mm) – *permanent set (mm)*	0,35	0,51	0,46	≤ 0,67

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 50 kN.

Anforderungen erfüllt

The gratings fulfill the requirement of class L 15.
Inner the allowed permanent set the max. load is 50 kN.

Requirements fulfilled

(10) Stabrost ø 273 mm
Nr. 790.273.000.25 / 28

(10) Ladder grating ø 273 mm
no. 790.273.000.25 / 28

Lichte Weite LW des Rahmens: 266 mm
Durchmesser des Prüfstempels: 150 mm

Clear opening LW of the frame: 266 mm
Size of test block: 150 mm

Belastung - *loading* Eigenschaft - *characteristic*	Prüfstücke - *samples* 1	2	3	Anforderung - *requirement*
P = 30 kN Durchbiegung (mm) – *permanent set (mm)*	0,89	0,78	0,91	≤ 1,06

Die Roste entsprechen der Klasse L 15.
Innerhalb der zulässigen Verformung belastbar bis 30 kN.

The gratings fulfill the requirement of class L 15.
Inner the allowed permanent set the max. load is 30 kN.

Anforderungen erfüllt

Requirements fulfilled

11. Kennzeichnung

Die Kennzeichnung ist wie folgt aufgebracht:

- Herstellerzeichen
- Übereinstimmungszeichen, vereinfacht
- DIN 19599 / EN 1253
- Herstelldatum
- Nennweite
- Artikelnummer

in Form eines Metallpapieraufklebers dauerhaft und gut lesbar aufgebracht.

Die Klassenangaben der Roste mit M 125 bzw. L15 fehlt teilweise.

Das vollständige Übereinstimmungszeichen wird auf die Verpackung aufgebracht.

11. Marking

The marking is executed as follows:

- Manufacturer's mark
- Regular sign Ü for conformity, simplified
- DIN 19599 / EN 1253
- Date of manufacture
- Nominal side
- Productnumber

as a label of metallic paper durable and clear to read.

The marking of the class of the gratings with M 125 resp. L 15 is missing partially.

The complete regular sign Ü for conformity (Übereinstimmungszeichen) is set up on the packing.

Anforderungen nur teilweise erfüllt

Requirements only partially fulfilled

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