



Section 9

VortX – Floor, Shower and Roof Drains

VortX – Floor, Shower and Roof Drains

A simple range of cast iron floor gullies, shower gullies, and roof outlets that connect to cast iron drainage systems and pipework of any other material through a range of adaptors.

- Innovative P and S trapped gully designs
- Unique removable bottle trap
- Full range of accessories
 - Funnels
 - Raising pieces
 - Reducers and adaptors
- Gratings and rodding eyes in nickel bronze and stainless steel for typical use with tiles, marble, terrazzo, concrete, vinyl and resin floor finishes



Ensign & VortX Grating – 'Streatham Hub'



Innovative 'P' Trap



Shower Drain options



Vertical Roof Outlet

Section 10

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General design considerations

Building Regulations/Standards

Local regulations take priority in relation to all sanitary and drainage pipework i.e BS EN12056 parts 1-3 for the UK market

Drains should be considered in areas where water is supplied and any surface drainage required.

A trapped gully may be used to prevent foul air entering the building. The VortX range offers innovative new P and S trap designs that are lighter in weight and require less installation space (can be installed in a 180mm core) than more traditional designs on the market

Non-trapped gullies can be used with pipework incorporating a P trap within the drainage system.

Load Rating

It is important that the grating assemblies selected are able to withstand the anticipated load requirements for the application. All VortX gratings and rodding eyes have been tested in accordance with BS EN1253.

Loading Class K3: – Areas without vehicular traffic, such as dwellings, commercial and some public buildings.

Pedestrian areas and wet room applications such as shower areas, bathrooms, swimming baths, leisure centres, balconies, retail areas, hotels, offices, schools, public buildings, hospitals, prisons, terraces and roof gardens.

Loading Class L15: – Areas with light vehicular traffic such as in commercially used premises and public areas.

Loading Class M125: – Areas with Vehicular traffic such as car parks, factories and workshops

Not including light commercial vehicles or heavy wheel loads.

Flow rate

The flow rate is the maximum amount of water (litres/second) which a gully will drain. This is dependent on a number of factors:

- Grating free area
- Sump capacity
- Body free area
- Gully design
- Outlet size

Also if the gully is to be trapped or include a filter bucket.

General Principles

At low heads of water the flow rate of the gully is mainly determined by the grating free area

Flow rates for floor drains depicted against gratings pages 65-68 are taken at 20mm water depth in line with BS EN1253-1:2015 – without traps. Shower drain flow rates pages 124-125 assume the gullies are trapped.

Flow rates for roof outlets pages 131-134 are taken at 35mm water depth up to 110mm and 45mm water depth at 150mm in line with BS EN1253-2:2015.

Pipework – Compatibility

The VortX range of gullies being manufactured in cast iron and coated consistent to BS EN877 are the perfect solution to connect to the Ensign above and below ground drainage systems kitemark approved to BS EN877 by standard ductile iron couplings.

However, the VortX range can be connected to most pipework on the market with 110OD and 160OD or through a range of spigot adaptors and stepped couplings. Contact the technical hotline for assistance 01952 262529.

Floor and Flooring

The type of gratings chosen will depend on the floor finishes such as ceramic tiles, concrete or sheet covering such as vinyl. Also those fitted in a finished floor area tend to be made from the more attractive material such as nickel bronze or stainless steel which can be supplied polished for that extra aesthetic appeal.

The depth of structural slab and available space will dictate the selection of gullies, and the necessity for raising pieces and extension products. Installations with a damp proof membrane will require additional clamping collars.

For the full range and technical information download the VortX brochure from www.pam-vortex.co.uk or www.saint-gobain-pam.co.uk



Gratings

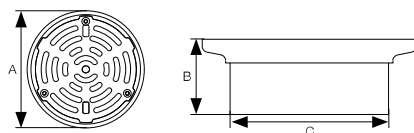
Height Adjustable

Grating bodies are threaded NPSM supplied in both nickel bronze and stainless steel for typical use with tiles, marble, terrazzo, vinyl and resin floor finishes. Supplied with standard screw fixings – security screws are available which can be ordered separately.

All gratings and rodding eyes are K3 loading class and may be supplied in a polished finish (to order) and can be installed with a removable bottle trap* where required (see page 123).

Direct Fit

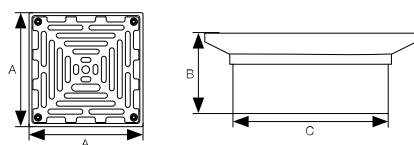
All VortX gratings and rodding eyes in both nickel bronze and stainless steel are available for direct fit connection to pipework when a gully body is not required. Ideal for connection to Ensign cast iron pipework to BS EN 877, however, the direct fit VortX gratings will connect to all pipe materials 110 OD. For other OD pipework stepped couplings or adaptors may be required (check with Technical 01952 262529).



150mm Circular Grating (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Grating free area (cm ²)	Load class
VX-F010	Nickel Bronze	NPSM	Standard 227049	Polished 234170	150	53	110	1.7	72	K3
VX-F010	Nickel Bronze	Direct Fit	Standard 233415	Polished 234171	150	53	110	1.5	72	K3
VX-F020	Stainless Steel	NPSM	Standard 227050	Polished 234172	150	53	110	1.5	72	K3
VX-F020	Stainless Steel	Direct Fit	Standard 233407	Polished 234173	150	53	110	1.5	72	K3

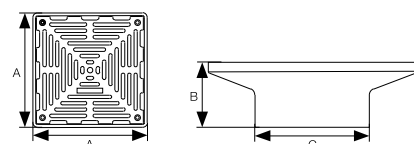
If bottle trap* required, see page 123.



150 x 150mm Square Grating (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Grating free area (cm ²)	Load class
VX-F030	Nickel Bronze	NPSM	Standard 227101	Polished 234174	150	57	110	1.3	119	K3
VX-F030	Nickel Bronze	Direct Fit	Standard 233408	Polished 234175	150	57	110	1.3	119	K3
VX-F040	Stainless Steel	NPSM	Standard 227102	Polished 234176	150	57	110	1.2	119	K3
VX-F040	Stainless Steel	Direct Fit	Standard 233421	Polished 234177	150	57	110	1.2	119	K3

If bottle trap* required, see page 123.

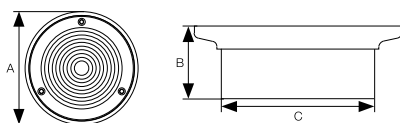


200 x 200mm Square Grating (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Grating free area (cm ²)	Load class
VX-F050	Nickel Bronze	NPSM	Standard 227103	Polished 234178	200	62	110	3.1	148	K3
VX-F050	Nickel Bronze	Direct Fit	Standard 233423	Polished 234179	200	62	110	3.1	148	K3
VX-F060	Stainless Steel	NPSM	Standard 227104	Polished 234180	200	62	110	2.8	148	K3
VX-F060	Stainless Steel	Direct Fit	Standard 233424	Polished 234181	200	62	110	2.8	148	K3

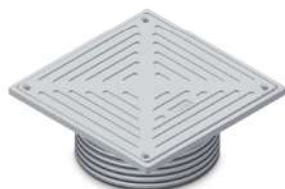
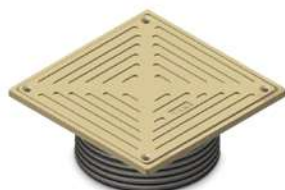
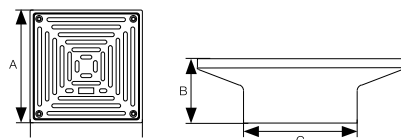
If bottle trap* required, see page 123.

Rodding Eyes



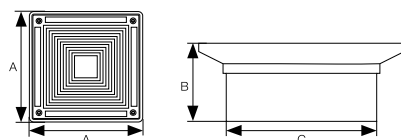
150mm Circular Rodding Eyes (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Load class
VX-F015	Nickel Bronze	NPSM	Standard 227105	Polished 234182	150	53	110	1.8	K3
VX-F015	Nickel Bronze	Direct Fit	Standard 233426	Polished 234183	150	53	110	1.8	K3
VX-F025	Stainless Steel	NPSM	Standard 227106	Polished 234184	150	53	110	1.6	K3
VX-F025	Stainless Steel	Direct Fit	Standard 233427	Polished 234185	150	53	110	1.6	K3



150 x 150mm Square Rodding Eyes (NPSM threaded or Direct Fit)

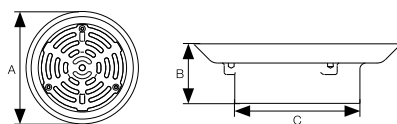
GEN code	Material	FIT	Finish		A	B	C	wt/kg	Load class
VX-F035	Nickel Bronze	NPSM	Standard 227107	Polished 234187	150	57	110	1.4	K3
VX-F035	Nickel Bronze	Direct Fit	Standard 233428	Polished 234188	150	57	110	1.4	K3
VX-F045	Stainless Steel	NPSM	Standard 227108	Polished 234189	150	57	110	1.3	K3
VX-F045	Stainless Steel	Direct Fit	Standard 233430	Polished 234190	150	57	110	1.3	K3



200 x 200mm Square Rodding Eyes (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Load class
VX-F055	Nickel Bronze	NPSM	Standard 227109	Polished 234191	200	62	110	3.4	K3
VX-F055	Nickel Bronze	Direct Fit	Standard 233431	Polished 234192	200	62	110	3.4	K3
VX-F065	Stainless Steel	NPSM	Standard 227110	Polished 234193	200	62	110	3.1	K3
VX-F065	Stainless Steel	Direct Fit	Standard 233433	Polished 234194	200	62	110	3.1	K3

Gratings for Vinyl Floors

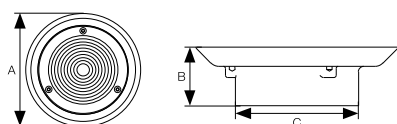


150mm Circular Grating (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Grating free area (cm²)	Load class
VX-F070	Nickel Bronze	NPSM	Standard 227111	Polished 234195	170	53	110	2.3	72	K3
VX-F070	Nickel Bronze	Direct Fit	Standard 233434	Polished 234196	170	53	110	2.3	72	K3
VX-F080	Stainless Steel	NPSM	Standard 227112	Polished 234197	170	53	110	2.1	72	K3
VX-F080	Stainless Steel	Direct Fit	Standard 233435	Polished 234198	170	53	110	2.1	72	K3

If bottle trap* required, see page 123.

Rodding Eyes for Vinyl Floors



150mm Rodding Eye (NPSM threaded or Direct Fit)

GEN code	Material	FIT	Finish		A	B	C	wt/kg	Grating free area (cm²)	Load class
VX-F075	Nickel Bronze	NPSM	Standard 227113	Polished 234199	170	53	110	2.4	N/A	K3
VX-F075	Nickel Bronze	Direct Fit	Standard 233438	Polished 234200	170	53	110	2.4	N/A	K3
VX-F085	Stainless Steel	NPSM	Standard 227114	Polished 234201	170	53	110	2.2	N/A	K3
VX-F085	Stainless Steel	Direct Fit	Standard 233439	Polished 234202	170	53	110	2.2	N/A	K3

Cast Iron Gratings



150mm Circular Cast Iron Grating

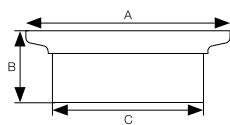
GEN code	SAP Code	Fit	A	B	C	wt/kg	Grating free area (cm²)	Load class
VX-F090	247771	NPSM	182	57	119	2.9	72	L15
VX-F090	247773	Direct	182	57	119	3	72	L15

150 x 150mm Square Cast Iron Grating

GEN code	SAP Code	Fit	A	B	C	wt/kg	Grating free area (cm²)	Load class
VX-F100	247772	NPSM	150	63	119	2.9	119	L15
VX-F100	247774	Direct	150	63	119	3	119	L15

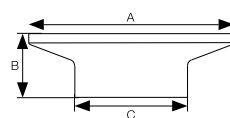
Can be machined to accommodate bottle trap by special request.

Anti-Ligature Gratings



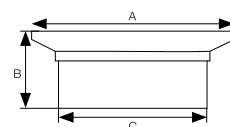
150mm Circular Grating (NPSM threaded)

GEN code	Material	FIT	Finish	A	B	C	wt/kg	Flow rate L/sec	Load class
VX-F021	Stainless Steel	NPSM	Standard 250676	150	53	110	1.5	1.1	K3



150 x 150mm Square Grating (NPSM threaded)

GEN code	Material	FIT	Finish	A	B	C	wt/kg	Flow rate L/sec	Load class
VX-F041	Stainless Steel	NPSM	Standard 250677	150	53	110	1.6	1.1	K3



170mm Circular Grating (NPSM threaded)

GEN code	Material	FIT	Finish	A	B	C	wt/kg	Flow rate L/sec	Load class
VX-F081	Stainless Steel	NPSM	Standard 250678	170	53	110	2.1	1.1	K3

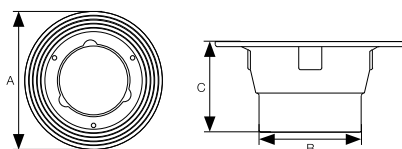
Gully Bodies (Non-Trapped)

Gully Bodies (Non-Trapped)

The VortX gully bodies are manufactured in cast iron, trapped or non-trapped, NPSM threaded to accept raising pieces and gratings.

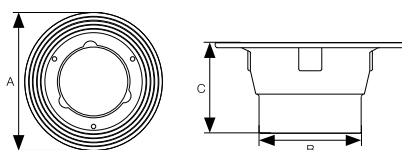
The VortX bodies have been designed to reduce the chance of build up of debris and provide improved flow. The unique flange design has 4 identification rings that give an excellent key to the waterproofing membrane or final floor finish and has dimples to assist drill location for fixing to the structural floor removing the requirement for a deck clamp.

All gully bodies are supplied in a grey epoxy coating consistent with BS EN 877 fittings.



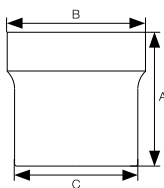
Medium Sump Body (110mm Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F200	227119	205	110	100	2.4



Medium Sump Body (Threaded 4" BSP)

GEN code	SAP code	A	B	C	wt/kg
VX-F200	227118	205	121	100	2.6



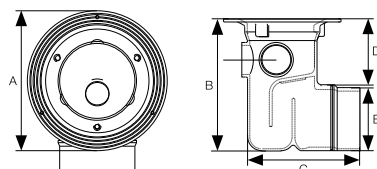
Sumpless Body (110mm outlet)

GEN code	SAP code	Material	A	B	C	wt/kg
VX-F210	227120	Cast Iron	124	120	110	1.6

Gully Bodies (Trapped)

Gully Bodies (Trapped)

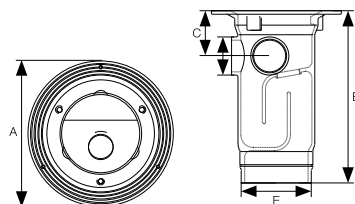
New innovative “P” and “S” trap designs are lighter in weight and minimise the space required that is needed by the more traditional products on the market. Supplied with 110mm spigot outlets, three plugged 2” BSP inlets incorporating the same flange design features and can be installed with the standard clamp ring if required.



P Trap (110mm outlet)

GEN code	SAP code	A	B	C	D	E	wt/kg
VX-F220	227129	205	230	196	115	110	5.6

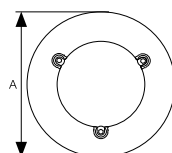
Registered Design 1345789-0001



S Trap (110mm outlet)

GEN code	SAP code	A	B	C	D	E	wt/kg
VX-F230	227130	205	295	72	60	110	5.6

Registered Design 1345789-0002



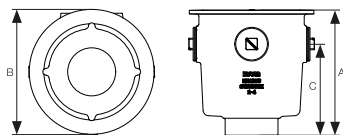
Clamping Ring (to suit all gullies)

GEN code	SAP code	Material	A	B	wt/kg
VX-F205	223440	Cast Iron	205	12	0.9

New Deep Sump Gullies

New Deep Sump Gullies

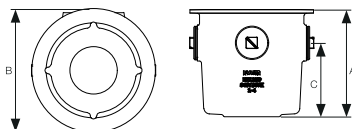
New to VortX is a range of cast iron deep sump gullies, bell traps and brewery traps that offer a variety of solutions for any application. The cast iron deep sumps are available with 100mm spigot outlets or 4" and 6" BSP outlets, 3 x 2" BSP inlet positions, and the option of a 100mm BSP inlet. The bodies are supplied in a grey epoxy coating.



Cast Iron Deep Sump Body (100mm Spigot Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F215	260384	270	260	200	12.3

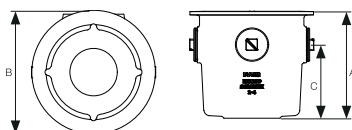
Body can also include 4" BSP Inlet on upon request.



Cast Iron Deep Sump Body (4" BSP Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F215	260385	226	260	155	11.5

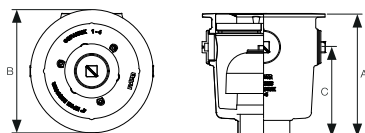
Body can also include 4" BSP Inlet on upon request.



Cast Iron Deep Sump Body (6" BSP Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F215	260386	226	260	155	10.1

Body can also include 4" BSP Inlet on upon request.



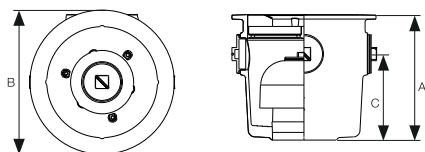
Bell Trap Body (100mm Spigot Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F250	260387	270	260	200	12.3

Body can also include 4" BSP Inlet on upon request.

Includes a 4" NPSM reducing body collar to allow compatibility with all VortX – nickel, bronze and stainless steel gratings and rodding eyes with NPSM thread.

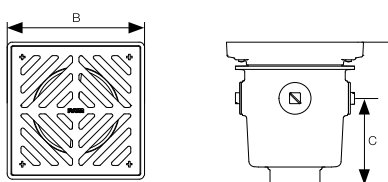
New Deep Sump Gullies



Bell Trap Body (4" BSP Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F250	260388	226	260	155	11.5

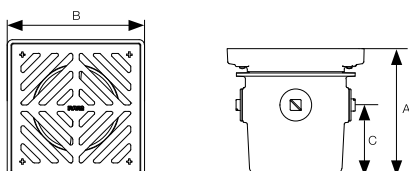
Body can also include 4" BSP Inlet on upon request.
Includes a 4" NPSM reducing body collar to allow compatibility with all VortX – nickel, bronze and stainless steel gratings and rodding eyes with NPSM thread.



100mm Brewery Trap (100mm Spigot Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F240	260389	312-342	300	190	29.6

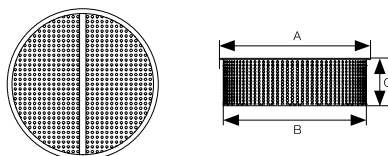
Grating height variable 30mm.



100mm Brewery Trap (4" BSP Outlet)

GEN code	SAP code	A	B	C	wt/kg
VX-F244	260390	280-310	300	155	28.6

Grating height variable 30mm.

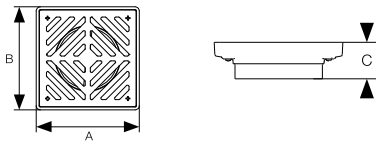


Galvanised Filter Basket

GEN code	SAP code	A	B	C	wt/kg
VX-F415	260391	188	178	60	0.5

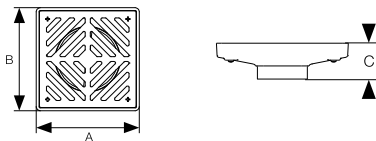
To suit deep sump and bell trap.

New Deep Sump Gullies – Gratings



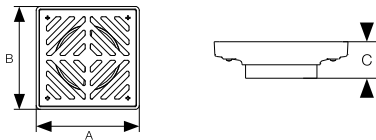
Ductile Iron Gratings (8" NPSM
300 x 300mm Ductile Iron Grating
Sheradised)

GEN code	SAP code	A	B	C	wt/kg
VX-F110	260392	300	300	84	14



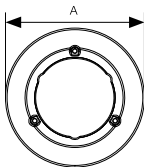
Ductile Iron Gratings (4" NPSM
300 x 300mm Ductile Iron Grating
Sheradised)

GEN code	SAP code	A	B	C	wt/kg
VX-F130	260393	300	300	82	14.5



Ductile Iron Gratings (300 x 300mm)
Direct Fit (Sheradised)

GEN code	SAP code	Size SP16	A	B	C	wt/kg
VX-F110	260394	200	300	300	84	14
VX-F120	260395	150	300	300	82	14.1
VX-F130	260396	100	300	300	82	14.4



VortX Bell Trap/Deep Sump
Reducing Ring 4" NPSM

GEN code	SAP code	A	wt/kg
VX-F206	260397	200	0.5

Can be fitted to Deep Sump/Bell Traps to enable connection with nickel bronze/stainless steel gratings.

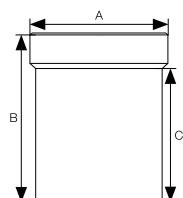
Accessories

Raising Pieces

Supplied in grey epoxy coated cast iron, NPSM threaded and in three standard height sizes to provide additional adjustment for the gratings and rodding eyes.

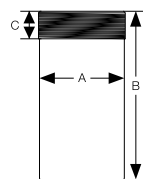
Adaptors

Manufactured in cast iron – BSP threaded which are available in a number of diameters to connect to the 4" BSP floor drain body utilising reducing bushes. The adaptors allow connection to cast iron, PVC and other materials.



Cast Iron Raising Pieces (NPSM threaded)

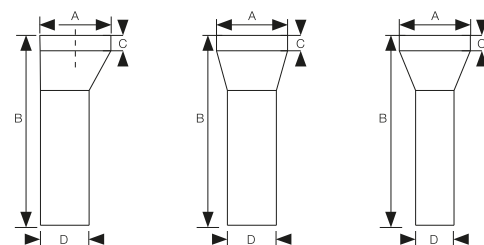
GEN code	SAP code	Size	A	B	C	wt/kg
VX-F350	227123	95-140	120	155	120	2.0
VX-F350	227122	40-95	120	117	80	1.5
VX-F350	227121	20-40	120	62	25	0.8



Spigot Adaptors (BSP)

GEN code	SAP code	Size	A	B	C	wt/kg
VX-F500	227131	110 to 4" (BSP)	110	215	35	2.7
VX-F500	234206	56 to 2" (BSP)	56	215	27	1.1
VX-F500	247249	160 to 6" (BSP)	160	300	35	6.2

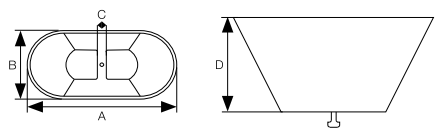
Use with 150 Vortx Roof Outlets. See page 79.



Concentric/Eccentric Spigot Adaptors

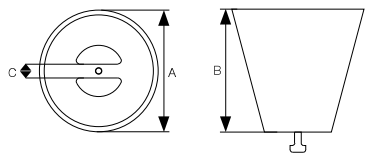
GEN code	SAP code	Size	A	B	C	D	wt/kg
VX-F501	256614	4" BSP to 80mm	4" BSP	300	25	80	2.8
VX-F501	256615	4" BSP to 80mm	4" BSP	300	25	80	2.8
VX-F501	256613	4" BSP to 60mm	4" BSP	300	25	60	2.3

Accessories



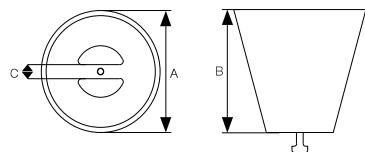
Oval Funnel/VX-F305

SAP code	Material	A	B	C	D	wt/kg
227116	Nickel Bronze	225	100	12	95	0.7



Circular Funnel/VX-F300

SAP code	Material	A	B	C	wt/kg
227117	Nickel Bronze	100	94	12	0.3



Circular Funnel/VX-F310

SAP code	Material	A	B	C	wt/kg
227115	Stainless Steel	100	94	12	0.2



Security Screws/VX-F420

SAP code	Material	A	B	C	wt/kg
233455	Stainless Steel	-	-	-	0.1

For securing gratings/rodding eyes.



Airtight Bung

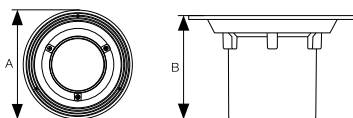
GEN code	Material	Code	Size	wt/kg
VX-F420	ABS	241195	105	0.01

To fit all rodding eyes to make double seal.

Shower Drain Bodies

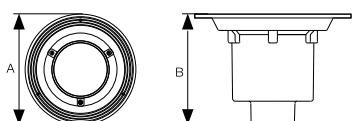
Shower Drain Bodies

Manufactured in cast iron with grey epoxy coating incorporating the VortX styling flange design. The shower gullies are available in 110mm O.D. and 60mm O.D. horizontal spigots and 60mm O.D. vertical spigots. The shower gullies should be fitted with the VortX removable bottle trap*.



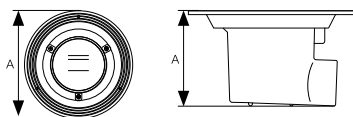
Cast Iron Vertical Shower Drain

GEN code	SAP code	Size	A	B	wt/kg
VX-S260	227125	110mm	210	130	2.4



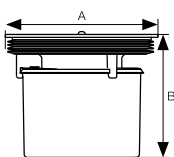
Cast Iron Vertical Shower Drain

GEN code	SAP code	Size	A	B	wt/kg
VX-S260	227126	60mm	210	149	2.4



Cast Iron Horizontal Shower Drain

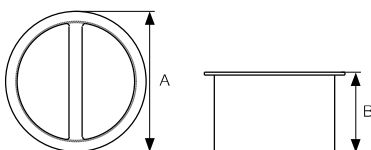
GEN code	SAP code	Size	A	B	wt/kg
VX-S261	227127	60mm	210	121	2.5



50mm Removable Bottle Trap (Registered design)

GEN code	SAP code	Material	A	B	wt/kg
VX-F400	227128	ABS	111	92	0.1

Registered design number 1285415 – 0001-0005. Can be fitted to gratings nickel bronze/ stainless steel.



Gravel Guard

GEN code	SAP code	Material	A	B	wt/kg
VX-F410	227138	Stainless Steel	102	60	0.2

Shower Drain Gratings



150mm Circular Grating for Vinyl Floor

GEN code	Material	Finish		A	wt/kg	Flow rate L/sec V.O	Flow rate L/sec H.O	Load class
VX-S270	Stainless Steel	Standard 227132	Polished 234208	150	0.8	1.1	0.9	K3

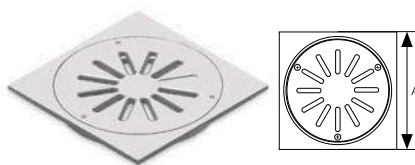
Flow rate at 20mm water depth – trapped body. V.O = Vertical Shower Outlet. H.O = Horizontal Shower Outlet.



150mm Circular Decorative Grating for Vinyl Floor

GEN code	Material	Finish		A	wt/kg	Flow rate L/sec V.O	Flow rate L/sec H.O	Load class
VX-S270	Stainless Steel	Standard 227133	Polished 234209	150	0.7	1.1	0.9	K3

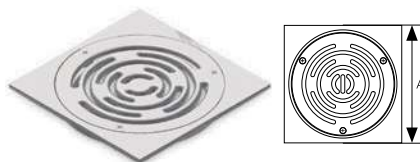
Flow rate at 20mm water depth – trapped body. V.O = Vertical Shower Outlet. H.O = Horizontal Shower Outlet.



150 x 150mm Square Grating for Tiled Floor

GEN code	Material	Finish		A	wt/kg	Flow rate L/sec V.O	Flow rate L/sec H.O	Load class
VX-S271	Stainless Steel	Standard 227134	Polished 234210	150	1.0	1.1	0.9	K3

Flow rate at 20mm water depth – trapped body. V.O = Vertical Shower Outlet. H.O = Horizontal Shower Outlet.



150 x 150mm Square Decorative Grating for Tiled Floor

GEN code	Material	Finish		A	wt/kg	Flow rate L/sec V.O	Flow rate L/sec H.O	Load class
VX-S271	Stainless Steel	Standard 227135	Polished 234211	150	0.9	1.1	0.9	K3

Flow rate at 20mm water depth – trapped body. V.O = Vertical Shower Outlet. H.O = Horizontal Shower Outlet.

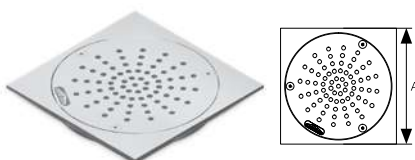
Anti-ligature



150mm Circular Grating for Vinyl Floor

GEN code	Material	Finish		A	wt/kg	Flow rate L/sec V.O	Flow rate L/sec H.O	Load class
VX-S272	Stainless Steel	Standard 250679	Polished POA/to order	150	0.8	1.1	0.9	K3

Flow rate at 20mm water depth – trapped body. V.O = Vertical Shower Outlet. H.O = Horizontal Shower Outlet.



Anti-ligature

150 x 150mm Square Decorative Grating for Tiled Floor

GEN code	Material	Finish		A	wt/kg	Flow rate L/sec V.O	Flow rate L/sec H.O	Load class
VX-S273	Stainless Steel	Standard 250680	Polished POA/to order	150	1.0	1.1	0.9	K3

Flow rate at 20mm water depth – trapped body. V.O = Vertical Shower Outlet. H.O = Horizontal Shower Outlet.

TBA – Please contact technical department 01952 262 529

Shower Drain Kits



Shower Drain Kits

VortX shower drain kits consist of a cast iron shower drain, a removable bottle trap and a stainless steel grating of choice in either standard or polished finish, supplied in a box.



VX-S260



Cast Iron Vertical Shower Drain – 100mm with a 50mm removable trap (VX-F400)
Choice of Gratings:

					Flow rate L/sec	
	Standard	239376	239736	239734	239738	1.1
	Polished	239733	239737	239735	239739	1.1
	Kit wt/kg	3.3	3.2	3.5	3.4	

Flow rate at 20mm water depth – trapped

VX-S260

Cast Iron Vertical Shower Drain – 50mm spigot with a 50mm removable trap (VX-F400)
Choice of Gratings:

					Flow rate L/sec	
	Standard	239340	239744	239742	239746	1.1
	Polished	239741	239745	239743	239747	1.1
	Kit wt/kg	3.3	3.3	3.5	3.4	

Flow rate at 20mm water depth – trapped

VX-S261

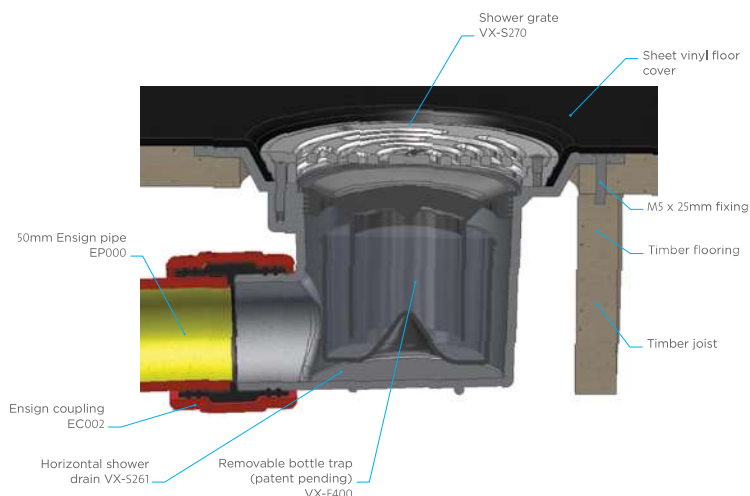
Cast Iron Horizontal Shower Drain – 50mm spigot with a 50mm removable trap (VX-F400)
Choice of Gratings:

					Flow rate L/sec	
	Standard	239348	239752	239750	239754	0.9
	Polished	239749	239753	239751	239755	0.9
	Kit wt/kg	3.4	3.3	3.6	3.5	

Flow rate at 20mm water depth – trapped

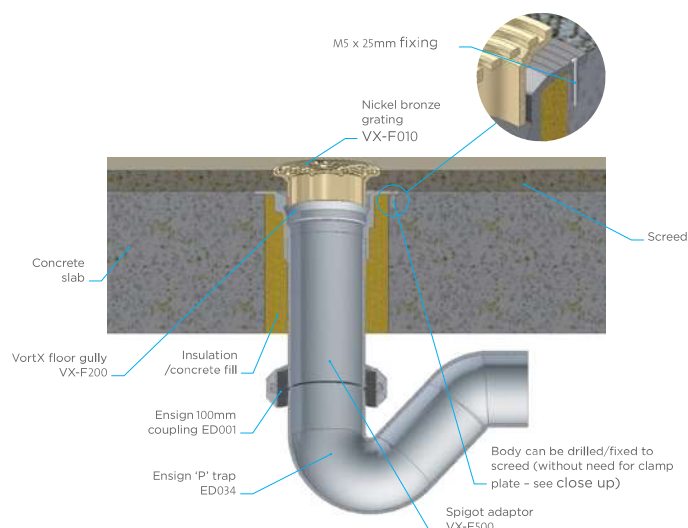
Typical installations

Shower application



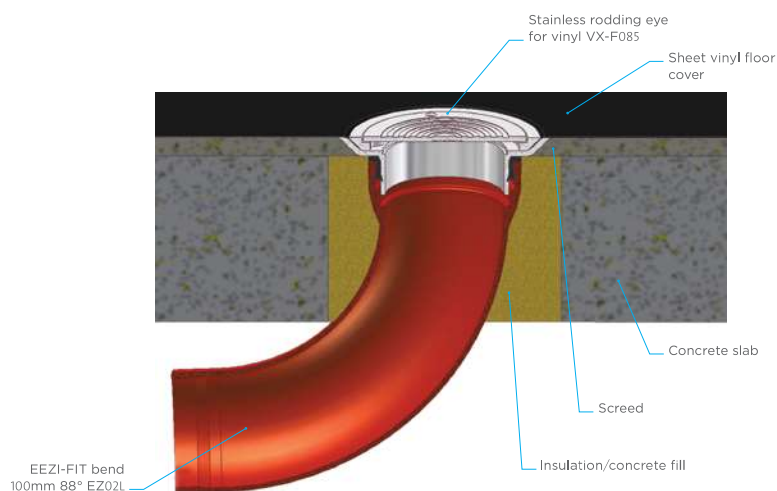
VortX shower drains can be installed in many different applications. Typically the circular gratings VX-S270 are used for vinyl sheet style floor finishes, solid flooring, or timber deck as shown in the diagram. For tiled flooring use the square grates VX-S271. New anti-ligature shower gratings have now been added to the range – check for availability.

Screed Floor with 'P' Trap



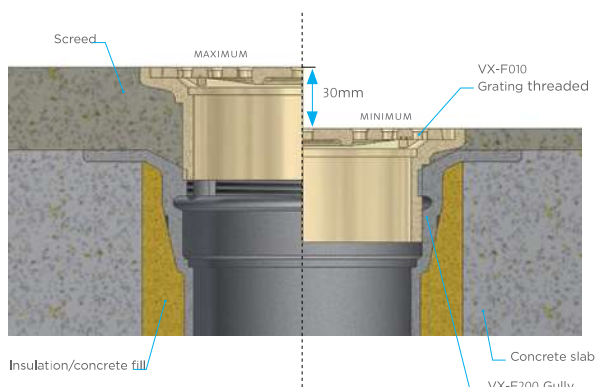
Installations which require a higher level of flow through the grating should use a P trap arrangement which offers less restriction as shown in the diagram. The VortX range of floor gullies, connect directly to the Ensign/Timesaver above and below ground systems using the VX-F500 spigot adaptors.

Connection to Direct Fit Gratings (without gully)



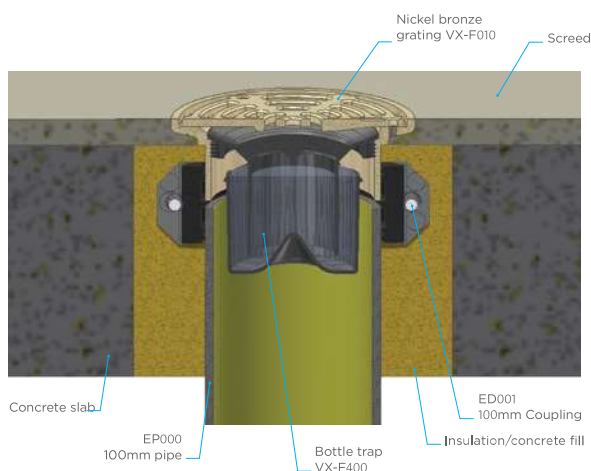
Access to below ground or suspended drainage systems can be designed as simple rodding eye points using Direct Fit gratings. This diagram again shows the flexibility of the PAM ranges of products demonstrating how the grating can connect directly with an EEZI-FIT large radius bend.

Adjustable Grating Height



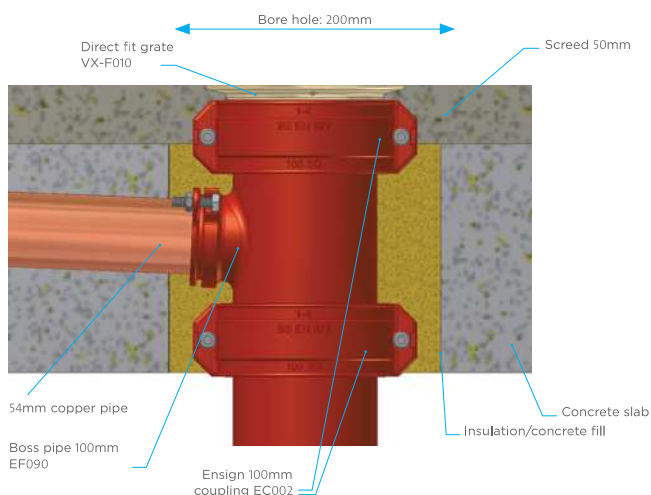
All VortX Nickel bronze and Stainless steel gratings with NPSM threaded spigots allow up to 30mm height adjustment for various depths of floor finish, when screwed directly into the floor gully (as shown). If further height adjustment is needed use in conjunction with VX-F350 NPSM threaded cast iron raising pieces to reach the height required.

Direct Fit Floor Drain



If the grating can be installed in the floor screed without the need for height adjustment then a cost effective option can be to use a Direct Fit grating fitted with a bottle trap. The grating has a spigot of 110mm OD which allows connection to cast iron, HDPE, PVC pipework using a mechanical coupling to suit various ranges ie. EC002 / ED001 /GT01 /TD02.

Drain with Side Inlet

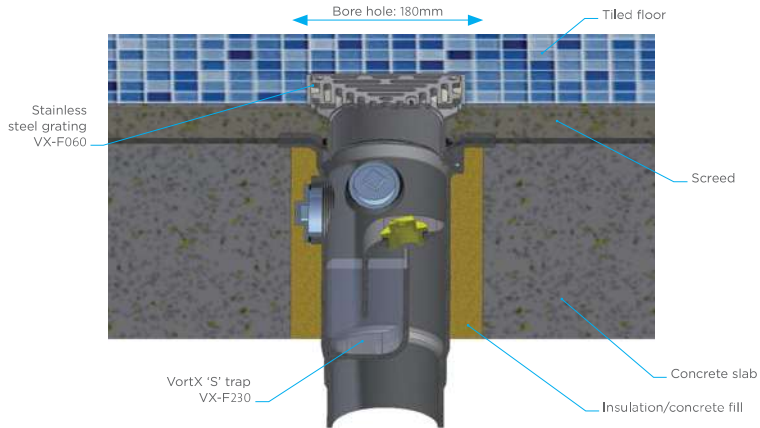


The VortX floor drain range can offer flexible solutions when used in conjunction with the Ensign or Timesaver cast iron drainage system. If there is a need to connect waste pipes from appliances to a back or side inlet – this can be achieved using a direct fit nickel bronze grating connected to an Ensign boss pipe (EF090) using a standard ductile iron coupling EC002.

For an EEZI-FIT system the grating can be pushed directly into EEZI-FIT Boss pipes EZ090/91/92.

New 'S' Trap (for tiled floor)

Highlighting space saving opportunities for diameter of bore hole.



The VortX range includes the innovatively designed S Trap in 100mm diameter which has 3 no. 2" BSP back inlet positions which are supplied plugged off for potential future use.

The slim-line S Trap incorporates an internal plug located for rodding/cleaning access and only requires a bore hole of 180mm.

Side inlet connections

For side inlet connections on the "P" trap VX-F220 & "S" trap VX-F230 bodies, these are provided by a 2" BSP female thread, which comes blanked off when supplied with a 2" BSP plug (with rubber washer). Ensure that these are tightened prior to installation of the body. For connections to alternative materials i.e. copper, muPVC or ABS etc please use a BSP adaptor and a PTFE tape to seal the thread.

Side inlets can also be achieved on other gully bodies/direct fit gratings by using boss pipes from Ensign EF090 – EF092 and EEZI-FIT EZ090 – EZ093. See page 127.

Rodding eyes – Double seal

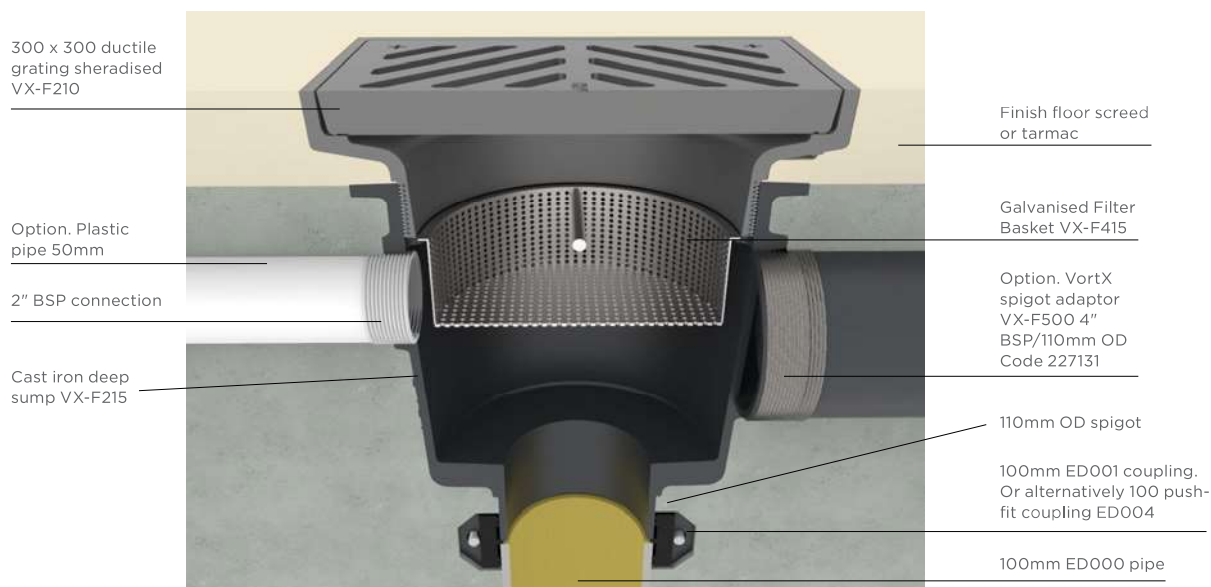
VortX rodding eyes are single seal. Fit airtight bung (see page 122) to rodding eyes to make double seal units.

Connections to Pipe systems

	Material Type						
	Cast Iron					PVC/HDPE	Clay
Floor Gully/ Roof Outlet Bodies	Ensign soil BS EN 877 – 100mm	Ensign drain BS EN 877 – 100mm	EEZI-FIT BS EN 877 – 100mm	Timesaver soil BS 416 – 100mm	Timesaver drain BS 437 – 100mm	BS 46600/ BS EN 1401 – 110mm	BS EN 295-1 100mm
Spigot (110 OD)	EC002	ED001	EZ001	GT01	TD02	EC002/GT01	ED001/ ED076
Spigot (4" BSP)	VXF-500/ EC002	VXF-500 & ED001	VXF-500 & EZ001	VXF-500 & GT01	VXF-500 & TD02	VXF-500/ EC002/GT01	VXF-500/ ED001 & ED076
Shower Gully Bodies							
Spigot (110 OD)	EC002	ED001	EZ001	GT01	TD02	EC002/GT01	ED001 & ED076
Spigot (60 OD)	EC002	-	-	GT01	-	EF071R	-
Direct Fit Gratings							
Nickel Bronze Stainless Steel	EC002	ED001	EZ001	GT01	TD02	EC002/GT01	ED001 & ED076

VortX – Deep sump with 300x300m grating 100mm spigot

Typical applications – Yard or plantrooms

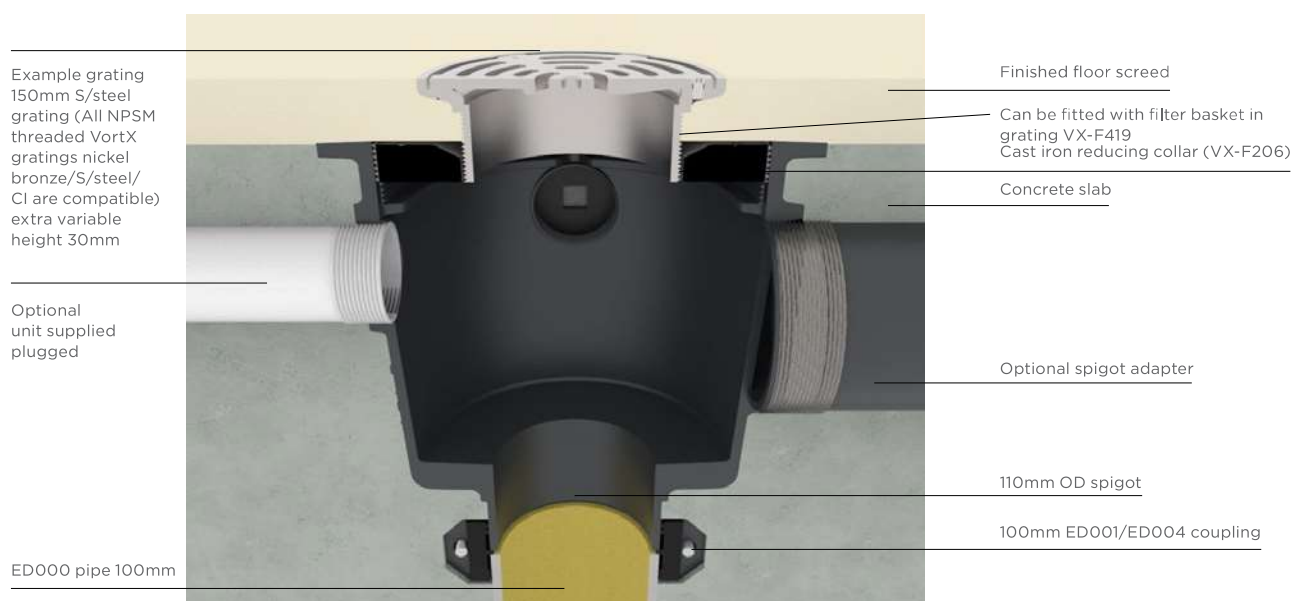


Bill of materials:

Product code	Description
260384	Cast iron deep sump body - VX-F215
260392	300mmx300mm ductile/iron grating sheradised - VX-F210
260391	Galvanised filter basket - VX-F415

VortX – Deep sump – 110 spigot outlet with Stainless steel grating

Typical applications – Plant rooms/service rooms or kitchens

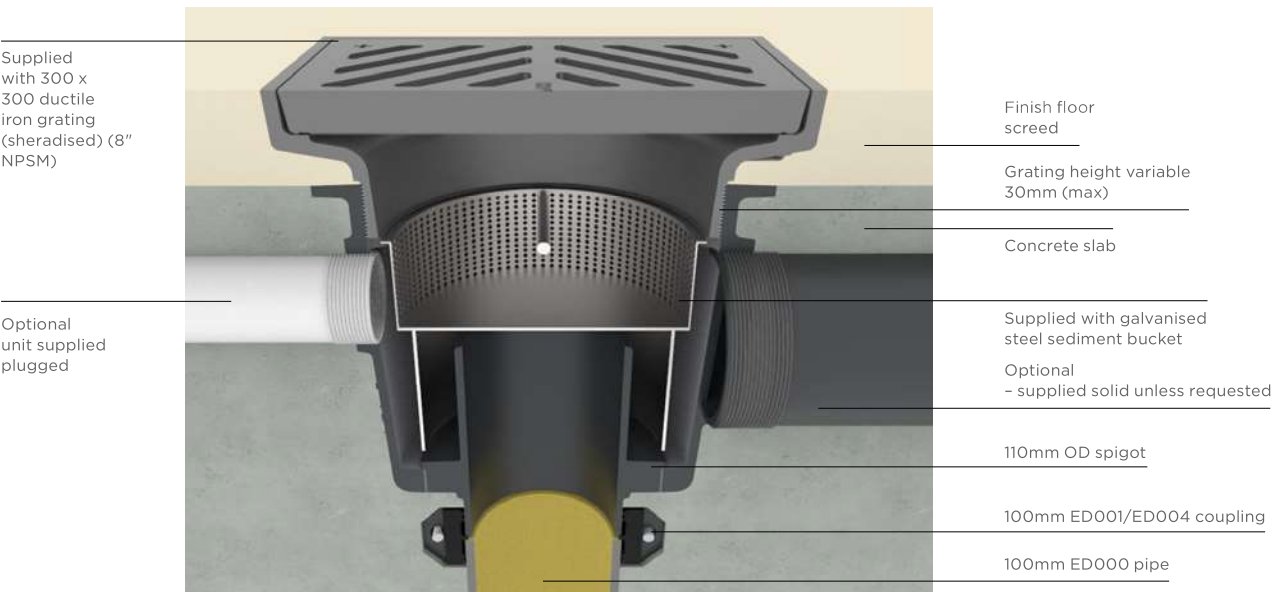


Bill of materials:

Product code	Description
260384	Cast iron deep sump body - VX-F215
260397	200mm cast iron reducing collar - VXF206
227050	ISO circular stainless steel grating NPSM - VXF020

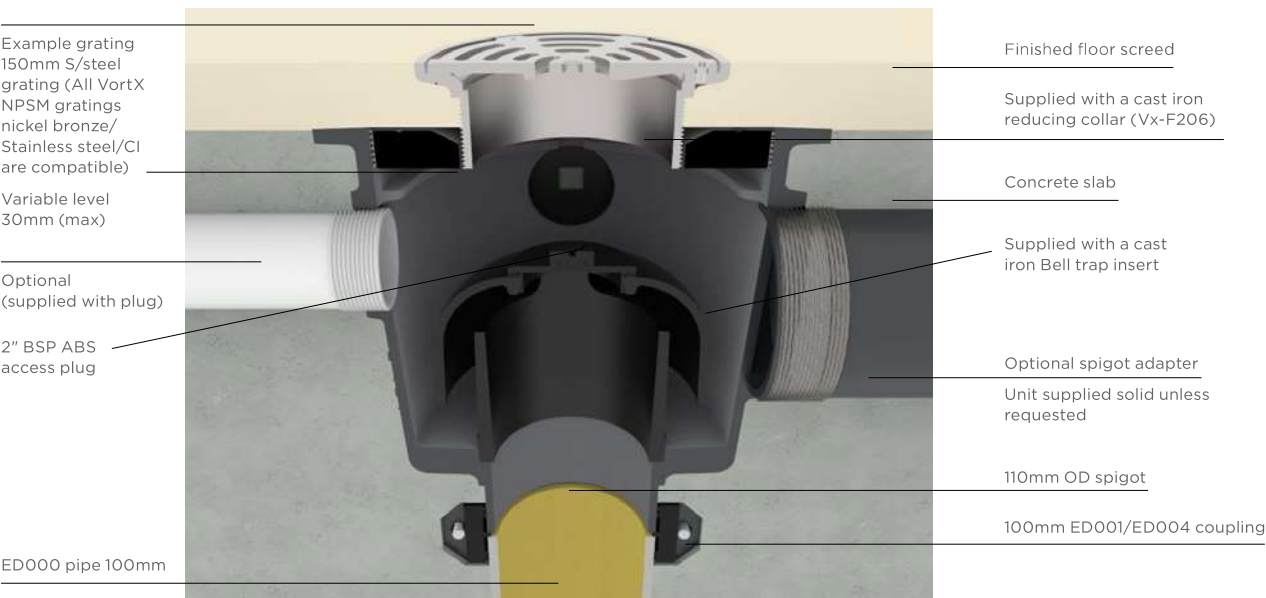
VortX – Brewery trap VX-F240/SAP code 260389

Typical applications – Brewery, railways, industrial – requiring a high flow capability



VortX – Bell trap 110mm spigot outlet VX-F250/SAP code 260387

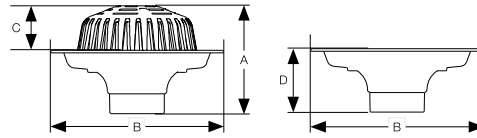
Typical applications – Plant rooms/service rooms or kitchens



Roof Outlets

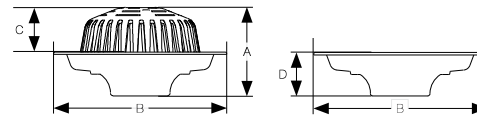
VortX Roof Outlets

A new range of cast iron roof outlets that offer robust long lasting solutions for most construction market applications. Designed in accordance with BS EN 1253 the range consists of cast iron bodies epoxy coated to the high standard of BS EN 877 with the gratings and clamping rings protected by sheradising. All VortX roof outlets have been flowrate tested and comply fully with the standard and will connect to most drainage systems on the market.



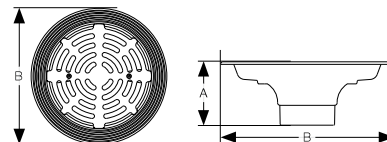
Vertical

GEN code	SAP code	Dia	A	B	C	D	wt/kg	Flow Rate L/S
VX-R105	241181	110	220	350	91	89	8.9	10.7



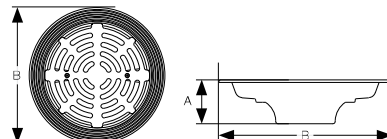
Vertical

GEN code	SAP code	Dia	A	B	C	D	wt/kg	Flow Rate L/S
VX-R155	241183	4" (BSP)	180	350	91	89	8.4	10.7
VX-R155	247413	6" (BSP)	184	386	64	120	12.8	14.5



Vertical

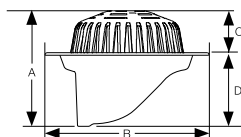
GEN code	SAP code	Dia	A	B	wt/kg	Load Class	Flow Rate L/S
VX-R100	241180	110	129	350	10.5	L15	8.1



Vertical

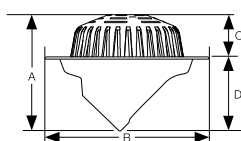
GEN code	SAP code	Dia	A	B	wt/kg	Load Class	Flow Rate L/S
VX-R150	241182	4" (BSP)	89	350	10	L15	8.1
VX-R150	247428	6" (BSP)	64	386	14.8	L15	14.2

Roof Outlets



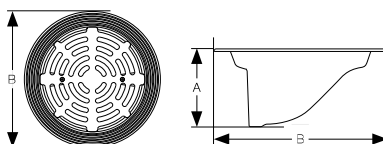
Angled 88° Dome Grate

GEN code	SAP code	Dia	A	B	C	D	wt/kg	Flow Rate L/S
VX-R255	255261	4" BSP	249	350	86	163	7.9	10.7



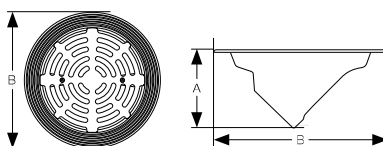
Angled 45° Dome Grate

GEN code	SAP code	Dia	A	B	C	D	wt/kg	Flow Rate L/S
VX-R256	255249	4" BSP	255	350	86	169	9.9	10.7



Angled 88° Flat Grate

GEN code	SAP code	Dia	A	B	wt/kg	Load Class	Flow Rate L/S
VX-R250	255262	4" BSP	163	350	6.5	L15	8.1

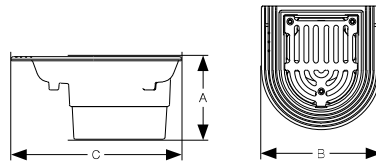


Angled 45° Flat Grate

GEN code	SAP code	Dia	A	B	wt/kg	Load Class	Flow Rate L/S
VX-R251	255250	4" BSP	169	350	8.5	L15	8.1

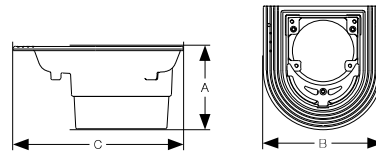
Smaller Diameters
Use spigot adaptors VX-F500 - VX-F501 for 110, 80 and 60mm Ø pipe connection.
See page 74.

Roof Outlets



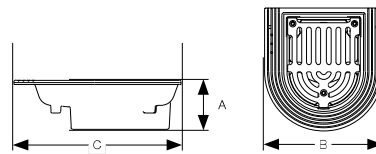
Balcony Spigot - Flat Grating

GEN code	SAP code	Spigot Dia	A	B	C	wt/kg	Flow Rate L/S
VX-R300	241184	110	100	200	210	3.6	4.99



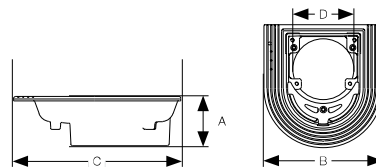
Balcony Spigot - Notched Grating

GEN code	SAP code	Spigot Dia	Pipework Dia	A	B	C	wt/kg	Flow Rate L/S
VX-R305	241187	110	100	100	200	210	3.2	4.99
VX-R305	241186	110	75	100	200	210	3.4	4.15
VX-R305	241185	110	50	100	200	210	3.5	1.41



Balcony Threaded - Flat Grating

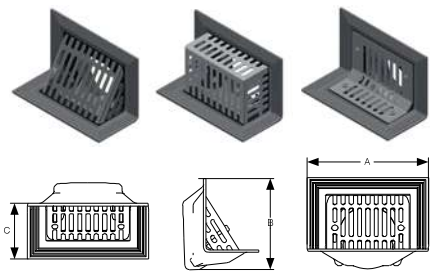
GEN code	SAP code	Spigot BSP	A	B	C	wt/kg	Flow Rate L/S
VX-R350	241188	4"	60	200	210	3.0	4.99



Balcony Threaded - Notched Grating

GEN code	SAP code	Spigot Dia	Pipework Dia	A	B	C	wt/kg	Flow Rate L/S
VX-R355	241191	4"	100	60	200	210	2.3	4.99
VX-R355	241190	4"	75	60	200	210	2.8	4.15
VX-R355	241189	4"	50	60	200	210	2.9	1.41

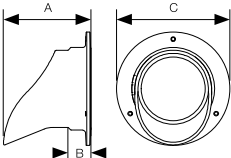
Roof Outlets



Two-Way Outlet BSP Threaded

GEN code	SAP code	Grating	BSP	A	B	C	wt/kg	Flow Rate L/S
VX-R500	241192	Angled	4"	234	172	111	6.2	1.09
VX-R501	247964	Flat	4"	234	172	111	6.2	1.09
VX-R502	248015	Boxed	4"	234	172	111	6.2	1.09

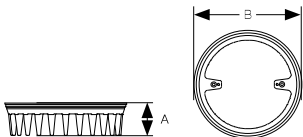
Stainless steel gratings.



Two-Way Downspout

GEN code	SAP code	A	B	C	wt/kg
VX-R510	253762	140	35	180	2.2

Cast iron push-fit black polyester coated.

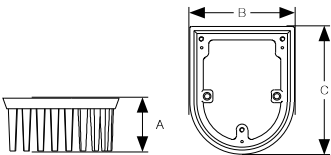


Raising Pieces



Raising Piece for Vertical Outlet VX-R100/150

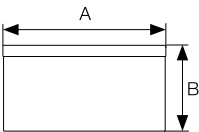
GEN code	SAP code	A	B	wt/kg
VX-R710	241193	75	285	2.5



Raising Piece for Balcony Outlet VX-R300/350

GEN code	SAP code	A	B	C	wt/kg
VX-R720	241194	73 (63 effective)	134	165	0.9

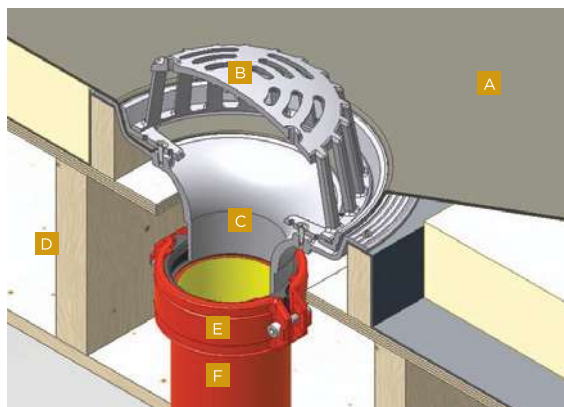
Gravel Guard



Filter Basket

GEN code	SAP code	Material	A	B	wt/kg
VX-R730	247752	Stainless Steel	291	155	0.2

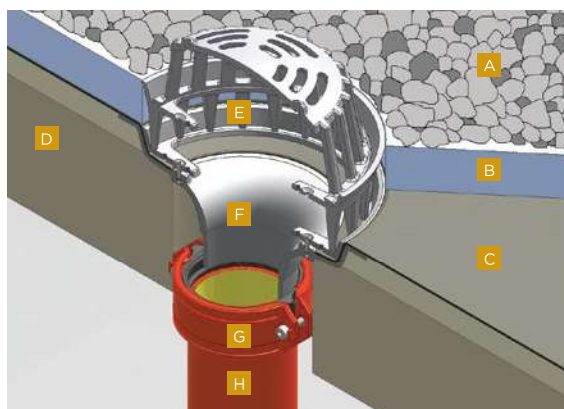
Cast Iron Roof Outlets – Typical Installations



Cold Roof Applications

1. Vertical outlet with dome grating

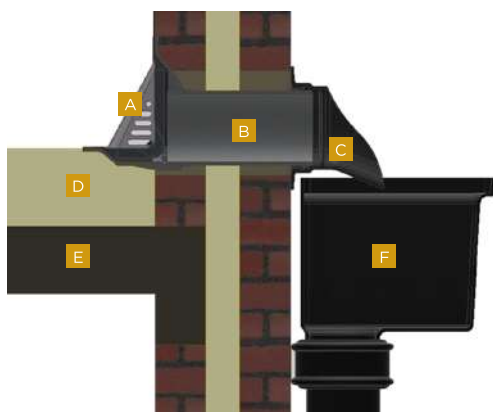
- A. Membrane
- B. Cast Iron Dome Grate
- C. VX-R105 Spigot Body
- D. Timber Deck
- E. 100mm Ensign/Timesaver Coupling ECO02/GT01
- F. 100mm Ensign Timesaver Pipework



Warm Roof Applications

2. Vertical spigot outlet with raising piece

- A. Gravel
- B. Insulation
- C. Membrane
- D. Concrete Deck
- E. Raising Extension Piece VX-R710
- F. VX-R105 Spigot Body
- G. 100mm Ensign/Timesaver Coupling ECO02/GT01
- H. 100mm Ensign/Timesaver Pipework



3. Two way outlet with spigot adaptor

- A. VX-R500 BSP Body
- B. VX-F500 Adaptor 4" BSP/110mm
- C. Push-Fit Two-Way Downspout VX-R510
- D. Insulation
- E. Concrete Deck
- F. Cast Iron Rainwater Head



4. Balcony roof outlet with notched grating

- A. VX-R355 BSP Body
- B. VX-F500 Spigot Adaptor 4" BSP/110mm
- C. Timesaver Heritage Soil Pipe Coupling GT05