

# Stainless Steel Floor Outlets - Materials Care, Maintenance, Installation & Specifying/Ordering

## Materials

Harmer Stainless gullies are manufactured in 1.5 - 2mm thick sheets to material Grade 304. This is suitable for general use in and around buildings including most coastal locations. It is predominately considered for areas with food production, processing or preparation where corrosion resistance or minimum maintenance is required. For more aggressive atmospheres such as swimming pool applications, Grade 316 is available on request. Both grades are fully pickle passivated and all components are welded in argon shield to ensure high quality joints.

All drain bodies are cylindrical shape to limit waste accumulation, enables easy waste removal and is more hygienic.

Grating and baskets are available in various shapes, sizes and finishing versions. The grates are selected according to the loads and location of installation. We offer the following grate types:

- Mesh Anti-Slip
- Ladder
- Plate
- Perforated

Grates and bezels are manufactured to material Grade 304 as standard with satin finish which is suitable for most applications. Material Grade 316 is available on request.

## Maintenance

The high quality grates and bodies are maintenance free but should be inspected periodically and cleaned of any trapped matter.

If drains are not used for a period of time the trap water may evaporate or become fetid. To remedy this, there is no need to remove the Grate, simply reprime the Trap by pouring clean water through the drain. NEVER USE BLEACH OR CAUSTIC CLEANING AGENTS.

To clean Stainless Steel, use only soapy water and wipe dry. Under no circumstances use metal scouring pads, metal scrapers or wire wool since this will contaminate surfaces leaving rust spots.

Frequency of cleaning depends upon application. Generally, clean the metal when it is dirty in order to restore its original appearance. This may be once a day for a drain in hygienic or aggressive situations.

## Inverted or Bell Trap

Should it be necessary to access the drain for maintenance or rodding purposes, the trap must first be removed.

### Equipment required:

- Latex rubber gloves
- Bucket of clean water
- Sponge
- Household disinfectant

### Procedure:

- Put on protective latex gloves
- Remove grate
- Dry all surfaces
- Remove basket
- Remove trap

### Refitting trap:

- Apply silicone lubricant to seal rim of trap
- Push fit the trap into the drain body
- Replace basket
- Refit grate
- Reprime the trap with clean water
- Dispose of dirty water

## Installation of Single-Part Floor Drains

1. Make sure the drain pipe is at the correct height.
2. During concrete pouring, the upper part should be 1-1,5 [mm] below the floor level.
3. Next floor layers can be made when the upper part is stabilized.
4. During concrete pouring make sure, that the upper part clearance is not narrowed.
5. Make sure concrete gets to all places, even difficult of access ones.

## Installation of Two-Part Floor Drains

1. First, put the lower part of the floor drain in the structural part of the floor. The lower part should be placed in the hollow of 15-20 [mm] to ensure adequate draining of the condensate from the damp-proof course.
2. Lay the damp-proof course and secure it with the clamping ring of the lower part.
3. Next, position the upper part on the required level. The upper part edge should be placed about 1-1.5mm below the floor level.
4. Next floor layers can be made when the upper part is stabilized.
5. During concrete pouring make sure that the upper part clearance is not narrowed.
6. Make sure concrete gets to all places, even difficult of access ones.



## Specifying/Ordering

### Example 1: Floor Drains in Kitchens

Item: Harmer Stainless.

Floor Construction: 150mm ceramic tiles over insulated solid ground floor slab.

Manufacturer: Alumasc Exterior Building Products Ltd, White House Works, Bold Road, Sutton, St Helens, Merseyside WA9 4JG.

Body type/material: Standard fixed height trapped vertical sump with mesh anti-slip grating manufactured from Stainless Steel ref: SV110/S20/K/T.

### Example 2: Floor Drains in Changing Rooms

Item: Harmer Stainless.

Floor Construction: 150mm ceramic tiles over suspended concrete floor.

Manufacturer: Alumasc Exterior Building Products Ltd, White House Works, Bold Road, Sutton, St Helens, Merseyside WA9 4JG.

Body/grate type & material: Compact two part adjustable height trapped horizontal sump with perforated grating manufactured from Stainless Steel ref: SMKHA50/S15/B/T.

# Chemical Resistance Data for Stainless Steel

The ability of stainless steel to resist corrosion depends on a number of factors including the type of steel used, the chemicals encountered and the ambient temperature.

The table indicates the extent and type of corrosion to be expected in any one year.

Chemical (with % concentration)	Temp (°C)	Steel Type 1.4301304	Steel Type 1.4404316L
acetic acid (1%)	boiling point	<0.1	<0.1
acetic acid (10%)	boiling point	0.1 - 1.0	<0.1
acetic acid (20%)	boiling point	>1.0	<0.1
acetic acid (20%)	20	<0.1	<0.1
acetic acid (80%)	20	>1.0	<0.1
acetic acid (100%)	boiling point	>1.0	<0.1
acetone	20	<0.1	<0.1
alcohol (methanol or ethanol)	20	<0.1	<0.1
alcohol propyl	20	<0.1	<0.1
aluminium chloride	20	0.1 - 1.0	0.1 - 1.0
aluminium sulphate	20	<0.1	<0.1
ammonia	boiling point	<0.1	<0.1
ammonia gas (dry)	20	<0.1	<0.1
ammonium hydroxide	20	<0.1	<0.1
ammonium nitrate	20	<0.1	<0.1
ammonium phosphate	20	0.1 - 1.0	>1.0
ammonium sulphate	20	0.1 - 1.0	<0.1
ammonium sulphide	20	<0.1	<0.1
ammonium chloride	20	0.1 - 1.0	0.1 - 1.0
ammonium chloride (20%)	boiling point	0.1 - 1.0 SP	<0.1 SP
ammonium chloride (43%)	boiling point	<0.1 SP	<0.1 SP
amyl chloride	20	<0.1	<0.1
aniline	20	<0.1	<0.1
barium chloride	20	<0.1	<0.1
barium hydroxide (10%)	20	x	x
barium sulphate	20	<0.1	<0.1
barium sulphide	20	x	x
beer	20	<0.1	<0.1
benzene	20	<0.1	<0.1
benzoic acid	20	<0.1	<0.1
bichloride of potassium	20	<0.1	<0.1
bleach (with 12.5% chlorine)	20	x	x
boric acid	20	<0.1	<0.1
bromic acid	20	0.1 - 1.0	0.1 - 1.0
bromine water	20	>1.0	>1.0
butane	20	<0.1	<0.1
calcium carbonate	20	<0.1	<0.1
calcium chloride	20	>1.0	0.1 - 1.0
calcium chloride (20%)	20	<0.1 P	<0.1 P
calcium chloride (20%)	boiling point	0.1 - 1.0 SP	<0.1 P
calcium hydroxide	20	0.1 - 1.0	<0.1
calcium hypochlorite	20	>1.0	0.1 - 1.0
calcium sulphate	20	<0.1	<0.1
carbon dioxide	20	<0.1	<0.1
carbon disulphide	20	<0.1	<0.1
carbon monoxide	20	<0.1	<0.1
carbon tetrachloride	20	<0.1	<0.1
carbonic acid	20	<0.1	<0.1
caustic potash	20	<0.1	<0.1
caustic soda (20%)	20	<0.1	<0.1

Chemical (with % concentration)	Temp (°C)	Steel Type 1.4301304	Steel Type 1.4404316L
caustic soda (50%)	20	<0.1	<0.1
caustic soda (80%)	20	>1.0	<0.1
chlorinated water	20	>1.0	0.1 - 1.0 P
chlorinated water (1g/l)	20	0.1 - 1.0 P	0.1 - 1.0 P
chlorinated water (1mg/l)	20	<0.1	<0.1
chlorine (dry)	70	<0.1	<0.1
chlorine (wet)	20	>1.0	>0.1
chloroacetic acid	20	0.1 - 1.0	0.1 - 1.0
chlorobenzene	20	<0.1	<0.1
chloroform	20	0.1 - 1.0	0.1 - 1.0
chromic acid (50%)	20	>1.0	>1.0
chromic acid (10%)	20	<0.1	<0.1
citric acid (25%)	boiling point	>1.0	<0.1
citric acid (50%)	20	<0.1	<0.1
copper nitrate	20	<0.1	<0.1
copper sulphate	20	<0.1	<0.1
cottonseed oil	20	<0.1	<0.1
cresol	20	<0.1	<0.1
cupric chloride	20	>1.0	>1.0
cupric cyanide	20	<0.1	<0.1
cyclohexane	20	<0.1	<0.1
cyclohexanone	20	<0.1	<0.1
diethylamine	20	<0.1	<0.1
dimethylaniline	20	<0.1	<0.1
disodium phosphate	20	x	x
distilled water	20	<0.1	<0.1
electroplating solutions	20	<0.1	<0.1
ethyl acetate	20	<0.1	<0.1
ethyl chloride (chloroethane)	20	<0.1	<0.1
ethylene glycol	20	<0.1	<0.1
fatty acids	20	<0.1	<0.1
ferrous sulphate	20	<0.1	<0.1
fluorine gas (wet)	20	>1.0	>1.0
formaldehyde (37%)	20	<0.1	<0.1
formic acid (5-10%)	20	<0.1	<0.1
formic acid (10%)	80	>1.0	<0.1
formic acid (50%)	24-40	<0.1 - 1.0	<0.1
formic acid (50%)	boiling point	>1.0	0.1 - 1.0
formic acid (50%)	20	>1.0	<0.1
freon 12	20	<0.1	<0.1
fruit juices and pulp	20	0.1 - 1.0	<0.1
furfural	20	<0.1	<0.1
glucose	20	<0.1	<0.1
glycerine	20	<0.1	<0.1
hydrobromic acid (20%)	20	>1.0	>1.0
hydrochloric acid (0.5%)	20	0.1 - 1.0 P	<0.1 P
hydrochloric acid (0.5%)	boiling point	>1.0	>1.0
hydrochloric acid (1%)	20	0.1 - 1.0 P	<0.1 P
hydrochloric acid (40%)	20	>1.0	>1.0
hydrogen peroxide (90%)	20	<0.1	<0.1

# Chemical Resistance Data for Stainless Steel

## Table Key

Annual Corrosion (mm) Type of Resistance  
 <0.1 — Complete  
 0.1 - 1.0 — Partial  
 >1.0 — Non-resistant  
 x — Lack of data

## Specific Corrosion Risks

P = Pitting corrosion S = Stress corrosion

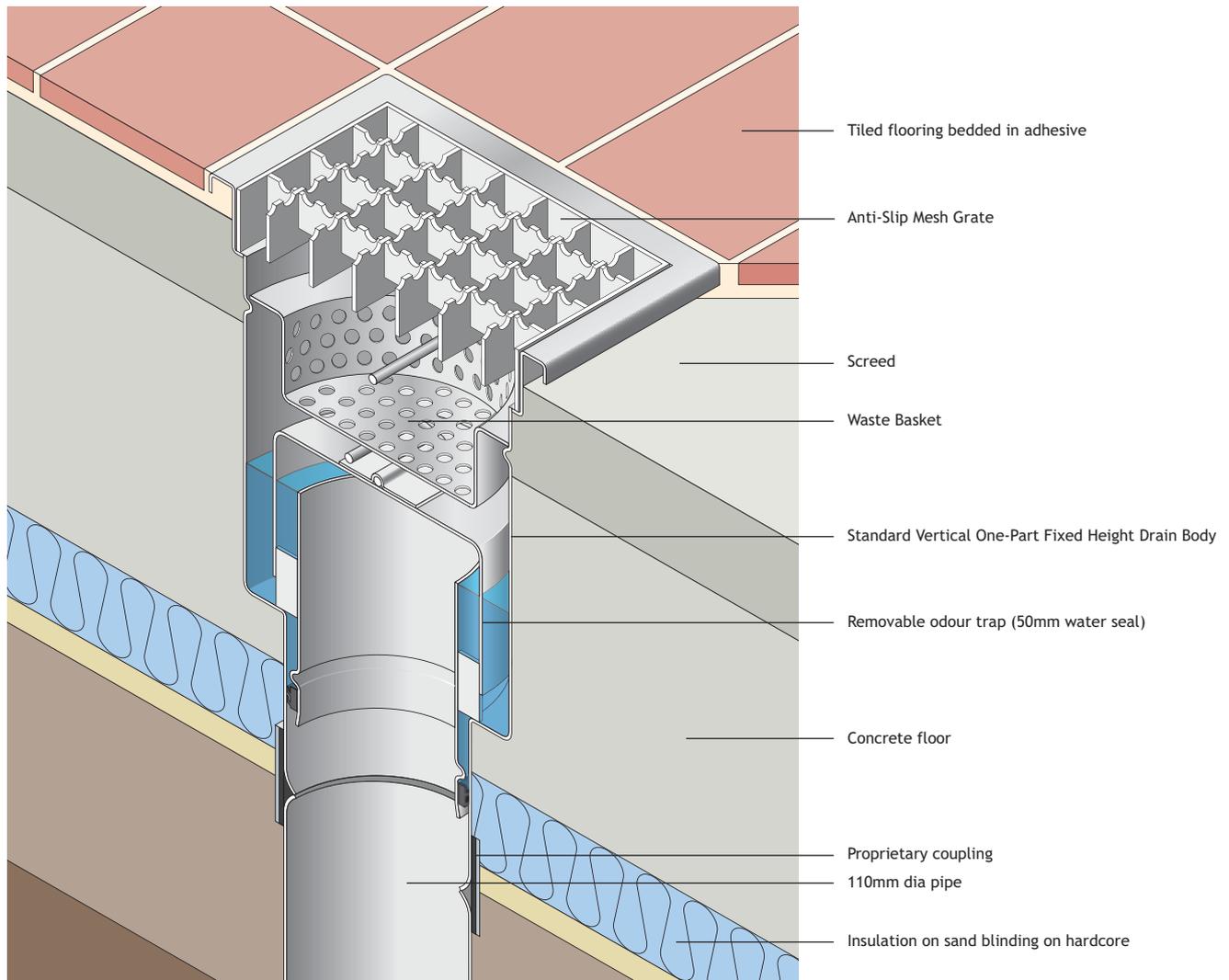
Chemical (with % concentration)	Temp (°C)	Steel Type 1.4301304	Steel Type 1.4404316L
hydroquinone	20	<0.1	<0.1
hypochlorous acid (chlorine water)	20	>1.0	>1.0
iodine	20	>1.0	>1.0
lactic acid (10%)	10-100	0.1 - 1.0	<0.1
lactic acid (25%)	20	<0.1	<0.1
lactic acid (50%)	20-80	0.1 - 1.0	<0.1
lactic acid (50%)	boiling point	>1.0	0.1 - 1.0
linseed oil	20	<0.1	<0.1
magnesium chloride	20	>1.0	>1.0
magnesium sulphate	20	<0.1	<0.1
maleic acid	20	<0.1	<0.1
methyl chloride	20	<0.1	<0.1
methyl ethyl ketone	20	<0.1	<0.1
milk	20	<0.1	<0.1
mineral oils	20	x	x
nickel chloride	20	>1.0	>1.0
nickel sulphate	20	<0.1	<0.1
nitric acid (30%)	boiling point	<0.1	<0.1
nitric acid (50%)	boiling point	0.1 - 1.0	0.1 - 1.0
nitric acid (65%)	80	<0.1	<0.1
nitric acid (65%)	boiling point	0.1 - 1.0	0.1 - 1.0
oil	20	<0.1	<0.1
oils and fats	20	<0.1	<0.1
oleic acid	20	<0.1	<0.1
oleum	20	<0.1	<0.1
oxalic acid	20	<0.1	<0.1
palmitic acid (10%)	20	<0.1	<0.1
perchloric acid (10%)	20	>1.0	>1.0
perchloric acid (70%)	20	>1.0	>1.0
petrol (refined)	20	<0.1	<0.1
petroleum oils	20	<0.1	<0.1
phenol (5%)	20	<0.1	<0.1
phosphoric acid (20%)	boiling point	<0.1	<0.1
phosphoric acid (40%)	boiling point	<0.1	0.1 - 1.0
phosphoric acid (85%)	95	>1.0	<0.1
phosphorous trichloride	20	<0.1	<0.1
photographic solutions	20	>1.0	>1.0
picric acid	20	<0.1	<0.1
potassium carbonate	20	<0.1	<0.1
potassium chloride	20	<0.1	<0.1
potassium cyanide	20	<0.1	<0.1
potassium hydroxide	20	<0.1	<0.1
potassium permanganate	20	<0.1	<0.1
propane gas	20	<0.1	<0.1
prussic acid	20	<0.1	<0.1
sea water (natural)	20	0.1 - 1.0 P	<0.1 P
silver nitrate	20	<0.1	<0.1
silver sulphate	20	<0.1	<0.1
sodium bicarbonate	20	<0.1	<0.1
sodium carbonate	20	<0.1	<0.1

Chemical (with % concentration)	Temp (°C)	Steel Type 1.4301304	Steel Type 1.4404316L
sodium chloride (3%)	20-60	0.1 - 1.0 P	<0.1 P
sodium cyanide	20	<0.1	<0.1
sodium disulphide	20	<0.1	<0.1
sodium ferrocyanide	20	<0.1	<0.1
sodium hydroxide	20	0.1 - 1.0	<0.1
sodium hypochlorite	20	0.1 - 1.0	<0.1
sodium principal (20%)	50	<0.1	<0.1
sodium principal (20%)	100	<0.1	<0.1
sodium principal (40%)	100	0.1 - 1.0	<0.1
sodium sulphate	20	<0.1	<0.1
sodium sulphide	20	0.1 - 1.0	>1.0
sodium sulphite	20	0.1 - 1.0	<0.1
sodium thiosulphate	20	<0.1	<0.1
stannic (tin) chloride	20	>1.0	<0.1
stearic acid	20	<0.1	<0.1
sugar beet syrup	20	<0.1	<0.1
sugarcane sap	20	x	x
sulphur	20	0.1 - 1.0	<0.1
sulphur dioxide (dry)	20	>1.0	<0.1
sulphur dioxide (wet)	20	x	<0.1
sulphuric acid (1%)	100	>1.0	0.1 - 1.0
sulphuric acid (5%)	20	0.1 - 1.0	<0.1
sulphuric acid (5%)	boiling point	>1.0	>1.0
sulphuric acid (10%)	20	>1.0	<0.1
sulphuric acid (10%)	boiling point	>1.0	>1.0
sulphuric acid (50%)	20	>1.0	>1.0
sulphuric acid (70%)	20	>1.0	>1.0
sulphuric acid (20-90%)	20-100	>1.0	>1.0
sulphuric acid (93%)	20	>1.0	>1.0
sulphurous acid (10%)	20	0.1 - 1.0	<0.1
tan liquor	20	<0.1	<0.1
tannin (tannic acid)	20	<0.1	<0.1
tartanic acid	20	>1.0	0.1 - 1.0
toluene	20	<0.1	<0.1
trichlorethylene	20	<0.1	<0.1
triethylamine	20	<0.1	<0.1
trisodium phosphate	20	<0.1	<0.1
turpentine	20	<0.1	<0.1
urea (carbamide)	20	<0.1	<0.1
urine	20	<0.1	<0.1
vinegar	20	<0.1	<0.1
water ('acid mine')	20	<0.1	<0.1
water (fresh)	20	<0.1	<0.1
water (salt)	20	<0.1	<0.1
whisky	20	<0.1	<0.1
wine	20	<0.1	<0.1
xylene	20	<0.1	<0.1
zinc chloride	20	0.1 - 1.0	0.1 - 1.0
zinc sulphate	20	<0.1	<0.1

Note: Although Alumasc has carefully prepared this data, it is nevertheless recommended that laboratory tests are undertaken for specific site conditions.

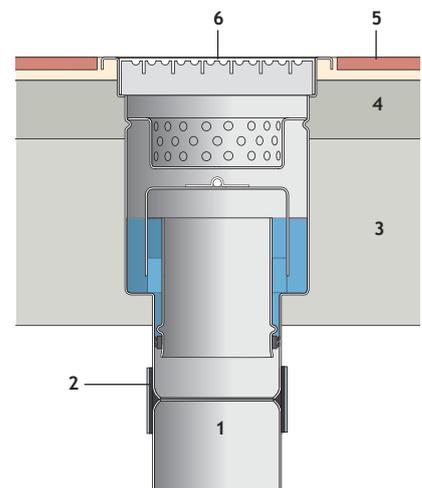
# Stainless Steel Floor Outlets - Application Details

## Standard Vertical One-Part Fixed Height Drain Body with Square Anti-Slip Mesh Grate



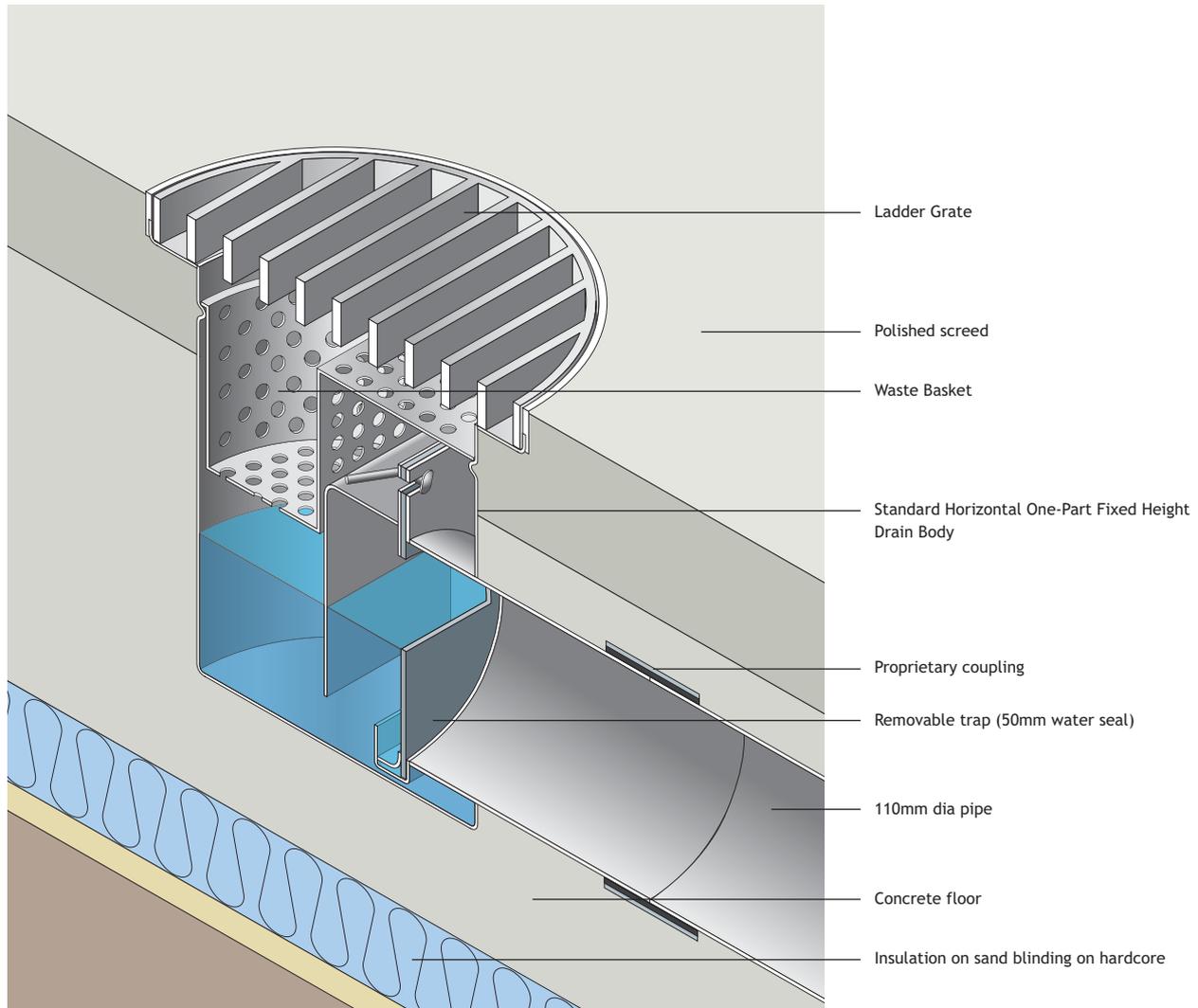
### Sitework

1. Position drain pipe to align with drain body. Ensure drain body is set to required FFL height.
2. Join with proprietary coupling.
3. Once hardcore, sand blinding and insulation are installed, pour concrete mix.
4. Lay screed to falls.
5. Apply adhesive and fit tiles.
6. Fit Anti-Slip Mesh Grate



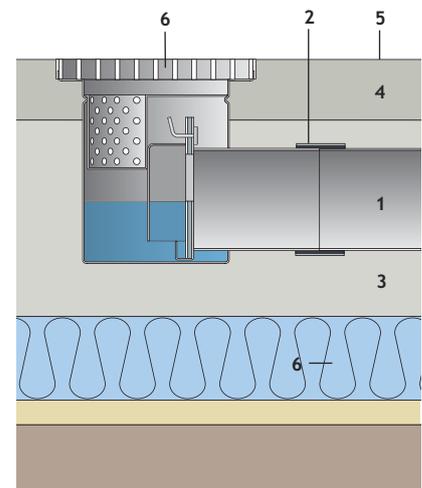
# Stainless Steel Floor Outlets - Application Details

## Standard Horizontal One-Part Fixed Height Drain Body with Circular Ladder Grate



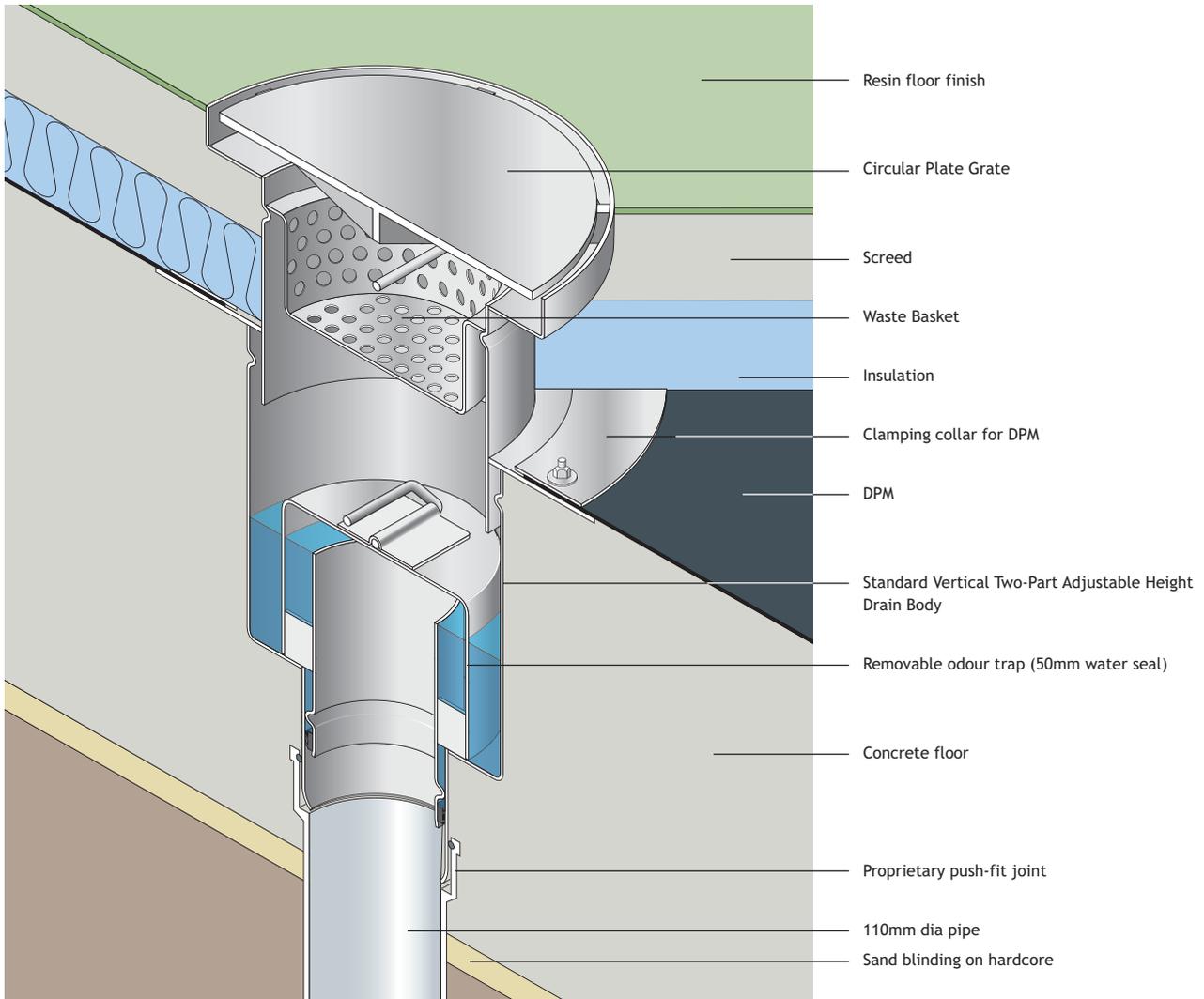
### Sitework

1. Position drain pipe to align with drain body. Ensure drain body is set to required FFL height.
2. Join with proprietary coupling.
3. Once hardcore, sand blinding and insulation are installed, pour concrete mix.
4. Lay screed to falls.
5. Apply polished screed finish.
6. Fit Ladder Grate



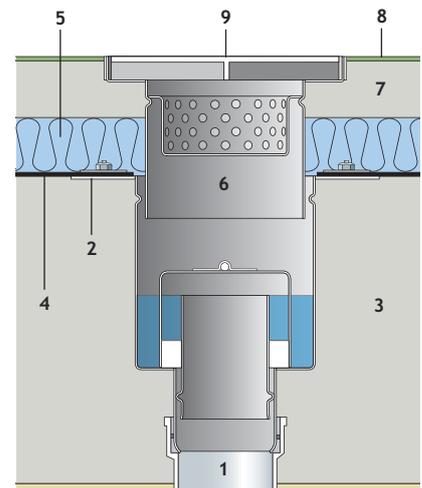
# Stainless Steel Floor Outlets - Application Details

## Standard Vertical Two-Part Adjustable Height Drain Body with Circular Plate Grate



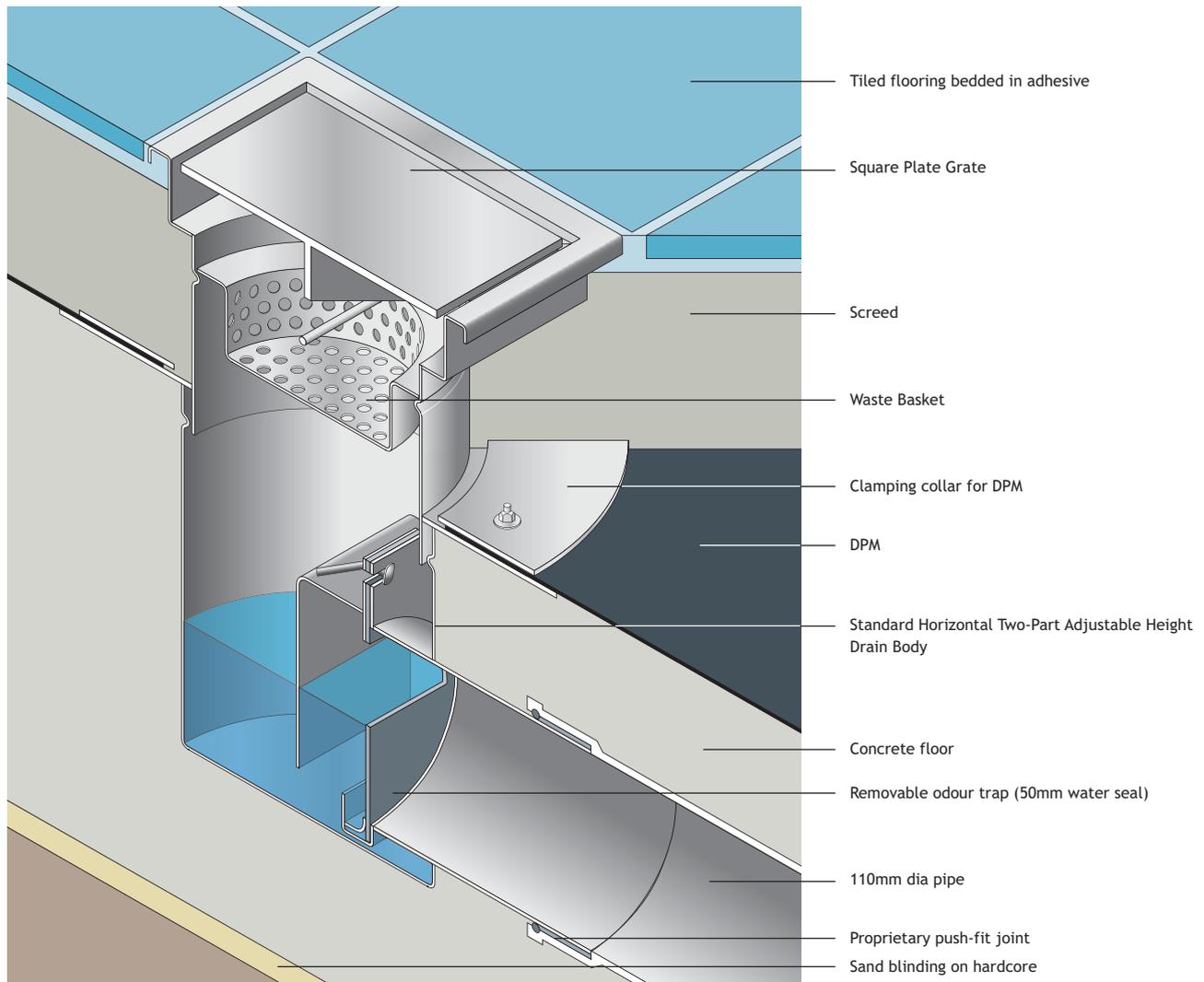
### Sitework

1. Connect socketed pipe to drain body.
2. Set pipework so that the clamping flange of the lower section drain body is level with the top of finished slab.
3. Lay concrete slab.
4. Lay DPM. Cut a hole in the membrane and clamp firmly to the floor drain
5. Lay insulation.
6. Push fit the sliding upper section drain body into the clamping flange ensuring that the height is set to the required FFL.
7. Lay screed to falls.
8. Apply resin floor finish.
9. Fit Circular Plate Grate.



# Stainless Steel Floor Outlets - Application Details

## Standard Horizontal Two-Part Adjustable Height Drain Body with Square Plate Grate



### Sitework

1. Connect socketed pipe to drain body.
2. Set pipework so that the clamping flange of the lower section drain body is level with the top of finished slab.
3. Lay concrete slab.
4. Lay DPM. Cut a hole in the membrane and clamp firmly to the floor drain.
5. Push fit the sliding upper section drain body into the clamping flange ensuring that the height is set to the required FFL.
6. Lay screed to falls.
7. Apply adhesive and lay floor tiles.
8. Fit Square Plate Grate.

