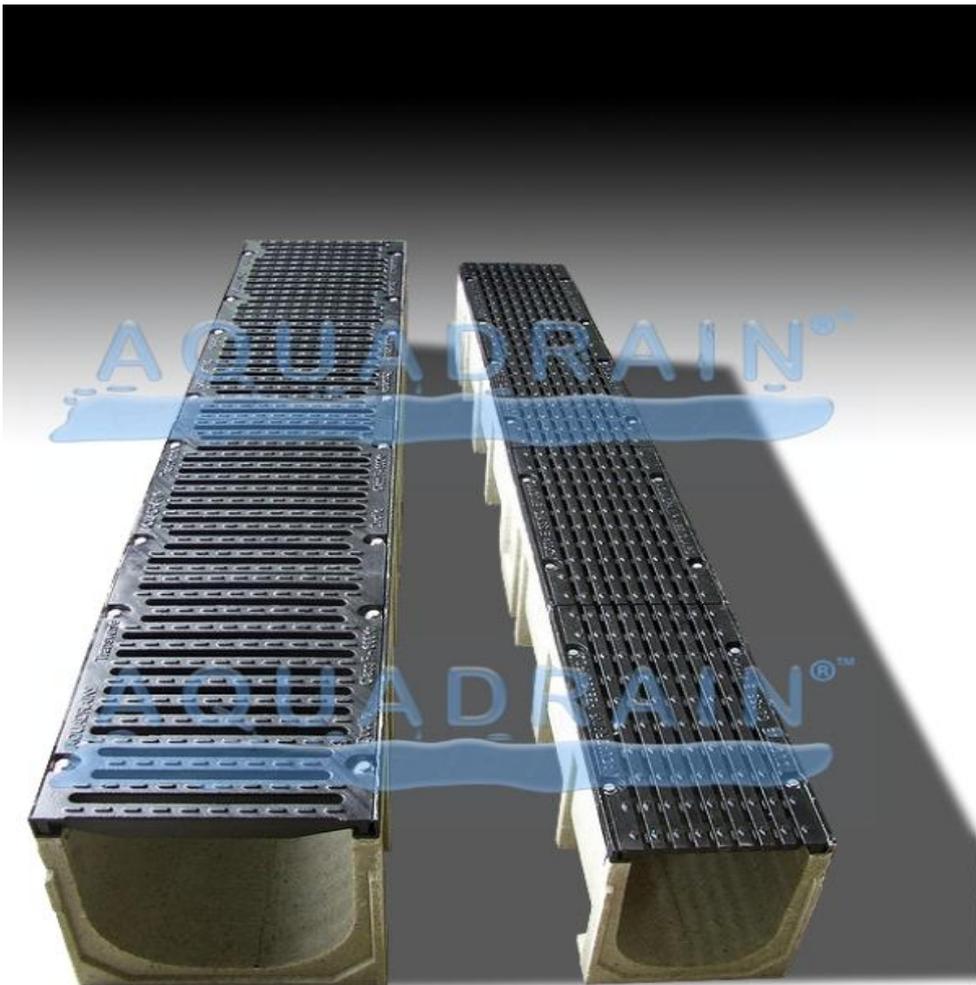




*Polymer Concrete Drainage Channels and Grates*



[www.aquadrain.com.au](http://www.aquadrain.com.au)



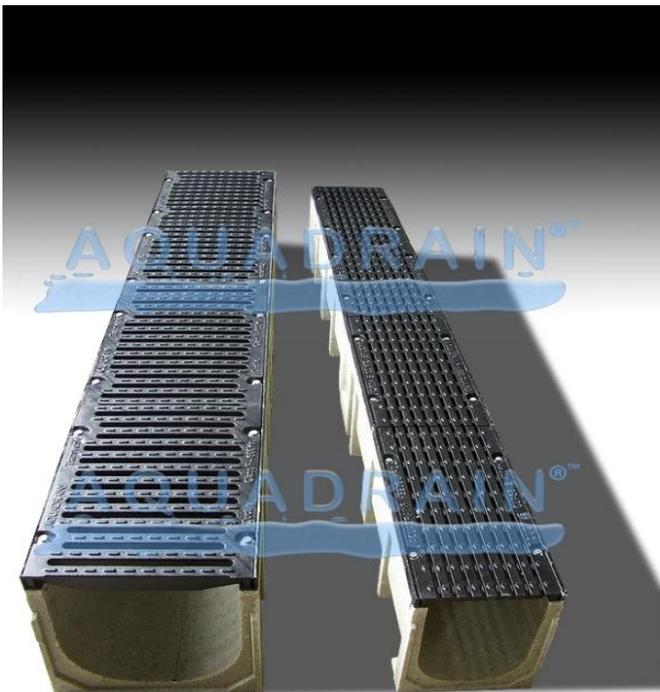
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## Aquadrain® Drainage Channel Systems

Owned and operated by an Australian company

### Ductile Iron Series



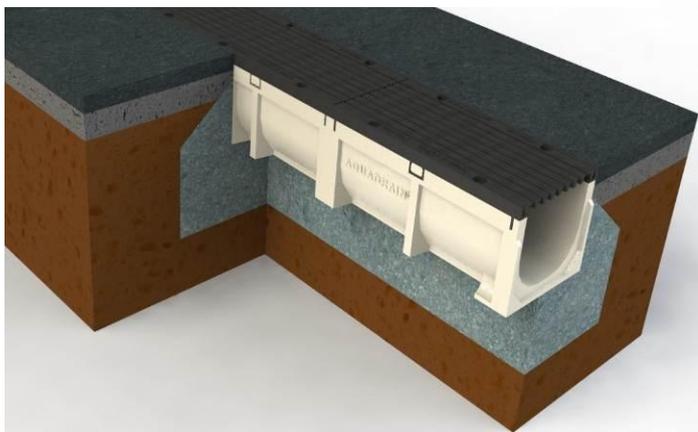
Aquadrain® polymer concrete drainage channels are manufactured from a blend of fine aggregates and a high quality formulated resin used as a binder. By batching these products together under the correct conditions such as temperature and moisture controls, as well as a clean environment, the polymer concrete product is produced. The resin binder used in our polymer concrete channels takes the place of what cement does in a traditional concrete mixture.

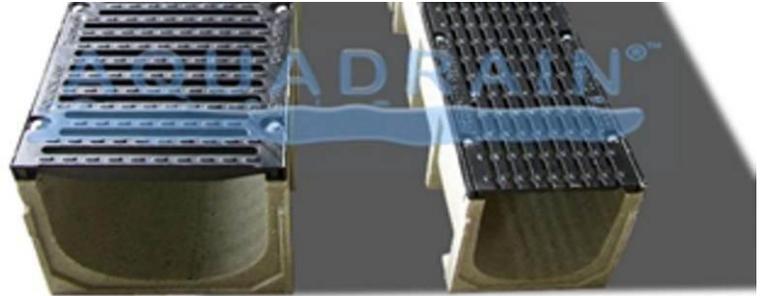
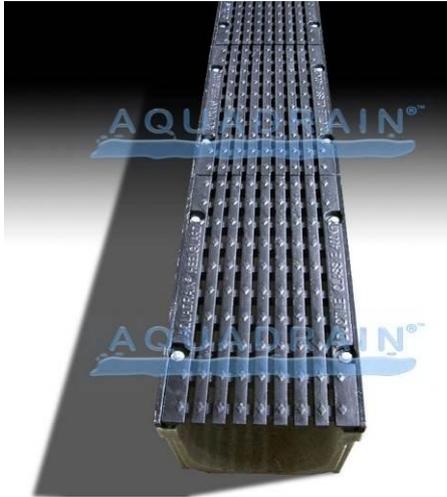
This specially formulated resin used in our channels **adds resistance** to a wide range of **chemical attack**. It also adds a significant amount of **compressive strength** to the channel system as well as adding **water penetration properties** and giving the channels a smooth finish to **enhance higher flow rates**.

Once encased into their appropriate concrete surround, this channel and ductile iron grate system is capable of reaching loads as high as Class G (900Kn).

Since the release of the Aquadrain® drainage systems, our product has proven to be the popular choice, specified by many architects, hydraulic consultants and government authorities such as councils and Department of Roads, as well as a fast growing return client base.

The Aquadrain® drainage system is now being regularly supplied into numerous government and private developments over many areas of Australasia.





Transverse Style

Longitudinal Heelguard

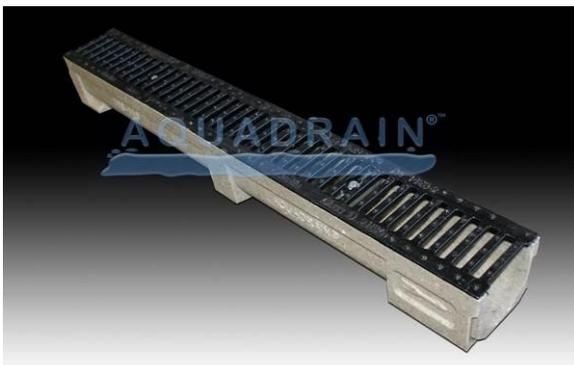
Aquadrain® drainage channels, complete with cast grates and edge rails, are capable of reaching some of the largest loads required in the market.

This channel and grate system currently comes complete with longitudinal heelguard and transverse style gratings. We are also currently looking at new grate designs to be added to our range.

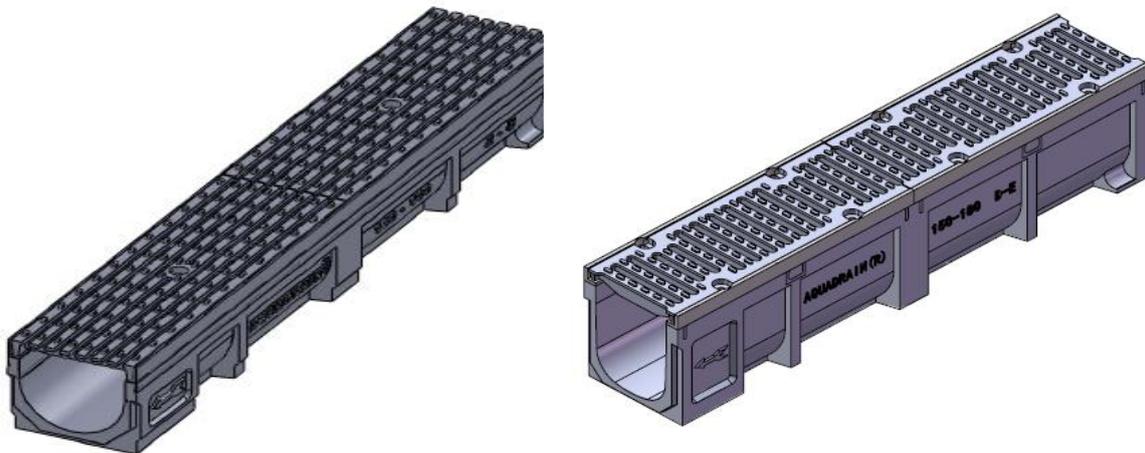
This drainage system is used for many different project types; here are just a few examples -

- Service Stations / Truck Stops
- Transportation / earthmoving equipment yards
- Industrial Sheds, surrounding areas
- Airports, RAAF Bases, Army Bases, Navy Docks
- Shopping centre car parks / Loading bays
- Freeways / Highways and roads in general
- Heritage building sites
- Schools / Universities / Public walkways
- Mining project sites

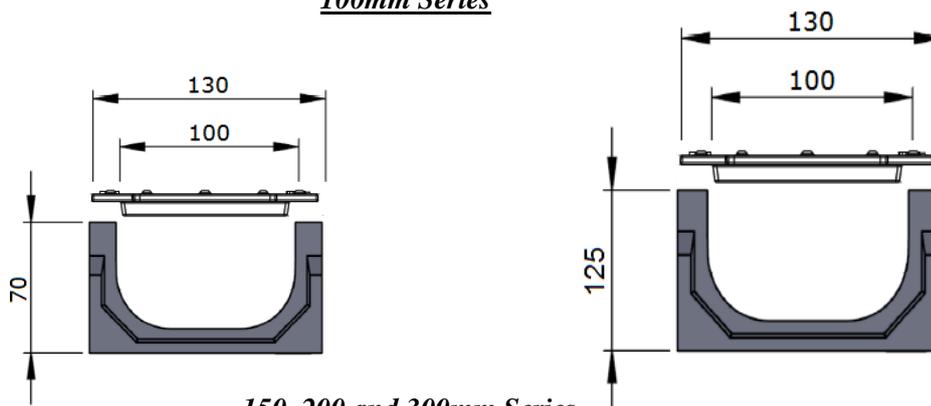
As you can see, the Aquadrain® channel systems are widely used in many areas of construction whether it is a new construction, replacement or a renovation of an old heritage site.



**Profiles for Channels with Ductile Iron Grates**

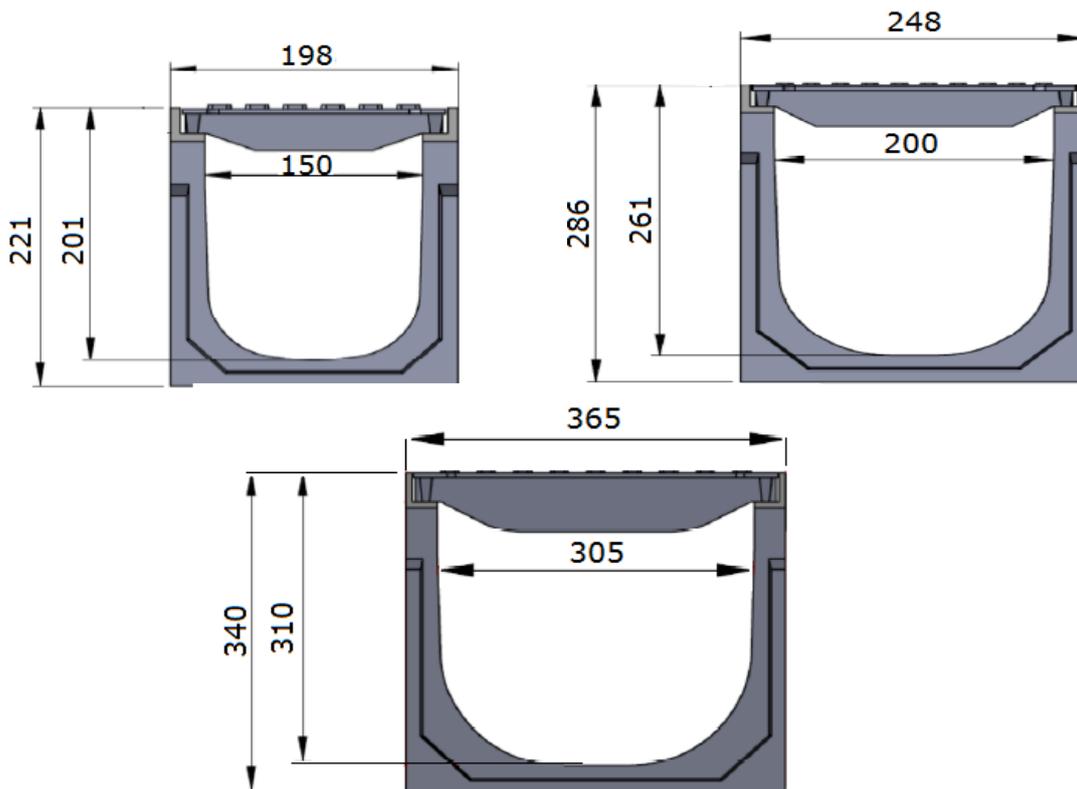


**100mm Series**



A new range of larger shallow channels are currently being designed so please contact us for updated information on our latest product range in this series.

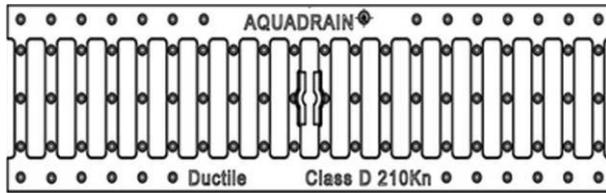
**150, 200 and 300mm Series**



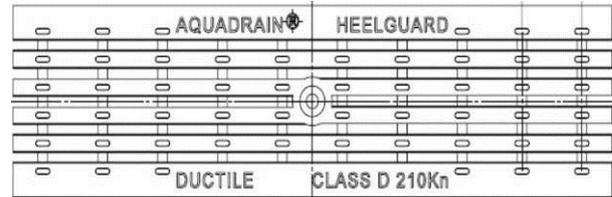


## Ductile Iron Grate styles

### Transverse Style



### Longitudinal Heelguard Style



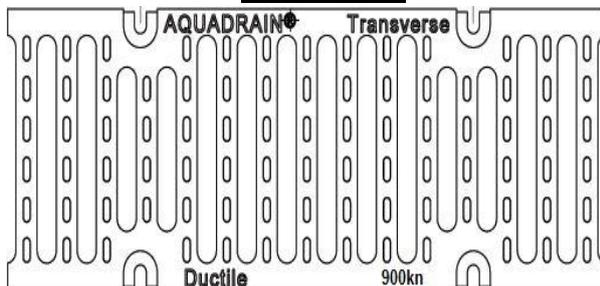
### Transverse Style

The **100mm series** channels complete with transverse style 500-7 grade ductile iron grates are tested to Class D loading - 210kn. This polymer channel system is also supplied with locking bars and 8-8 high tensile lockdown bolts as standard when sold in our polymer concrete channels. These non slip grates in our 100mm series have smaller openings than those in our larger transverse style grates and are used in all areas of construction from domestic through to commercial projects.

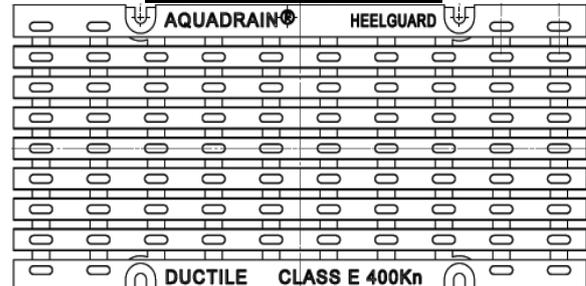
### Longitudinal Heelguard Style

The **100mm series** channels complete with heelguard longitudinal 500-7 grade ductile iron grates are also tested to Class D loading - 210kn. These non slip grates are also supplied complete with the high tensile bolts and lockdown provision when sold in our polymer concrete channel system and are used in many projects of high pedestrian type areas.

### Transverse Style



### Longitudinal Heelguard Style

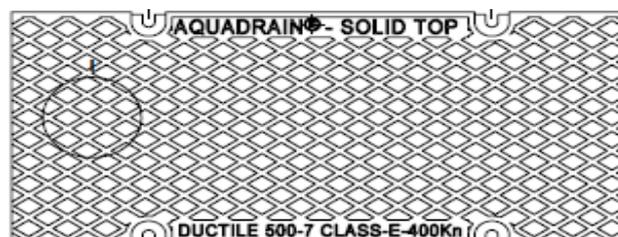


### Transverse Style

The transverse styles **150, 200 and 300mm series** ductile iron 500-7 grade grates come rated as high as class G - 900kn. These grates again come supplied with 8-8 high tensile bolted lock down system. These grates can also be supplied with special security bolt downs if required.

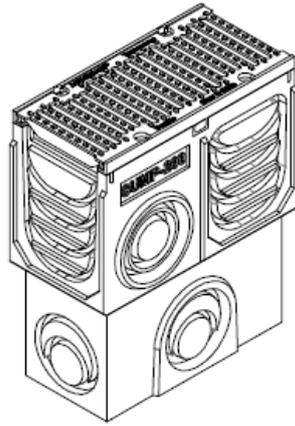
### Longitudinal Style

The heelguard longitudinal style **150, 200 and 300mm series** ductile iron 500-7 grade grates are rated to Class E - 400Kn. These grates are supplied as above with the same 8-8 high tensile lock down system and can also be supplied with security bolt down option if required.



*Note – We are currently working on bolt down ductile iron solid top covers that can be used for heavy trafficable areas electrical ducting as an example.*

## *Polymer Channel Inline Sumps*



Our polymer concrete inline sumps are manufactured to the same width as the lineal channel systems so they can be installed along selected sections of the lineal run. These sumps can also be used to pick up other small amounts of water from other areas of your site having many inlet and outlet options to be tapped into.

Inline sumps can be entered from either end of our channel system or from a side position when required.

These sumps are commonly used as silt/trash boxes and can be supplied with a silt/trash basket to prevent the blocking of stormwater pipes which can reduce or block water flows.

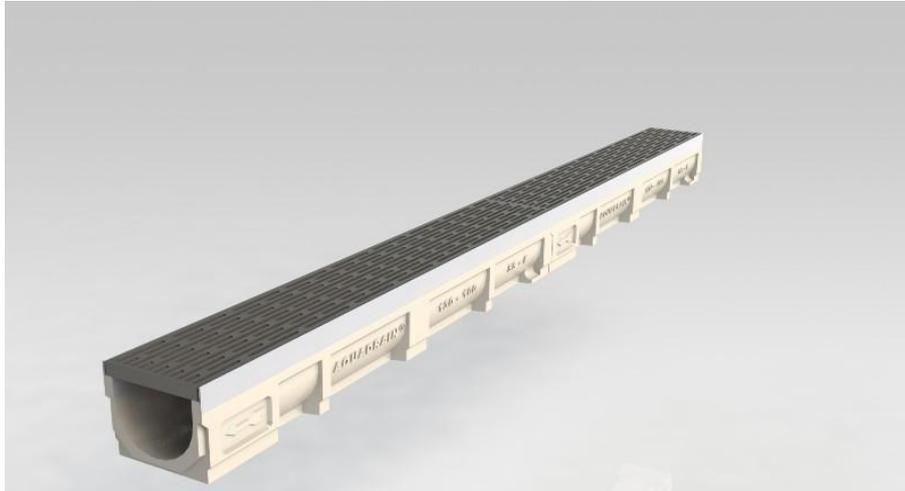
We also offer an environmental basket system into areas required such as car parks, etc.

Once installed these sumps disappear into the lineal run of channels with all styles of gratings matching.





## *Aquadrain® Drainage Channel Systems* *Galvanised Series*



Aquadrain® galvanised series polymer concrete channels come complete with galvanised edge rails and a great range of galvanised grates to choose from. After concrete encasement this channel and its associated grates have been tested to a class D loading (210Kn).

This galvanised edged channel system includes a range of four galvanised grate options to choose from starting with the standard transverse grates commonly used in many areas of construction through to three heelguard options being longitudinal, perforated, and transverse as shown below.

We stock polymer concrete pits and grates to match, both standard transverse and perforated heelguard style of grates for our channel system. Special grate options are also available on request for both the channel system and polymer concrete pits.

A Security lockdown system can also be supplied if required for these channel and grate systems. Correctional service facilities, certain areas in mental health and where theft is a problem are the types of projects where this system is commonly used.

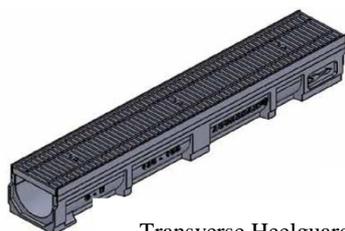
Common uses for this channel system are -

- Driveways / access roads into houses or units
- Commercial building complexes
- Shopping centre / mall areas
- Landscaped areas / common walkways
- Car parks, etc.

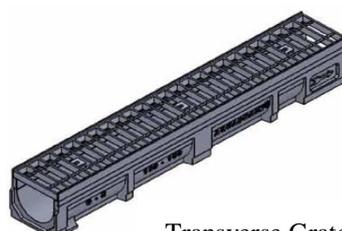
As you can see this system gives many options to work with having a large range of grating styles to choose from to enhance your project.



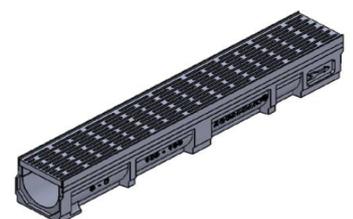
Longitudinal Heelguard



Transverse Heelguard



Transverse Grate



Perforated Heelguard

**Galvanised Edged Channel and Grate Styles**

Transverse style grating is one of the most commonly used grates in the market. This style of grate has the capability of higher water intake than that of the heelguard styles grates due to its larger openings. It is used in commercial and domestic construction situations on a daily basis.



Perforated heelguard grates have proven to be very popular in pedestrian areas as well as being used in nursing homes, hospitals and other such projects. This grate is also highly used in areas of landscaping where leaves and small debris can be caught prior to entering the channel system. We have a range of polymer concrete sumps and sump grates in this pattern available.



Longitudinal style grating is one of our highest purchased products. Not only does this product have a high loading capacity for a heelguard grate but can also put that finishing touch to your project. The longitudinal style is commonly used in areas where fast running water can normally escape over the bearing / load bars of a transverse style grate.



Transverse heelguard style grates can be used in many situations. These grates have a high loading capacity due to their design and have been used in projects such as shopping malls where heelguard is required for pedestrians but trucks also have to make deliveries to shops.





### **Photographs of Installed Galvanised Product**



These photos show our 200mm clear opening drainage channels complete with locked down longitudinal heelguard grates after installation.

This product was supplied and installed by a local council into a NSW government project.

This product was supplied as a class D 210kn unit due to its close proximity to the adjoining main road.

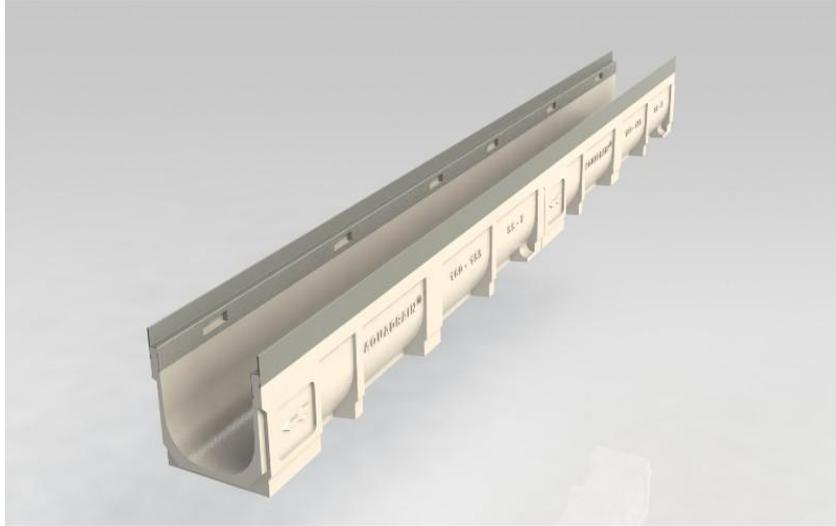
As you can see in these photos, the longitudinal heelguard product not only has the capability of handling heavy loads but can catch unwanted debris entering into the channel system reducing the chance of unwanted blockages to water flow. It is also very aesthetically appealing.

*Please also see our perforated heelguard option if leaves and unwanted debris is a problem.*

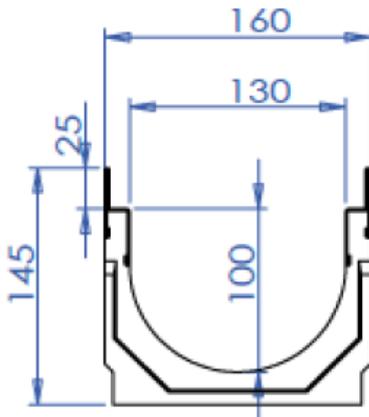


Installed by a NSW council as part of a footpath and road drainage works upgrade.

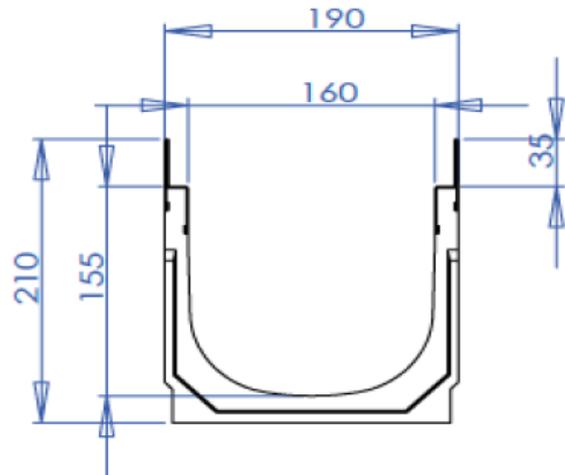
**Profiles for Channels with Galvanised Grates**



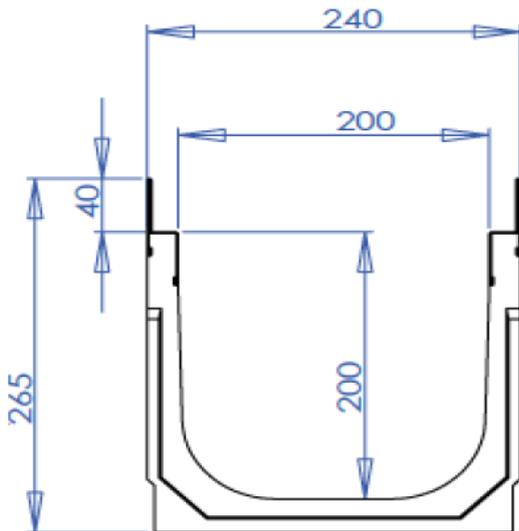
Grate Width 150mm



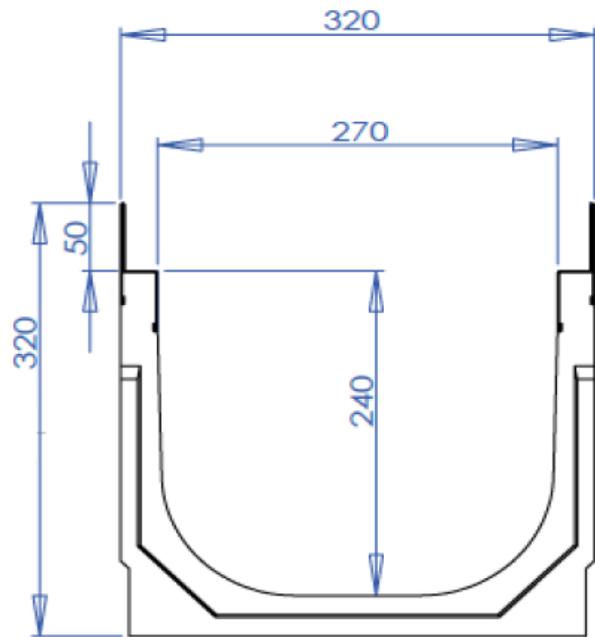
Grate Width 180mm



Grate Width 230mm

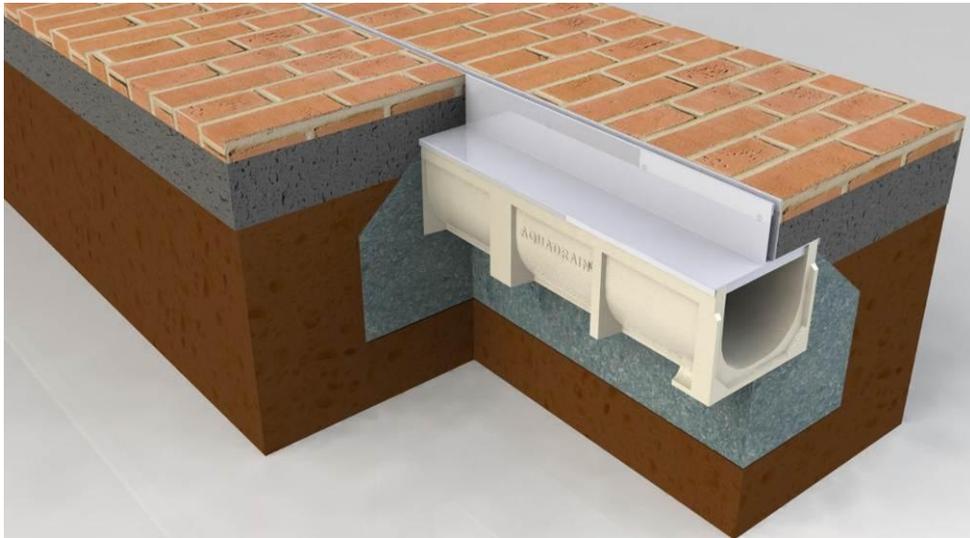


Grate Width 310mm





## **Galvanised and Stainless Steel Top Slot System**

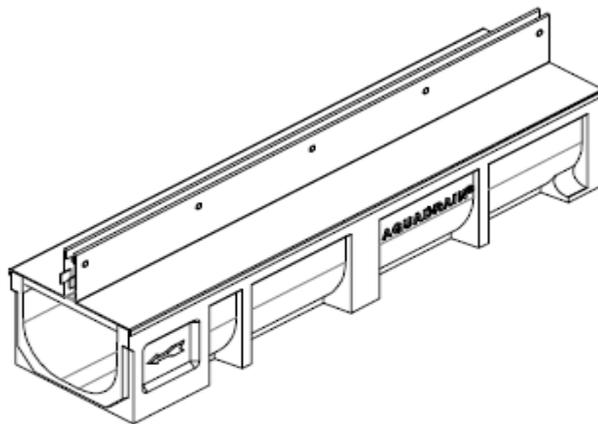


The Aquadrain® drainage channel system is available with a galvanised top slot section as shown above. This galvanised top slot product can be supplied in various lengths depending on your site requirements.

This product has many applications but is commonly used in paved or stamped concreted areas.

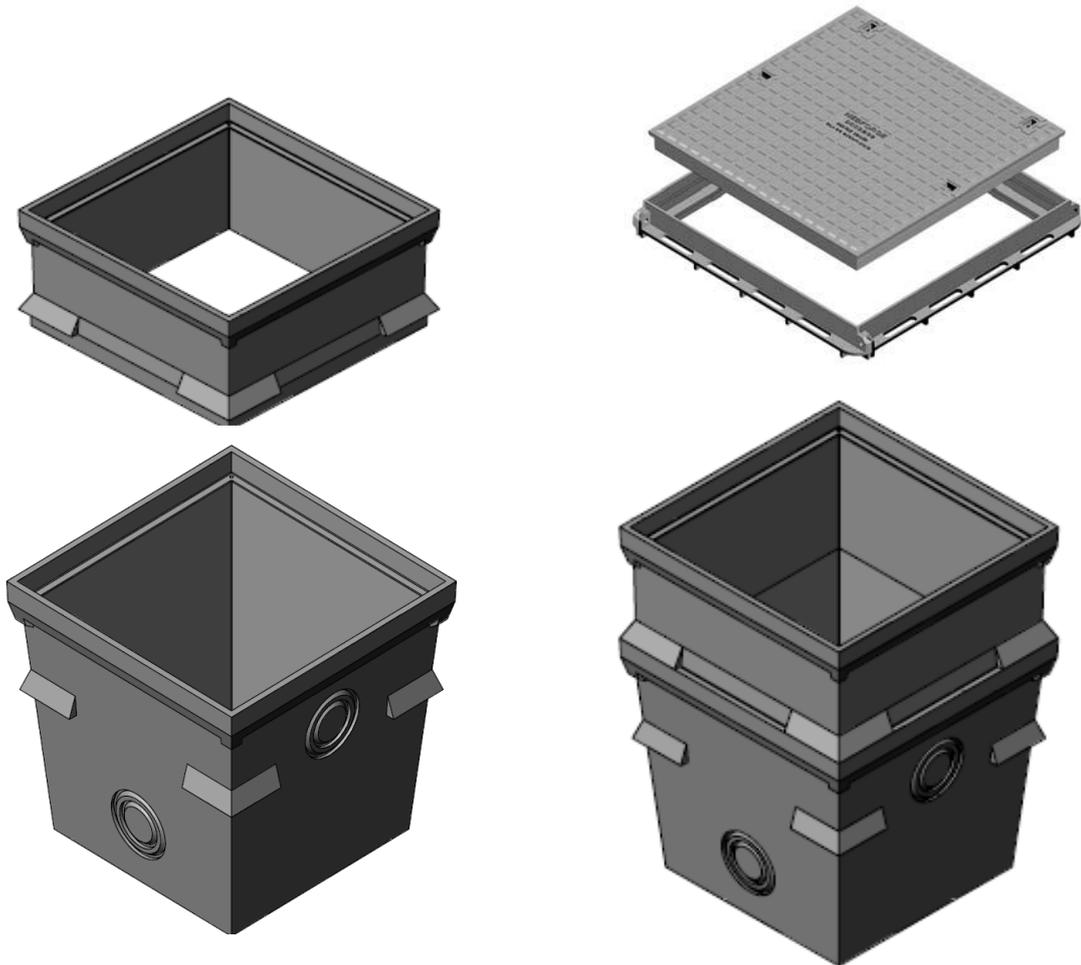
The galvanised slot sections can integrate with the joints in the paved or concreted areas helping the appearance of the top slot section blend into the finished project.

*This system is also available with a side slot unit which can be installed against the wall of a building as one example of its use.*



*Stainless top slot can also be supplied.*

## *Polymer Concrete Pit Bases and Riser Sections*



Polymer Concrete pit bases are widely used throughout the domestic and commercial drainage and construction industries.

These high strength, easy to handle precast pits are commonly used in both electrical and drainage applications and can be supplied with many cover / grate options available to choose from.

Each pit has 4 x 8mm locking points for securing many of the cover and grate options down. These pits are also available complete with a decorative edge rail that enhances the finish to many applications that are required to match to our channel system.

Please contact our nearest office for more information regarding these decorative edged pits. Special grates and covers can also be made on request.

With a number of sizes available these pit bases are a great lightweight option over many other products available without compromising strength or having to use heavy lifting machinery on site.



## Grates and Ductile Iron Cover Options for Polymer

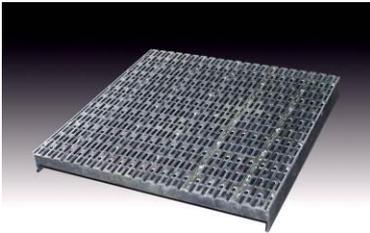
With many sizes available these pits and risers are a great option for many applications. Coming complete with a large range of grate and cover options, these pits can be used in many areas of commercial and domestic drainage.

Grates and covers available –

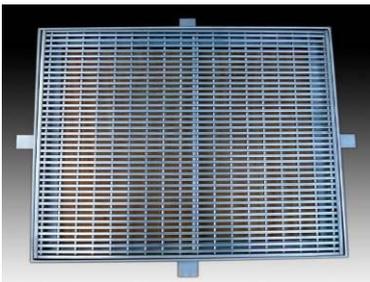
- Galvanised transverse and heelguard.
- Stainless transverse and heelguard.
- FRP
- Gas tight and checker plate lids (also used in electrical)



Transverse grates, the most commonly used grate in the industry, has a large range of uses. This grate can be used in most applications and is one of the best for removing high volumes of water.

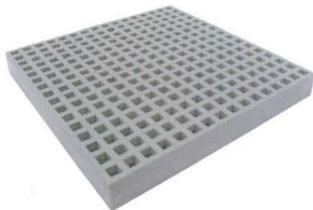


Heelguard galvanised grates are used in many applications through the drainage industry such as retirement villages, shopping centres and other high pedestrian areas such as shopping malls. This grate is also used in many areas of landscaping.



The stainless steel wedge wire heelguard is commonly used for its aesthetics and can also be use in many high corrosive areas. This grate can be supplied in both 304 and 316 grade materials.

*Please contact us further for our recommendation on the correct grade and treatment of stainless for your project.*



FRP grating comes in a range of colours and sizes and can also be an option in many corrosive areas. FRP is commonly used in water and sewerage treatment plants and has a large range of other applications.



Gas and air tight covers are used over stormwater and electrical pits for the prevention of odours and covering conduit cabling in electrical. These high strength covers can also be used in many other applications.

*Galvanised steel checker plate lids are also available.*

**Channel and Grate Load Ratings Chart**

 <u><b>10Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Galvanised steel series of channels and all associated gratings in all sizes.</li> <li>➤ All Ductile Iron series of channels and all associated gratings.</li> </ul>
 <u><b>80Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Galvanised steel series of channels and all associated gratings in all sizes.</li> <li>➤ All Ductile Iron series of channels and all associated gratings.</li> </ul>
 <u><b>150Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Galvanised steel series of channels and all associated gratings in all sizes.</li> <li>➤ All Ductile Iron series channels and all associated gratings.</li> </ul>
 <u><b>210Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Galvanised steel series of channels and all associated gratings in all sizes.</li> <li>➤ All Ductile Iron series channels and all associated gratings.</li> </ul>
 <u><b>400Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Complete Ductile iron series of channels incorporated with a cast edge rail including both longitudinal heelguard and transverse patterned grates.</li> </ul>
 <u><b>600Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Ductile iron series of channels incorporated with a cast edge rail and transverse patterned ductile iron grates.</li> </ul>
 <u><b>900Kn</b></u>	<ul style="list-style-type: none"> <li>➤ Ductile iron series of channels incorporated with a cast edge rail and transverse patterned ductile iron grates.</li> </ul>



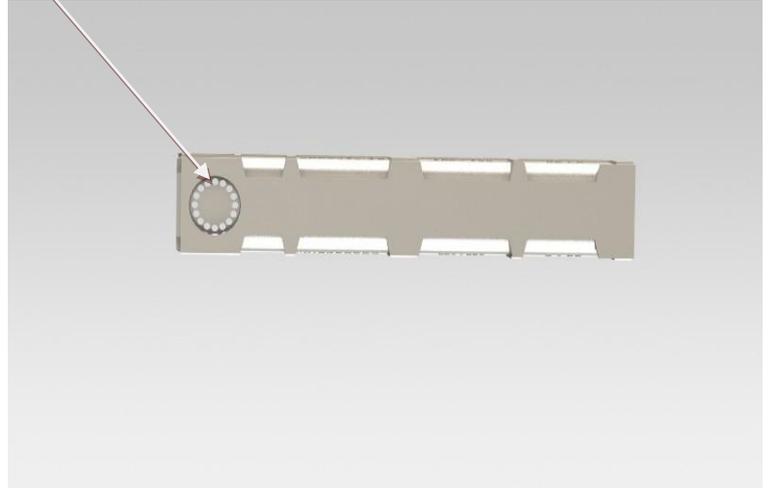
## **Basic Installation Details**

Drill a series of holes to the parameter of the outlet penetration.

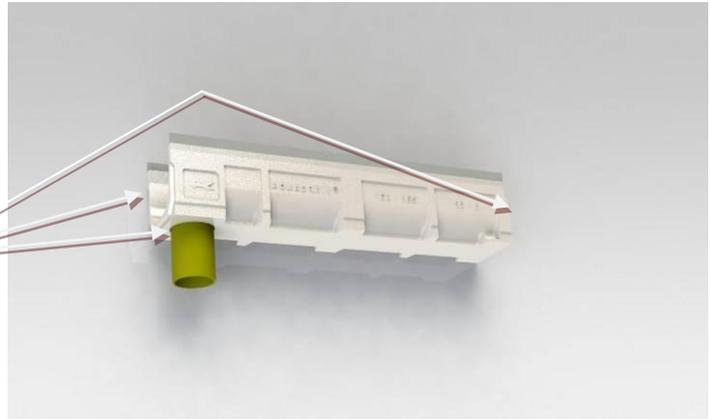
1/ Holes are to be drilled with a masonry drill bit prior to the breaking through of the pipe outlet penetration. Failure to do this may fracture and damage the channels structural integrity. A masonry hole saw can also be used for this removal process. Wet cutting is best to eliminate airborne dust.

2/ After drilling or coring is complete, use a new or sharp cold chisel to remove the remainder of the area to be cleared from the penetration outlet area.

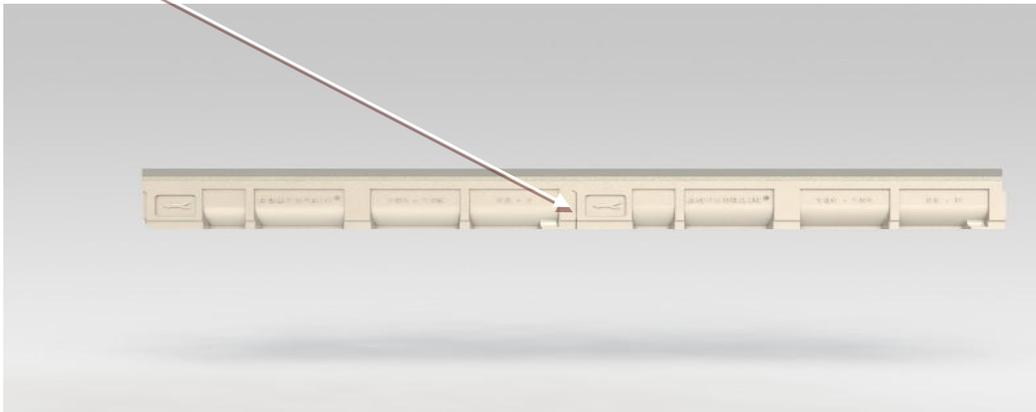
3/ If required finish off by cleaning the penetration by using an angle grinder fitted with a masonry grinding wheel, lightly run over the areas that require it, leaving a neat hole for the pipe work it fit into.



Ensure that all joints are fully sealed.



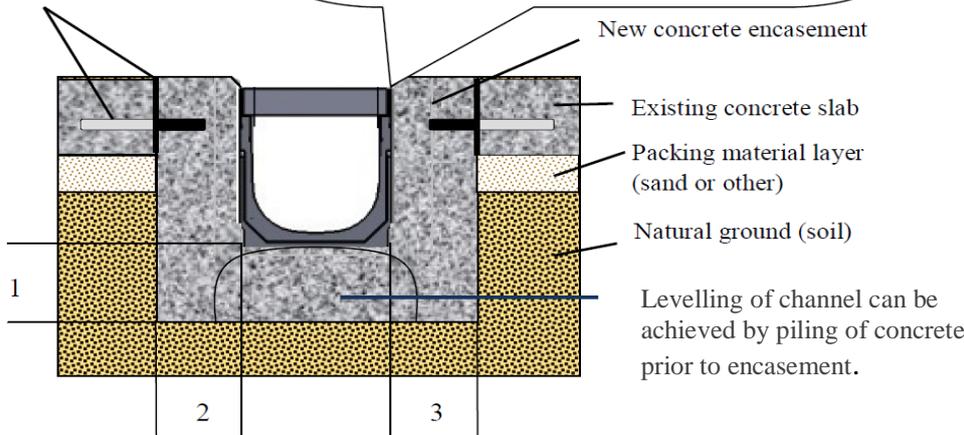
4/ Once all joining surfaces are clean use appropriate sealant to join any pipe work as well as male and female joining ends.



## Concrete Encasement Details for PCC Gal Series

Dowels/dowel inserts and expansion joints may be required. Consult with your engineer for further details if required.

Edge Protection -The edge of the concrete is to taper approximately 45 degrees down to the edge rail. Also allow the edge rail to finish 4-5mm below the finished concrete level to ensure rail protection.



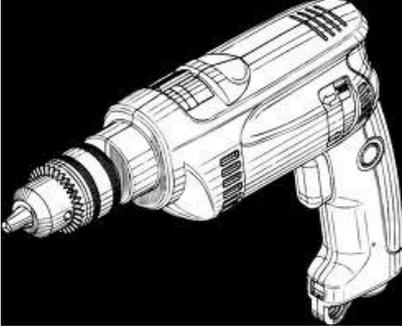
- Working away from your outlet pipe, the lowest point, pile concrete at either end of the channel until you have the correct fall or position required.
- Finish the first concrete encasement pour to the level of the internal dimension of the channel.
- The second pour is then to the finished level. Always allow 4-5mm of concrete above the edge rail of the concrete.
- Vibrate all concrete to eliminate any air pockets present and ensure that the concrete moves into all areas possible.  
Hanging the channel via formwork can also be used to install Aquadrain® polymer concrete channels.

Series	Class	1	2	3
PCC130	A/B	80/100	80/100	80/100
PCC160	A/B	80/100	80/100	80/100
PCC200	A/B	80/100	80/100	80/100
PCC270	A/B	80/100	80/100	80/100
Series	Class	1	2	3
PCC130	C/D	150/200	150/200	150/200
PCC160	C/D	150/200	150/200	150/200
PCC200	C/D	150/200	150/200	150/200
PCC270	C/D	150/200	150/200	150/200

Please contact your nearest Aquadrain® supplier for further details regarding installation of this product into other situations other than shown above such as paved areas, grass or bitumen.

## *Tool Examples for installation*

### Drill



Industrial style drills are recommended.

### Masonry Drill Bit



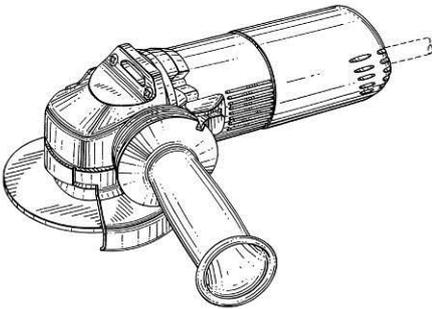
Masonry Drill bits are required when drilling this product.

### Masonry Hole Saw



Ensure that the hole saw is manufactured to cut masonry. Wet cutting will reduce dust.

### Angle Grinder



Industrial style angle grinders fitted with masonry blades are recommended if hole saw method is being used.

### Cold Chisel



Ensure a sharp or new cold chisel is used when breaking through drilled outlet penetrations.

### Two part epoxy



Suitable two part epoxy putty should be used for any joints / mitres or any other patching that may be required.



When installing large quantities of our product, a large concrete cutting saw is also be a good option.

**A guide to Safety Equipment while working with  
Aquadrain<sup>®</sup> Polymer channels**

**Eye Protection**



**Hearing Protection**



**Respiratory Protection**



**Hand Protection**





## Distributor / Reseller

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