

Decorative Channel Drain

Guide to the Use & Installation

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Channel Drain

Pavetuf Decorative Channel Drain offers a lightweight, durable and easy to install drainage system for your patio, driveway, garage threshold and pedestrian areas. With aesthetically beautiful decorative grates that come in a choice of three colours and an added option of a cast iron finish.

Benefits

- Quick fix design - component parts snap together easily for speedy installation.
- UV inhibitors prevents fading and cracking from the sun.
- Heel Proof Grates.
- Channel can be cut to length and joined simply with the coupling.
- Grates and Channel are durable, lightweight and easy to install.
- Recyclable.
- System components are chemical resistant and rustproof.
- Optimal drainage performance is ideally suited to light duty applications.
- Easily attaches to mains drainage.
- Catch Basins and Filters help prevent dirt and debris clogging up the drainage system.
- Grates are removable for quick drain inspection or maintenance.
- Load Class A15/B125 in accordance with EN1433:2003.
- Maximum load 4.0t (A15 for channel only).
- Maximum load 9.5t (B125 in combination with grate, channel, surrounded by concrete).



Standard Weight Load Classes







Pavetuf Decorative Channel Drain system is a perfect choice for both pedestrian and light vehicular traffic areas. The system is tested in accordance with EN 1433:2003 standard and meets A15 and B125 classes. Pavetuf Decorative Channel Drain will meet the A15 Class with the Channel Drain laid on its own. When laid with the Grate, along with the appropriate concrete support at the sides, it will meet the B125 Class. The laying method for each is covered in the installation sections.

What is a Weight Load Class?

The Weight Load Class denotes that a product has been tested to be able to safely hold up to the relating weight.

Load Rating is measured on the drain system's compression resistance - how much weight a drain can withstand without structural damage.

This Load Rating gives a load bearing tolerance (or load capacity) and is categorised into six standard Load Classes that are defined by BS EN 1433. This European Standard sets a number of requirements on the installation of access covers and gully grates in the UK, as well as defining the standard 'groups' into which products can fall.

LOAD RATINGS						
MAX. WEIGHT LOAD (TONNES)	1.5	12.5	25	40	60	90
INSTALLATION AREA						
	Pedestrian Areas, Patios	Driveway, Garage Thresholds, Light Traffic	Lightly Trafficked Roadways, Small Car Parks	Main Roads, Highways	Industrial Estates, Loading Bays	Airports, Docks, Heavy Duty
CLASS	A15	B125	C250	D400	E600	F900
PAVETUF OFFER	✓	✓	✗	✗	✗	✗

Channel Drain Flow Rates

MINI CHANNEL DRAIN FLOW RATES			
Slope [%]	Flow Velocity [m/s]	Flow Discharge [m ³ /s]	Flow Discharge [l/min]
0.10	0.09	0.003	17.00
0.25	0.44	0.0020	118.90
0.50	0.62	0.00283	170.00
0.75	0.68	0.0031	204.00
1.00	0.88	0.0040	237.70
2.00	1.24	0.0054	322.90
3.00	1.52	0.0068	407.70

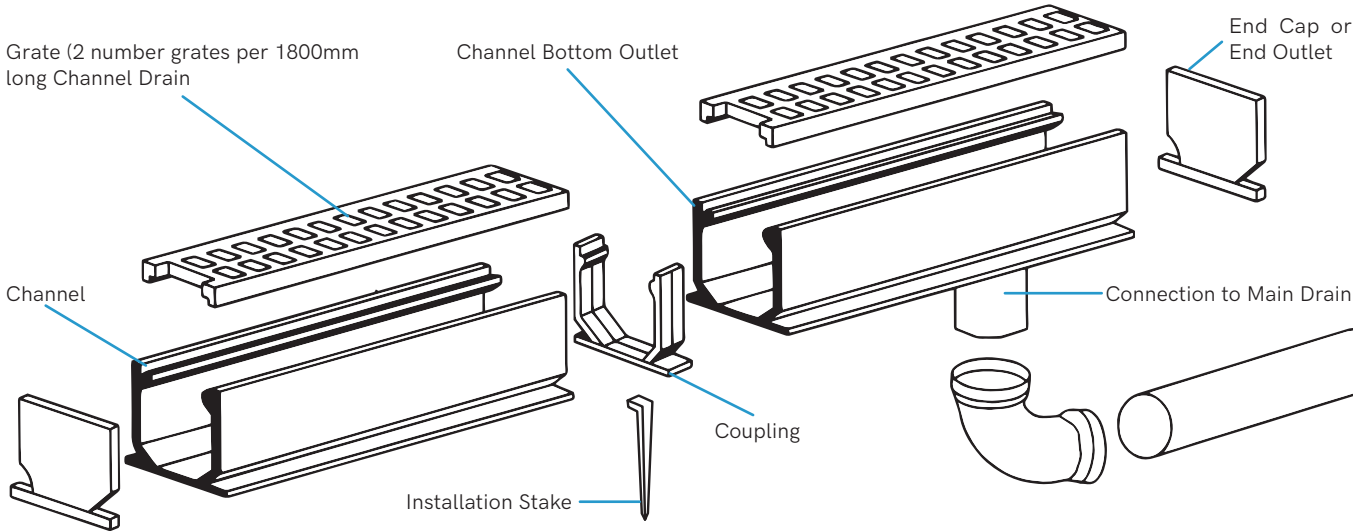
FLOW RATES THROUGH THE GRATE WITH 1/2" HEAD PRESSURE			
Grate	Load Capacity		Flow Rate EU [l/min]
	EU	Max. Load (tonne)	
Grey Slotted, Buff Slotted	A15	4.00	114.7
Fallen Ash Leaf Grey, Fallen Ash Leaf Black	A15	4.00	62.2
Fallen Ash Leaf Cast Iron	A15	4.00	57.1
Checker Board Swirl Grey, Checker Board Swirl Black	A15	4.00	66.4
Checker Board Swirl Cast Iron	A15	4.00	47.5

OUTLET FLOW CAPACITY		
Part	Flow Rate EU [l/min]	Pipe Connection
End Outlet	65.7	2"Schedule 40 fittings
Channel Drain 914mm Long 78mm wide with Spigot Bottom Outlet	120.3	

Choosing Your System



Decorative Channel Drain Components (B125)



Grate Options

Slotted Grates



Grey 914 x 78mm



Buff 914 x 78mm

Fallen Ash Grates



Grey 914 x 78mm



Black 914 x 78mm



Cast Iron 305 x 70mm (x6 per 1800mm)

Checker Board Swirl Grates



Grey 914 x 78mm



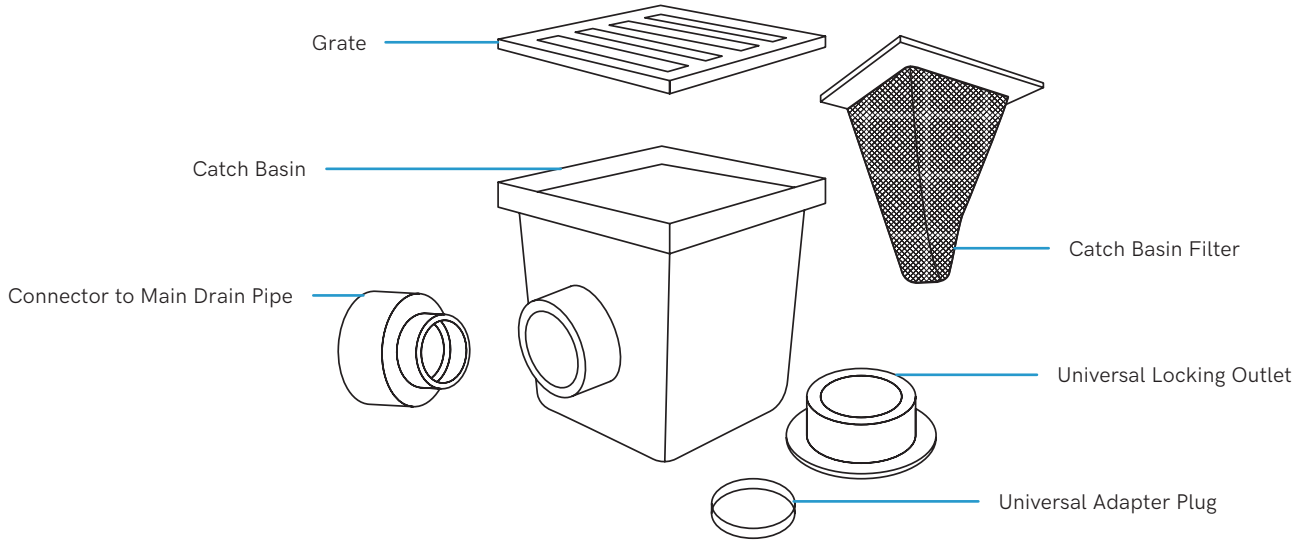
Black 914 x 78mm



Cast Iron 305 x 70mm (x6 per 1800mm)

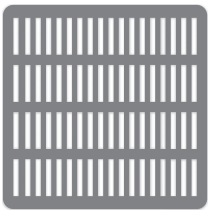


Decorative Channel Drain Catch Basin Components (B125)

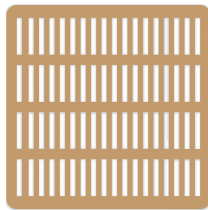


Grate Options

Slotted Grates



Grey
305 x 305mm

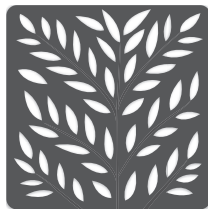


Buff
305 x 305mm

Fallen Ash Grates



Grey
305 x 305mm

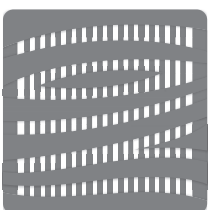


Black
305 x 305mm

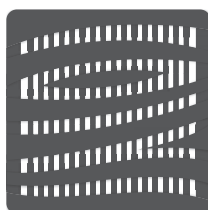


Cast Iron
305 x 305mm

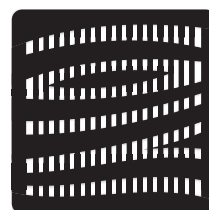
Checker Board Swirl Grates



Grey
305 x 305mm



Black
305 x 305mm



Cast Iron
305 x 305mm

Installation Guide

Tools List

- Spade/Shovel/Pick
- Screwdriver
- String Line
- Spirit Level
- Silicone Sealer
- Hacksaw
- Tape Measure
- Hammer/Rubber Mallet



Installation of Decorative Channel Drain

Materials List

- Pavetuf Decorative Channel Drain
- Pavetuf Decorative Channel Drain Spigot Bottom Outlet or End Outlet
- Pavetuf Decorative Channel Drain Grate
- Pavetuf Decorative Channel Drain Screws
- Pavetuf Decorative Channel Drain End Cap
- Pavetuf Decorative Channel Drain Installation Stake (depending on application)
- Pavetuf Decorative Channel Drain Coupling
- Pavetuf Decorative Channel Drain Connector to EN1401 pipes
- Sand/Cement/Concrete (depending on application)

Preparing and Planning Channel Drain

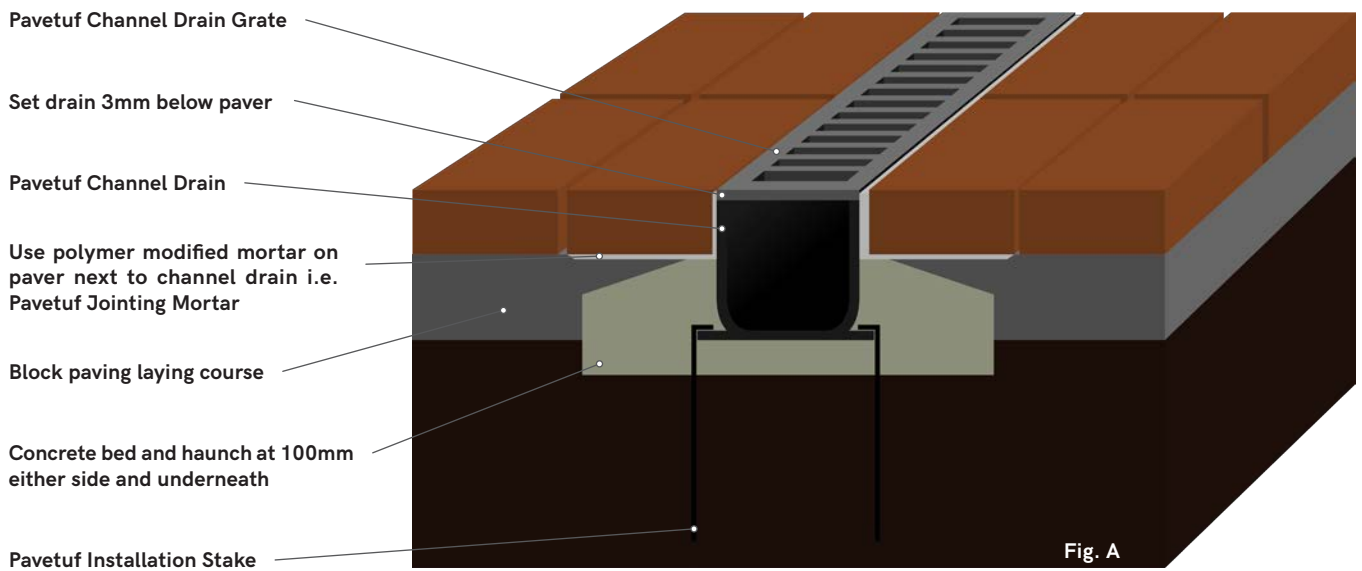
Before going ahead and purchasing your channel drain, the primary consideration should always be about how much weight the channel drains are going to have to support. You should always think carefully about which weight class to choose based on **ALL** potential future applications. For example, a B125 channel drain may be suitable for a regular driveway, but if heavier vehicles such as delivery lorries or waste disposal trucks will be passing over the drain as well, a C250 or D400 class would have to be considered to prevent breakage. Please note, Talasey only supply the Pavetuf Decorative Channel Drains suitable for A15 and B125 class.

Pavetuf Decorative Drainage Channel, when laid with the Grates from the same range, fall within the B125 Class. The following installation guide will give you guidelines on the application needed for pedestrian and driveway/light vehicular trafficked areas.

You will need to decide where the channel drainage is going to be installed and remember that the channel drain needs to discharge, preferably into the mains drainage system either from the end of the channel drain or through the bottom outlet in the Spigot channel drain.

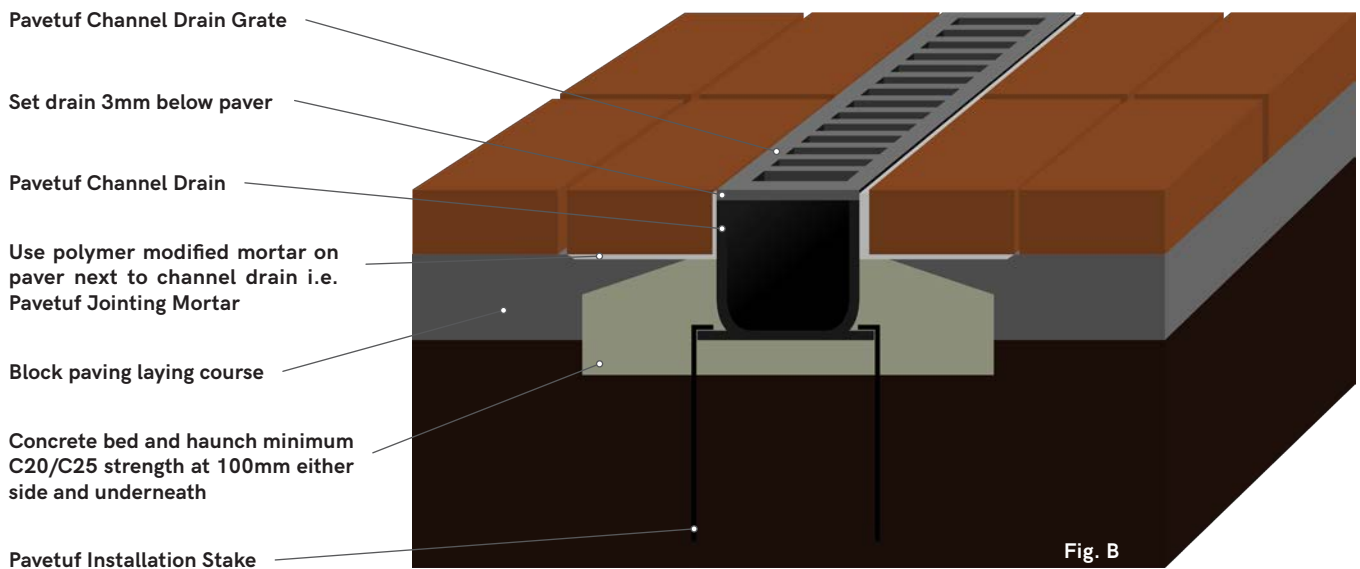
Block Paving for Pedestrian/Patio to A15 Class

Figure A illustrates a pedestrian installation using block paving set in a partial concrete surround, with a minimum of a 100mm concrete haunch to provide stability. The finishing level of the grate and channel should be set at 3mm lower than the finishing height of the block paving to allow for water surface drainage. Due to the smooth wall construction of the channel, it will need to be weighed down or fixed with the installation stake, to allow the concrete surround to set and prevent floating. Allow your concrete haunching to fully cure before using a Vibrating Plate Compactor in the area.



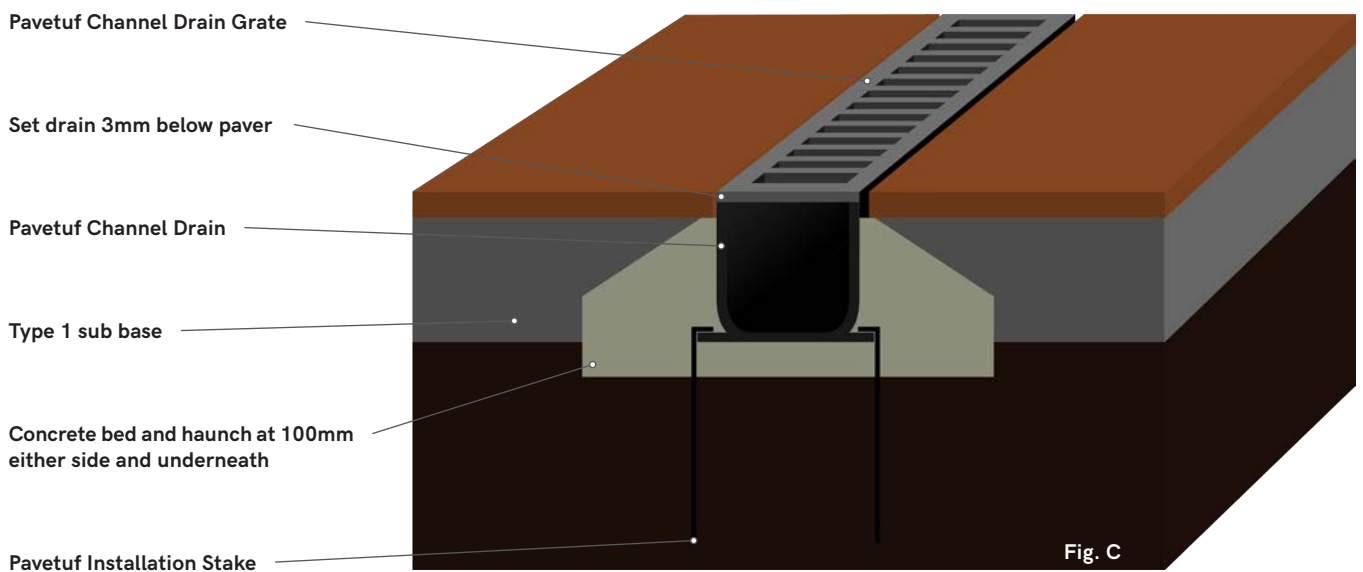
Block Paving Driveway/Light Traffic to B125 Class

Figure B illustrates a driveway/light vehicle traffic installation with block paving set in a partial concrete surround. A minimum strength of C20/25 concrete haunch should be set allowing for the depth of the block paving to sit on the top with 100mm of concrete at either side and under the channel. The finishing level of the grate and channel should be set at 3mm lower than the finishing height of the block paving to allow for water surface drainage. Due to the smooth wall construction of the channel, it will need to be weighed down or fixed with the installation stake to allow the concrete surround to set and prevent floating. Allow your concrete haunching to fully cure before using a Vibrating Plate Compactor in the area.



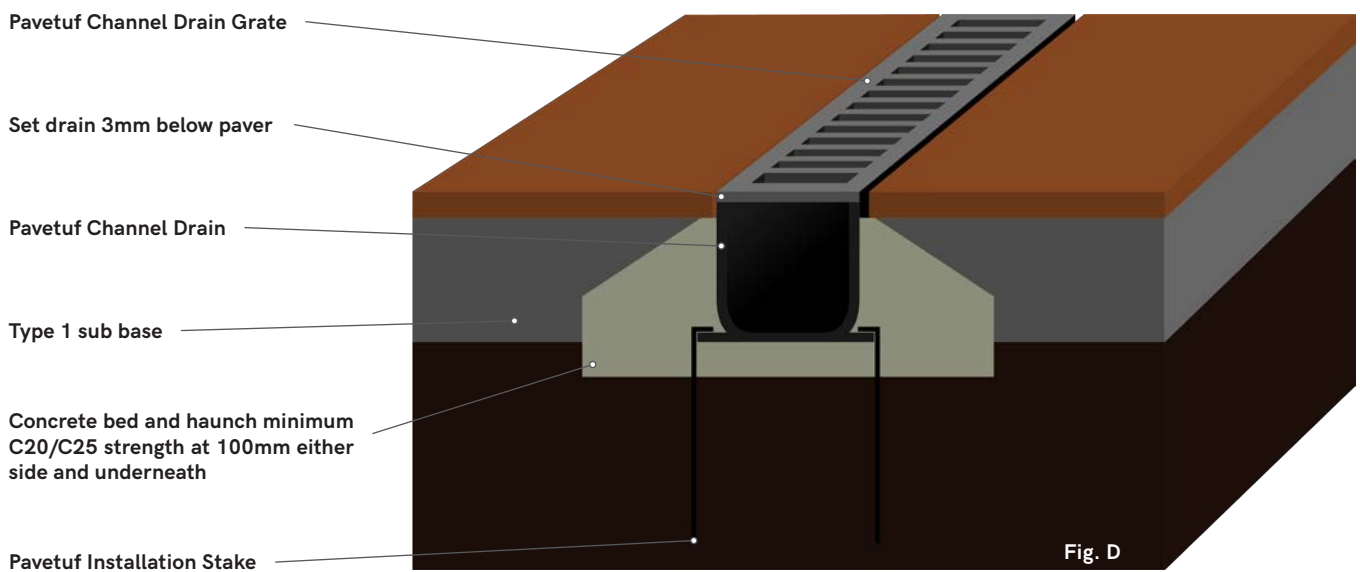
Paving Flags for Pedestrian/Patio to A15 Class

Figure C illustrates a pedestrian/patio installation with paving flags set in a partial concrete surround. A concrete haunch should be set allowing for the depth of the paving flag and the laying course to sit on the top with 100mm of concrete at either side and under the channel. The finishing level of the grate and channel should be set at 3mm lower than the finishing height of the paving to allow for water surface drainage. Due to the smooth wall construction of the channel, it will need to be weighed down or fixed with the installation stake to allow the concrete surround to set and prevent floating. Allow your concrete haunching to fully cure before using a Vibrating Plate Compactor in the area.



Paving Flags for Driveway/Light Traffic to B125 Class

Figure D illustrates a driveway/light vehicle traffic installation with paving flags set in a partial concrete surround. A minimum strength C20/25 concrete haunch should be set allowing for the depth of the paving flag and the laying course to sit on the top with 100mm of concrete at either side and under the channel. The finishing level of the grate and channel should be set at 3mm lower than the finishing height of the paving to allow for water surface drainage. Due to the smooth wall construction of the channel, it will need to be weighed down or fixed with the installation stake to allow the concrete surround to set and prevent floating. Allow your concrete haunching to fully cure before using a Vibrating Plate Compactor in the area.



Excavate a Trench

Your application will determine how deep and wide the trench will need to be and what strength concrete mix is required underneath the channel drain. See the illustrations to choose the correct method for your application.

Prepare the area and excavate a trench to accommodate the channel drain at 79mm depth plus the bedding concrete at 100mm. As you dig the trench you need to allow for a fall of around 5mm per every 1m length (1:200) of channel drain. Pavetuf Decorative Channel Drains do not have a built-in fall or slope. This needs to be manually accommodated for in the trench preparation. The lowest point needs to be where the channel drain meets the mains drainage outlet.

Erect a String Line

Erect a string line at each end of the trench as a guide for laying the channels to the finishing height. Allow a 3mm recess below the final surface level and begin the channel installation at the lowest point. This will be the main drain outlet end of the run. Therefore, if any cuts are required in the channel drain, they need to be installed furthest away from this outlet.

Dry Lay the Channel Drain

Lay the channel end-to-end, with the bottom or end outlets in the channel run at the appropriate location of the trench ready for joining.

Cutting the Channel and Grates

If a full channel is not required at the end of your run, it can be cut to size at any location to fit the required total length. Measure and mark the channel drain and cut using a Hacksaw.

If any cuts have been necessary on the channel drain do the same with the grates. These can be cut to size at any location to fit the required total length. Measure and mark the required length and cut using a Hacksaw.

Fix the End Cap or End Outlet

For the installation of end caps and end outlets an external waterproof silicone sealant must be used.

- End caps are used at both ends of the run if using the bottom outlet.
- End outlets are only required if you want to take the water from the channel drain to the main drain, via the end of the channel rather than from the bottom.
- Fix the Pavetuf Decorative Channel Drain Connector 60mm to 100mm to either the channel bottom spigot outlet section, if you are discharging the water from underneath, or to the end outlet if you are discharging the water from the end of the Channel Drain ready for you to connect to the main drain later. It is advisable to test the seal on the connector before the final finishing and concrete surround is installed to ensure there are no leaks.

Prepare the Trench

Prepare the base of the trench with the relevant concrete base for your application by using the installation illustrations on from pages 12 to 15.

Connect the Channel Drain

Use the Pavetuf Decorative Channel Coupling to clip the channel drains together easily. These slot onto the end of the channel.

Secure the Channel Drain

If you are using the Pavetuf Decorative Channel Drain Installation stakes to secure the channel, anchor these to the trench bed every 600mm on each side of channel. If you are not using the installation stakes, due to the smooth wall construction of the channel, it will need to be weighed down at the end of the installation to allow the concrete surround to set and prevent floating.

Fixing the Grates

Once the concrete surround has cured, the grates can be fixed in place. Simply slot the grate into the top of the channel drain. Screw the grates in place with the relevant screws for your chosen pattern. Do not over tighten and damage the threads.

- 2 number Decorative Channel Drain Grates per full length of Channel Drain
- 6 number Cast Iron Decorative Channel Drain Grates per full length of Channel Drain

PAVETUF DECORATIVE CHANNEL DRAIN	NUMBER OF SCREWS PER GRATE
Grey Slotted Grate 914 x 78mm	4
Buff Slotted Grate 914 x 78mm	4
Stainless Steel Screws 4 x 5/8" (for use with slotted grates)	-
Grey Fallen Ash Leaf Grate 914 x 78mm	4
Black Fallen Ash Leaf Grate 914 x 78mm	4
Grey Checker Board Swirl Grate 914 x 78mm	4
Black Checker Board Swirl Grate 914 x 78mm	4
Stainless Steel Screws 4 x 1" (for use with Decorative grates)	-
Cast Iron Fallen Ash Leaf Channel Grate 305 x 305mm	2
Cast Iron Checker Board Swirl Channel Grate 305 x 305mm	2
Stainless Steel Screws 8 x 1" (for use with Cast Iron grates)	-

Please note: After installation a waiting time of a minimum of 72 hours must be considered before allowing traffic to pass over the channels.

Create A Corner Or A Tee

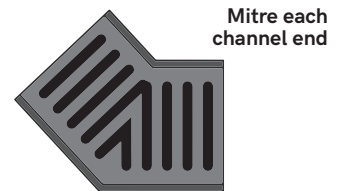
Method 1 - There is an option to purchase a prefabricated 90° elbow and a tee which comes fitted with the Pavetuf Decorative Channel Drain Grey Slotted Grate. If you have chosen an alternative grate to this then you can purchase extra grates and channel drain and use the grey slotted grate as a template and simply cut them to fit. This will save you having to cut and join the standard straight channel drain.



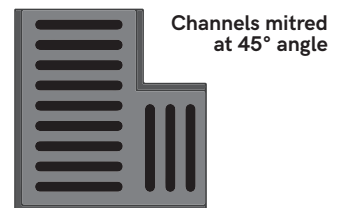
Method 2 - It is possible to create your own corner connections where the two pieces will connect. This will involve cutting on the corners to join. If you are choosing to create your own corners you will need to remember to order additional channel drain and grate to achieve this.

Keep in mind that these can be rather difficult to create and take time to do so. It may be easier to purchase the prefabricated option as a template and cut your chosen channel grate to size to fit as mentioned in Method 1.

To form a 90° angle, you will need to mitre cut both adjoining channel drains and grates to a 45° angle and butt them together. Use a silicone sealer to create a waterproof joint for the channel. Drill extra screw holes if necessary, to secure the grate sections.



Alternatively, you can create a tee joint by lining up the channel and then cutting the side of the channel to accommodate the joining section. Use a silicone sealer to create a waterproof joint for the channel. Drill extra screw holes, if necessary, to secure the grate sections.



It is possible to form tighter angles if the installation requires. The process is the same as above and the mitre cut would need to be set at the required angle.

To help with the mitre angle calculation and marking, there are numerous tools on the market that will help.

Mark the grate and channel drain with your chosen angle and cut with a hacksaw, angle grinder or similar. Ensure the cut is neat, accurate and in line with the marking and remove any debris. Check the join and adjust if necessary. Once you are happy with the join, use an external waterproof silicone sealer to hold the joint and seal it. Allow the sealer to cure for the recommended time that the silicone sealer manufacturer advises and then test the joint with water to ensure there are no leaks. Once the silicone sealer is cured then screw the grate to secure and drill extra holes if necessary.

If using the system for vehicular traffic a prefabricated tee joint or 90° elbow is recommended.

Installation of Decorative Catch Basin

Materials List

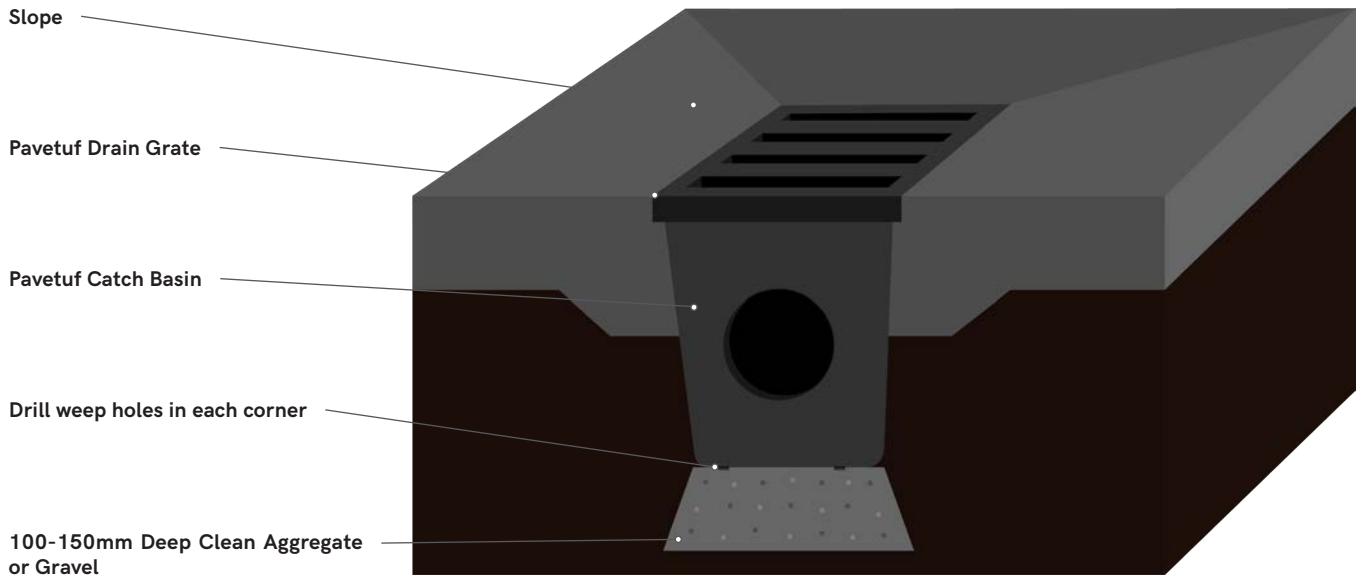
- Pavetuf Decorative Channel Drain Catch Basin
- Pavetuf Decorative Channel Drain Catch Basin Filter
- Pavetuf Decorative Channel Drain Catch Basin Grate
- Pavetuf Decorative Channel Drain Screws
- Pavetuf Decorative Channel Drain Catch Basin Locking Outlet
- Pavetuf Decorative Channel Drain Catch Basin Adapter Plug
- Pavetuf Decorative Channel Drain Connector to EN1401 pipes
- Gravel
- Suitable EN1401 PVC drainage pipe

Preparing and Planning Catch Basins

Catch Basins are an alternative to using a Channel Drain. Alternatively, they can be used in conjunction with the channel drain system to remove standing water from lower areas in the garden or on a patio. They can also take the rainwater away from a down pipes and gutters.

Catch basins can be connected to the main drain system or the water can be taken away to a suitable soak away to help disperse the water efficiently.

In the chosen area you will need to dig a hole for the catch basin and a trench for the drainage pipe. The water can be diverted to the nearest manhole for mains drainage or to a chosen location of a soak away.



Excavate a hole and trench

Prepare the area and excavate a hole for the catch basin. This needs to be around 405mm wide to accommodate the widest section of the catch basin plus 100mm to haunch with concrete, if required for stability. A depth of 330mm for the catch basin plus 150mm-300mm gravel area underneath is recommended (if there is a lot of standing water then go for the 300mm depth for the gravel to assist with the drainage).

Excavate the trench to where the water will be directed to. As you dig the trench you need to allow for a fall of around 5mm per every 1m length (1:200) of PVC drainage pipe. The fall will ensure the water is taken from the catch basin and does not sit in the pipe.

If you are taking your water to a soak away you will need to prepare the area, at the end of the trench, to the relevant specification for the manufacturer of the soak away you are using.

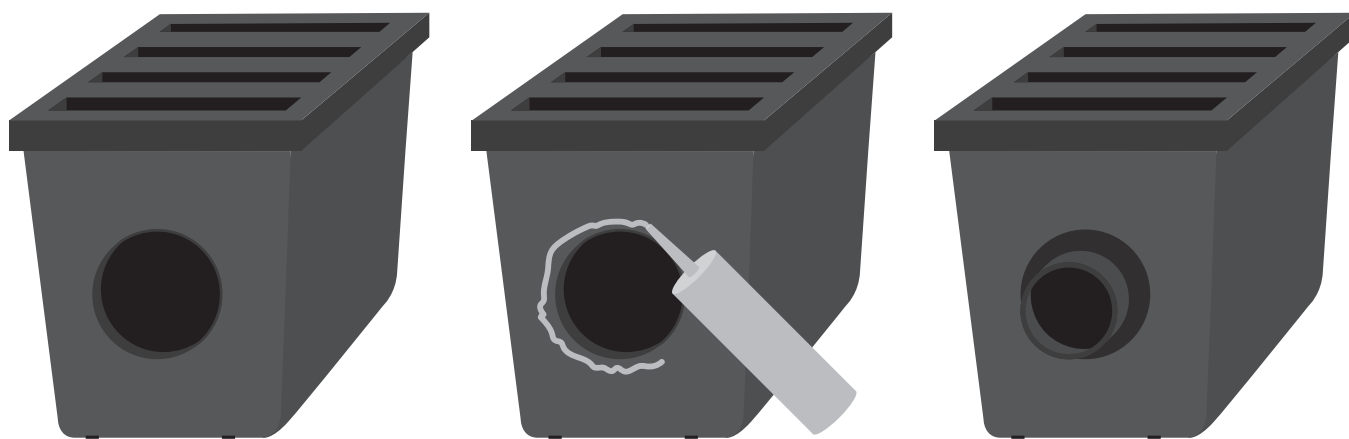
It is the responsibility of the user to ensure that any works and additions to underground drainage is undertaken, in line with local building regulations.

If you are taking your water to your nearest main drain manhole, you will need to prepare the area at the end of the trench to the relevant specification for the manufacturer of the pipe and connections required.

Preparing the Catch Basin

Your catch basin comes with two outlets, both can be used or if you are just using one then there is an Adapter Plug to seal one side.

Use an external waterproof silicone around the connection and then insert the Locking Outlet/ Adapter Plug and twist to lock in place.



Drill approx. 6mm on bottom of the catch basin in each corner. This is to ensure there is no standing water left in the catch basin to go stagnant.

Installing the Catch Basin

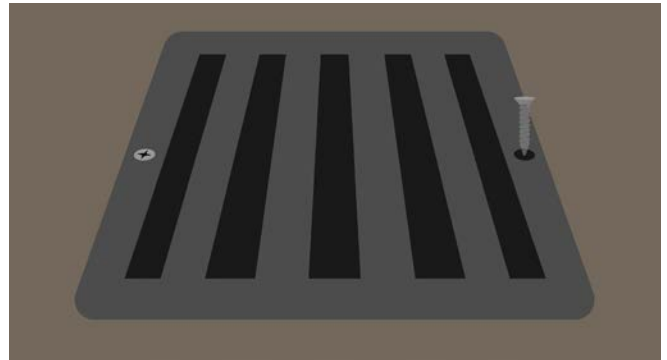
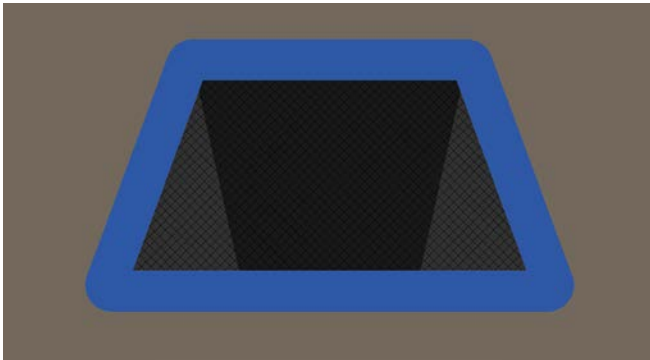
Place the gravel in the bottom of the trench at your chosen depth. Insert the catch basin and ensure that the top edge is around 3mm below the surface finish to ensure the water drains into it. If the catch basin is too high, just remove some of the gravel until you are happy with the position. Connect the Pavetuf Decorative Channel Drain Connector 100mm to 110mm to the catch basin and then to the drainage pipe. Test the seal with water to ensure there is no leak. Finish the drainage pipe installation as per the manufacturers guidelines and connect to the main drain or soak away.

Finishing the Installation

Backfill the trench and the hole to a level that will allow the surface finish product to be installed on top. The example below shows a catch basin placed in a garden area to assist drainage and has been back filled with just soil as it will have no foot traffic on it. If the catch basin is to be used on a patio then back fill with MOT Type 1 and allow for a 100mm haunch on concrete to go around the catch basin leaving the right depth from the surface level to allow for the finished product to be installed. Allow your concrete haunching to fully cure before using a Vibrating Plate Compactor in the area.

If you are using a catch basin filter insert this before you fasten down your grate.

Simply slot the grate into the top of the catch basin. Screw the grates in place with the relevant screws for your chosen pattern but do not over tighten and damage the threads.



PAVETUF DECORATIVE CHANNEL DRAIN CATCH BASIN	NUMBER OF SCREWS PER GRATE
Grey Square Slotted Grate 305 x 305mm	2
Buff Square Slotted Grate 305 x 305mm	2
Cast Iron Square Fallen Ash Leaf Grate 305 x 305mm	2
Cast Iron Square Checker Board Swirl Grate 305 x 305mm	2
Stainless Steel Screws 20x1-1/2 40 (for use with Slotted/Cast Iron Catch Basin Covers)	-
Grey Square Fallen Ash Leaf Grate 305 x 305mm	2
Black Square Fallen Ash Leaf Grate 305 x 305mm	2
Grey Square Checker Board Swirl Grate 305 x 305mm	2
Black Square Checker Board Swirl Grate 305 x 305mm	2
Stainless Steel Screws. 20x1-3/4 (for use with decorative Catch Basin Covers)	-

Maintenance

It is recommended to regularly clean your channel drain. Over time, channel drains can sometimes become clogged up with soil, silt, leaves and other debris. This can reduce the effectiveness of the drainage, meaning the area will be more prone to overflows and flooding.

Pavetuf Decorative Channel Drains and Catch Basins are designed to be straightforward to maintain. Simply unscrew and carefully remove the grate. It is often possible to remove any built-up debris or silt by hand or by flushing it out with water. If you have a Catch Basin Filter fitted then simply remove, empty any debris out and wash with clean water before replacing it in the Catch Basin.

Health & Safety

Hand Protection - Wear appropriate gloves.

Eye Protection - Wear protective goggles where appropriate.

Foot Protection - Wear appropriate safety boots.

Clothing - Wear appropriate protective clothing.

It is your responsibility to ensure that you comply with all applicable health and safety legislation and guidelines.

Please dispose of packaging and waste products in line with current environmental legislation.



Channel Drain



Grates

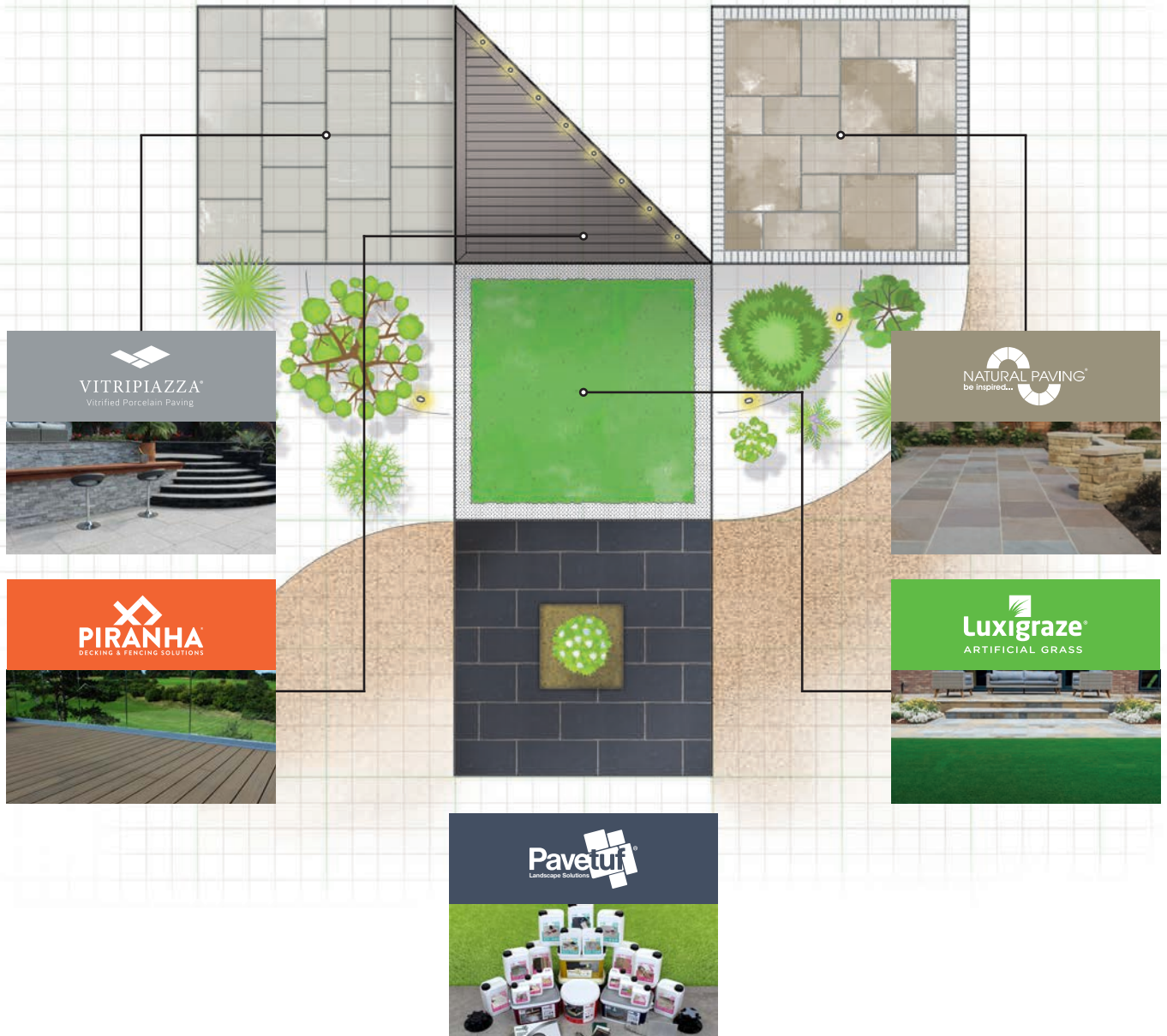
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