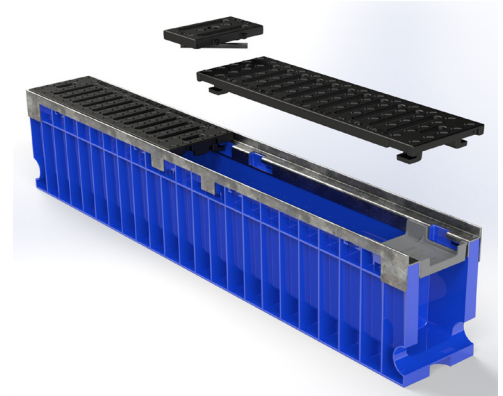


The Permatreat-S and Permatreat-EA treatment devices rely on the quality of their installation to achieve C250 load classification to BS EN 1433. Therefore, it is important this guide is followed to ensure the required specification is met.



## Delivery

- Permatreat will be delivered to site on pallets. Palletised load measurements are approx. 1.0m x 1.2m x 1.0m high and each pallet will contain 35 Permatreat units
- Pallet weight is circa 397kg for the Permatreat-S, and 439kg for Permatreat-EA
- Permatreat is delivered with gratings in position and fastened
- Deliveries shall be unloaded using mechanical handling equipment

## Storage

- Position pallets on stable, even level ground
- Stacking of pallets is not recommended
- Store away from direct source of heat or ignition
- Transit banding not to be removed until point of installation

## Excavation and Bedding Preparation

- Prepared formation: to be trimmed smooth and free from sharp objects and projections. For optimum capacity Permatreat should be installed level but it can be installed to shallow gradients should the drainage design require
- Permatreat should be laid on a 150mm deep concrete bed with a minimum 150mm thick haunch to both sides. A 30N/mm<sup>2</sup> concrete mix is required
- Tolerance: prepared formation/local subgrade below concrete bed tolerance of ±5mm within any 3m direction
- Permatreat should be bedded in to the concrete
- The commensurate level for the Permatreat installation should allow for the height of the Permatreat and the depth of the concrete bedding plus a further 3-5mm below the finished level to protect the Permatreat and prevent ponding
- Ensure the membrane encapsulation from the Pemavoid tanks (if required) spans below the Permatreat installation (including concrete bedding and haunching) with sufficient length to return up the rear of the Permatreat run. See General Design Details within the Pemavoid System Technical Manual for further guidance

Figure 1: Permatreat Concrete Requirements

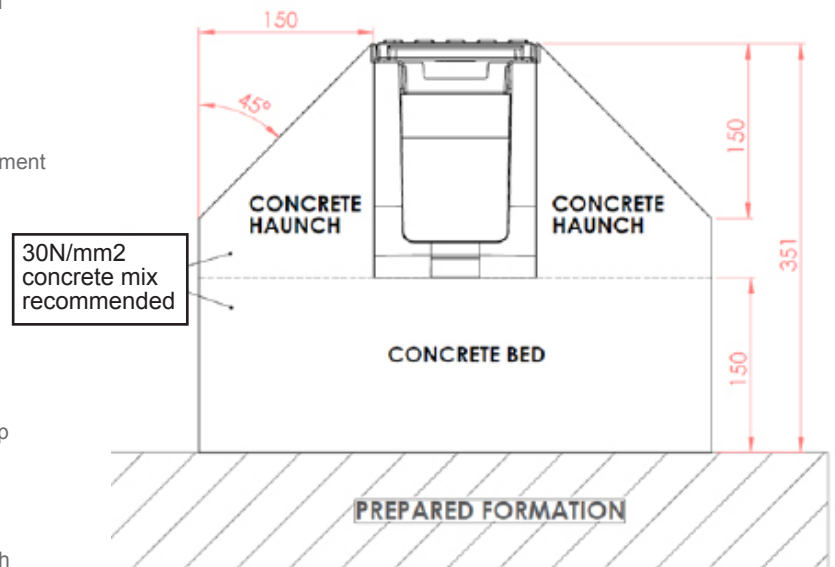
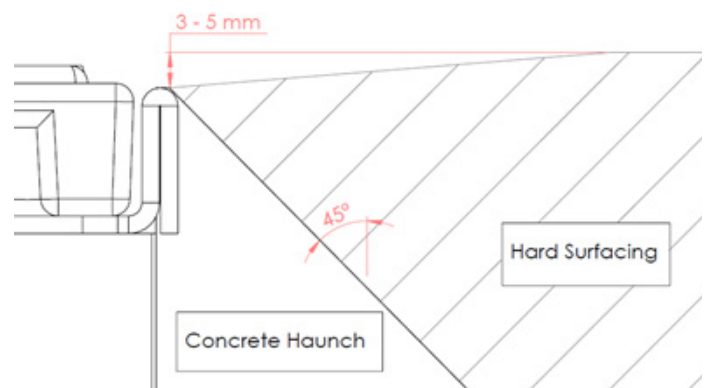


Figure 2: Height below finished level



## Installation of Permatreat

- Installation to be carried by a suitably qualified installer
- Check installation plan / details to confirm Permatreat orientation in relation to geocellular tank(s)
- Permatreat must be laid in line, aligned using a builder's line or suitable laser alignment equipment
- Install the Universal Permatreat Connector (product code: PV06305) along the length of the Permatreat run, with 1 connector required per linear metre of Permatreat. The connector is installed where adjacent Permatreat units butt against each other to form a 40mm diameter outlet
- Install the Permatreat Connector by firstly removing the fresh concrete bed (before hardening) in immediate area and inserting 'o' ring (supplied with connection unit) into the rebate of the 40mm diameter outlet from the Permatreat and then insert the 40mm diameter spigot into the Permatreat aperture
- Ensure the Permatreat Connector is seated in a vertical position if installing Permatreat ahead of the Permavoid tank or is butted against the Permavoid tank if installing the Permatreat after the Permavoid tanks, (see Figure 5)
- Redundant Permatreat outlet, if not used must be blanked prior to placing concrete haunch. 40mm blanking plugs are available if required
- Place the concrete haunch to the front and rear of the Permatreat
- The linear elements must be kept clean during installation
- Trafficking over the newly laid channel to be kept to a minimum
- To terminate the end of a unit a Permatreat end cap (PV03002) is used. The end cap will need to be trimmed down to suit the finished level of the Permatreat (see Figure 6)
- It is essential the grating is left installed in the Permatreat during construction of the pavement

Figure 3 - Linear run

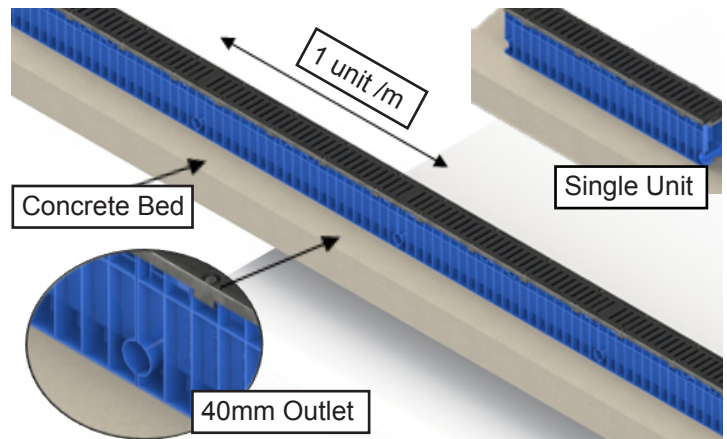


Figure 4 - Installation of connection spigot

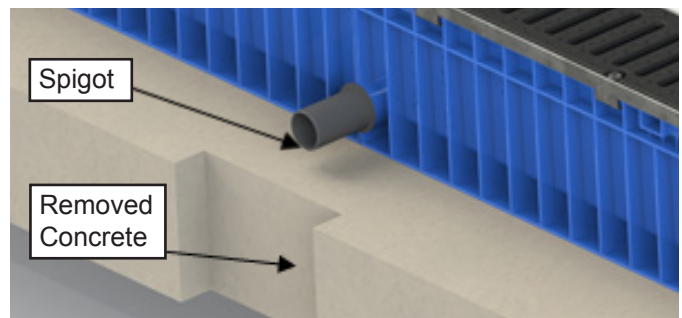
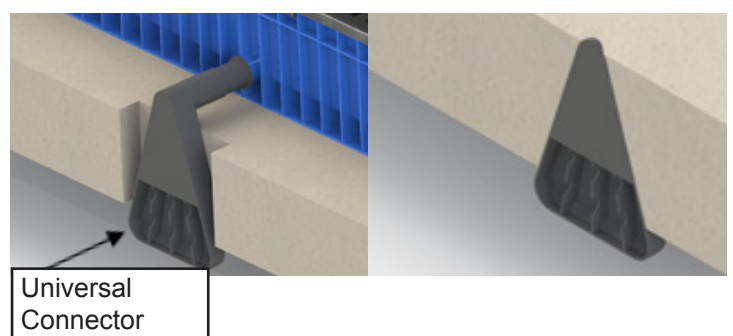


Figure 5 - Installation of connection unit



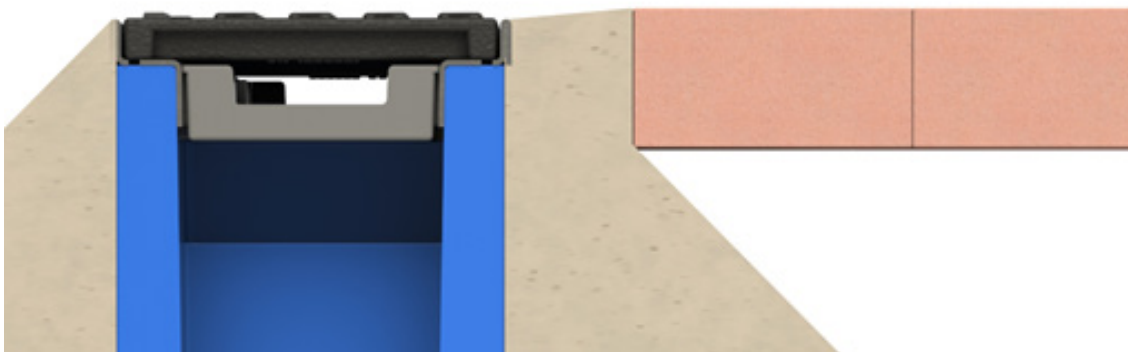
## Surface Finish Options

- Concrete: between the minimum 150mm concrete haunch and the concrete slab, an expansion joint must be inserted, to a structural engineer's specification
- Bituminous Bound: to avoid damaging the Permatreat units during compaction of the surfacing the concrete surround must be haunched as high as possible (45 degrees back to the Permatreat). The bituminous bound surfacing can be installed against the side of the channel. The finished level following compacting must be 3 to 5mm above the height of the grating (see Figure 2)
- Modular Paving: the concrete surround is critical to the strength of the Permatreat unit and cannot be reduced. Either the paving will need to be modified to fit (i.e. cutting the blocks / flags), or the concrete terminated at ground level ensuring the paving does not interfere with the 45° concrete haunch (see Figure 7).

Figure 6 - Installation of end cap



Figure 7- Modular paving example



## Maintenance Plan

This should be initiated by the drafting of routine maintenance plans to suit the site installation. A pre-handover inspection should be carried out and the Permatreat system cleaned prior to final handover.

### Routine inspection and maintenance should include:

- Inspection of systems
- Removal of silts
- Decanting of oils and hydrocarbons
- Water sampling and testing at point of discharge (if required)

Excess silts/debris held within Permatreat should be cleared manually or with a vacuum tank. We do not recommend pressure led cleaning.

### Routine maintenance procedures:

- 3 monthly inspections of units for signs of blockages and oil spillage
- Removal of litter and blockages as required
- Every 12 months inspect all chambers for silt and oil build up and sweep external surfaces
- Remove silt as required but at least every year
- Records of inspections and maintenance undertaken should be kept by the client

### Accidental spillages:

If accidental spillages occur or if oil or other substances that can cause water pollution, they must be dealt with immediately. An example of this is if a car sump falls and there is large spillage of oil on the car park or road surfaces. A spillage kit appropriate to the size of the car park should be kept by the site caretaker. This should include absorbent pads, socks and rain seals.

As soon as a spillage is identified, the drain inlets in that area should be covered to prevent pollution entering the system. The pollution should then be cleared from the road or car park surface. The Permatreat system receiving the spillage should be emptied of all pollution that has entered.

Permatreat should prevent any significant pollution from entering the rest of the drainage system. The Environment Agency should be informed of the spillage and the appropriate actions should be taken.

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