

1 Introduction

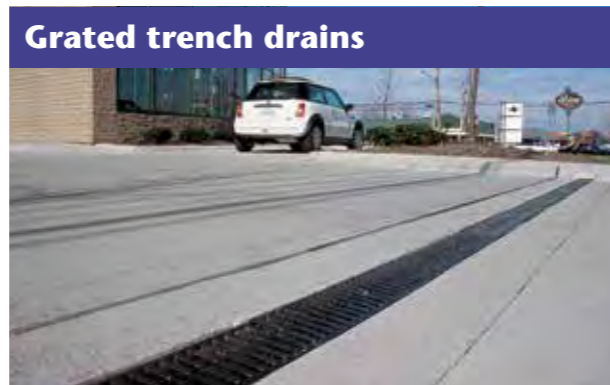
Grated trench drains

A trench drain is a continuous line of surface drainage that removes liquid from impermeable and semi-permeable surfaces.

Grated trench drains have continuous inlets along the entire length of the trench that enables maximum liquid capture and allows for simple one-way grading of the pavement.

Modular precast trench drains

Modular, factory produced trench drains offer consistent quality and can be created with advanced shape profiles with a built-in slope, providing additional benefits and cost savings.



Grated trench drains

✓ Safety

Superior liquid capture minimises hazards to pedestrians and vehicles, reducing the risk of litigation.

✓ Narrow grates

Narrow grates are significantly cheaper, particularly in high load class applications.

✓ Pavement longevity

Reduced standing water extends the service life of the pavement, especially in harsh environments.

✓ Hydraulics

Narrow systems with built-in slopes create increased velocity, resulting in drainage efficiency and lower materials costs.

✓ Grading

One-way slopes are simple, easy and quick to construct.

✓ Improved aesthetics

Grate used as a border or feature in the pavement.

✓ Maintenance

Trench drains enable easy access for maintenance and the increased flow velocity reduces the amount of sediment build-up and maintenance time.

✓ Pedestrian safe

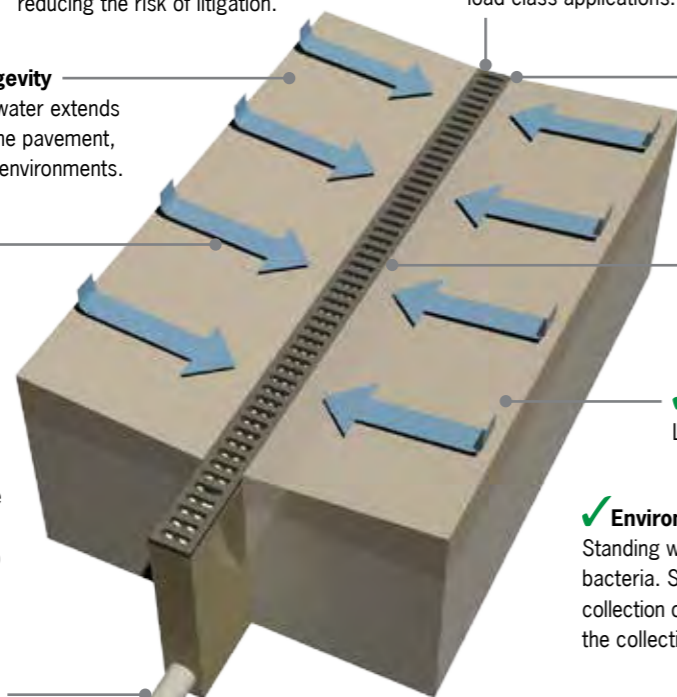
Level pavements.

✓ Pipe cost savings

Minimal underground pipework is required with reduced excavation and site costs.

✗ Initial costs

The product cost may seem high, but is offset by lower pipework and installation costs.



Cast-in-situ trench drains

A cast-in-situ drain is created on-site during a concrete pour. It has some similarities with modular trench drains except for the following disadvantages:

- ✗ **Deterioration** of concrete surfaces especially in harsh environments, which results in lower performing hydraulics and difficult to clean surfaces.
- ✗ **Wider grates** are more expensive, particularly in high load class applications.
- ✗ **Site work** involving excavation and the construction of formwork with a slope or 'V' profile can be costly. Tees and corners are difficult and time consuming to create.
- ✗ **Quality** can be inconsistent and vary greatly depending upon the contractor. It is difficult to achieve a level frame with adequate concrete support for the grate.



Alternatives to grated trench drains

Spoon drain

A spoon drain is a formed swale in the pavement, often leading to a grated pit.

✗ Inconvenient ponding

Cannot be walked on, even with a small amount of liquid. Potential trip hazard.

✗ Inefficient drainage

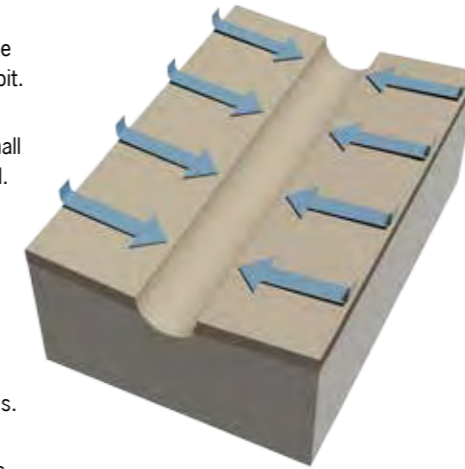
Shallow, inconsistent and irregular surface areas result in reduced hydraulic performance.

✗ Maintenance

Requires frequent cleaning as the spoon drain easily accumulates debris.

✓ Low cost

Quick to create with no product costs.



Spoon drain



Point drainage

Point drainage consists of a series of grated pits located at strategic places in the pavement. Precise and exact grading is needed for efficient drainage.

✗ Pavement longevity

The undulating pavement surface deteriorates prematurely, especially in harsh environments, reducing the service life of the drain.

✗ Frequent maintenance

Pipes are easily blocked by the build-up of debris requiring frequent maintenance.

✗ Poor quality

Inconsistent pavement finish results in settlement, which leads to ponding.

✗ Undulating pavement

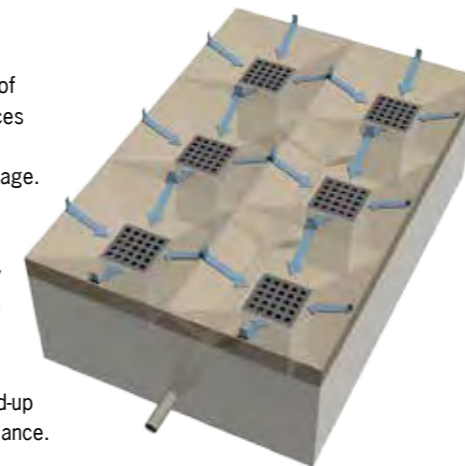
Complex four-way slopes are difficult and time consuming to design and construct.

✗ Costly pipework

Extensive underground pipework, excavation and site work required.

✓ Product costs

Initial costs appear to be low, but is offset by higher pipework and installation costs.



Point drainage



Do nothing



Do nothing

- ✗ **Property damage**
Increased risk of property damage due to flooding and water ingress.
- ✗ **Legal ramification**
Risk of litigation from damage to property and/or injury to persons.
- ✗ **Environmental damage**
Risk of environmental issues and costly clean-up and remediation expenses.
- ✗ **Reduced life of pavement**
- ✓ **No money spent**