

INSTALLATION PROCEDURE

- 1 It is always recommended that you start at the discharge/outlet end of the run.
- 2 Dig a trench for the channel installation with dimensions dependent on the width and height of the channel and the load class required (as shown in table).
- 3 Locate outlet channel, Silt-Box or Gully dependent on which is to be used, pour bedding concrete and position to proper level and alignment.
- 4 Install pipe connections and back fill to required level with concrete.
- 5 If using pre-sloped channels it is always recommended that the channels are laid out at the side of the trench in numerical order prior to laying.
- 6 When using constant channel and pre-sloped the constant channel always comes above the sloped channel with the same number (ie. No.10 > L10 > No 11).
- 7 On the bottom of the trench place a bed of concrete. (Thickness and quality will be dependent on load class required as per Fig A).
- 8 Lay the channels beginning with deepest first and in numerical order counting down.
- 9 Fit the channels together by sliding them from top to bottom ensuring no concrete gets in between the joint. Adjust channels for alignment as you go.
- 10 To complete the run place the closing end cap and seal to the channel.
- 11 Once the run is complete and end cap in place the final surround of concrete can be poured. The concrete surround must be finished between 2–3mm above the grating surface. It is important that the channels are protected against any kind of lateral forces and/or pressures during and after installation and it is therefore recommended that the gratings or pieces of wood are placed in the channels prior to pouring concrete.
- 12 Once the concrete surround has set, the gratings can then be installed ensuring all fixings are securely fastened.

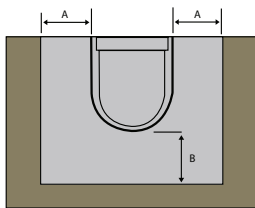


Fig A

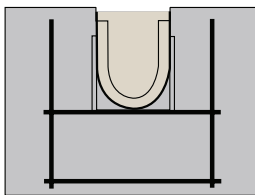


Fig B

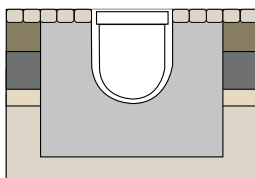


Fig C

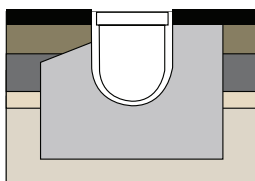


Fig D

	a	b	Surrounding concrete
Class A 1 5 kN	>8 cm	>8 cm	15 N/mm ²
Class B 12 5 kN	>10 cm	>10 cm	25 N/mm ²
Class C 250kN	>15 cm	>15 cm	25 N/mm ²
Class D 400kN	>20 cm	>20 cm	25 N/mm ²
Class E 600kN	>20 cm	>20 cm	25 N/mm ²
Class F 900kN	>25 cm	>25 cm	25 N/mm ²

For F90 0 kN class installation, you may want to put a wire netting in the concrete to avoid any cracking due to longitudinal sagging. Using such netting allows to add transverse reinforcing rods to sustain the channel's weight when pouring concrete (as Fig B).

BLOCK PAVING

Paving stones must be 2 – 3mm higher than the upper edge of the channel.

In case of paving stones the first 3 rows of blocks adjacent to the channels must be bedded in concrete. (as Fig C)

BITUMEN

The final coating should be flush with the upper edge of the channel or, even better, should be 2 – 3mm higher than the upper edge of the channel. (as Fig D)

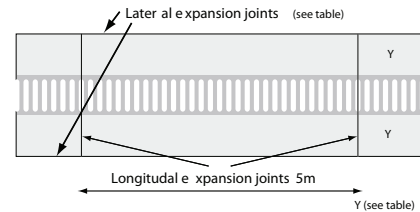
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LATERAL AND LONGITUDINAL EXPANSION JOINTS

Longitudinal expansion joints have to be placed approximately every 5 metres and at any junctions. These joints have to be continued into the concrete case (bedding).

A lateral expansion joint should be placed between each face of the concrete case and the bitumen or concrete paving. These expansion joints are there to absorb thermic expansions and therefore prevent any crushing or destruction of the channel lines (as shown).

All Clark-Drain channels can be easily accessed for rodding or flushing to maintain their efficiency.



LINEAR DRAINAGE CARE AND MAINTENANCE

FREQUENCY OF INSPECTION

It is not possible to state the frequency of inspections, as it will vary upon the location and environment in which the channel is situated. In general the frequency of inspection should be based upon local knowledge.

Inspections should pay particular regard to the condition of the following:

- Gratings or covers where fitted
- Locking for gratings or covers
- Sump/gully outlet
- Concrete surround (where exposed at surface)
- Pavement condition adjacent to the channel

MAINTENANCE

Channels may be rodded or cleaned with shovels (generally in a direction away from outlet to avoid contaminating the underground connections)

- Ensure gratings (or covers) are relocked into position on completion of maintenance operation. Damaged gratings (or covers) should be replaced.
- The locking system (whether removed for cleaning or otherwise) should always be checked for security. Replace any damaged bolts or locking bars.
- Remove sump/gully sediment buckets and clean out. Replace bucket before cleaning channel and re-empty following cleaning of the channel if necessary. Flush sump/gully to ensure it runs freely to underground connections.
- Where exposed the concrete haunch should be repaired if damaged. The edge of the channel should not be left exposed. The level along the haunch should be checked and compared with construction drawings. Deviations from installation drawings may indicate or suggest suspect ground conditions and engineering advice may be necessary.
- If applicable, joint seals should be repaired or renewed in accordance with manufacturers recommendations.
- Steam cleaning agents should not normally be required if maintenance is a regular procedure.
- Steam cleaning of polyester and vinylester channels is not recommended.