

## SLOT-DRAINS

### GUIDELINES FOR DESIGN AND INSTALLATION

#### WATER FLOW CONSIDERATIONS

Slot-Drains or slotted drains are drive-over surface drainage structures. As such the top surface of the *Slot-Drains* are installed at the same level as the surrounding paving. It follows that the *Slot-Drains* will have the same gradient as the paving. This is a given and the Engineer should be able to calculate the flow from this.

The cavity of the *Slot-Drain* is circular just like a round pipe. The inside surface is smooth concrete. Friction formulae or curves for spun concrete pipes may be used to determine flow capacity.

#### LOAD BEARING CAPACITY

*Slot-Drains* are designed to withstand a safe wheel load of 100kN. This represents the largest possible permitted normal road vehicle travelling slowly. Typical applications are filling stations (large petroleum tankers), loading bays and parking lots.

Special applications that need checking or redesign include the airside of airports, docksides with large lifting equipment and busy roadways.

The Engineer must ensure that the bearing capacity of the foundation material underneath the *Slot-Drain* is sufficient for the intended load.

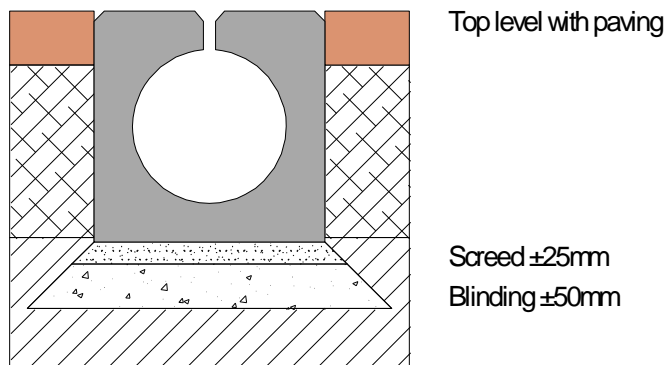
As a rule of thumb, the following ground bearing capacities may be used:

150mm Slot-Drain:	300kPa
300mm Slot-Drain:	120kPa
450mm Slot-Drain:	100kPa

#### INSTALLATION

As with any paving and drainage project, it is crucially important to get the levels right. Plan it well and work accurately.

If possible, it is easier to install the *Slot-Drains* first and then the surrounding



paving. The light-weight paving can easily be lined up with the tops of the installed *Slot-Drains*. After the Engineer is happy with the bearing capacity of the foundation material, excavate approximately 75mm deeper than the depth of the *Slot-Drain*. Set out to line and level and lay a 25MPa blinding of  $\pm 50$ mm thick. Set up profiles and install the *Slot-Drains* on a strong topping screed of  $\pm 25$ mm thick. Use a ratio of 1-part OPC to 3-parts clean river sand and a semi-dry mixture. The topping must be compacted as is good practice. Line the tops of the *Slot-Drains* up accurately for a professional appearance.