

Always read these instructions even if you are familiar with the installation process for Clearview Intelligence Road Studs.

Clearview Intelligence are the creators of the Intelligent Road Stud and have designed and developed the solar powered inset mounted, flush, road stud. These provide a flexible and innovative approach to traffic safety. Designed to provide guidance and advance warning to drivers day and night.

Under no circumstances should the stud be dismantled. Failure to comply with this or these installation instructions will invalidate the warranty.

The positioning and colours of the installed studs should conform with the existing laws and regulations, where applicable, of the country of installation.

Correct installation is essential if the road markers are to achieve good adhesion to the road surface. Solarlite flush studs must only be installed in hard-aggregate surfaces such as tarmac or concrete with an approved installation compound as listed in this document. It is the responsibility of the installer to ensure that road construction and weather conditions are suitable for the installation of studs.

To maximise the effectiveness of the enhanced delineation provided by Clearview Intelligence studs, Clearview studs should commence at least 100m prior to the start and continue 100m from end of the bend in addition to the bend itself. When multiple bends are in close proximity to each other, it is also recommended that Clearview studs are installed between the bends to ensure continuity of the visual effect.

-  Do not attempt installation work if the road surface is wet, damp or when the road/surface temperature is below 0°C.
-  Ensure that the correct Personal Protection Equipment is worn at all times.
-  Always refer to the handling and usage instructions provided with the fixing materials.

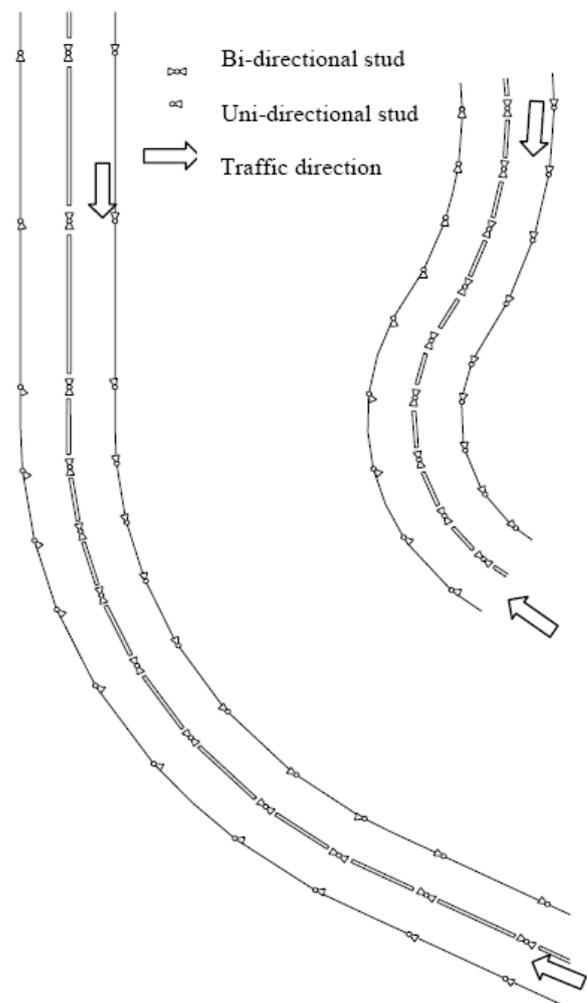
## Alignment

When placing the stud into the cavity, ensure that the reflective face of the stud is orientated correctly facing the traffic.

It is recommended that on curves, bi-directional studs in the centre of the road be positioned such that the light output is seen clearly and as early as possible by motorists travelling in either direction.

On tight radii bends it is good practice to align every other bi-directional stud to be optimum for one direction of travel then the other. On such tight radii bends the use of red unidirectional nearside studs is also highly recommended.

Refer to the diagram (right) for examples of typical layouts showing the direction of light output together with the direction of traffic.



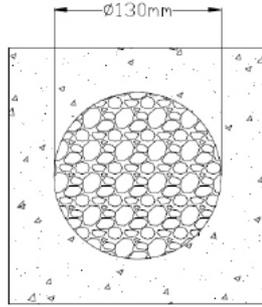
## Installation Step by Step Instructions

### Step 1

Using chalk or an environmentally friendly aerosol spray, accurately mark on the road surface, the correct positions for the stud cavities. Solarlite flush studs **must** only be installed in a hard-aggregate surface such as tarmac or concrete.

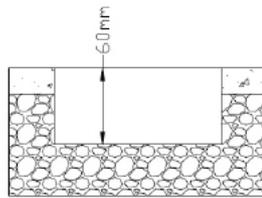
## Step 2

Drill a circular hole, 130mm ( $\pm$  2mm) by 60mm ( $\pm$  2mm) deep with a core cutter that produces a flat-bottomed cavity with perpendicular sides. The core cutter can be of the wet diamond core type or the tyne based router type (used for Halifax studs). Endeavour to ensure that the top rim of the hole is maintained.



## Step 3

After drilling, remove the centre core from the cut to expose the cavity. Make sure the bottom of the cavity is flat. If necessary trim flat.



## Step 4

Remove all debris from the cavity, either using compressed air or vacuum removal.

Ensure that when using compressed air that the correct Personal Protection Equipment (PPE) is worn and that blown debris is not directed at persons or vehicles.

## Step 5

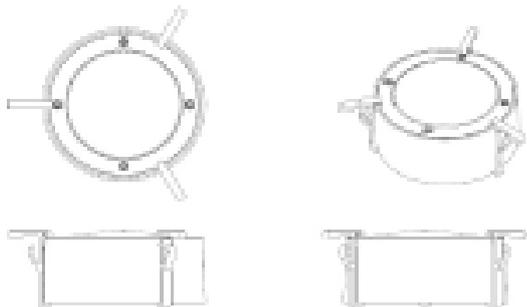
Ensure all cavities are clean, dry, and free from dust and debris prior to installation, if any surface shows signs of moisture; the moisture must be removed either using a compressed air lance or a propane gas torch.

 Ensure that the correct Personal Protection Equipment is worn and that any blown debris is not directed at persons or vehicles.

 Caution should be used when using the gas torch so as not to over heat and damage the surface. As overheating the bitumen will allow the polymers to burn off, causing the road surface to break up over a short period of time. This in turn could allow the stud to become dislodged from the road.

## Step 6

Attach the three installation clips to the stud housing. Position the installation clips onto the base rim of the housing and push the installation clip towards the top of the housing to clamp onto the stud.



The stud housing must be thoroughly cleaned and decontaminated using white spirit applied with a clean lint free cloth. The stud housing must be clean to provide a good bonding surface for the resins and sealants. The stud should be dry before being fixed into place.

## Step 7

Mix an appropriate amount of fixative resin. An appropriate grade of two pack bitumen extended epoxy resin should be used, see approved resins note below:

Approved installation compound for United Kingdom DfT type approval is **Triflex Cryl R238** (referred to as resin) and must be used for any United Kingdom public highway installation.

Approved installation compound (excluding United Kingdom) is **Robnor Polyurethane Stud Sealant EL628SS** (referred to as resin).

When using Triflex CrI R238 the following mixing ratios apply:

- For winter use (0°C to + 15°C) Triflex recommend 0.72 kg of catalyst per 18 kg drum.
- For summer use (+15°C to +35°C) Triflex recommend 0.36 kg of catalyst per 18 kg drum.

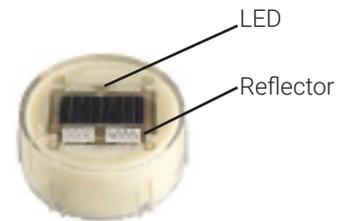


Always refer to the handling and usage instructions provided with the fixative resin.

The fixative resin should be poured to a level of 40mm  $\pm$  1mm from the road surface.

## Step 8

Insert the stud with its clips attached into the cavity making sure the LEDs are correctly facing oncoming traffic. Make sure that the stud is flush with the road surface by placing a suitable straight edge across the outer ring of the road stud and the road surface.



Ensure that once the stud is inserted into the cavity some of the installation compound poured in step 7 has been displaced around the edge of the stud.

After the stud is inserted, if required, immediately top up the resin around the edge of the road stud to a level of 1mm ( $\pm$ 1mm) below the road surface.

Allow a minimum of 30mins to cure. Ensure that the lens remains clean at all times. If the compound gets on the lens, wipe clean immediately. To aid the accuracy of the pour the use of a funnel or pouring jug will be required.

## Step 9

Clean site after the installation and remove all debris from the carriageway.

Installation complete.

Clearview Intelligence reserve the right to change or modify product specifications.

'SolarLite' and 'HazLight' are Trademarks.

World wide patents coverage. All values are nominal.