

# 301 Roadstud Installation Instructions

**The following *must be read* before any installation takes place.**

Using a vehicle-mounted vertical milling machine with working depth and traverse control adjusted to suite the dimensions of the 301 and all tungsten carbide cutting tools fully installed into the cutting head it is possible to cut the appropriate shaped slot, and accommodate the product, into an asphalt surface.

**The procedure for installation with this equipment is as follows:**

After stabilizing the rig on its hydraulic jacks, the boring head, fitted with a 152mm diameter cutter is lowered to the surface and the required hole-depth (25mm) set at the control stop. The cutter is set in motion and cuts the first hole. It is then raised, indexed forward and a second hole cut to allow an elongated cavity of an overall length of 180mm.

On reaching full depth, the head is traversed back to the original hole position and raised. The action described will create a cavity of precise width 152mm, length 180mm and depth 25mm and with vertical sidewalls and a level base as required for this product. As a guide your placement of the casting into the cavity should show leading edges are level with the road surface. There should be no disturbance to the surrounding surface.

## **Cavity preparation**

After formation of the cavity all surplus material must be removed and any dust/fines completely removed with an air blast from a small compressor or flame gun. The cavity must be free from dust, dirt or any other

material that may adversely affect the bond. If the surface is of concrete, the sides and the bottom of the cavity must be primed. Under no circumstances must excess primer be allowed to lie in the cavity.

In frosty or damp conditions the cavity walls and base must be preheated by flame gun to dry off any dampness and to raise the temperature of the surrounding road surface to a minimum of +5C before applying the primer coat or before bedding and grouting the stud. Excess heat to the surrounding asphalt should however be avoided, as this will damage the material and failure of the installation may result.

## **Bedding and Grouting**

Pour the manufacturers recommended filled bitumen adhesive (See Note 1 ) , at a temperature of between 170C and 190C, into the cavity to within 12 –15mm of the road surface. Immediately place the 301 casting into the cavity, which if cut at the correct depth will ensure leading edges are level with your road surface. Care should be taken to ensure no adhesive flows back over the reflective faces or the plate immediately in front of them. The cavity edges are now sealed around and the adhesive left to cool and set before trafficking. Setting time depends on ambient and ground temperature.

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## NOTES

1. It is recommended that to achieve optimum installation, Roadcraft's Polymer Modified Road Stud Adhesive is utilised. This is a specially designed material of superior chemical formulation, and offers a greater lifespan, with improved adhesion qualities and is less susceptible to shrinkage around the marker as a result of oxidation of the bitumen content. Polymer Modified Road Stud Adhesive and used in the BSEN1463 testing of road trials.
2. In view of the temperatures involved when handling the adhesive, normal protection measures should be taken during heating and application, ie. Suitable gloves, clothing etc. should be worn.  
  
If skin is splashed with hot adhesive, do not wipe, but should be treated immediately with copious quantities of cold water, preferably immersed.
3. Care should be taken to avoid any contact between hot adhesive and water.
4. **UNDER NO CIRCUMSTANCES SHOULD THE ADHESIVE EXCEED 200°C.** Heating above the recommended 190C for prolonged periods may affect properties and heating above 200C may lead to combustion.
5. <sup>3</sup>/<sub>4</sub> kilo of adhesive is sufficient for 1 x 301 studs depending on road surface texture
6. Technical assistance is available for demonstration of the application technique if required.
7. Tropicalised Hot Melt Adhesive is available for use where higher ambient and/or surface temperatures prevail.
8. If studs are installed in unfavourable conditions, optimum performance cannot be expected, ie. Ensure that application instructions are adhered to and for best results use only Fleming supplied components  
  
The 301 reflecting Roadstud systems are tested to certification of BSEN1463-1-2 achieving classifications that allows use on any public road within the UK. These requirements are detailed within the Traffic Signs Regulations and General Direction TSRGD 2002.  
  
Other countries especially within Europe may have differing options within EN1463 which may allow use of the 301.
9. The information contained in this document is given in good faith and is believed to be true and accurate. However no guarantee of results are implied as conditions of application and use are beyond our control.

### Needing further information contact:

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