

3M™ Marker Series 290 Reflecting Road Stud Application Instructions

Surface Mounted Application

The following steps should be followed accurately when the job in hand requires the surfacing mounting of a 3M™ Marker Series 290 Reflecting Road Stud.

Adhesive

It is recommended that to achieve optimum installation results you use Polymer Modified Road Stud Adhesive. 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 oxidisation of the bitumen content. It is generally referred to as “hot melt” by contractors as it requires heating in order to liquefy for application. Supplied in blocks, it has an approximate storage life of 12 months if kept in optimum recommended conditions.

**READ PRODUCT AND SAFETY DATA SHEETS
CAREFULLY BEFORE HEATING COMMENCES**

Heating

It is advisable to break the adhesive block into smaller pieces for more efficient heating. The material should be heated in a purpose built vessel fitted with a mechanical agitator to ensure full dispersion throughout the process. The material reaches softening point at 95°C (+/- 5°) pouring temperature is reached between 160-170°C. This is the optimum temperature for both adhesion and application properties. The maximum safe heating temperature is 195°C but this temperature will result in hardening and loss of elasticity. Lower temperatures will reduce adhesion and make it more difficult to handle. You must NEVER exceed the industry recommended maximum temperature of 200°C

Surface Preparation

Ensure the road surface is dry, free of dust and loose material. It may be necessary to “tamp” the surface in order to flatten any prominent crowns etc. for application onto surface dressing. Oil, grease or salt deposits should be removed either mechanically or chemically. Studs should not be laid over loose detritus, mud or similar extraneous matter or over old flaking marking of paint or thermoplastic material. If the road surface is at a temperature of less than 5°C, or if it is wet, it should be warmed carefully by a road heater so that, when the material is laid, the surface temperature is above 5°C and the surface is dry.

Application

After surface preparation, the adhesive should be dispensed from the heating unit directly onto the road surface in order to maintain correct contact temperatures. Oil jacketing or other heating at the dispensing head is recommended in order to achieve this. Sufficient adhesive should be applied onto the surface to cover an area slightly larger than the stud base. The stud should immediately be placed on to the adhesive, ensuring an edge seal around the entire stud. It is better to apply too much adhesive than not enough. Studs not bedded on the entire base surface area will be subject to non-uniform loading which may lead to failure. Applications to surface dressed, or other surfaces of macro - texture may require two applications of adhesive in order to fill the interstices. The stud should float on a layer of adhesive, not rest on the road surface or crown of any prominent chipping.

Subject to ambient temperature, the studs should be allowed to set for 30-120 seconds before exposure to traffic. Complete resistance to rotational movement of the stud by hand indicates it is ready to be trafficked.

3M™ Marker Series 290 Reflecting Road Stud Application Safety Notes

1. In view of the temperature involved when handling “hot melt” adhesive, safe working practices should be observed at all times during the heating and application process.
Ensure suitable PPE is used for respiratory, hand, ocular/facial and bodily protection. This includes compulsory use of face masks; we recommend filter mask for particles, mandatory hand protection; we recommend heat-resistant chemical protection gloves, mandatory face protection; we recommend use of a heat-resistant face cover, mandatory complete body protection; we recommend heat-resistant protective clothing, mandatory foot protection; we recommend heat-resistant footwear.
If hot material is splashed or comes into contact with the skin, the area should be treated instantly and soaked thoroughly with cold water to cool the bitumen as quickly as possible, and then clean the affected area with water and a neutral soap. If the bitumen is stuck to the skin DO NOT remove it as it can cause serious damage, seek medical attention.
2. UNDER NO CIRCUMSTANCES SHOULD THE ADHESIVE EXCEED INDUSTRY RECOMMENDED MAXIMUM TEMPERATURE OF 200°C. Avoid contact of hot product with water. Risk of splashing of hot material; do not allow water or any liquid to contact with hot product since this could cause splashing of hot material or boil-over. Do not breathe fumes from hot product.
3. The product is non-flammable under normal conditions of storage, manipulation and use. In the event of a fire due to improper storage, use or manipulation use a suitable POLYVALENT POWDER EXTINGUISHER (ABC powder), in accordance with the Regulation on fire protection systems. DO NOT use water as an extinguishing agent.
4. Technical assistance is available for demonstration of the application technique if required.
5. IF STUDS ARE INSTALLED IN UNFAVOURABLE CONDITIONS OPTIMUM PERFORMANCE CANNOT BE EXPECTED, ensure that application instructions are adhered to for best results, and use only our supplied components.

The approved “hot melt” road stud system meets the requirements of BSEN 1463 and has been accepted by the Department for Transport, Transport Scotland, the Welsh Government and the Northern Ireland Assembly, for use on all types of roads Referenced in the latest edition of the Traffic Signs Regulations and General Directions (TSRGD). This approval is a legal requirement and substitution of any of the system components is not only illegal, but will breach any contractual arrangements with the specifiers.