



CROWN
TECHNOLOGY, LLC

Preformed Thermoplastic Pavement Markings

Tuff-Mark®

available with

Tuff-Grip®

Multi-Layer Application Procedure

General Requirements:

- **Material:**

Tuff-Mark® and Tuff-Mark® with Tuff-Grip® must remain dry at all times. It should be stored in an area that is 35°F - 90°F. The boxes should be stacked flat and no more than 30 boxes high. Do not drop or throw Tuff-Mark® and Tuff-Mark® with Tuff-Grip® in temperatures below 50°F, as Tuff-Mark® and Tuff-Mark® with Tuff-Grip® will be less flexible and can break. Use the plastic sheets contained in the box to keep the Tuff-Mark® and Tuff-Mark® with Tuff-Grip® pieces separate as they can bond together especially in hot weather. Shelf life is one year.

- **Surface Preparation:**

Be sure that the application surface is thoroughly clean and moisture free. Do not apply Tuff-Mark® and Tuff-Mark® with Tuff-Grip® on top of ANY existing markings other than thermoplastic. If applying on top of existing thermoplastic, remove any loose thermoplastic, make sure the marking is clean, and make sure there is no moisture on the markings. If the old marking has a powdery surface, scrape the surface to reveal fresh material. Tuff-Mark® and Tuff-Mark® with Tuff-Grip® can be applied to new asphalt once the asphalt has cooled and the surface is “non-tracking” due to tack or oils. Tuff-Mark® and Tuff-Mark® with Tuff-Grip® can be applied to new (green) concrete once the surface has hardened, curing compound has been removed, and the surface is free from any moisture.

- **Safety Precautions:**

During the application of Tuff-Mark® and Tuff-Mark® with Tuff-Grip®, protective clothing should be worn. The clothing should consist of work boots, long pants, gloves, and safety goggles or a face shield.

Asphalt Surface Requirements:

1. Thoroughly clean the application area of any loose particles and ensure that there is no moisture in the application area.
2. Position all Tuff-Mark® base parts (no design cut outs) on the surface. Make sure all connecting parts of the Tuff-Mark® base have no gaps between them. Make sure parts are properly aligned before heating the material.

3. After parts are aligned, heat the material by moving an approved heating device slowly and steadily over the material. The heating device should be moved in a sweeping motion over the material at a height of 6" to 10" for even heating of the material.
4. If the Tuff-Mark® base has no surface media, apply heat until the edges start to curl, otherwise continue heating until the largest surface media are at a minimum of 60% embedment.
5. After the Tuff-Mark® base has cooled but is still soft, position the Tuff-Mark® or Tuff-Mark® with Tuff-Grip® top (with design cut outs) over the Tuff-Mark® base. Make sure all connecting parts of the Tuff-Mark® or Tuff-Mark® with Tuff-Grip® top have no gaps between them. Make sure parts are properly aligned and apply slight pressure to them before heating the material.
6. Heat the Tuff-Mark® or Tuff-Mark® with Tuff-Grip® top at a slower rate (hold the heating device a few inches further away) than the Tuff-Mark® base to avoid smearing the design.
7. Continue applying heat until the largest surface media are at a minimum of 60% embedment.
8. After Tuff-Mark® or Tuff-Mark® with Tuff-Grip® has cooled check the bond to the surface. Try lifting an edge or cutting an area in the interior of the material. Properly bonded Tuff-Mark® and Tuff-Mark® with Tuff-Grip® will bring up some of the asphalt with it, or it will leave some residue on concrete. If bonding is not adequate, continue heating until the material is properly bonded. Do not leave until proper bonding has been achieved. Reheating at a later date will not work due to moisture trapped beneath the Tuff-Mark® or Tuff-Mark® with Tuff-Grip® material.
9. Tuff-Mark® and Tuff-Mark® with Tuff-Grip® will cool within a couple of minutes of application. A spray of cool water may be used to accelerate cooling time. Do not allow foot or auto traffic until material has cooled.

Concrete Surface Requirements:

1. Follow step 1 of the asphalt application procedure. The surface of worn polished concrete should be roughed up.
2. Create outline of marking pattern on surface with chalk or crayon for guidance to aid with sealer application.
3. When applying on new concrete, all curing compounds should be removed before sealer application. Apply Crown's recommended primer sealer to concrete. Make certain all solvent has evaporated and sealer has dried. Solvent left in the sealer will cause obstructions in the marking commonly referred to as blistering or pin holing. If a sealer is applied at a heavier mil thickness, solvent can be trapped beneath the top dry film resulting in the same type of problem.
4. Continue with steps 2 through 9 of the asphalt application procedure.

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