

Preformed Thermoplastic Application Instructions

Safety Precautions:

- Protective clothing, consisting of leather boots, or work boots, or work shoes, long pants, gloves, safety glasses or a face shield should be worn while applying product.
- ALWAYS WEAR HEAT RESISTANT GLOVES WHEN WORKING WITH PREFORMED THERMOPLASTIC
- CAUTION: Portland cement concrete surfaces may spall when heated with the propane torch; therefore safety glasses must be worn when applying.
- Avoid all contact with the molten material and heat torch flame. If you do get molten material on your skin, flush the area immediately with plenty of water and seek medical attention. Do not attempt to pull the molten material off of your skin.

Surface Application-General Requirements:

- Asphalt and concrete must be free of moisture, dirt, dust, and chemicals or significant oily substances.
- Surface should be moisture free for 24 hours prior to application for best results. Use torch to remove any moisture and sub surface moisture from area to be marked.
- May be applied onto new asphalt as soon as the road surface has cooled enough to walk on
- Portland cement concrete must be free of all curing compounds. Any residual salts or de-icing chemicals must be removed prior to application. **PFT EPOXY is recommended on all concrete surfaces prior to installing Preform Thermoplastic markings.**
- **PFT EPOXY is recommended for all Specialty Colors and large markings (EXAMPLE: Interstate Shield).**
- **2090 primer is recommended for all WHITE or YELLOW markings on old asphalt surfaces that are oxidized and/or have polished or exposed aggregate.**
- Preformed Thermoplastic may be applied on new or old thermoplastic. When applying on old thermoplastic, scrape off any loose material. Ensure that the remaining thermoplastic surface is clean. If the old thermoplastic is oxidized (powdery surface), grind or heat it and scrape the top surface so fresh material is exposed.
- **Do not apply on top of paint, cold plastic or plural component materials.**

Instructions for Application on Asphalt or Non-Bituminous Surfaces:

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1. **Clean Surface:** Clean intended application area thoroughly. All loose particles, sand, dust, etc. must be removed. Utilize a power blower or compressed air if available, otherwise sweep completely.
 2. **Layout \ Pre-mark Markings:** Position all connecting parts (lines, legends, or symbols) onto the pavement surface where marking will be placed. There should be no gaps between the adjoining segments. Outline/pre-mark the area where the marking will be placed using a chalk line or crayon. Check to ensure that proper layout and alignment is obtained before moving to step three. Once the marking has been traced, or the area delineated, remove the marking from the pavement.
 3. **Surface Moisture Removal Instructions:** To ensure there is no moisture on the surface where you will be placing the Preform thermoplastic, use a 998 Heat Gun or similar heat source. Hold the torch nozzle 8-10 inches above the pavement. Using the torch in a circular motion, heat the surface to evaporate all moisture. Extend the heating 3-6 inches outside of the pre-marked area. Do not attempt to heat an area larger than 4' x 4' at any time.
 4. **IF applying PFT Epoxy:** Apply approximately 2 inches wider than the width of the thermoplastic line. (EXAMPLE - Apply 6 inches wide for a 4 inch thermoplastic line.) Apply by squeezing out the appropriate amount of epoxy needed for the surface. Using a nap roller spread out the epoxy over the application area. **Do not allow epoxy to cure prior to installing the preform thermoplastic:** Typically, the epoxy open time will be 60 minutes or less at ambient temperatures of 70°F. The PFT Epoxy will cure upon heating the thermoplastic material. Yield should be approximately 30sqft per dual 300mil cartridge depending on the roadway surface and the thickness applied.
 5. **IF applying 2090 Primer:** Apply approximately 2 inches wider than the width of the thermoplastic line. (EXAMPLE - Apply 6 inches wide for a 4 inch thermoplastic line.) Apply the appropriate amount of primer needed for the surface. Apply the primer evenly over the application area (5-7 wet mil coverage is recommended) **Allow primer to properly dry.** Primer should be slightly tacky to the touch. Typically the primer will dry in 10 minutes or less at ambient temperatures of 70°F. Yields should be approximately 250 to 300 ft2 per gallon depending on the roadway surface and the thickness applied.

CAUTION: 2090 Primer is FLAMMABLE when wet.

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6. **Place Marking:** Position the segments with exposed glass beads up. Do not apply in pieces larger than 4' x 4' at any time.



7. **Heat / Torch the Marking:** Hold the torch so that the torch nozzle is 6-8 inches over the Preformed Thermoplastic material. If material is splattering with the introduction of the torch, the flame is too close to the material or the pilot valve needs to lower the intensity and eliminate the splattering. Begin heating the marking by moving the flame from your torch slowly but steadily over the material. The material must be heated to its melting temperature to achieve a bond with the pavement. ***If material is supplied with factory heat indicators, heat material until the indicators have relaxed and are no longer visible.*** Insufficient heat will result in inadequate bonding and failure. Overheating the material will sink the top coating of beads into the material and result in pavement markings with low retroreflective values. To ensure that heat is evenly applied to the entire marking, move the torch in a sweeping motion, approximately 2' wide, keeping the nozzle of the torch about 6 to 8 inches above the material.

Caution: Maintain a minimum distance of 6 inches between the torch nozzle and the material. Any closer will cause superficial scorching of the material without adequate melting throughout.

Note: 125 mil thick materials will require a longer heating period than 90 mil.

During heating, Preformed Thermoplastic will soften and begin to conform to the pavement surface to which it is applied. Additionally, the material may bubble and change color, turning slightly darker or paler. If the material does change color, move the torch to another section to avoid scorching that material.



8. **Check Bond:** Inspect the recently applied marking to ensure that complete bonding has occurred over the entire area. After the product has cooled to near ambient temperature, cut an area in the interior of the material with a chisel where it appears the material received the least amount of heat. For white product this will appear the whitest in color.
- Applied on asphalt: If the material can be lifted without evidence of asphalt on the underside, insufficient heat has been applied.
 - Applied on Portland cement concrete: When trying to lift the product, adequate bonding has occurred if the thermoplastic separates and part of the thermoplastic remains stuck to the pavement.

If upon inspection it has been found that insufficient heat has been applied, simply reapply heat until adequate bonding has occurred. Note: do not leave the project until a sufficient bond has been established. Attempts to reheat at a later date will be unsuccessful.



9. **Beads:** Preformed Thermoplastic is manufactured with surface applied and intermix glass beads to provide both a good, initial retroreflectivity and sustained reflectivity throughout its useful life. The product can be supplied without pre-applied surface beads (i.e. reversible turn arrows). When working with non-beaded material, beads must be applied to the surface in a uniform and even manner during application while the material is in the molten state to provide adequate initial retroreflectivity.
10. **Cool Time:** Preformed Thermoplastic will cool and set within a couple of minutes of application. Cool times will vary based on roadway temperature, thickness of material and the amount of heat applied during application. If desired, setting time can be reduced by covering the applied marking with water after application.

Recommended Equipment:

- Shrinkfast 998 heat gun or equivalent torch with 25' hose
- Infrared Thermometer
- Tape Measure
- Chalk String
- Blower
- Chalk
- Utility Knife
- Putty Knife
- Water Sprayer
- Straight Edge
- Safety Glasses
- Safety Vest
- Leather Gloves