

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 and a safety vest should be worn while applying product.
- **ALWAYS WEAR HEAT RESISTANT GLOVES WHEN WORKING WITH SWARCO PREFORMED THERMOPLASTIC**
- Portland cement concrete surfaces may spall when heated with the propane torch; therefore safety glasses must be worn when applying to cement concrete surfaces.
- 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.
- Concrete should be moisture free for 24 hours prior to application for best results.
- Portland cement concrete must be free of all curing compounds. Any residual salts or deicing chemicals must be removed prior to application.
- Swarco Preformed can 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 or cold plastic.

Temperature: Swarco Preformed Thermoplastic can be applied at ambient and surface temperatures of 32°F and rising.

Instructions for Application on Asphalt or Non-Bituminous Surfaces:



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 Pre-Heat Instructions:** Using a magnum Heat Torch or similar heat source, utilize the pre-set pilot valve setting to get a blue flame with an orange or yellowish tip. Then squeeze the torch handle to achieve maximum output. Hold the torch nozzle 8-10 inches above the pavement. Using the torch in a circular motion, preheat the surface to a minimum temperature of 275°F. Extend the heating 3-6 inches outside of the pre-marked area. Do not attempt to preheat an area larger than 4' x 4' at any time. Properly heated asphalt should turn a deep solid black color. Note: concrete surfaces may spall when heated with the torch; therefore safety glasses must always be worn when applying onto Portland cement surfaces. Use the infrared thermometer to check the surface temperature for a minimal reading of 275°F across the entire target area.



4. **Place Marking:** Once the surface temperature of the targeted area reaches 275°F, immediately position the first segment with exposed glass beads up. Do not apply in pieces larger than 4' x 4' at any time. If using a torch similar to the Magnum, the applicator should utilize the preset pilot valve setting (do not squeeze handle) to get orange tipped flame to heat the material. Do not operate the Magnum torch at maximum output. Hold the torch so that the torch nozzle is 6-8 inches over the SWARCO 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.



5. **Heat / Torch the Marking:** Begin heating the placed 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. 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, Swarco 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.



6. **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.

7. **Beads:** Swarco Preformed Thermoplastic is manufactured with surface applied and intermix glass beads to provide both high 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.
8. **Dry Time:** Swarco Preformed Thermoplastic will cool and set within a couple of minutes of application. Dry 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:

- Magnum Torch 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

