



Ennis Paint, Inc. Preformed Thermoplastic Application Instructions Flametape™/Thermaline™

Read and understand all instructions and safety information before attempting to apply material.

SAFETY PRECAUTIONS: While installing Flametape™/Thermaline™ material, protective clothing and eye protection should always be worn. Protective clothing should include leather boots, or work shoes, long pants (no synthetic fabrics should be worn) and gloves. Eye protection, consisting of safety goggles or a face shield should also be worn.

Flametape™/Thermaline™ should be kept in the original packaging until you are on the job site and ready to apply material to the road. This will help prevent damage or loss of material pieces. Material should be stored and transported at temperatures between 50°F (10°C) and 100°F (38°C).

Surface preparation, prior to application, is extremely important for the successful installation of preformed thermoplastic. The pavement surface on which preformed material is to be applied, must be clean, dry and above 32°F (0°C). If any of these conditions are not met, the chances of a successful installation are greatly reduced. While installation can be accomplished with a surface temperature below the specification, great care must be exercised and it is not recommended.

FOR YOUR SAFETY: BEFORE USING ANY ENNIS PAINT PRODUCT, CAREFULLY READ AND UNDERSTAND ALL MATERIAL SAFETY DATA SHEETS.

Preheating Application Instructions:

1. New concrete open to traffic less than 3 months must be sandblasted, pressure washed, or shot blasted to remove curing compound.
2. Use a broom or air sweeper to clean the area where the Flametape™/Thermaline™ marking is to be applied. The area must be completely free of loose particles, dust, and dirt.
3. The moisture should be completely removed from the road surface. Heat the asphalt or Portland cement road surface with your torch where the marking is to be placed. It is best to heat the pavement surface for at least 40 seconds and with full flame; this will eliminate deep heating and prevent longer cooling time. Using a circular motion, extended beyond the perimeter of the marking by at least 3 inches. The pavement will retain the heat for a short period of time. For best results, the recommended heated surface temperature range, prior to placing the marking, is 280°F to 325°F. Use temperature in the upper range on cooler or windy days.
4. Preheat small sections at a time: 4-5 feet in length for roll tape or sections of symbols up to 3'x2' in size then lay the material **immediately** onto heated road surface.
5. If not familiar with preformed thermoplastic installation, we recommend the use of an infrared heat gun thermometer to check the preheated road surface for the proper temperature for application. **Preheating** of the road surface **provides the greatest amount of energy for the bonding process to occur with the material.**
6. Now, position Flametape™/Thermaline™ material immediately on the road, and heat-fuse the edges and finalize bonding from the surface. Position the torch over the marking – about 5 to 8 inches high so that the flame is extended and the heat is evenly applied. **Move the torch in a circular motion** across the marking for 20-30 seconds. As the material softens, it totally conforms to the surface on which it is applied, and should almost be liquid. During the heating process, the material may **bubble and discharge steam**. These are natural effects and indicate that you have reached the correct temperature for proper material bonding. The marking will return to its original color upon cooling. Make sure to run the flame slowly along the edges to seal the material well.
7. Make sure to check your bond **after** material has cooled: make a 2"x2" cross cut through bonded material. Try to lift center of cross cut with blade or flat screwdriver to evaluate the bond. . Make sure to run the flame slowly along the edges to seal the material well.

Non-preheating Application Instructions:

1. New concrete open to traffic less than 3 months must be sandblasted, pressure washed, or shot blasted to remove curing compound.
2. Use a broom or air sweeper to clean the area where the material is to be applied. The area must be completely free of loose particles, dust, and dirt.
3. **Any moisture** should be removed from the road surface. Dry the asphalt or Portland cement road surface with your torch where the marking is to be placed. With a full flame and in a circular motion, extend drying beyond the perimeter of the markings by at least 3 inches.
4. Dry small sections at a time: 4-5 feet in length for roll tape or sections of up to 3'x2' in size, then lay the material **immediately** onto heat dried road surface.
5. After the Flametape™/Thermaline™ material has been positioned on the road, it is time to heat-fuse the material and the edges to accomplish bonding to the surface. Position the torch over the marking about 5-8 inches high so that the flame is extended and the heat is evenly applied. Move the torch in a circular motion across the marking for approx. 40-60 seconds. As the material softens, it totally conforms to the surface on which it is applied, and should be liquid. During the heating process the material may bubble and discharge steam. These are natural effects and indicate that you have reached the correct temperature for proper material bonding. The marking will return to its original color upon cooling.
6. Make sure to check your bond **after** material has cooled: make a 2"x2" cross cut through bonded material. Try to lift center of cross cut with blade or flat screwdriver to evaluate the bond. Make sure to run the flame slowly along the edges to seal the material well.

Installation Instructions with ThermoBond Primer:

ThermoBond provides:

Faster application times.

A dramatic increase in bond to difficult surfaces.

No pre-heating to pavement-unless temps. below 50°F.

EP THERMOBOND 1 Is a two-component primer/sealer, formulated to provide a strong bond between both preform and molten thermoplastic road marking materials. It is extremely effective on concrete or older oxidized asphalt road surfaces.

THERMOBOND is a 100% solids primer containing no solvents.

1. Keep primer cooler than 70° and out of the sun before it's use. A cooler starting temperature will provide a longer working time (pot life).
2. Assure road surface is free from dirt, sand and oil.
3. For manual application, mix the approximate total amount needed for the particular symbol, line or square feet. Usage will greatly depend on texture of the road surface and method of application such as, a paint-roller, brush or pump sprayer. (1 pint will cover Approx. 30 sq. feet)
4. If material is drawn from bulk containers, use measuring cups to measure out the proper portions. Measuring cups are available from Ennis Paint Inc, and are pre marked to allow for various batch sizes (pint, ½ pint). Example...measure component "A" for ½ pint in measuring cup "A"...measure component "B" in measuring cup "B" for one quart. Pour "A" and "B" into any empty cup or similar container and mix with a wooden stir stick for about 30-40 seconds. Always keep measuring cups dedicated for A or B component **ONLY**. **Never** mix in measuring cups or contaminate them with other component! (Most wax paper cups work fine for mixing.)
5. Apply mixed material to prime road surface **right after mixing**, then apply ASAP the preformed or hot thermoplastic spray/extrude over the still wet primed area.
6. The hot thermoplastic will now cure the primer automatically by providing heat energy for the chemical reaction. For preformed thermoplastic, use a propane torch (like Ennis's Magnum torch) and adjust the setting valve to about 50-70 % heat output (not full blast), MOVE the flame at a distance of about 6 inches from the tip of the torch head to the surface and continuously MOVE over the preformed material. Preformed thermoplastic should start to almost melt, and conform to the texture of the road surface. Then focus on the proper bead embedment.
(Do not sink beads by overheating).
7. Let material cool off.... bond strength of primer is now initiated and will continue to increase for a few hours. Markings should be ready for traffic as soon as it is cooled off.

ALWAYS CHECK INITIAL BOND **AFTER COOLING** TO ASSURE THE PRIMER HAS CURED ENOUGH TO HAVE A GOOD STARTING BOND (10-15 min. depending on ambient temperature)! Material must cool sufficiently to ensure integrity in the bonding area.

MIXING RATIO BY WEIGHT: A 84: B 16 (84:16)

Clean up any tools with Acetone. (*Obey safety cautions on Acetone container*).

Dispose all empty containers obeying local laws and regulations.

Do not use any other primers/sealers, as they may actually diminish the bond.

Important Notes:

Do not allow traffic to cross markings before material has cooled down as this could result in tracking of dirt or oil, etc. Application of water after completion is helpful if speed cooling is required.

All thermoplastic materials will develop some tack when heated- this is necessary for the bonding process. However, Ennis's Flametape/Thermaline will turn, after cooling, into a non-tacky and non-marring tape and will almost reject dirt after cooling. It is therefore important to cool the applied marking before traffic is permitted.

Caution: If you apply too much heat directly on the marking, the material will burn leaving you with brown colored marking. A constant back and forth sweeping circular motion of the torch gives the best results. A torch should never be kept on the product without torch movement.

Applications to New Asphalt: To prevent any bonding or bleeding problems, caused by some asphaltic flux oil's etc., some states require a 30 day "curing" period before any markings can be installed. To apply preformed thermoplastic to new asphalt before this time period is up, a bond test should be done on a sample installation. Please review #6 on the "Non-preheating" instructions. (Check for excessive black spots-bleeding)

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