



Manhole Protection Rings APPLICATION INSTRUCTIONS

First-time applicators should contact Ennis-Flint, Inc. for product support and on-site training.

**CAUTION: During application an open flame is required.
Ensure that no flammable gases are present prior to application.**

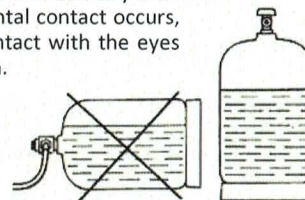
SURFACE APPLICATION, GENERAL REQUIREMENTS:

- Equipment:**
- Ennis-Flint® 3000 EX Propane Torch, or equivalent, with pressure regulator and 25 ft. of hose
 - Gas Powered Blower or Broom
 - Chalk Sticks and Chalk Snap Line
 - Adequate Supply of Propane
 - Paint roller (for sealer applications)
 - Leather/ heat resistant gloves
 - Tape Measure
 - Utility Knife, Putty Knife
 - Hammer and Chisel
 - Water sprayer (optional)
 - Chemical resistant gloves (for sealer applications)
- Moisture:** Pavement must be dry prior to positioning the PreMark® material. PreMark® material cannot be applied to a wet surface or during precipitation. Once precipitation has stopped, ensure surface has dried thoroughly and moisture removed. On concrete, Ennis-Flint recommends waiting 24 hours after precipitation has stopped.
- Surface:** Surface must be free of dirt, dust, salt, deicing agents, chemicals and significant oily substances. PreMark® material can be applied on asphalt, portland cement concrete (in conjunction with recommended sealer), and new or old thermoplastic. Portland cement concrete must be free of all curing compounds. When applying on old thermoplastic scrape off any loose material and remove the oxidized (powdery) layer by grinding the surface or heating the surface and scraping off the oxidized layer to expose fresh material. **Do not apply on top of paint or cold plastic.**
- Material:** Keep PreMark® material dry all times. Avoid extreme storage temperatures. PreMark® material should be stored indoors at temperatures between 35° F. and 90° F. Packages should be stored flat and stacked a maximum of 25 high. PreMark® should be handled with care in temperatures below 50° F as it will be less flexible in colder weather. Shelf life is 24 months.
- Temperature:** PreMark® material does not have any minimum road or ambient temperature requirements.

SAFETY PRECAUTIONS:

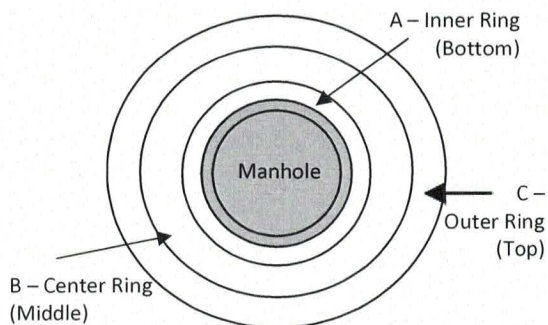
Protective clothing, consisting of leather work shoes, long pants, gloves, safety goggles, and a safety vest should be worn. Avoid all contact with the molten SuperBundy® material and propane torch flame. If you get molten material on your skin, flush the area immediately with plenty of water then seek medical attention. Do not attempt to pull the molten material off your skin. If accidental contact occurs, wash contaminated skin with soap and water and remove contaminated clothes immediately. If accidental contact with the eyes occurs, immediately flush eyes with plenty of water for at least 15 minutes; remove contact lenses; call a physician.

Equipment such as the Ennis-Flint® 3000 EX or Magnum® heat torch operate on vaporized propane gas. Use the largest size cylinder possible. The propane cylinders must be used in the upright position with the valve being the uppermost part. Never lay the cylinder down on its side. This will allow liquid gas to flow into the torch and is not recommended. Do not use the torch if the propane cylinder is not in the upright position.



INSTRUCTIONS FOR APPLICATION ON ASPHALT:

1. 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 thoroughly.
2. Ensure that no moisture is present prior to positioning the PreMark® material on the pavement surface. Surface moisture is not often visible so you should assume that some moisture is present. Remove moisture by drying the application area with a propane fueled torch.
3. Position the narrowest ring, "A", around the manhole frame, collar, or riser. There should be no gaps between the adjoining segments. You may overlap the edges slightly. Check to ensure that proper layout and alignment is obtained before heating the material. Ensure that the top surface is facing up. Regularly spaced indents have been manufactured into the top surface of the PreMark® material making the top easily identifiable. Wearing protective gloves, immediately position ring "B", the second widest ring, on top of the first ring, while the first ring is still molten. **Caution: Avoid contact with the molten material.** Heat the second ring following the procedure in step 4 above. Immediately after this ring has been heated until all indents have been closed, then, while wearing protective gloves, position the final ring "C" which is the widest, over the second ring while avoiding contact with the molten material. Heat the final ring following step 4 above until all indents have closed.



4. Inspect the recently applied PreMark® Manhole Protection Ring to ensure that complete bonding has occurred over the entire area. After the material has cooled to near ambient temperature, try to lift an edge with a putty knife, or screw driver, or cut an area in the interior of the material with a chisel where it appears the material has received the least amount of heat. If the material can be lifted without evidence of asphalt on the underside, insufficient heat has been applied. Simply reapply heat until adequate bonding has occurred. Note: Do not leave the project until sufficient bond has been established. Attempts to reheat at later date will be unsuccessful.
5. PreMark® material will cool and set rapidly within a couple of minutes of application. If desired, setting time can be accelerated with a spray of cool water.

INSTRUCTIONS FOR APPLICATION ON NON-BITUMINOUS SURFACES:

1. Follow steps 1 and 2 as stated for application on asphalt. Note: Worn, polished concrete should be ground or milled so the surface becomes rough.
2. Delineate the area to receive the PreMark® material using a chalk line, chalk or crayon. Once the marking has been traced, or the area delineated, remove the marking from the pavement.
3. Apply sealer approved for use with PreMark® material to areas outlined in chalk or crayon. Allow it to dry until it will not transfer to the finger when touched. The more porous the surface, the more sealer is required. **Caution: Do not attempt to speed up the drying process by using an open flame as the sealer is flammable at this stage.** Remember: It is important to cover the entire area with sealer where the PreMark® material will be applied.
4. Continue with Steps 3 through 6 as stated above under "Instruction for Application on Asphalt" until application is complete. Note: When trying to lift the recently applied PreMark® material (step 6) off the non-bituminous surface it is unlikely that any part of the pavement will be lifted up with the PreMark® material. Adequate bonding has occurred if the PreMark® material separates and part of the PreMark® material remains stuck to the pavement.

NOTES:

- Closed indents act as a post-application visual cue that the application procedures have been followed.
- Do not allow 2 pieces of PreMark® material to remain in direct contact with each other, as they will bond together especially in hot weather.
- You can "cut and paste" with PreMark® material. Use a knife to score the material and carefully break it along the score. In warm weather you can use scissors.
- Don't throw or drop PreMark® material in lower temperatures as it will be less flexible in colder weather.
- Oil impervious PreMark® material can be applied immediately after completion of daily paving operations.
- Dispose of all materials in accordance with all applicable federal, state and local laws and regulations.