



APPLICATION INSTRUCTIONS

PREFORMED THERMOPLASTIC DETECTABLE WARNING MATERIAL

First-time applicators must contact Flint Trading, Inc. for on-site training prior to applying TopMark®

SURFACE APPLICATION, GENERAL REQUIREMENTS (portland cement concrete and asphalt):

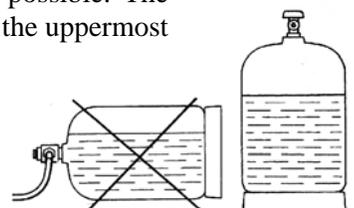
- Equipment:**
- Flint 2000EX™ heat torch
 - TopMark® sealer gun
 - Infra Red Thermometer
 - TopMark® 35 lb. roller
 - LP Gas Tanks
 - TopMark® bonder paste gun
 - Utility Knife
 - Broom or Gas Powered Blower
- Temperature:** Ambient and surface temperature must be 45°F and rising. If substrate surface temperatures exceed 90°F do not attempt to apply more than a 4 ft. x 2ft. section at one time.
- Moisture:** Remove standing or surface moisture by drying the application area with a propane torch.
- Surface:** TopMark® can be applied on asphalt, or non-bituminous portland cement concrete surfaces. Surface must be free of dirt, dust, deicing agents, chemicals and significant oily substances. Concrete surfaces must have surface porosity. To test for porosity sprinkle a few drops of water on to the surface. If the concrete does not readily absorb the water drops, the surface is not sufficiently porous and you should contact your Flint Trading representative for additional instructions on how to prepare the surface. Do not apply on top of previous markings, or coatings. **CAUTION:** For applications on asphalt; imprinted, grooved, or tined surfaces; coarse, exposed aggregate; or over joints or saw cuts, contact tech support at Flint Trading Inc at (336)475-6600 for additional instructions.
- Lay out:** Prior to starting the application, place all tools and materials where they are going to be needed in the application process. Lay out the domed sheets on to the surface and make any necessary cuts using a utility knife, or heavy duty scissors, at this time. Using the marker supplied with the sealer/bonder paste kit mark the outline of the material on the surface. (See Figure1).

SAFETY PRECAUTIONS:

Read the enclosed Material Safety Data Sheet prior to application. Protective clothing consisting of leather work shoes, and long pants, should be worn. Always wear safety glasses and nitrile gloves (supplied), when working with the sealer/bonder paste. Always point the tip of the cartridge in a direction where an accidental discharge will not contact personnel at the site. In the unlikely event of sealer/bonder paste contacting skin, remove contaminated clothing, and wash the affected area with soap and water for at least 15 minutes. Destroy any contaminated leather. Seek medical attention if irritation persists. Any unused sealer/bonder paste can be discharged through the mixing nozzle onto the aluminum tray provided. Cured sealer/bonder paste can safely be disposed of. Do not let mixed sealer/bonder paste puddle as intense heat will develop during curing.

The Flint 2000 EX operates on vaporized propane gas. Use the largest size cylinder possible. The propane gas cylinders must be used in the standing, upright position with the valve being the uppermost part.

Never lay the cylinder down. 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.



MATERIAL HANDLING INSTRUCTIONS:

TopMark® Detectable Warning Material is supplied as a kit containing a domed preformed thermoplastic material, and a sealer/bonder paste kit. TopMark® should be kept dry at all times and stored at temperatures ranging between 35°F and 90°F. Boxes of TopMark® domed surface sheets should be stored flat and stacked to a maximum of 5 high for 1ft.x 2 ft. and 15 pks high for all other sizes. Shelf life is 12 months when stored properly. Keep bonder paste warm during application to aid in dispensing.

Application of TopMark® Sealer & TopMark® Bonder Paste (The following procedure applies to both TopMark® Sealer & TopMark® Bonder Paste):

1. *Load sealer and bonder paste* (See Figure 2): Install sealer cartridges first. Start with the sealer gun pointing upwards. Unscrew the retaining nut and remove the nose plugs. (See Figure 3). Mount the mixing nozzle and secure it with the retaining nut.(See Figure 4). Rotate the gun so the nozzle of the cartridge is pointing downwards. Squeeze the handle gently until the sealer is approximately 2 in. from the tip of the mixing nozzle. Once the sealer has entered the mixing nozzle it must be used within 10 minutes. **Note: If you do not anticipate using the sealer or bonder paste within this period of time then simply replace the mixing nozzle with a new set of nose plugs.** Follow the same procedure for the bonder paste. The amount of sealer/bonder paste in a single A/B cartridge will be sufficient for applying 9 sq. ft. of material.
2. *Apply the sealer:* Hold the sealer gun so that the nozzle of the sealer cartridge is approximately one inch above the application area. Squeeze the handle carefully and squirt the sealer onto the area to be covered (Figure 5). Apply the sealer approximately ½ inch beyond the marker outline. Using the foam roller provided spread the sealer to the entire application area, using approximately one cartridge per 4 ft. x 2 ft. ramp. See Figure 6. The sealer should appear like a light coat of paint, leaving a shiny surface. **Note: do not allow the sealer to fully cure before applying the bonder paste.**
3. *Apply the bonder paste:* Immediately after the sealer has been applied, apply the bonder paste. See Figure 7. Follow a similar procedure as for the sealer with two notable changes: a) use minimal downward pressure on the (new) foam roller “pushing” rather than “rolling” the bonder paste over the application area; See Figure 8 b) apply a thin bead of bonder paste along the inner perimeter of the marking ensuring coverage along the outer edges. **Note: Do not apply bonder paste beyond the marked outline.** Applied correctly the bonder paste layer will be noticeably thicker than that of the sealer. As with the sealer, allow approximately one cartridge per 4 ft. x 2 ft. ramp. Be ready to apply the domed sheets as soon as the bonder paste has been applied. (See Step 1 below). **Note: If a new bonder paste cartridge, or nozzle, is used, the first 12” of bonder paste bead must be dispensed and “rolled” into the application area to ensure a good mix ratio, or it must be discarded into the aluminum tray provided.**

APPLICATION OF TopMark® MATERIAL

1. *Position all of the domed sheets:* **Note: always wear the nitrile gloves provided while working with the sealer/bonder pastes.** Immediately after the bonder paste has been applied lay out all of the domed sheets needed to cover the area in which the sealer and bonder paste has been applied (see Figure 9). Hand-tack the domed sheet down into the bonder paste.
2. *Clean excess Bonder Paste:* If after hand tacking, the bonder paste did not squeeze out past the edges of the domed sheets, application of additional bonder paste will be necessary. To do so, gently lift the domed sheet, insert the bonder paste mixing nozzle, and apply a small amount of bonder paste. Hand-tack the tile down into the bonder paste. Clean off any excess bonder paste around the seam joints, and edges using the wood scraper provided.(See Figure 10). Using the wood scraper scoop up the excess bonder paste. Use the paper towels provided to clean the wood scraper at regular intervals.
3. *Heating of the domed sheets:* Start heating the first 4 sq. ft. section of domed material using the Flint 2000EX. Keeping the nozzle of the torch approximately 6 to 8 inches above the TopMark® heat to a range between 215°F and 250°F. Use an infra red thermometer to monitor temperature. (See Figure 11). Heat to a maximum of 4 sq. ft. at a time. **Note: do not overheat the TopMark® material as this will cause the domes to melt.**
4. *Roll the domed sheet:* Once proper heat has been achieved, immediately place holed corrugated inserts on the domed surface sheets. (See Figure 12). With the roller in its upright position at the bottom of the ramp and the segmented main roller closest to the material, tilt the weight of the roller onto the pivoting wheels. Raise the segmented roller

above the surface of the corrugated insert and position it in the middle of the sheet. **Note: Do not allow the pivoting wheels to contact the holed corrugated inserts.** Lower the segmented roller onto the first holed corrugated insert. (See Figure 13). Immediately roll from the middle of the holed corrugated insert to the outer edge then finish with a return pass to the opposite edge nearest you (first pass should be “uphill” if applied on a slope or ramp). (See Figure 14). Repeat process for subsequent holed corrugated inserts. **Note: Do not re-use holed corrugated inserts.**

5. **Heat additional domed section:** Once rolling is completed, use your gloved hands to slowly remove the holed corrugated inserts from the domed section ensuring that the inserts do not adhere to any excess bonder paste. Discard the used holed corrugated inserts. **Note: Do not re-use holed corrugated inserts.** Heat the next domed section using the procedure described in Step 3 being careful to direct the flame away from the previously heated domed section. (See Figure 15). Roll the domed section as described in Step 4. (See Figure 16). Continue this pattern of alternately heating and rolling until all the domed sheets for the entire application area have been heated and rolled.
6. **Bonder Paste Inspection and Clean-up:** Using the procedure outlined in step 2 use the provided wood scraper and paper towels to clean up any excess bonder paste.
7. **Heat the edges:** After clean-up re-heat the edges of the entire installation using the Flint 2000EX torch. Angle the torch so that the flame is directed away from the domed sheets. (See Figure 17).
8. **Set Up:** TopMark® will cool and set within approximately 30-45 minutes of application in 75°F ambient temperature. The ramp should be closed to traffic for the duration of this set up time. **Note: Material will not bond with the pavement until the sealer and bonder paste cure. Since both will take longer to cure in cooler temperatures, (45°F - 55°F), you should allow a minimum of 1 hour to elapse before opening the ramp up to pedestrian traffic.**

Additional Notes:

- Do not apply TopMark® in areas where it is subjected to vehicular traffic.
- If the next TopMark® application does not take place within 20-30 minutes of the last use of the sealer/bonder paste, remove the mixing nozzles from both the sealer and the bonder paste and insert a new set of nose plugs. This should be done with the cartridge pointing downwards to remove the mixing tip and then immediately place the cartridge in an upright position and insert the nose plug while observing all safety instructions mentioned above. Tighten the retainer nut loosely only. The retainer nut may unseat the nose plugs if over tightened.
- Do not throw or drop TopMark®.
- You can "cut and paste" with TopMark®. At ambient temperature, use a utility knife, or heavy duty scissors to cut the TopMark® material.
- Use an empty sealer/bonder box to discard used rollers with uncured bonder paste. Once the bonder paste on the rollers has cured, rollers can be disposed of in the trash bags provided.
- Dispose of wood scrapers, towels and gloves in to the trash bags provided.
- All used holed corrugated inserts can be placed in their original box and safely recycled.
- Excess bonder paste on tools and equipment can be cleaned up using soap and water and the paper towels provided. (See Figure 18)
- TopMark® applications subjected to mechanical snow removal are not covered under warranty.
- Dispose of all materials in accordance with all applicable federal, state and local laws and regulations.

TopMark® Application Instructions

(Use in conjunction with the full set of text instructions on pages 1 through 3 of this document)

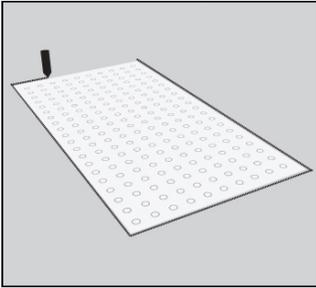


Figure 1: Layout material and mark outline with supplied marker.

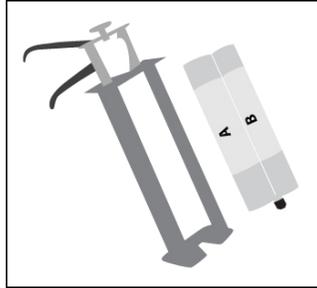


Figure 2: Install cartridges in sealer and bonder paste guns.

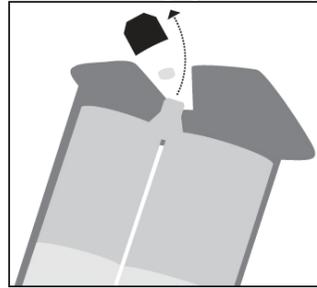


Figure 3: Remove nose plug. Gun must be in upright position.

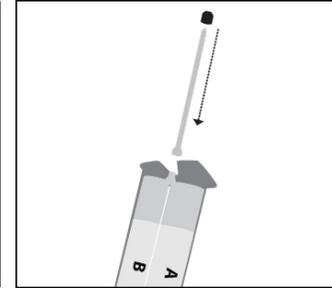


Figure 4: Mount nozzle and secure with black retaining nut.

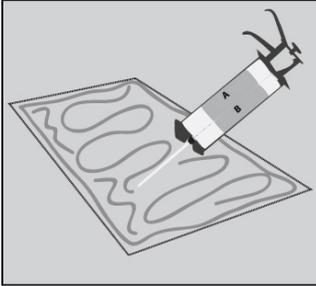


Figure 5: Dispense sealer onto the application area.

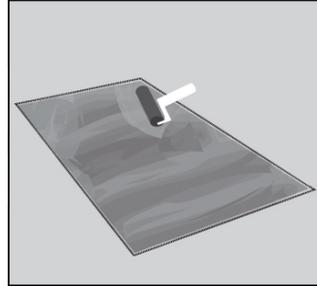


Figure 6: Spread sealer using supplied roller.

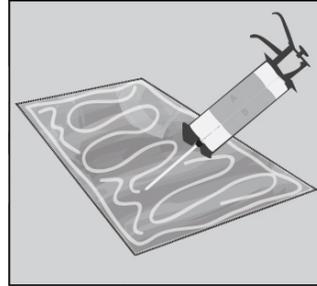


Figure 7: Dispense bonder paste onto application area. Apply thin bead along perimeter.

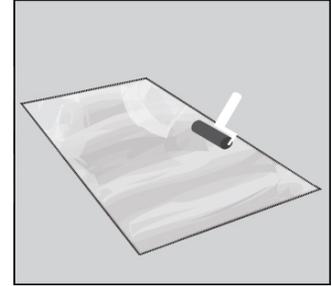


Figure 8: Spread bonder paste using the supplied roller.

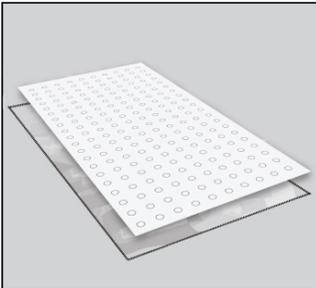


Figure 9: Position TopMark domed surface material.

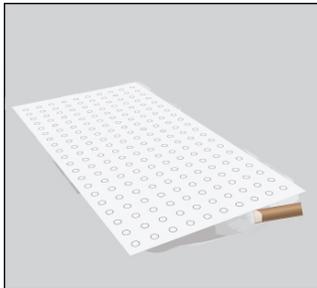


Figure 10: Clean up excessive bonder paste and sealer.

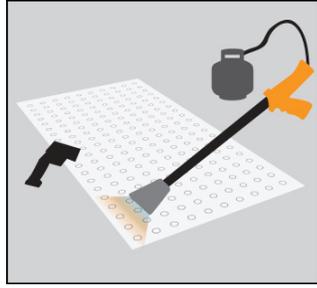


Figure 11: Heat TopMark domed sheet a maximum of 4 sq. ft. at a time.

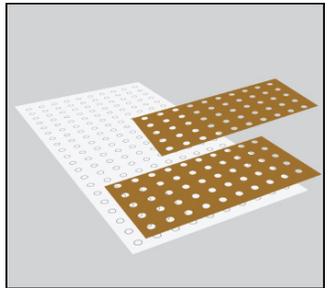


Figure 12: Place holed cardboard inserts onto domed sheet.

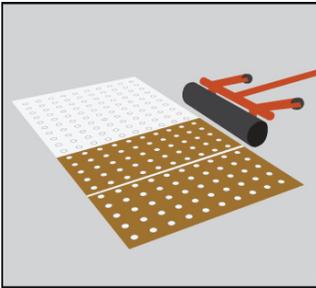


Figure 13: Position the roller by tilting the handle downward.

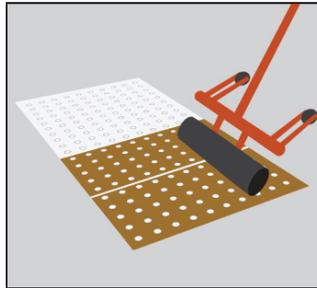


Figure 14: Roll the first two domed sheets or 4 sq. ft section.

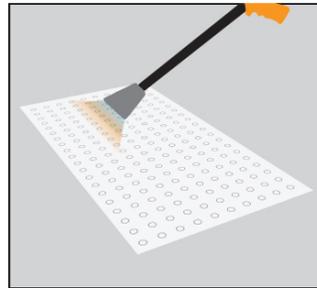


Figure 15: Heat the next 4 sq. ft. section.

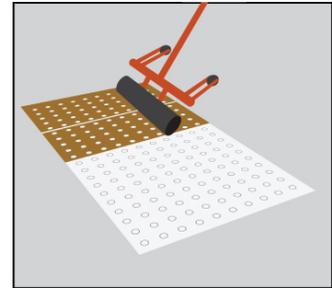


Figure 16: Roll the next 4 sq. ft. section.

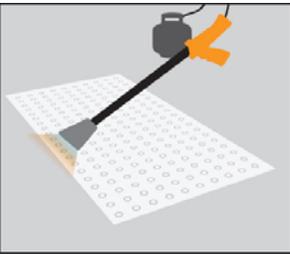


Figure 17: Heat the edges of the domed sheets.

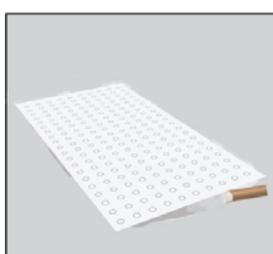


Figure 18: Clean up excess bonder paste.

TopMark® Patent Pending

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