

SURFACE APPLIED DETECTABLE WARNING TILES / TRUNCATED DOMES

Note: Per project specifications, edit sections below by selecting desired requirements & specifications. Delete provisions not pertaining to the project.

PART 1 - GENERAL

1-A DESCRIPTION

1. This Section specifies furnishing and installing Surface Applied Detectable Warning Tiles where indicated. Recommended for both concrete and asphalt applications.

1-B SUBMITTAL PACKAGE CONTENTS

1. Product Data: Includes product literature, installation, and maintenance instructions.
2. Product Samples: Submit two (2) samples minimum 7" x 7" as required by requesting authority.
3. Specification Drawings: Details material description, product part number, and tile surface profile and dimensions showing fastener locations with anchor detail.
4. Maintenance Instructions: Submit copies of manufacturer's specified maintenance practices for each type of proposed Detectable Warning Tile and accessory as required.

1-C STANDARDS AND REQUIREMENTS

1. Provide Surface Applied Detectable Warning Tiles and any accessories as produced by a reputable manufacturer of Surface Applied Detectable Warning Tiles.
2. Installer's Qualifications: Hire an experienced and trusted Installer who has successfully completed installations similar in design and scope to the current project.
3. Americans with Disabilities Act (ADA): Provide Surface Applied Detectable Warning Tiles which comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title III Regulations, 28 CFR Part 36, ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES.
4. California Code of Regulations (CCR): Provide only approved DSAAC detectable warning products as provided in the California Code of Regulations (CCR) Title 24, Part 2, Section 205 definition of "Detectable Warning". Section 1117A.4 and 1127B.5 for "Curb Ramps" and Section 1133B.8.5 for "Detectable Warnings at Hazardous Vehicular Areas".
5. Thermoplastic Polymer Composite (TPO NC) Surface Applied Detectable Warning Tiles manufactured from a TPO compound using impact resistant, stabilized UV package comprised of light stabilizers, absorbers and anti-oxidants with a pressure sensitive adhesive applied to bottom of the truncated dome tile, the tile shall incorporate an in-line pattern of truncated domes measuring 0.2" height, 0.9" base diameter, and 0.45" top diameter, dome spacing at 2.35" measured from center to center. For wheelchair safety the field area shall consist of a texture of raised points 0.05" high; DWT Tough-EZ is manufactured by Three D Plastics, Inc., Tel: 877-843-9757, or approved equal.
 - a. Dimensions: Surface Applied Detectable Warning Tiles adhered to concrete or asphalt shall meet or exceed the following dimensions and tolerances:
Length and Width: [24x24] [24x36] [24x48] [24x60] [36x30] [36x48] Fasteners/Anchors: 9-12 min.

- b. Wear resistance of Tile when tested by ASTM C 507 not to exceed 0.03 averages (after 1,000 cycles).
- c. Slip Resistance of Tile when tested by ASTM F 609 Wet/Dry Static Coefficient of Friction values are not to be less than 0.8 on top of domes and field area.
- d. Abrasion resistance tested using ASTM D 1044 (Accumulated Wear Index) not to exceed 0.01 after 1,000 abrasion cycles measured on the top surface of the dome representing the average of six measurement locations per sample.
- e. RCRA Subtitle C classification: Non-Hazardous

1-D DELIVERY, STORAGE AND PACKAGING

- 1. Surface Applied Detectable Warning Tiles shall be suitably packaged or crated according to industry standards to prevent damage in shipment or handling. Package or crates shall designate tile type by part number.
- 2. Surface Applied Detectable Warning Tiles shall be delivered to protected location at building site for storage prior to installation.

1-E ON-SITE CONDITIONS

- 1. Environmental Conditions and Protection: Maintain minimum temperature of 50° F in spaces to receive Surface Applied Detectable Warning Tiles for at least 24 hours prior to installations, during installation, and for not less than 24 hours after installation.
- 2. All materials used for preparing the site, including any water or primers shall be contained and controlled to prevent contamination of the surrounding environment. Provide barricades or traffic control devices to prevent access by the general public.

1-F MANUFACTURER'S GUARANTEE

- 1. Three D Traffic Works guarantees to the buyer that the Surface Applied DWT Tough-EZ Tactile Warning Tiles shall be guaranteed for a period of five (5) years from date of final installation. The guarantee includes replacement of tiles when there is a defect in the dome shape, color fastness, sound-on-cane acoustic quality, resilience or attachment. The units are of uniform kind, quality, and quantity within each unit and among all units. This guarantee is in lieu of any warranty, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation or liability on the part of Three D Traffic Works. Under no circumstances will Three D Traffic Works be liable for any loss, damage, expense or consequential damages of any kind arising in connection with the use of ability to use Three D Traffic Works products.

PART 2 - PRODUCTS

2-A MATERIALS AND MANUFACTURERS

1. Thermoplastic Polymer Composite (TPO NC) Surface Applied Detectable Warning Tile specified is based on DWT Tough-EZ manufactured by Three D Plastics Inc. (877-843-9757) existing engineered and field tested products which have been in successful service for a period of two (2) years are subject to compliance with requirements, may be incorporated in the work and shall meet or exceed the specified test criteria and characteristics.
2. Color: Yellow conforming to Federal Color No. 33538. Color shall be homogeneous throughout the tile. Tiles are also available in Dark Grey (Federal Color No. 36118), Black (Federal Color No. 17038), Brick Red (Federal Color No. 22144), Blue (Federal Color No. 15187), and Clay Red (Federal Color No. 20109).

PART 3 - IMPLEMENTATION

3-A INSTALLATION

1. During all surface preparation and Surface Applied Detectable Warning Tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
2. The application of all tiles, primer, and sealants shall be in strict accordance with the guidelines set by their respective manufacturers. Surface Applied Detectable Warning Tile is recommended for concrete and asphalt surfaces.
3. Coordinate with the contractor or Engineer to ensure that the surfaces being prepared and fabricated to receive the tiles are constructed correctly and adequately for tile installation. Review manufacturer and contract drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.
4. Set the tile true and square to the curb ramp area as detailed in the design drawings, so that its location can be marked on the concrete surface. A thin permanent marker works well. Remove tile when done marking its location.
5. The surface to receive the Surface Applied Detectable Warning Tile is to be mechanically cleaned with a wire cup grinder or shot blaster to remove any dirt or foreign material. This cleaning and roughening of the concrete surface should include at least 4 inches around the perimeter of the area to receive the tile. Those same areas should then be cleaned with a clean rag soaked in Acetone.
6. Immediately prior to installing the Surface Applied Detectable Warning Tile, all surfaces must be inspected to ensure that they are clean, dry, free of voids, curing compounds, projections, loose material, dust, oils, grease, sealers and determined to be structurally sound (new concrete pours must be cured for a minimum of 28 days) before the application of the TPO primer.
7. Spread TPO primer to provide complete coverage over the prepared concrete surface should include at least 1 inch around the perimeter of the area to receive the tile, and platform edge, using a standard paint roller. Complete coverage is best achieved using a paint roller. It is not recommended to use a sprayer to apply primer. Applying primer requires the use a NIOSH approved cartridge respirator suitable to keep airborne mists and vapor concentrations below the time weighted threshold limit values. When using in poorly ventilated and confined spaces, use fresh-air supplying respirator or a self contained breathing apparatus. Use approximately 1 oz. of primer per 2 square foot of tile. Allow curing time of three (3) minute before attaching the tile.

8. After primer has cured, carefully remove the paper backing that is protecting the pressure sensitive adhesive on the bottom of the tile. Set the tile square to the marked corners on the surface area as outlined in the design drawings before laying the tile into position.
9. Set the tile true and square to the surface area as detailed in the design drawings.
10. Using the DWT roller applicator or applying foot pressure to the entire surface of the tile, apply sufficient pressure to the tile to insure complete contact with surface. Start by applying pressure in the middle of the tile and working your way to the tile edges.
11. Following the installation of the tile, using Acetone on a rag, wipe the concrete around the tile's perimeter to ensure a clean, dry surface to receive perimeter sealant.
12. Tape all perimeter edges of the tile back 1/16" from the tile's perimeter edge and tape the adjacent concrete back 1/2" from the tile's perimeter edge to maintain a straight and even caulking line. Apply sealant around tile perimeter using care to work the sealant into any void between the tile and concrete interface. Apply sealant around tile perimeter using a plastic shaping tool, spatula or gloved finger making a cupped shaped profile between the tiles and adjoining concrete. Immediately remove masking tape from the tile and concrete surface after tooling the perimeter. Any adhesive on the tile surface can be easily removed with mineral spirits.
13. When using SikaBond General Construction adhesive/sealant, be sure cut the tip at a 45-degree angle, and puncture the seal inside of the nozzle and place the cartridge in a caulk gun. Only use adhesive recommended by the manufacturer. Wear protective gloves and safety goggles when applying adhesive. Perimeter sealant should be applied following the sealant manufacturer's recommendations.
14. All subsequent tiles are set following the same procedures as outlined in items 7 through 10. Be sure to leave a ¼-inch gap between tiles to allow for expansion and contraction of substrate and tile. Failure to leave a ¼-inch joint between adjacent units could result in conformation problems or damage to the tiles. Plastic tile spacers may be used to insure a uniform ¼-inch wide nominal joint.
15. Mechanical fasteners are not required for installation of the DWT Tough-EZ tiles. If mechanical fasteners are specified in the plans, we recommend drilling with a 1/4 inch masonry drill bit to create a hole through the deck of the tile. Do not drill through molded domes. Fasteners should be flush to the top of the tile deck when installed. Stainless steel low profile expansion anchors ¼ inch diameter by 1-½ inch long is available from Three D Plastics, Inc.
16. If tiles are custom cut to size, cuts can be made using a circular saw, industrial scissors, box cutter or straight edge knife. Tile will not crack, split, tear or chip when cutting.

3-B CLEANING, PROTECTING AND MAINTENANCE

1. Protect tiles against damage during construction period to comply with Tactile Tile manufacturer's specification.
2. Clean Tactile Tiles not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean Tactile Tiles by method specified by Tactile Tile manufacturer.
3. Comply with manufacturers maintenance manual for cleaning and maintaining tile surface and it is recommended to perform annual inspections for safety and tile integrity.

END SECTION