

SECTION 32 17 26 - TACTILE WARNING TRUNCATED DOMES DETECTABLE WARNINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Detectable Warnings / Truncated Domes / Tactile Cues (TWSI's)

1.2 RELATED REQUIREMENTS

- A. 03 30 00 - Cast-in-place Concrete: Concrete for sidewalks and platforms.
- B. 32 17 23 - Pavement Markings: Crosswalk and curb markings.
- C. 32 17 26 - Tactile Warning Surfaces

1.3 SUBMITTALS

- A. Qualification Data: Installer to provide documentation of approval and training by manufacturer.
- B. Product Data: Provide product criteria, characteristics, and current accredited testing data.
- C. Manufacturer's Installation Instructions: Indicate any special preparation of substrate, installation and attachment methods, and all conditions requiring special attention.
- D. Warranty: Submit warranties upon completion of work and ensure all forms have been completed in Owner's name within 30 days of scope completion.
- E. Maintenance Data: For users operation and maintenance of system including:
 - 1. Methods for maintaining system's materials and finishes.
 - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Authorized and trained by manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.
- B. Store in temperature ranges of 25 - 90 degrees F.



1.6 WARRANTY

- A. Installation Warranty: Contractor shall correct defective work within a 2 year period after Date of Substantial Completion.
- B. Manufacturer Warranty: Provide 5 year warranty for tactile warning surfacing for failing to maintain more than 95% of their surface adhesion, or nonskid characteristics.
 - 1. Exception: Where such failures are the result of vehicular traffic, shopping cart trucks or tractors, blade or rotary snow removal or other mechanically abrasive devices.
 - 2. Exception: Where surface coloring agents, sealers or bond breakers have been applied to concrete or asphalt substrate.

PART 2 - PRODUCTS

2.1 DESCRIPTION

- A. Tactile warning surfacing (TWSI) and nonskid coatings for pedestrian traffic.

2.2 MANUFACTURERS

- A. Specification is based on products listed by Vanguard ADA Systems: www.VanguardOnline.com.
 - 1. Substitutions for products by manufacturers other than those listed above: See Section 016000 - Product Requirements.

2.3 PERFORMANCE AND DESIGN CRITERIA

- A. ATBCB PROWAG - Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way; 2011.
- B. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines.
- C. 49 CFR 27, 37, and 38 - Standards for Accessible Transportation Facilities, Final Rule; Department of Transportation; current edition.
- D. ADAAG requirements (Title 49, Part 37.9 Standards for Accessible Transportation Facilities, Appendix A, Section 4.29.2 - Detectable warnings on walking surfaces)

2.4 DETECTABLE WARNING

- A. Truncated Domes:



1. Basis of Design Product: Detectable Warning (Truncated Dome) by Vanguard ADA Systems. Comparable and substituted products will be judged based on the following performance criteria, features, warranty, and qualifications.
2. Performance Criteria:
 - a. Substrate Requirements:
 - 1) Portland Cement:
 - a) Strength: 3,000 PSI minimum.
 - b) Finish: Medium broom finish or coarser profile.
 - c) Cure: 20 day minimum.
 - 2) Asphalt:
 - a) Compaction: 95% minimum.
 - b) Finish: Rolled, compacted, smooth.
 - c) Cure: 20 day minimum.
 - b. Skid Resistance: 0.80 minimum in accordance with ASTM F1679.
 - c. UV Resistance: 99% minimum Fade Resistance and Color Retention in accordance with ASTM G155.
 - d. Chemical Resistance: Tested for 7 days.
 - 1) Road Salts: no effect.
 - 2) Anti-freeze: no effect.
 - 3) Diesel fuel: no effect.
 - 4) Gasoline: no effect.
 - 5) Transmission fluid: no effect.
 - 6) Motor oil: no effect.
 - e. VOC: 25 g/l maximum. Tested in accordance with ASTM D2205.
 - f. Water Absorption: Maximum 0.5%. Tested in accordance with ASTM D570.
 - g. Smoke Development: Pass. Tested in accordance with EN ISO 9239-1.
 - h. Flame Spread: Less than 150 mm. Tested in accordance with EN ISO 11925-2.
 - i. Shore Hardness: Shore Durometer, A-1, 80 minimum after 24 hours. Tested in accordance with ASTM D2240.
 - j. Tracking: None. Tested for 32 minutes maximum in accordance with ASTM D711.
 - k. Viscosity: 6000-12000 cps ASTM D2196 - Brookfield #7 spindle @20 rpm, 77 deg F
 - l. Color: White, Red, Blue, Black, Yellow, Gray, Green and derivative colors
Seamless installation. Adhesive, sealants or mechanical fasteners not required.

(Most current testing data: <https://vanguardonline.com/downloads/>)



PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify surface is free of surface applied sealers, coloring agents, or other materials detrimental to surface bond.
- B. Verify existing conditions meet manufacturer's requirements before starting work.
- C. Verify surface temperature is between 35 degrees F and 88 degrees F.

3.2 PREPARATION

- A. Prepare surfaces to receive work in accordance with manufacturer's instructions.
- B. Grind or abrade to remove surface applied sealers, coloring agents, oils, bond breakers, or any surface applied or infused materials that will cause rejection of adhesion and provide required surface profile.
- C. Broom or air sweep clean surfaces free of debris, vegetation and material impacting adhesion.
- D. Provide completely dry surface, with moisture content not exceeding 6%.

3.3 INSTALLATION

- A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B. Truncated Domes:
 - 1. Mask work area.
 - 2. Reducer:
 - a. Mix and catalyze Reducer component in accordance with installation instructions.
 - b. Install Reducer component. Cross roll at 90 degrees to ensure appropriate coverage and penetration.
 - c. Wait minimum 30 minutes for Reducer component to cure.
 - 3. Base/Nonskid:
 - a. Mix and catalyze base component in approved color(s) in accordance with installation instructions.
 - b. Fill all surface deformities with manufacture's recommended materials.
 - c. Install Base component and cross roll at 90 degrees up to 3 times to ensure adequate coverage and penetration.
 - d. Remove masking immediately upon completion.
 - e. Wait minimum 30 minutes for base component to cure.



4. Domes:
 - a. Layout dome forms in accordance with contract documents and dimensional allowances.
 - b. Mix and catalyze base component in approved color(s) in accordance with installation instructions.
 - c. Pour catalyzed base component onto mats in coverage rates indicated by manufacturer.
 - d. Apply material as per manufacturers recommended procedures to ensure adequate coverage and penetration of all apertures.
 - e. Remove excess material
 - f. Remove forms immediately in accordance with manufacturer's instructions.
 - g. Wait minimum 30 minutes for final component to cure.
 - h. When material is tack free, surface is ready for pedestrian traffic.

3.4 CLEANING

- A. Clean as needed with very light pressure wash without the use of soaps, abrasives or rotary tip.

3.5 PROTECTION

- A. Protect installed work areas required by the manufacturer until work is complete to maintain product performance, design criteria and warranty.

END OF SECTION

