

STAINLESS STEEL DETECTABLE WARNING SURFACE DOME/DIRECTIONAL BAR

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of contract, including General and Special Conditions and Division 1 Specifications Section, apply to this section.

1.02 DESCRIPTION

- A. This Section specifies furnishing Stainless Steel Detectable Warning Surface Domes/Bars where indicated.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance.
- B. Samples for Verification Purposes: Submit one (2) full size sample of the kind proposed for use.
- C. Shop drawings are required for products specified showing product details.
- D. Maintenance Instructions: Submit copies of manufacturer's specified installation and maintenance practices for each type of domes/bars and accessories as required.

1.04 QUALITY ASSURANCE

- A. Provide Stainless Steel Detectable Warning Surface Domes/Bars and accessories as produced by a single manufacturer with a minimum of three (3) years' experience.
- B. Installer's Qualifications: Engage an experienced installer who has successfully completed installations similar in material, design, and extent to that indicated for project.
- C. Provide Stainless Steel Detectable Warning Surface Domes/Bars which are in compliance with:
 - a. 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).
 - b. 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".
- D. Stainless Steel Detectable Warning Surface Domes/Bars shall be manufactured from grade 316 stainless steel and have an integral non-slip surface on the top of the Domes/Bars. The Domes shall have measurements of nominal 0.2 inch in height, 0.9 inch base diameter and 0.45 inch top diameter. The Bars shall have measurements of nominal 0.2 inch in height, 1.0 inch wide and 11.0 inch in length. "Advantage One Tactile Dome/Bar Systems" as manufactured by Advantage Tactile Systems Inc. (1-800-679-4022).
- E. Stainless Steel Detectable Warning Surface Domes/Bars material shall meet the following ASTM specifications:
 - A182, A193, A276, A313, A314, A320, A479, A493 and A580.

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1. Chemical properties shall be: C 0.08%, Cr 17%, Fe 65%, Mn 2%, Mo 2.5%, Ni 12%, P 0.045%, S 0.03%, Si 1%.
2. Mechanical properties shall be:
 - A. Tensile Strength > 79,800 psi,
 - B. Yield Strength >34,800 psi,
 - C. Elongation at Break (in 50 mm) > 60%,
 - D. Rockwell B Hardness < 80,
 - E. Brinell Hardness < 149,
 - F. Izod Impact > 95.1 ft-lb.
3. Slip Resistance when tested by ASTM C 1028-96 the combined Wet and Dry Static Co-Efficients of Friction not to be less than 0.80 on top of domes/bars.
4. Chemical Stain Resistance when tested by ASTM D 543-95 (re approved 2001) to withstand without discoloration or staining - saturated calcium chloride, red enamel spray paint, red lipstick, red wax crayon, black liquid ink, chewing gum, mustard, ketchup, urine, coffee, asphalt, tobacco juice, hydraulic oil and used motor oil.
5. Abrasive Wear when tested by BYK – Gardener Tester ASTM D 2486-00 with reciprocating linear motion of 37± cycles per minute over a 10" travel. The abrasive medium, a 40 grit Norton Metallite sand paper, to be fixed and leveled to a holder. The combined mass of sled, weight and wood block is to be 3.2 lb. Average wear depth shall not exceed 0.04" after 1,000 abrasion cycles when measured on the top surface of the dome/bar representing the average of three measurement locations per sample.
6. Abrasive Wear when tested by Taber Tester ASTM C 501-84 and US Specifications SS-T-308b with H22 coarse Calibrade Wheels with each testing coupon weighed to the nearest 0.01 gram. Average wear index shall be a minimum of 480 after 1,000 abrasion cycles with ASTM C 501-84 parameters and 210 with SS-T-308b parameters when measured on the top surface of the dome/bar representing the average of four sample measurements.
7. Salt and Spray Performance when tested to ASTM B 117-03 not to show any deterioration or other defects after 100 hours of exposure.
8. AASHTO HB-17 single wheel HS20-44 loading "Standard Specifications for Highways and Bridges". The Directional Tactile Detectable Warning Tactile Domes and Bars shall be mounted on a platform then subjected to the specified maximum load of 10,400 lbs., corresponding to an 8,000 lb individual wheel load and a 30% impact factor. The Domes/Bars shall exhibit no visible damage at the maximum load of 10,400 lbs.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Stainless Steel Detectable Warning Surface Domes/Bars shall be suitably packaged to prevent damage in shipment or handling.

1.06 SITE CONDITIONS

- A. Environmental Conditions: Maintain a suitable temperature as per manufacturer's requirements.

1.07 GUARANTEE

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- A. Stainless Steel Detectable Warning Surface Domes/Bars shall be guaranteed in writing for a period of five (5) years from date of final completion of project. Product is guaranteed from defective material and breakage.
- B. Installer must provide a two (2) year installation warranty. Product must be guaranteed from defective work and loosening of Stainless Steel Detectable Warning Surface Domes/Bars.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Stainless Steel Detectable Warning Surface Domes/Bars is based upon "Advantage One Tactile Dome/Bar Systems" as manufactured by Advantage Tactile Systems Inc. (1-800-679-4022).
- B. Existing engineered and field tested products which have been in successful service for a period of three (3) years, and are subject to compliance with requirements, may be incorporated in the work provided they meet or exceed the specified test criteria and characteristics.
- C. Substitutions: Substitutions shall be made only under provisions of the contract and must meet all applicable standards for compliance with ADA and CCR Standards as outlined in section 1.04 (C). Any proposed substitution must meet standards specified in Sections 1.04 and 1.07 and must be equivalent in appearance and function to the product specified herein and installer must provide an additional installation warranty for a period of three (3) years from project completion and an additional two (2) years for product warranty.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Select correct drill bit size for peg diameter of dome/bar. Ensure you use correct drill bit for corresponding surface/substrate. Mark drill bit to gauge depth or add a depth limiter which corresponds to overall peg length. DO NOT MEASURE FROM TIP OF DRILL BIT. This will allow dome hole to be slightly deeper than the length of the peg.
- B. Lay the template down (purchased from manufacture) on working surface. Check alignment of holes, holes/domes/bars placement look best when holes are centered in field of work. Use weights/pressure to help secure template on surface while drilling first hole. Use a dowel and insert in newly drilled hole to secure the template. Repeat same procedure to opposite corner.
- C. Drill out remaining holes in template as needed. Move template through field of work using pegs (more may be needed) to align template with previous drilled holes. (There will be 25 holes per square foot.)
- D. Clean loose debris from holes, using shop vac or similar means that suits your surface/substrate.
- E. Inject adhesive into drilled holes. (Quarter filled should be sufficient.) DO NOT OVER FILL HOLES. Once Stainless Steel Detectable Warning Surface Domes/Bars are inserted and if adhesive spills out, clean immediately with appropriate manufactures recommended cleaning agent.
- F. Refer to the adhesive manufactures installation instructions for correct guidelines for that adhesive.