

**SECTION 527  
DETECTABLE WARNINGS**

**527-1 Description.**

Furnish and install detectable warnings on newly constructed and/or existing concrete or asphalt walking surfaces (sidewalk curb ramps, sidewalks, shared use paths, etc.) constructed in accordance with Standard Plans, Index 522-002.

**527-2 Materials.**

**527-2.1 Detectable Warnings:** Provide detectable warnings in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705. Use detectable warnings consisting of materials intended for exterior use subject to routine pedestrian traffic and occasional vehicular traffic. Use detectable warnings with size and pattern shown in the Plans comprised of truncated domes aligned in parallel rows in accordance with Standard Plans, Index 522-002. Do not use detectable warnings with a diagonal pattern.

**527-2.1.1 Preformed Materials:** Use detectable warnings consisting of weather-resistant tiles or pavers that are cast into concrete, or tiles or mats that are surface-applied to concrete or asphalt surfaces with adhesives and mechanical fasteners or torch-applied preformed thermoplastic.

**527-2.1.2 Field-Formed Materials:** Use detectable warnings applied as a secondary application to the substrate.

**527-2.2 Material Properties:** Provide detectable warnings that meet the following minimum material property requirements when tested in accordance with the following:

PROPERTY	STANDARD	TEST VALUE
Slip Resistance	FM 3-C1028	Dry Coefficient of Friction – 0.8 min. Wet Coefficient of Friction – 0.65 min. (include recessed areas between truncated domes)
Wear Resistance	FM 5-594	Average Volume Loss: no more than 0.06 cm <sup>3</sup>
Water Absorption*	ASTM D570	Not to exceed 5%.
Adhesion/Bond Strength**	FM 5-589	150 psi min. tensile adhesion strength
Non-Hazardous Classification	Submit Material Safety Data Sheet (SDS)	Non-Hazardous, per RCRA Subtitle C

\* Applies only to plastic materials.

\*\* Applies only to surface-applied materials.

**527-2.3 Color/Contrast:** Use safety yellow, brick red or black colored detectable warnings on concrete walking surfaces. Use safety yellow colored detectable warnings on asphalt walking surfaces. Acceptable detectable warnings shall meet the following criteria for a duration of three years.

COLOR	LIGHT REFLECTANCE VALUES (LRV) CAP Y*
Safety Yellow	25 – 45

COLOR	LIGHT REFLECTANCE VALUES (LRV) CAP Y*
Brick Red	5 – 15
Black	0 – 5

\*When measured with a spectrophotometer

**527-2.4 Approved Product List:** Methods or products used to form detectable warnings in wet concrete will not be permitted. Use detectable warnings listed on the Department’s Approved Product List (APL). Manufacturers seeking evaluation of products for inclusion on the APL shall submit an application in accordance with Section 6 and include certified test reports from an independent lab showing the product meets the requirements of this Section and the Standard Plans, Index 522-002 Acceptance Criteria and manufacturer’s drawings, specifications and procedures for materials and installation, including touch-up and repair.

**527-3 Installation Procedures.**

**527-3.1 Surface Preparation and Installation:** Prepare the surface in accordance with the manufacturer’s recommendations. Use only products and materials appropriate for the surface on which they will be applied. Install in accordance with the manufacturer’s instructions, using materials and equipment recommended and approved by the manufacturer. For surface-applied tiles or mats, use adhesives applied over the entire surface and mechanical fasteners.

**527-4 Method of Measurement.**

Detectable warnings will be paid by plan quantity, per square foot, furnished, installed and accepted.

**527-5 Basis of Payment.**

Price and payment will be full compensation for all work specified in this Section, including all labor, surface preparation, materials and incidentals necessary to complete the work

Payment will be made under:

Item No. 527- 2- Detectable Warnings– square foot.