By Jon Julnes

Contractors looking to add additional services to their pavement maintenance arsenal embraced the Americans with Disabilities Act in 1990, becoming their client’s “ADA experts” for restriping and reconfiguring parking lots — and also for alteration and repair of access aisles from the parking lot to public buildings.

But one ADA requirement — Section 4.29 Detectable Warnings, requiring installation of “truncated domes” to let wheelchair-bound or vision-impaired individuals know they are approaching a potentially hazardous area — was suspended (except for transit platform edges) almost immediately as agencies and various civil rights groups wanted to test a variety of different detectable warnings to make sure that the final law required the most-effective warning available.

The suspension could have been extended but was allowed to lapse in July 2001 — meaning that all new construction and alterations where the ADA requires detectable warnings are now required to install what the guidelines term “truncated domes.”

These “truncated domes” are a specific size and shaped surface first used in Japan in the early 1960s, copied by the United Kingdom in the early 1980s, and ultimately mandated by the United States in 1990.

As a result of the lapsed suspension, for those states where the America’s with Disabilities Act Accessibility Guidelines (ADAAG) is the basis for their building codes, truncated domes are the only acceptable texture now allowed where “detectable warnings” are called for.

As with other aspects of the ADA, the federal law takes precedence over state and local laws — unless state or local laws are more strict than the federal law.

“Truncated domes are the standard design requirement determining the boundary between the sidewalk and street by people with visual disabilities,” the U.S. Dept. of Transportation and the Federal Highway Administration (FHWA) wrote in a letter to all state agencies last May. “Truncated domes have a unique design that can be detected underfoot and with a cane, and other surfaces are not considered ADA equivalent and therefore do not comply with the ADA requirements.”

The same letter continues,
“FHWA is obligated to enforce the requirements, and state and local governments are required to apply the minimum standards when constructing and altering pedestrian facilities.”

**Expect approval of revised guidelines**

In recent years the ADA and the Architectural Barriers Act (ABA) have undergone revision, and the revision specifically addresses the “detectable warnings” requirement. (The revised guidelines, which feature a new format and a new numbering system, are currently in a “draft” stage, awaiting public comment, but the ADA Board does expect the draft to be approved without substantial changes.)

ADA says the “Draft Guidelines for Accessible Public Right-of-Way,” approved last June, is written as a supplement to the ADAAG but will likely become a full chapter of the guidelines. In it were a variety of new mandates, including those requiring appropriate textures and slopes for sidewalk ramps, and walking surfaces.

Under the original 1990 ADA guidelines, Section 4.29.2 defines detectable warnings as “raised truncated domes with a diameter of nominal 0.9 in., a height of nominal 0.2 in., and a center-to-center spacing of nominal 2.35 in.” In addition, the definition requires that the detectable warnings “shall contrast visually with adjoining surfaces, either light-on-dark or dark-on-light.”

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**What If There’s No Curb?**

The Americans With Disabilities Act Accessibility Guidelines do provide directive for areas where there is no curb to differentiate between the parking lot (or other “vehicular way”) and a sidewalk. In section 4.29.5, “Detectable Warnings at Hazardous Vehicular Areas,” the guidelines require detectable warnings defining the entire area:

“If a walk crosses or adjoins a vehicular way, and the walking surfaces are not separated by curbs, railings, or other elements between the pedestrian areas and vehicular areas, the boundary between the areas shall be defined by a continuous detectable warning which is 36 in. wide...”

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An accepted process of installing truncated dome detectable warnings involves spreading the material over a template, then peeling the template back leaving the detectable warnings on the pavement.

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**Proposed detectable warnings revisions**

Under the “Draft Guidelines for Accessible Public Right-of-Way,” detectable guidelines will be required for curb ramps and blended transitions, as referenced in sections 1102.6 and 1104. Section 1102 covers “pedestrian access routes,” a new term referring to the public right of way that serves as an accessible route. Section 1102 covers curb cuts and blended transitions (which have a slope no greater than 1:48), which will most often require detectable warnings.

The draft guidelines note in section 1104.3.2 that “detectable warnings provide a distinctive surface of truncated domes detectable by cane or underfoot to alert people with vision impairments of the transition to vehicular ways. These warnings compensate for the sloped surfaces of curb ramps which remove a tactile cue provided by curb faces.”

The draft guidelines note that the advisory committee considered the issue of detectable warnings at length before recommending that the detectable warnings be required...
according to revised specifications. “The Board has revised the technical criteria for detectable warnings in order to facilitate compliance and accommodate existing detectable warning products that have been deemed to provide an equivalent level of accessibility,” according to the draft. “The Board believes that the revised specifications, which permit wider dome spacing, an in-line grid pattern, and smaller surface coverage at curb ramps (24 in. instead of the full ramp length) will further minimize disruptions or hazards to wheelchair traffic.”

Among the proposed revised technical specifications, as delineated in Section 1108, for detectable warnings are:

- **Dome size (1108.1.1)** Truncated domes in a detectable warning surface shall have a base diameter of 0.9 in. minimum to 1.4 in. maximum, a top diameter of 50% of the base diameter minimum to 65% of the base diameter maximum, and a height of 0.2 in.

- **Dome spacing (1108.1.2)** Truncated domes in a detectable warning surface shall have a center-to-center spacing of 1.6 in. minimum and 2.4 in. maximum, and a base-to-base spacing of 0.65 in. minimum, measured between the most adjacent domes on a square grid.

- **Contrast (1108.1.3)** Detectable warning surfaces shall contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light.

- **Size (1108.1.4)** Detectable warning surfaces shall extend 24 in. minimum in the direction of travel and the full width of the curb ramp, landing, or blended transition.

- **Location (1108.2.1)** In curb ramps and blended transitions, the detectable warning surface shall be located so that the edge nearest the curb line is 6 in. minimum and 8 in. maximum from the curb line.

Truncated domes are as of July 26, 2001, the only tactile cue allowed under federal guidelines at transition points between “hazardous vehicular ways and pedestrian ways.” If your state doesn’t call out for these in their current codes, be aware that Federal DOT requires them now in every state (public work), regardless of building code, and any state that does not require them for private work, will in only a matter of months due to it being a federal mandate.

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