ODOT DWS Designer Resource

The purpose of this document is to assist engineers when designing curb ramps to ensure that the detectable warning surface being proposed is available from the Qualified Products List (QPL). Some manufactures offer up to a dozen colors for their Detectable Warning Surface (DWS). The ODOT standard is safety yellow; all other colors require an approved design exception. The table on the following page is only comprised of items that are approved within the ODOT QPL. Products that are exposed to ultraviolet (UV) light may lose their color contrast over time and will require replacement. Ensure that cut DWS are secured with additional anchors when specified by the manufacturer. The document will be posted on the QPL homepage at https://www.oregon.gov/odot/construction/pages/qualified-products.aspx.

Wet Set (WS):
Wet set DWS have anchors attached to the bottom of the panel. These panels are then placed into wet concrete such that when it cures, the DWS is affixed to the surface. These types of applications have a longer service life when compared to a surface applied application.

Wet Set Replaceable (WS Repl.):
Wet set replaceable products are installed very similarly to a standard wet set product, but in this case the anchors can be unscrewed from the rest of the DWS. This allows for the DWS to be replaced without disturbing the concrete below the surface.

Wet Set Snow Zone (WS SZ):
The wet set snow zone application is used to capture items in the QPL that are designed for snow zones. In most cases these DWS surfaces are constructed from cast iron which creates a natural patina over time as it weathers. Due to its material properties this type of application is less effected by UV rays. Note any special ODOT requirements for installation.

Surface Applied (SA):
The surface applied DWS utilizes an adhesive to affix the DWS to the concrete. The concrete in this case will need to be thoroughly cleaned to ensure a solid connection. Use manufacturer recommended adhesive. Caulking may be required to prevent water from infiltrating the DWS. The concern with these types of products is longevity because the adhesive may deteriorate over time especially in extreme weather conditions. These types of applications are useful when a DWS needs to be installed on aged and cured concrete or for temporary pedestrian access routes (TPAR).

Liquid Applied (Liquid Appld.):
This is a liquid product that is applied to a cured surface. The surface in this case will need to be thoroughly cleaned and free of debris to ensure a solid bond to the surface. This product does not stand up to vehicular traffic. This product can be applied to asphalt, concrete and metal (such as vault lids, manhole covers, etc.).

Radial Installations:
When specifying radial DWS installations specify the radius at the back of curb. Some radial options in the QPL have cut-lines to alter the radius sizes of the panel. When cut along these lines domes should remain intact. Wet set snow zone radial options are not expected to be cut to fit.

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Oregon Department of Transportation

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Manufacturer	Panel	Application	Edge	Panel Sizes	Designer Notes	Installation Note	Approved Colors
Access Tile	Rect.	WS Repl.	Flush	1'x1', 2'x2', 2'x3', 2'x4', 2'x5', 3'x4' and 3'x5'			Safety Yellow, Safety Red
		SA	Beveled				
	Radial	WS Repl.	Flush	15' radius only	Specify radii size at back of curb.	No prescored cut lines available.	Safety Yellow, Safety Red
		SA	Beveled	Single panel prescored for 8', 10', 15' and 20' radii.	Specify radii size at back of curb.	If cuts are made along the prescored marks the cuts will NOT go through individual domes.	
ADA Solutions	Rect.	WS	Flush	2'x2', 2'x3', 2'x4', 2'x5', 3'x4' and 3'x5'			Safety Yellow, Safety Red
		WS Repl.	Flush				
		SA	Beveled				
	Radial	WS Repl.	Flush	24"x33.25" panel. Prescored for 10', 15' and 20' radii	Specify radii size at back of curb.	If cuts are made along the prescored marks the cuts will NOT go through individual domes.	Safety Yellow, Safety Red
		SA	Beveled				
Tuftile	Rect.	WS Repl.	Flush	2'x1', 2'x2', 2'x3', 2'x4' and 2'x5'		Installation holes are to be filled in with a bolt to ensure a flush surface.	Safety Yellow, Safety Red, Natural Patina
		SA	Flush				
		WS SZ	Flush				
Armor-Tile	Rect.	WS Repl.	Flush	2'x2', 2'x3', 2'x4', 2'x5', 3'x4' and 3'x5'			Safety Yellow, Safety Red
		WS	Flush				
		SA	Beveled				
Vanguard	All	Liquid Prod.	Flush	Any			Safety Yellow
Neenah Foundry	Rect.	WS SZ	Flush	2'x2', 2'x2.5' and 2'x3'			Natural Patina
	Radial	WS SZ	Flush	9.5', 15', 20, 25' and 35' radii.	If using cast iron radius panels, ensure the size of the radius matches what is available from the manufacturer. Cast iron panels are not able to be cut as easily as polymer panels.	Installation holes are to be filled in with a bolt to ensure a flush surface.	Natural Patina
Ultratech	Rect.	SA	Beveled	2'x2', 2'x3', 2'x4' and 2'x5'			Safety Yellow, Safety Red
Alertcast	Rect.	WS Repl.	Flush	2'x3', 2'x4', 2'x5', 3'x4' and 3'x5'			Safety Yellow, Safety Red
Advantage Tactile	Rect.	WS SZ	Flush	1.5'x2', 2'x2' and 2.5'x2'		Installation holes are to be filled in with a bolt to ensure a flush surface.	Natural Patina
	Rect.	WS SZ					

Key:

WS - Wet Set

WS Repl. - Wet Set Replaceable

WS SZ - Wet Set Snow Zone

SA - Surface Applied

Rect. - Rectangular