

GUIDANCE FOR FIELD CUTTING OF POLYMER COMPOSITE TACTILE PANELS

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Introduction

The installation of polymer composite tactile panels may involve situations where field cutting or trimming of panels is necessary to maintain compliance with ADA guidelines. Even though tactile panels are available in many full unit sizes there will inevitably be applications that require panel geometry to be modified from factory sizes. This bulletin provides guidance for cutting and modifying panels in the field to suit these unique situations. Proper adherence to the guidelines in this document will ensure that the products supplied by ADA Solutions will maintain full warranty coverage.

Note: When field cutting and trimming tactile panels it may not be possible to maintain 100% compliance with ADA requirements for dome spacing. Verify approval with local jurisdiction prior to installing panels with field modifications.

Tools and Safety

Fiberglass reinforced polymer composite panels can be cut, trimmed, drilled, grinded, and smoothed with tools commonly used with wood and concrete materials. Always wear safety glasses, face shield, protective gloves, suitable protective clothing, hearing protection, and dust mask when cutting panels. Below is a list of recommended tools for cutting and grinding:

- Circular saw, table saw, or jig saw with fine tooth blade (diamond blade for best results)
- Angle grinder with diamond or carbide masonry cutting blade (ideal for radius cuts and edge finishing)

Applications Requiring Field Cutting

The figures below represent some examples of when tactile panels will require field cutting. Note that while these installation layout examples are included in PROWAG (Public Rights-of-Way Accessibility Guidelines) they may not be approved by all state DOT's and municipalities.

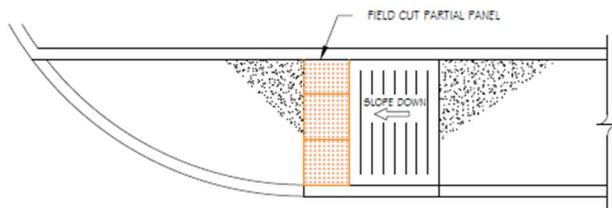


Figure 1: Straight installation with non-standard sidewalk width

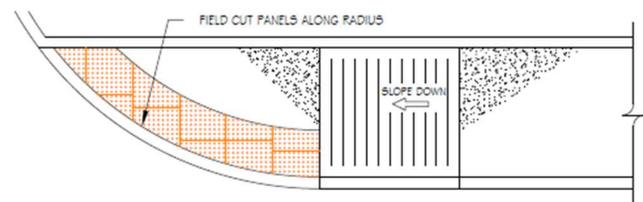


Figure 3: Rectangular panels. Domes aligned with direction of travel

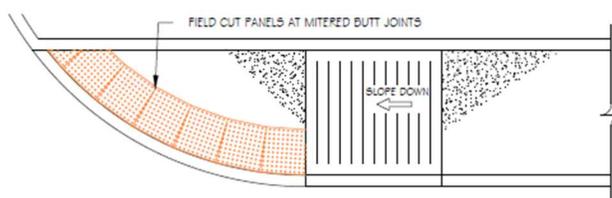


Figure 2: Square panels with tapered miter cuts to conform to radius

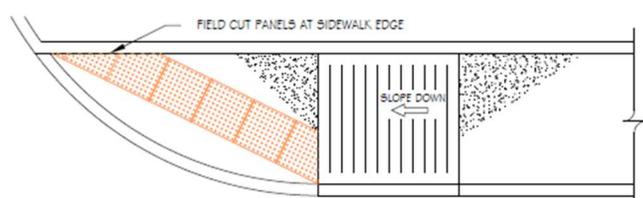


Figure 4: Angled installation with trimmed ends

Cutting Procedures

Before cutting panels be sure to confirm panel layout and cut locations prior to forming concrete. It is recommended to cut and “dry fit” panels to verify proper placement. This will help to avoid any delays or adjustments once the wet concrete has been poured.

The protective film on the panels should remain in place during cutting and trimming. This will help protect the panel from light abrasions and keep the panel clean throughout the installation process.

Cutting polymer composite tactile panels is similar to cutting CDX plywood. A diamond blade will provide the cleanest cut and reduce the possibility of chipping or fracturing the panel edge.



Figure 5: Cutting across bottom of Surface Applied tactile panel and closeup of cut edge

Straight Cuts: When using a handheld cutting device (i.e. circular saw) a straight edge or blade guide jig can be used to maintain a straight cut. Cutting on the top of the panel (domed side) will require a wide based straight edge to span across the truncated domes and help maintain a level cut. When using a table saw the panel can be cut either dome side up or dome side down for all panel types. For **Cast-In-Place Replaceable** panels with metallic anchors it is recommended to cut panels with dome side down. This will allow visibility of blade location to avoid hitting the metallic anchors. It also provides a more stable cutting surface for the part.



Figure 6: Cutting guide clamped to top surface of Cast-In-Place Replaceable panel

Radius or Compound Cuts: For radius cuts it is best to use an angle grinder with a diamond blade. Make initial passes along the top side of the panel along the cut line with a shallow cut. Make additional passes with progressively deeper cuts until the part is separated.

Finishing Cut Edge: Cut edges will be treated differently depending on panel type and location of cut.

Butt Joints – All panel types

For panel cuts located at intersecting butt joints between adjacent panels (Figure 7) no additional edge treatment is required unless edges exhibit any chipping or jagged conditions. If these conditions exist use an angle grinder to lightly chamfer the top edge to a uniform bevel.

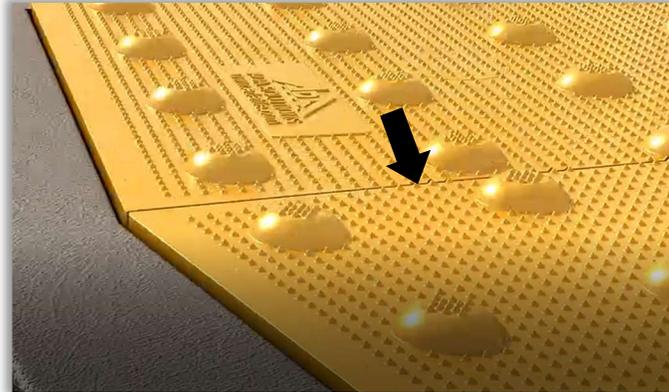


Figure 7: Butt joint between adjacent panels with field cut miter

Perimeter Edge Cuts – Surface Applied Panels

For cut edges located at the perimeter of a **Surface Applied** panel installation the edge should be beveled to prevent a trip hazard. Use an angle grinder with a fine grit grinding or sanding disc to bevel the edge to match adjacent factory chamfered edges. Minimum bevel should be at 45-degree angle along top edge with maximum 1/8-inch vertical face below chamfer (Figure 8).

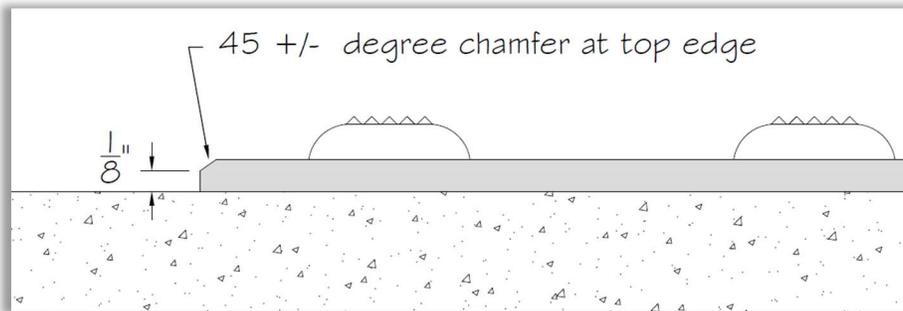


Figure 8: Bevel applied to cut edge of Surface Applied panel

Perimeter Edge Cuts – Cast-in-Place Panels

For cut edges located at the perimeter of a **Cast-In-Place** panel installation the edge should be beveled at a 45-degree angle continuous along the top edge of the panel prior to installation into the uncured concrete (Figure 9).

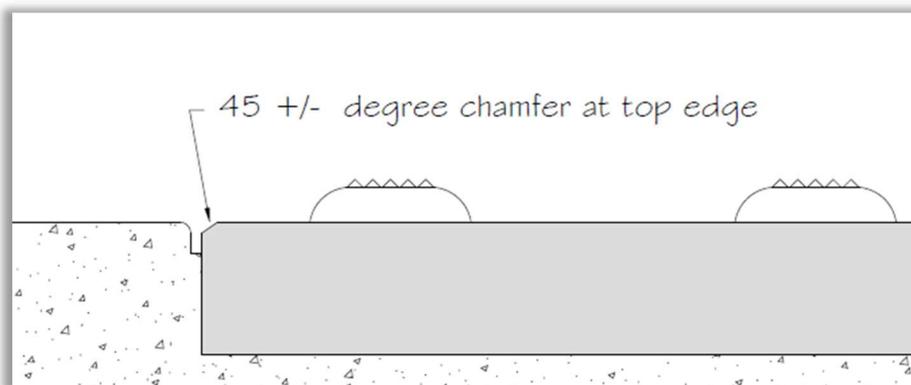


Figure 9: Bevel applied to cut edge of Cast-In-Place panel

Partial Dome Treatment

Some field cuts may pass through dome locations (Figure 10a). To eliminate any potential for trip hazard caused by partial domes the remainder of the dome will need to be removed or rounded over. Any cut dome that is 50 percent or greater in size to the original dome dimension should remain. The cut edges of the partial dome should be rounded over to eliminate the square edge condition with a radius that closely matches the factory curvature of the dome (Figure 10b). Cut domes less than 50 percent in size should be removed completely by grinding even with the top surface of the panels.

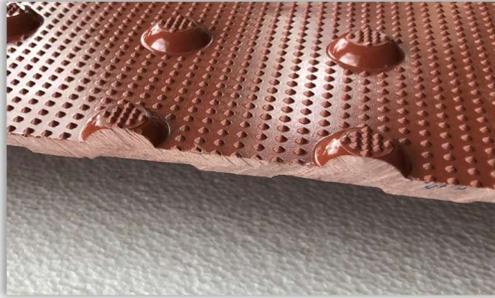


Figure 10a: Field cut through dome location

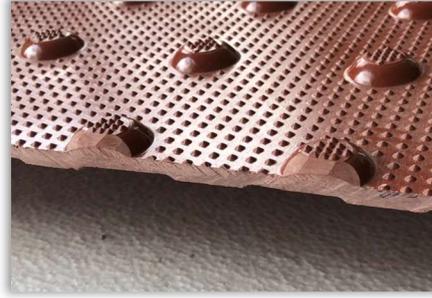


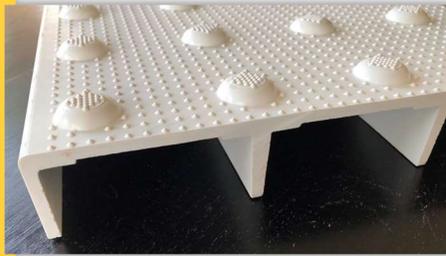
Figure 10b: Partial dome with rounded edges at cut.

Supplemental Anchor Locations

Field cutting of panels may result in the loss of factory supplied anchor locations. This occurrence may happen with both **Surface Applied** and **Cast-In-Place Replaceable** panel types. Supplemental anchors must be provided whenever a factory anchor location is removed during field cutting. This is to ensure proper securement to the concrete substrate. Supplemental anchor locations should be added within 3 inches of corners at cut edge and spaced at maximum 12 inches on center. Locate new anchors in domes maximum 3 inches from cut edge.

Installer Note:

It is recommended to use **Cast-In-Place Paver** panel type for wet-set installations that require a large amount of field cutting. The embedment design of this panel eliminates the need for adding supplemental fasteners. (Image: cross section of Cast-In-Place Paver with embedment ribs at 3 inches on center)



Adding Attachment Location – **Surface Applied Panels**

Surface Applied panels are provided with pre-defined countersunk fastener locations in the domes. When a factory supplied anchor location is eliminated after field cutting the panel a new fastener location must be provided. The new fastener point should be in a dome nearest to where the factory supplied anchor location was removed. Always try to include an anchor placement in the dome nearest to the corner of the panel (Figures 11 & 12).



Figure 11: Factory supplied fastener location.



Figure 12: Location of supplemental fastener in corner along field cut.

To add a supplemental anchor to a **Surface Applied** panel, first drill a countersunk hole into the center of the top of the selected dome. Next, drill a ¼ inch diameter hole through the panel located at the center of the dome (Figure 13). This will provide a recessed hole for the **nylon sleeve anchor pin** to sit flush with the top of the dome.

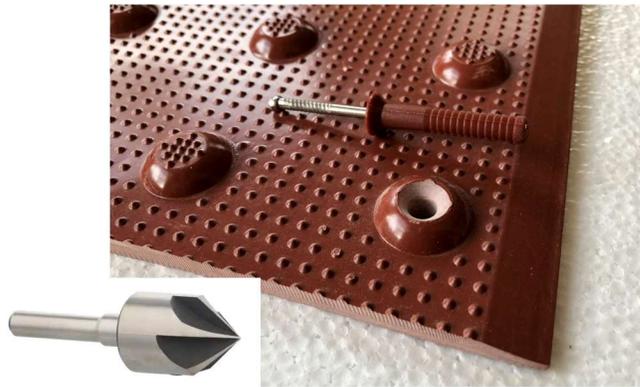


Figure 13: Countersunk hole for supplemental anchor

Adding Attachment Location – **Cast-In-Place Replaceable Panels**

Cast-In-Place Replaceable panels have engineered anchor locations that include a metallic anchor, ½” diameter bolt, washer, and cap (Figure 14). If these anchor locations are eliminated after field cutting the panel, a new anchor must be provided. The new anchor location should be located near the location where the factory supplied anchor was removed (Figure 15).

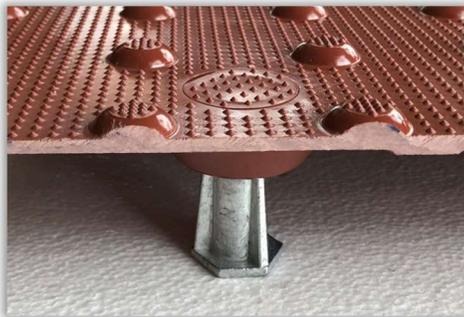


Figure 14: Factory supplied anchor (with ½ inch diameter bolt) and cap.



Figure 15: Underside of field cut CIP Replaceable panel. Note location of removed anchor (arrow) and locations of new supplemental anchors (yellow 'x') along 24-inch cut edge.

To add a supplemental anchor to a **Cast-In-Place Replaceable** panel, first drill a countersunk hole into the center of the top of the selected dome. Next, drill a ¼-inch diameter hole through the panel located at the center of the dome. Install the supplemental hardware: 1-1/2-inch metallic concrete anchor and ¼-inch counter sunk bolt with washer (Figures 16-18).



A supplemental hardware package can be obtained from **ADA Solutions** which includes:

- 1-1/2” metallic concrete anchor
- ¼” diameter bolt with washer

Figure 16: Countersunk hole in dome near cut edge of panel.



Figure 17: View of dome with new anchor fastener installed.



*Figure 18: View of bottom of CIP
Replaceable panel with new anchor
hardware installed.*

Please contact **ADA Solutions** at 800-372-0519 for any additional information. Installation instructions for all panel types can be found at www.ADATILE.com.