ADA SOLUTIONS

Wherever you go, there we are.®

Cast-in-Place Replaceable TWSI Submittal Package

ADA Solutions, LLC.

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www.adatile.com

ADA Solutions, LLC. appreciates your interest in the Cast-in-Place, Wet Set Replaceable Panel (CIPR). These Tactile Walking Surface Indicator (TWSI) Panels are easy to install, fully replaceable and made with HD exterior grade fibreglass reinforced polymer composite material. (TWSI) are also known as; Detectable Warning Tiles, Tactile Warning Plates and ADA Pads.

This informative submittal package includes:

- **Product data sheet**
- **Product specifications**
- **Installation manuals**
- **Detail drawings**
- **Test results**
- **Cleaning and maintenance instructions**
- **Sample warranty form**
- **Sample certificate of compliance**
- **Standard colours**

The information contained within this submittal document details the various design and functionality features that make ADA Solutions, LLC. TWSI Panels best suited for your project requirements. However, if you require any additional information, such as project-specific detail drawings and specifications, we would be pleased to produce expedited detailed documents specific to your project requirements.

The principal features and benefits of ADA Solutions, LLC. TWSI Panel System represents the latest design innovations for tactile warning and alert indicator panels. The primary features and benefits of ADA Solutions, LLC. TWSI Panel Systems include but are not limited to the following:

- Industry-leading Anti-Slip Surface
- The only true Replaceable – Allows for Easy Removal for Maintenance or Replacement
- Fibreglass Reinforced Polymer Composite Material
- 60mm (2.35”) Centre to Centre Dome Spacing – AODA/CSA/ISO Compliant
- The tactile body thickness is 5.6mm (0.22”) which excludes the 5mm (0.20”) truncated domes. It has a four (4) sided perimeter flange that is 19mm (0.75”) thick and contains air vents
- 51mm (2”) Embedment into Concrete
- Superior 13mm x 38mm (0.5” x 1.5”) Heavy Duty Metal Bolts, Washers and Corrosion Resistant Concrete Anchor Inserts
- Industry-leading 2041kg (4,500lb) pull-down strength per metal concrete anchor
- Delivered pre-assembled and ready for a hassle-free installation into wet concrete
- Available in various sizes and colours
- Industry-leading seven (7) Year Warranty
- Manufactured in an ISO 9001 QC Approved Facility
- Complies with all ASTM & ULC Test Requirements

By specifying ADA Solutions, LLC. Cast-In-Place Replaceable Panels will provide all project stakeholders with consistent, hassle-free, fully compliant installations each time. The use of ADA Solutions, LLC. CIPR eliminates commonly experienced failures resulting from the chronic float and lifting from the concrete as routinely experienced when using lightweight, ultra-thin alternative TWSI Units that rely on plastic anchors, and #2 all-purpose screws that achieve less than 25mm (1”) of concrete embedment depth.

We trust this overview of the ADA Solutions, LLC. TWSI Panel System, together with the information contained in our submittal package is helpful in determining the ADA Solutions, LLC. TWSI Panel System best suited to your project requirements. If you would like to speak directly with our sales or engineering representatives, please call us directly by dialling Toll-Free (800) 372-0519.

Yours truly,

Sandro Pinto
Sales Manager - Canada

ADA Solutions, LLC.
spinto@surewerx.com
Cell: 905-699-3999

CAST-IN-PLACE REPLACEABLE TACTILE WALKING SURFACE INDICATOR PANEL

SECTION 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.

B. ISO 23599:2018 - Assistive Products for Blind and Vision-Impaired Persons - Tactile Walking Surface Indicators.

C. ISO 21542:2011 - Building Construction - Accessibility and Usability of the Built Environment.

D. CSA B651-18 - Accessible Design for the Built Environment.

E. Accessibility For Ontarians With Disabilities Act (AODA), 2005 - O. Reg. 413/12: Integrated Accessibility Standards Regulation (IASR) 191/11 – Sections 80.25 to 80.29

F. National Building Code of Canada

G. ISO 9001 – Certificate No. 0502011, ISO 1409 & ISO/B 16949 Certified Manufacturing Facility located in Jefferson, OH.

1.02 DESCRIPTION

A. This Section includes Specifications for furnishing and installing Cast-In-Place Replaceable Tactile Walking Surface Indicator (TWSI) panels with an in-line truncated dome pattern embedded in all curb ramps at the locations and to the dimensions shown on the Drawings, by the Contract Documents and as directed by the Engineer/Architect.

1.03 SUBMITTALS

A. **Product Data Sheet:** Submit ADA Solutions, LLC. literature describing products, installation procedures and routine maintenance.

B. **Samples for Verification Purposes:** Submit two (2) tactile walking surface indicators samples. Samples shall be properly labelled and shall contain the following information: Name of Project, Submitted by Date of Submittal, and Manufacturer's Name.

C. **Shop Drawings:** Submit Standard Manufacturer Shop Drawings showing all pertinent characteristics of the Cast-In-Place Replaceable Tactile Walking Surface Indicator (CIPR), including profile, sound on cane contact amplification feature, panel surface profile, metal bolt and anchor locations, plans of panel placement including joints, and material to be used as well as outlining installation materials and procedures.

D. **Material Test Reports:** Submit all completed current test results from qualified, accredited independent testing laboratories by ASTM and UL/Canada guidelines and indicating that materials proposed for use are in compliance with specification requirements and meet or exceed the properties indicated on these specifications.

E. **Maintenance Instructions:** Submit copies of the manufacturer's specified installation and maintenance practices for each type of TWSI panel and accessories as required.

1.04 QUALITY ASSURANCE

A. Provide Cast-In-Place Replaceable TWSI panel and accessories as produced by a single manufacturer with a minimum of five (5) years' experience in the manufacturing of Cast-In-Place Replaceable TWSI panels.

B. Installer's Qualifications: Engage an experienced installer certified in writing by Cast-In-Place Replaceable TWSI panel manufacturer as qualified for installation, who has completed installations similar in material, design, and extent to that indicated for the Contract.

C. Cast-In-Place Replaceable Tactile Walking Surface Panels (CIPR) shall meet or exceed the following test criteria using the most current test methods:

Test Reference	Test Description	Requirements
AASHTO-H20	Load Bearing at 7,257 kg (16,000lb)	No Damage
ASTM D 695	Compressive Strength	≥ 199 Mpa (29,800 psi)
ASTM D 790	Flexural Strength	≥ 202 Mpa (29,300 psi)
ASTM D 638	Tensile Strength	≥ 80 Mpa (11,600 psi)
ASTM D 696	Linear Coefficient of Thermal Expansion	2.32×10^{-5} / °C
ASTM C 1028	Static Coefficient of Friction	≥ 1.05 Wet / ≥ 1.18 Dry
ASTM E 84	Flame Spread Index – (Class A)	≤ 25
CAN/ULC S102.2	Smoke Developed Index – (Class A)	≤ 5
	Flame Spread Index – (Class A)	≤ 5
ASTM D 570	Water Absorption	≤ 0.10%
ASTM C 501	Abrasion Resistance (Iw)	≥ 549
ASTM G 155	Accelerated Weathering @ 2,000hrs	ΔE < 5
ASTM C 1026	Freeze/Thaw/Heat	No Disintegration
ASTM B 117	Salt Spray @ 200hrs	No Change
ASTM D 1037	Accelerated Aging	No Failure
ASTM D 543	Chemical Resistance	No Failure
ASTM 1308	Chemical Stain Testing	No Deterioration

D. Polymer Composite Cast-In-Place Replaceable TWSI panels manufactured with fibreglass and carbon reinforced polyester based Sheet Molding Compound (SMC). An exterior grade matte finish that is homogeneous, colourfast and UV stable throughout the entire panel, including the raised truncated domes. TWSI Products that rely on surface paints, coatings or supplemental compounds are not permitted. The truncated domes must contain sufficient levels of fibreglass reinforcement to ensure durability. Panels manufactured without fibreglass reinforcement such as Vitrified Polymer Composite (VPC) shall not be used on this project. The panel shall incorporate an in-line pattern of truncated domes measuring nominal 5mm (0.2") height, 23mm (0.9") base diameter, 12mm (0.47") top diameter, and spaced centre-to-centre 60mm (2.35") as measured side by side

E. Stamped concrete, polymer concrete or concrete pavers/tile, brick, and cast-iron TWSI Products are not acceptable for use on this Project.

F. Fibreglass composite TWSI (Replaceable Panels) shall utilize embedment hardware that is universally recognized and accepted by the concrete industry. Plastic anchors and all-purpose screws are not permitted for this project.

G. TWSI Panels must meet or exceed the weight of 10.5 Kilograms Per Square Meter (kg/m^2) (2.15 Pounds Per Square Foot (lbm/sq ft.) (installed).

H. Panel body must meet or exceed 5.6mm (0.22") thick (not including truncated domes).

I. Panels must have four (4) sided perimeter flange; a minimum installed depth of 17mm (0.67") and a minimum flange width of 19.1mm (0.75") including the flared edge.

J. Heavy Duty Metal Bolts shall be Hex Head with a minimum 9.5mm (0.37") diameter x 31.75mm (1.25") in length.

K. Corrosion Resistant Concrete Embedment Anchor Inserts must be made out of heavy duty metal with a minimum insertion depth of 38.10mm (1.5"). Plastic anchors are not acceptable on this project.

L. Embedment anchors inserted in concrete and masonry elements must achieve minimum pull-down strength of 2041kg/anchor (4,500lb/anchor).

M. Each Embedment Anchor shall be recessed 12.7mm (0.5") from the back side of the TWSI Panel to achieve a minimum depth of 50.8mm (2.0") for permanent concrete embedment depth.

N. Unprotected and open bolt and screw heads directly exposed to foot traffic and the elements are not permitted on this project.

O. Dimensions: Cast-In-Place Replaceable TWSI panels shall be held within the following dimensions and tolerances:

Part Number	Anchor #	Part Size		Part Weight
2424NV6REP	6	610mm x 610mm (24" x 24")		5.08Kg (11.2lb)
2436NV8REP	8	610mm x 915mm (24" x 36")		6.89 Kg (15.6lb)
2448NV8REP	8	610mm x 1220mm (24" x 48")		7.80 Kg (17.2lb)
2460NV11REP	11	610mm x 1524mm (24" x 60")		11.6 Kg (24.6lb)
3648NV9REP	9	915mm x 1220mm (36" x 48")		19.27Kg (42.50lb)
3660NV12REP	12	915mm x 1524mm (36" x 60")		24.27 Kg (53.50lb)
248RADREP	8	610mmx845mm (For 3048mm, 4572mm, 6096mm radii)	24" x 33.25" (For 10', 15' and 20' radii)	6.4Kg (14lb)
Note: Tolerances (Side to Side & End to End) ± 0.1250mm (0.0049")				
Note: 5.6mm (0.22") Body Thickness & a 19.1mm [thick] x 25.4mm [wide] (3/4" x 1") perimeter flange with air vents.				

1.05 DELIVERY, STORAGE AND HANDLING

A. Cast-In-Place Replaceable TWSI panels shall be suitably packaged or crated to prevent damage in shipment and handling. Finished surfaces shall be protected by sturdy plastic wrappings to protect the panel from concrete residue during installation.

B. Cast-In-Place Replaceable TWSI panels shall be delivered to a location at the building site for storage before installation. Store CIPR panels in an area that is within an acceptable temperature range 4°C - 32°C (40°F - 90°F) and maintain the storage facility in a clean, dry condition to prevent contamination or damage to CIPR panels.

1.06 SITE CONDITIONS

A. Environmental Conditions and Protection: Maintain a minimum temperature of 4°C (40°F) in spaces to receive Cast-In-Place Replaceable TWSI panels for at least 24 hours before installation, during installation, and for not less than 24 hours after installation.

B. The use of water for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with the general public. Provide barricades or screens to protect the general public.

1.07 MANUFACTURER'S WARRANTY

A. Cast-In-Place Replaceable TWSI panels shall be warranted in writing for seven (7) years from the date of completion. The guarantee includes manufacturing defects, breakage, cracking, UV stability, deformation, workmanship and replaceability.

1.08 INSTALLATION WARRANTY

A. Cast-In-Place Replaceable TWSI panel installation shall be warranted in writing for two (2) years by the installer. Alternate products approved before the tendering phase must be guaranteed for three (3) years by the installer. Products must be guaranteed from defective work and loosening of panels.

SECTION 2 - PRODUCTS

2.01 MANUFACTURERS

A. Fibreglass Reinforced Polymer Composite Cast-In-Place Replaceable TWSI Panels by ADA Solutions, LLC. 323 Andover Street, Suite 3, Wilmington, MA 01887 – Toll-Free: 800-372-0519, spinto@surewerx.com, www.adatile.com.

B. Existing engineered and field-tested products, which have been in successful service for five (5) years are subject to specification compliance, may be incorporated in the project and shall meet or exceed the specified test criteria and characteristics. Requests for Approved Equal Status must be submitted and approved by the Owner before the Tender Phase of the Project.

C. Colour: Colour shall be homogeneous throughout the panel and domes.

Colour	Colour Standard	Colour Description
Federal Yellow (Y)	Federal Standard 595B Table IV	Colour No. 33538
Brick Red (R)	Federal Standard 595B Table IV	Colour No. 20109
Clay Red (CR)	Federal Standard 595B Table IV	Colour No. 22144
Safety Red (SR)	Federal Standard 595B Table IV	Colour No. 31350
Black (B)	Federal Standard 595B Table IV	Colour No. 37038
Dark Grey (G)	Federal Standard 595B Table IV	Colour No. 36081
Safety Blue (B)	Federal Standard 595B Table IV	Colour No. 15187
White (W)	Federal Standard 595B Table IV	Colour No. 27925
Seattle Yellow (SY)	Federal Standard 595B Table IV	Colour No. 23594
Houston Beige		Pantone #7529C

2.02 EQUIPMENT

A. Contractor shall provide all tools, equipment and services required for satisfactory installation per manufacturer's instruction as Incidental Work. Equipment, which may be required include typical mason's tools, a 4-foot long level with electronic slope readout, 11.4Kg (25lb) weights, vibrator and rubber mallet with 51mm x 102mm x 254mm (2" x 4" x 10") wood tamping plate, and a device for cutting the Tactile Walking Surface Indicators.

SECTION 3 - EXECUTION

3.01 PREPARATION

A. During all concrete pouring and CIPR Panel Installation procedures, ensure adequate safety guidelines are in place and that they are by the applicable industry and government standards.

B. Before installation, Contractor to ensure all submittals have been reviewed and approved by the contract Engineer/Architect. CIPR Panels shall be installed as per manufacturer's instructions.

C. Before placement of the Cast-In-Place Replaceable TWSI panel system, review manufacturer's instructions and contract drawings with the Contractor before the construction and refer all discrepancies to Project Engineer/Manager.

D. The physical characteristics of the concrete shall be consistent with the Contract Specifications while maintaining a slump range of 102mm – 178mm (4" – 7") to permit solid placement of the CIPR Panel. An overly wet concrete mix will cause the CIPR Panel to float. Under these conditions, suitable weights such as two (2) concrete blocks or sandbags 11.4Kg (25lb) shall be placed on each CIPR Panel until the concrete sets.

E. The concrete shall be poured and finished, true and smooth using typical mason's tools to the required dimensions and slope before CIPR Panel placement**.** Immediately after finishing, use a 1.2m (4ft) long level with electronic slope readout to level to the required specified slope is achieved. The panel shall be placed true and square to the curb edge, or by the contract drawings/specifications.

3.02 INSTALLATION

A. In accordance with the Accessibility For Ontarians With Disabilities Act (AODA), 2005 - O. Reg. 413/12: Integrated Accessibility Standards Regulation (IASR) 191/11 – Sections 80.25 to 80.29, and as per ISO 23599:2018 - Assistive Products for Blind and Vision-Impaired Persons - Tactile Walking Surface Indicators, the Replaceable Tactile Walking Surface Indicator Panels shall be set back from the curb ramp (back side) as per provincial accessibility requirements by the full width of the curb ramp (flare to flare) and ≥ 560mm (22”) (recommended 610mm (24”)) in the path of travel. Please contact ADA Solutions Sales Manager (Sandro Pinto) for other layout applications relating to the Canadian accessibility code requirements.

B. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the tile.

C. When preparing to set the panel, it is important that no concrete be removed from the area to accept the tile. It is recommended that the installation technique eliminate any air voids under the panels. Air vents along the side of the panel allow air to escape during the installation process.

D. CIPR Panels shall be tamped, vibrated and cast into place to provide an adequate bond between the back side of the panel and the wet concrete; this will ensure that the CIPR Panel is flush to the adjacent concrete surface or as the drawings indicate to permit proper water drainage and eliminate tripping hazards between adjacent finishes. **PLEASE NOTE:** In cold weather climates it is recommended that the CIPR Panels be set deeper into concrete, this ensures that the top of the raised truncated domes sits flush to the adjacent concrete. This method will significantly reduce the possibility of damage caused by snow clearing operations. Again, care should be taken to finish the concrete on the side of the panel with the lower elevation, adding channels to allow water to drain from the field surface of the panel and eliminate tripping hazards.

E. Although cutting panels is not recommended, ADA Solutions, LLC. understands that field cutting is inevitable. Fortunately, ADA Solutions, LLC. CIPR panels can be cut into size and configuration as necessary and in accordance to Project Contract Drawings. We recommend the use of a 60-tooth carbide blade on a circular saw or mini-grinder. A table saw can be used as well. Use of a straightedge to guide cuts is recommended, where applicable. The top of the body of the CIPR panels shall be fully seated and flush with the adjacent concrete substrate. For more specific instructions for cutting and placement, please contact the ADA Solutions Support Center (800-372-0519). **PLEASE NOTE:** When cutting CIPR panels, the installer must take caution to avoid removal of fixed anchor locations. If cutting off an anchor location(s) is unavoidable it is imperative for the installer to add supplemental embedment hardware. Preferably, the appropriate addition of 6.35mm x 38.1mm (0.25” x 1.5”) HD metal bolts, washers and corrosion resident concrete inserts to the CIPR Panel before installation into freshly poured concrete. If necessary, the installer can add supplemental hardware after installation. In these instances, calling the ADA Solutions, LLC. Support Center (800)-372-0519 is recommended. We strongly recommend using the ADA Solutions, LLC. CIP REP Radius panel to accommodate most radius conditions, this will significantly reduce the need to cut off embedment hardware locations. Contact ADA Solutions, LLC. Support Center for detailed guidance regarding the manual addition of supplemental hardware.

F. Immediately after placement, the panel elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water drainage to curb as the design dictates. Ensure that the field surface of the panel is flush with the surrounding concrete and back of curb so that no ponding is possible on the panel at the back side of the curb.

G. While concrete is workable, create a 6.35mm (1/4”) concrete-free recess around the perimeter of the panel. Use a 9.5mm (3/8”) radius edging tool to create a finished edge of the concrete. Then a steel trowel shall be used to finish the concrete around the perimeter of the panel, flush to the field level of the panel.

H. During and after the panel installation and the concrete curing stage, it is imperative that there is no walking, leaning or external force placed on the panel that may rock the panel causing a void between the underside of panel and concrete. Use proper safety barriers or cones to keep the general public away.

I. Following panel placement, review installation tolerances to contract drawings and adjust panel before the concrete sets. Suitable weights of 11 kg (25lb) each may be required to be placed on each panel as necessary to ensure solid contact with the underside of the panel to concrete.

J. Following the concrete curing stage, particularly under hot weather conditions ≥ 27°C (≥80°F), plastic sheeting will adhere strongly (resulting in difficult removal) to Tactile Walking Surface Indicator when not removed quickly. The protective plastic wrap is to be removed from the panel surface by cutting the plastic with a sharp knife, tight to the concrete/panel edge. If the concrete bled under the plastic, a soft brass wire brush would clean the residue without damage to the panel surface.

3.03 CLEANING AND PROTECTING

A. Protect CIPR Panels against damage during the construction period to comply with CIPR Panels manufacturer’s Specifications.

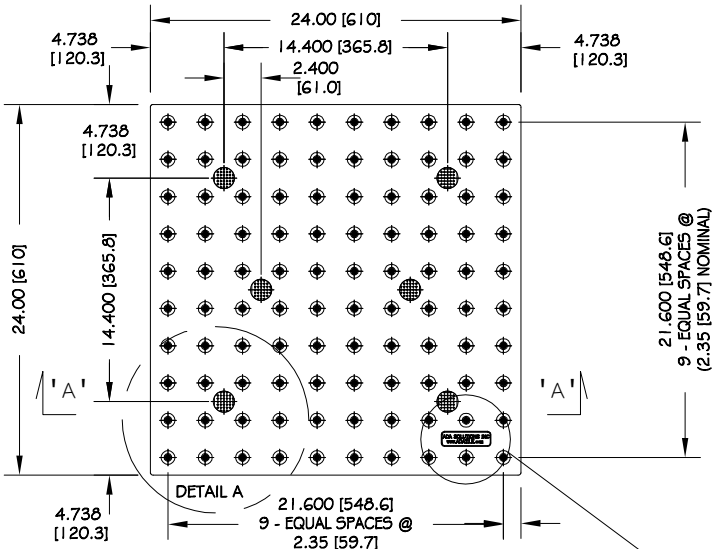
B. Protect panels against damage from rolling loads following installation by covering with plywood or hardwood.

C. Replace panels by the method specified by ADA Solutions, LLC.

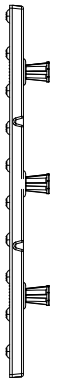
D. If requested by the Project Manager, clean CIPR Panels not more than four (4) days before the date scheduled for inspection intended to establish the date of substantial completion in each area of the project. Clean CIPR Panel by the method specified by ADA Solutions, LLC.

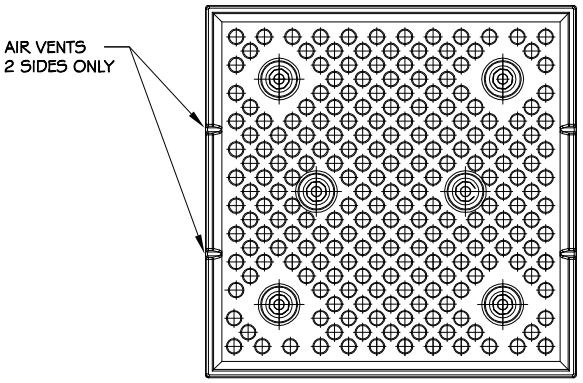
E. Comply with ADA Solutions, LLC. maintenance manual for cleaning and maintaining panel surface. It is recommended to perform annual inspections for safety and panel integrity.

END OF SECTION
Updated 01/10/2020

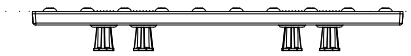


TOP OF PANEL

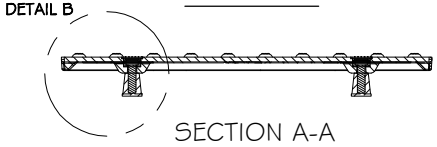




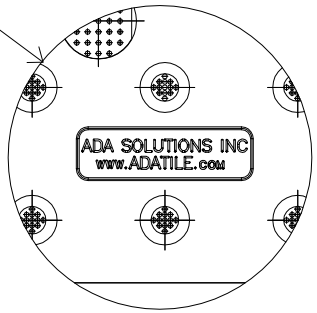
BOTTOM OF PANEL

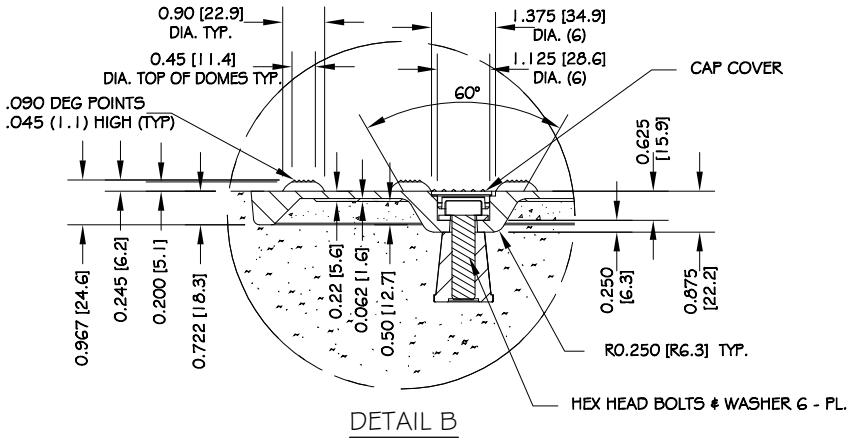


ELEVATION

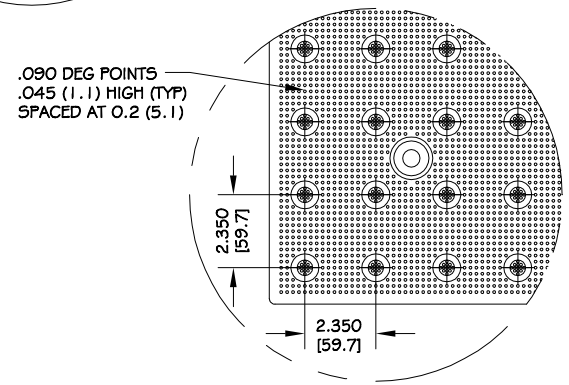


SECTION A-A





DETAIL B



DETAIL A
FIELD DOT 7 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

TRADE	PART NO.
TACTILE WARNING SURFACE	2424NV6REP_

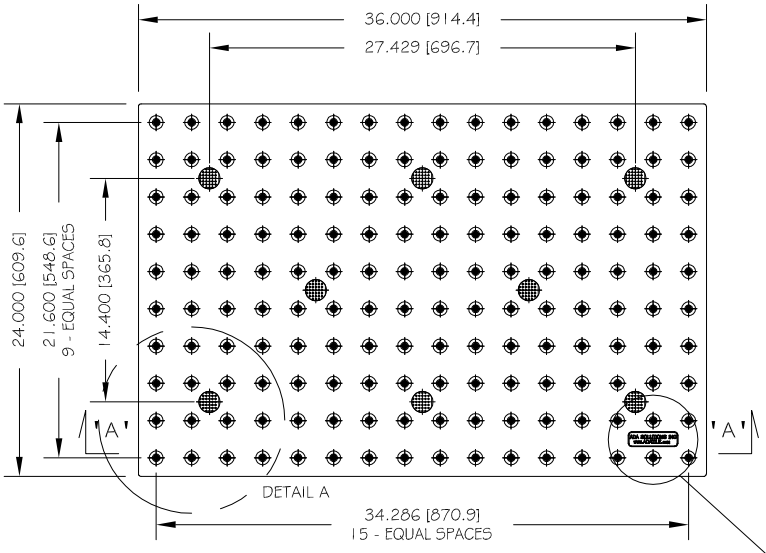
MATERIAL
SMC COMPOSITE

PROJECT

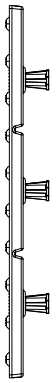
WET SET ADA REPLACEABLE TACTILE WARNING SURFACE UNIT
6-BOLT LOCATIONS
2.35" (59.7mm)IN LINE TRUNCATED DOME
PART SIZE 24" (610mm) x 24" (610mm)
PLANS AND DETAILS

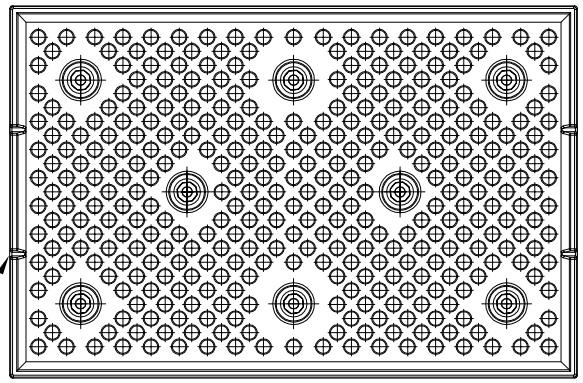
DRAWING NO.	DATE
ADA-REP2424	03-08-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES FOR PEDESTRIAN CROSSINGS
WWW.ADATILE.COM
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM



TOP OF PANEL





BOTTOM OF PANEL

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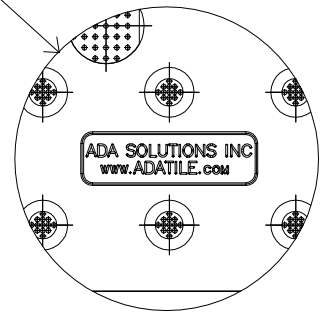
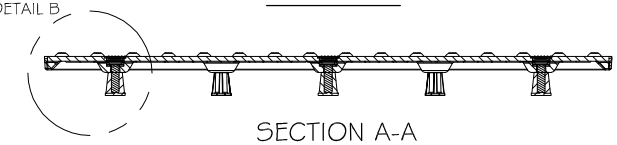
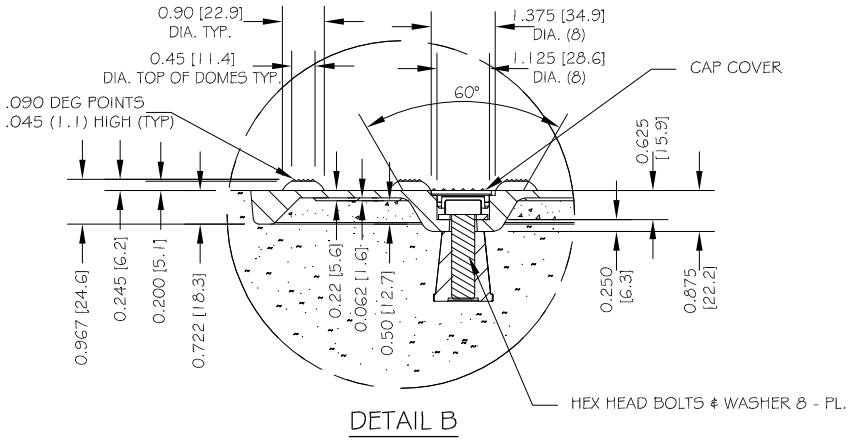
THE ENDS OF THE TWS UNIT



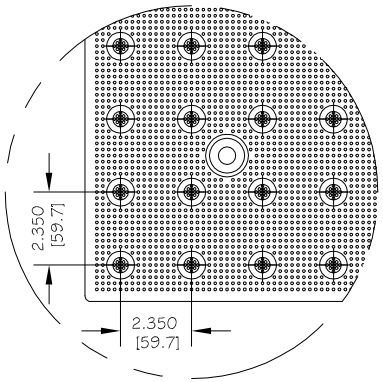
ELEVATION



SECTION A-A



DETAIL B



DETAIL A
FIELD DOT 7 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

TRADE	PART NO.
TACTILE WARNING SURFACE	2436NV8REP_

MATERIAL
SMC COMPOSITE

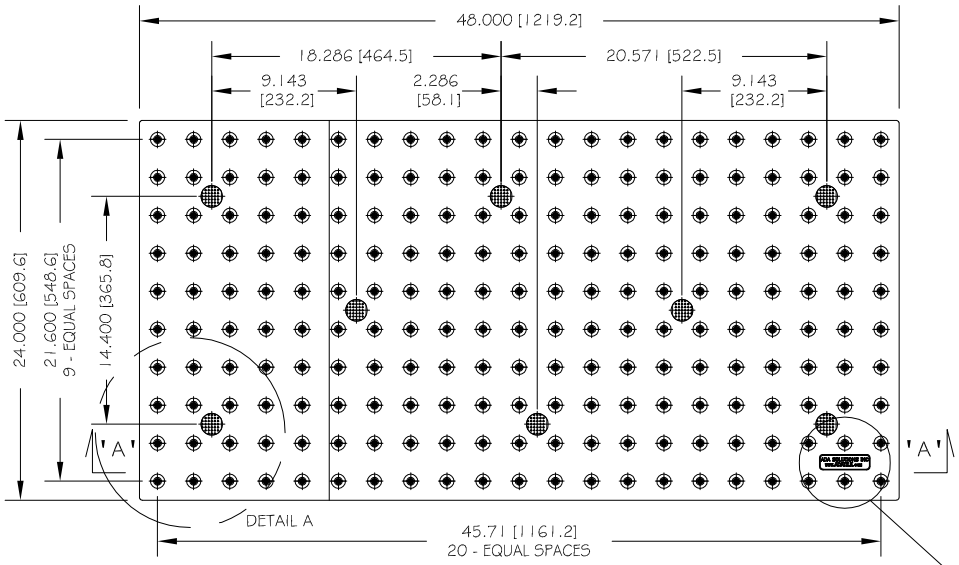
PROJECT

WET SET ADA REPLACEABLE TACTILE
WARNING SURFACE UNIT
8-BOLT LOCATIONS
2.350" (59.7mm) IN LINE TRUNCATED DOME
PART SIZE 24" (610mm) x 36" (914mm)
PLANS AND DETAILS

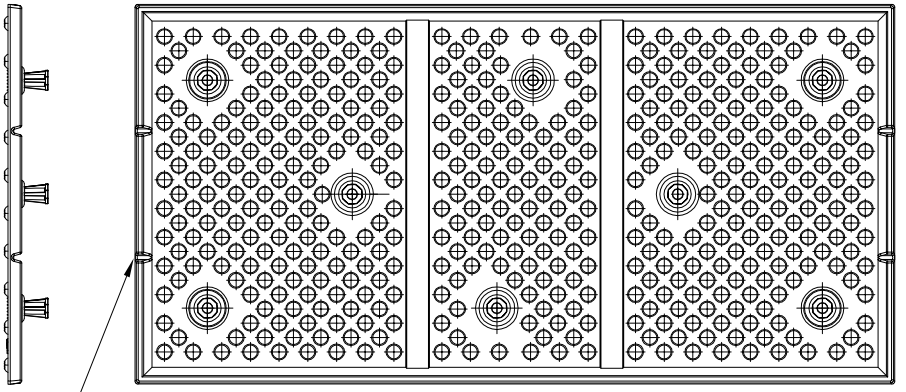
DRAWING NO.	DATE
ADA-REP2436	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES
FOR PEDESTRIAN CROSSINGS

WWW.ADATILE.COM
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM

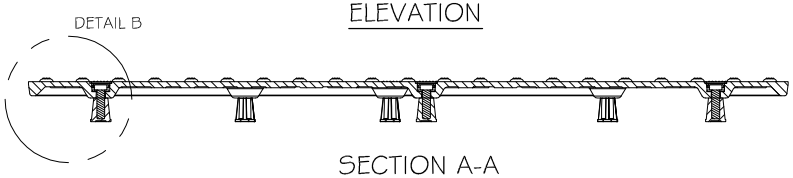


TOP OF PANEL

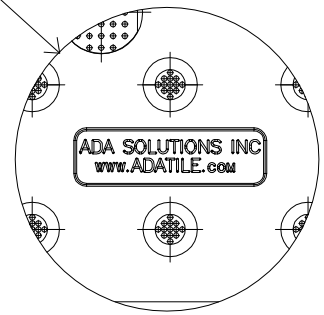


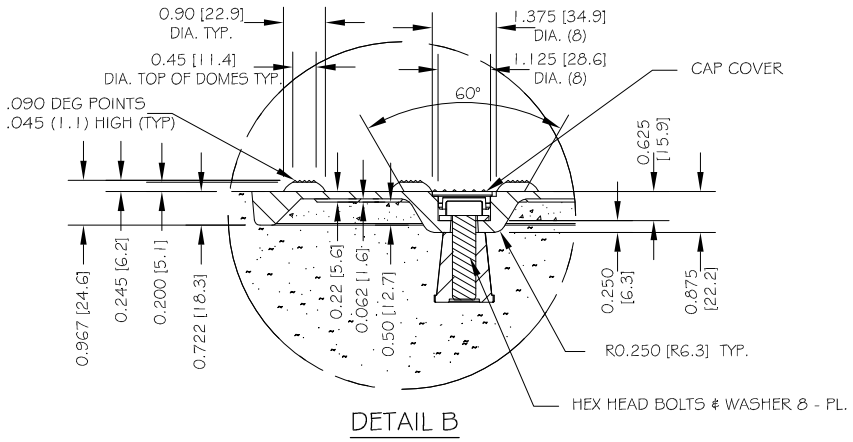
BOTTOM OF PANEL

ELEVATION

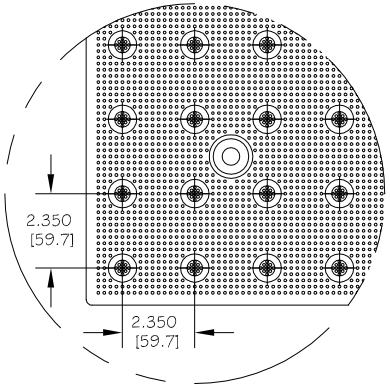


SECTION A-A





DETAIL B



DETAIL A
FIELD DOT 7 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

TRADE	PART NO.
TACTILE WARNING SURFACE	2448NV8REP_

MATERIAL
SMC COMPOSITE

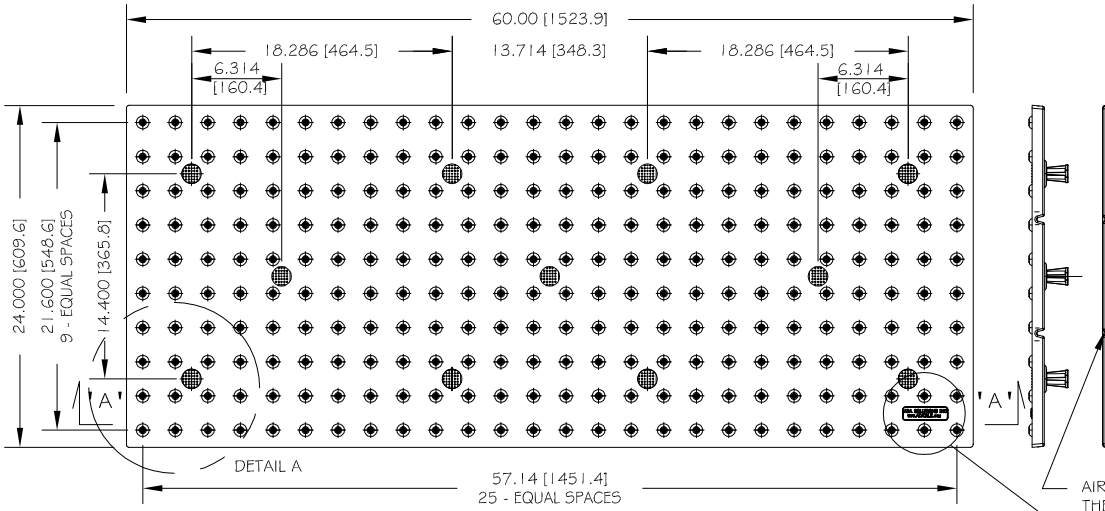
PROJECT

WET SET ADA REPLACEABLE TACTILE
WARNING SURFACE UNIT
8-BOLT LOCATIONS
2.350" (59.7mm) IN LINE TRUNCATED DOME
PART SIZE 24" (610mm) x 48" (1219mm)
PLANS AND DETAILS

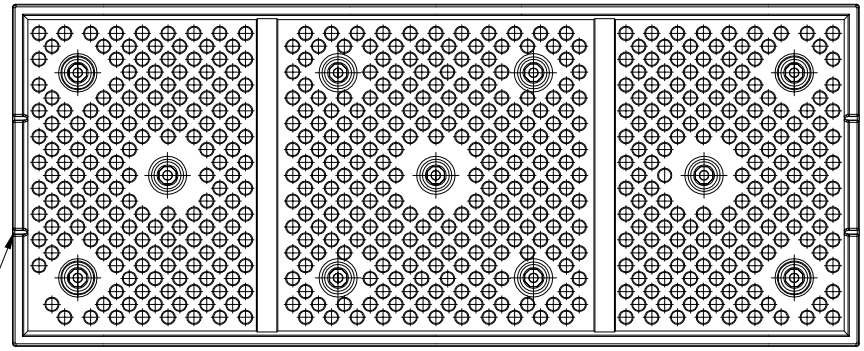
DRAWING NO.	DATE
ADA-REP2448	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES
FOR PEDESTRIAN CROSSINGS

WWW.ADATILE.COM
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM

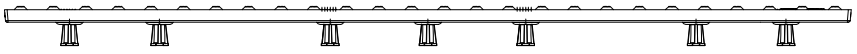


TOP OF PANEL



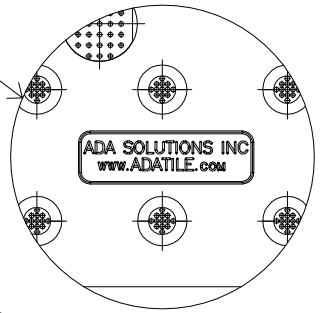
BOTTOM OF PANEL

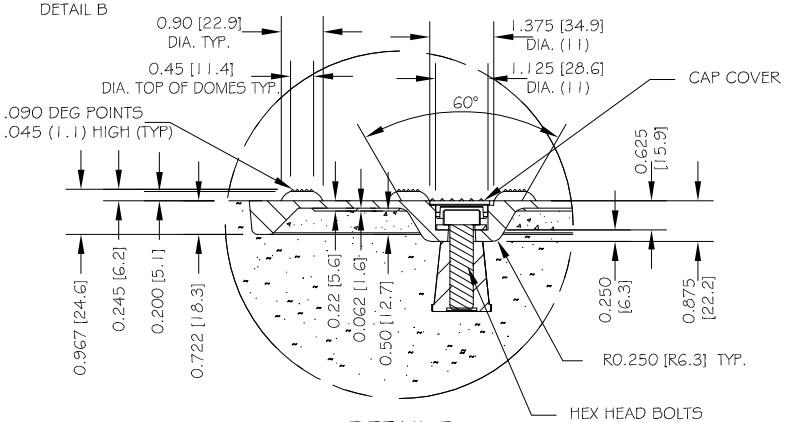
AIR VENTS LOCATED ON THE ENDS OF THE TWS UNIT



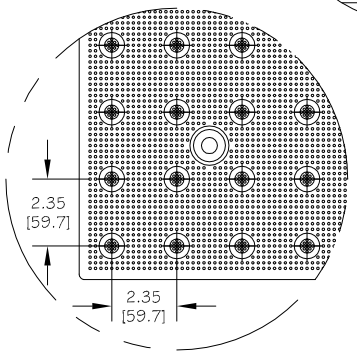
ELEVATION

SECTION A-A





DETAIL B



DETAIL A
FIELD DOT 7 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

TRADE	PART NO.
TACTILE WARNING SURFACE	2460NV11REP_

MATERIAL
SMC COMPOSITE

PROJECT

WET SET ADA REPLACEABLE TACTILE WARNING SURFACE UNIT
11-BOLT LOCATIONS
2.350" (59.7mm) IN LINE TRUNCATED DOME
PART SIZE 24" (610mm) x 60" (1524mm)
PLANS AND DETAILS

DRAWING NO.	DATE
ADA-REP2460	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES FOR PEDESTRIAN CROSSINGS

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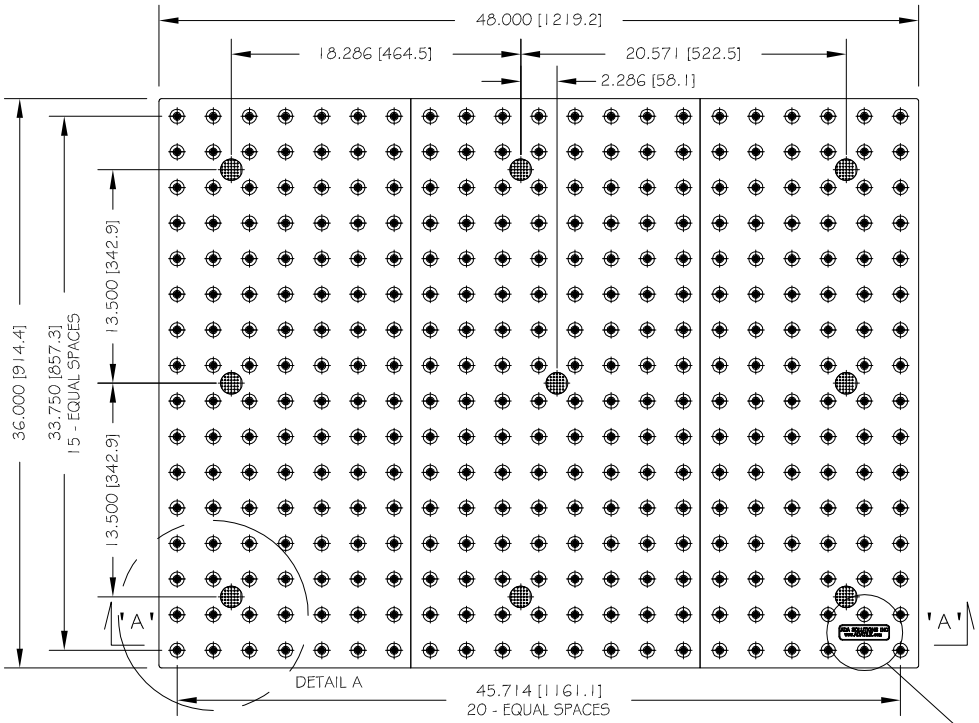
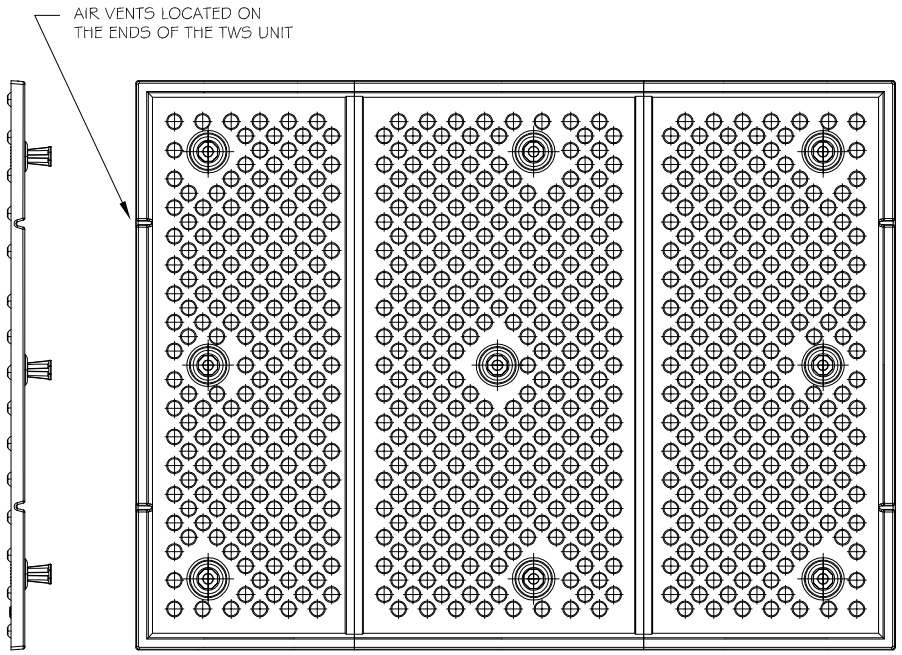
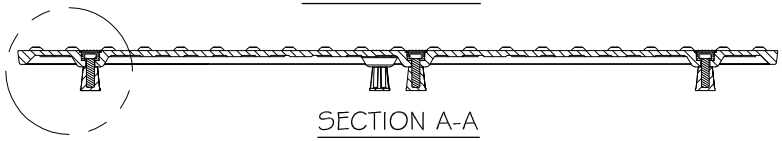
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM



TOP OF PANEL

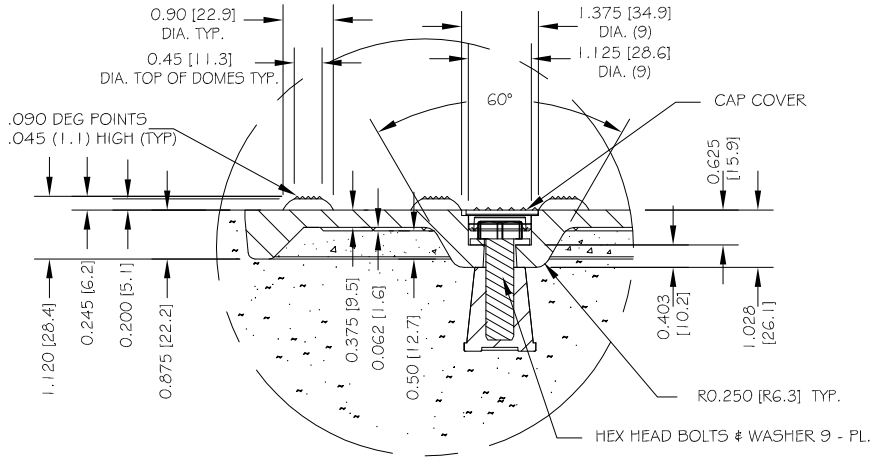


BOTTOM OF PANEL

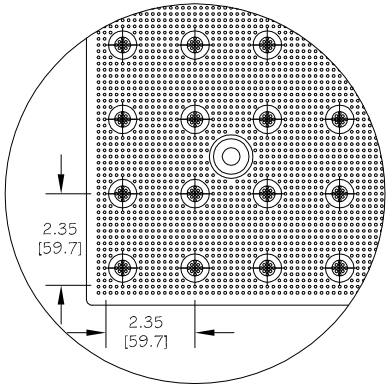


SECTION A-A

DETAIL B



DETAIL B



DETAIL A
FIELD DOT 13 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

TRADE	PART NO.
TACTILE WARNING SURFACE	3648REP_

MATERIAL
SMC COMPOSITE

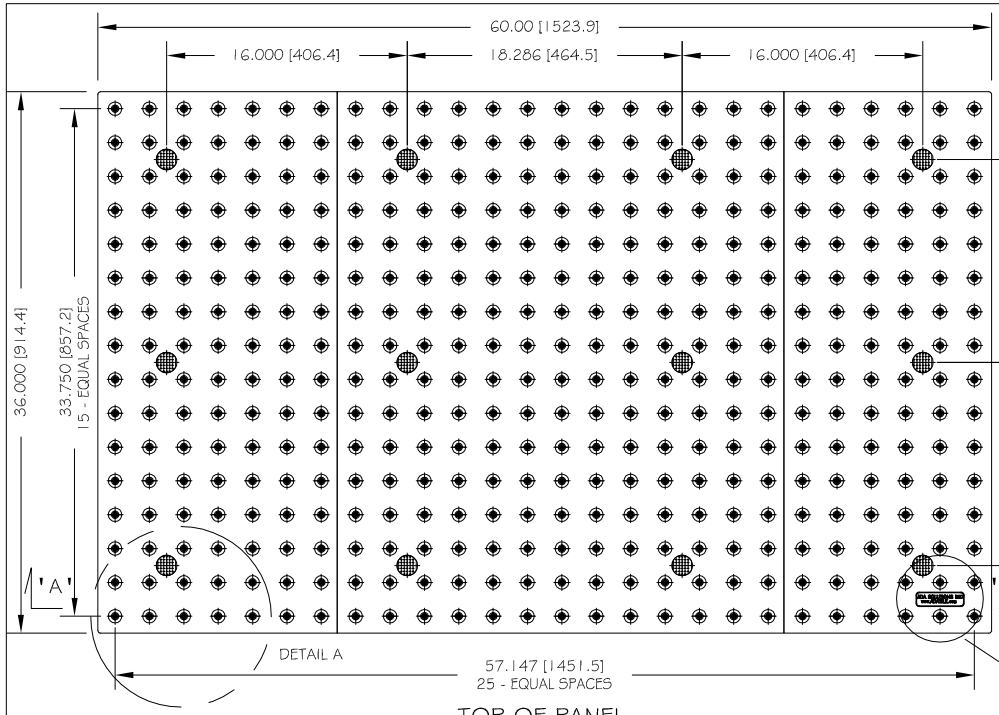
PROJECT

WET SET ADA HD REPLACEABLE TACTILE
WARNING SURFACE UNIT
9-BOLT LOCATIONS
2.350" 59.7mm) IN LINE TRUNCATED DOME
PART SIZE 36" (914mm) x 48" (1219mm)
PLANS AND DETAILS

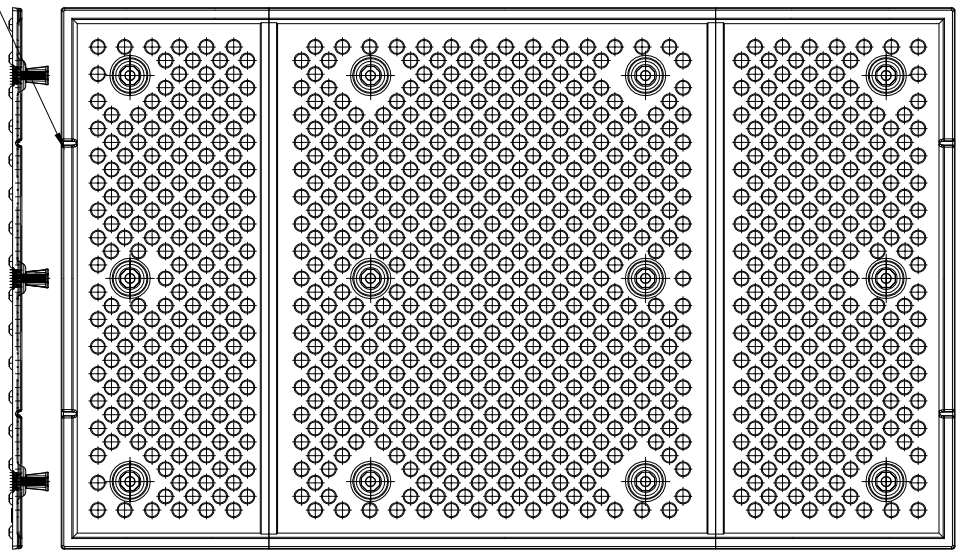
DRAWING NO.	DATE
ADA-REPHD3648	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES
FOR PEDESTRIAN CROSSINGS

WWW.ADATILE.COM
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM

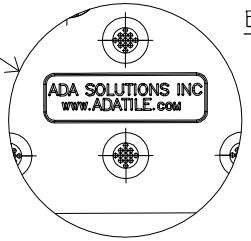


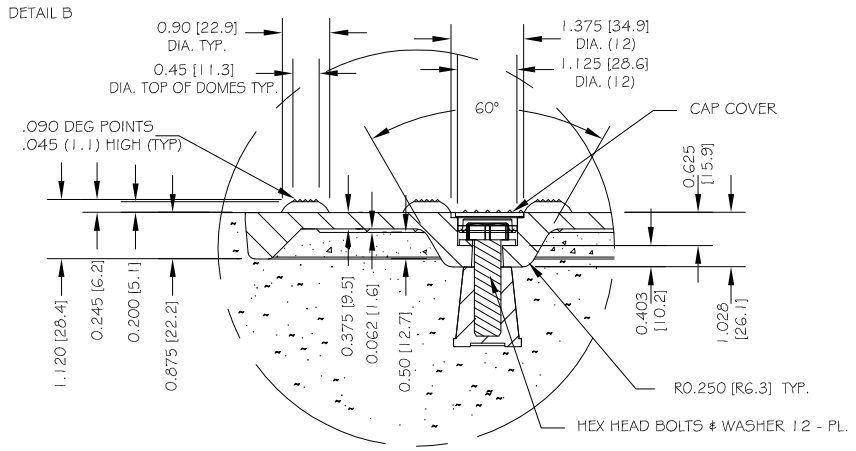
TOP OF PANEL



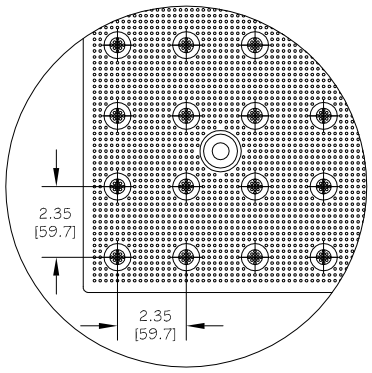
BOTTOM OF PANEL

SECTION A-A





DETAIL B



DETAIL A
FIELD DOT 13 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

TRADE	PART NO.
TACTILE WARNING SURFACE	3660REP_

MATERIAL
SMC COMPOSITE

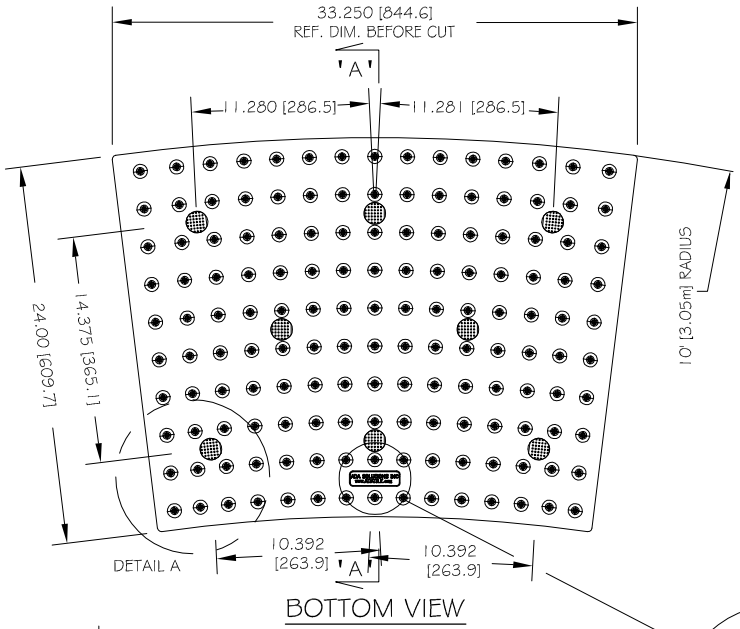
PROJECT

WET SET ADA HD REPLACEABLE TACTILE
WARNING SURFACE UNIT
12-BOLT LOCATIONS
2.350" (59.7mm) IN LINE TRUNCATED DOME
PART SIZE 36" (912mm) x 60" (1524mm)
PLANS AND DETAILS

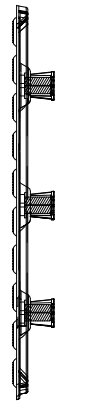
DRAWING NO.	DATE
ADA-REPHD3660	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES
FOR PEDESTRIAN CROSSINGS

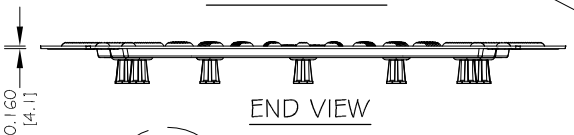
WWW.ADATILE.COM
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM



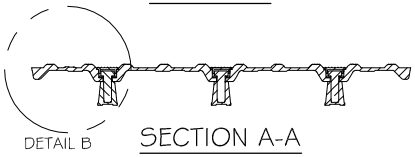
BOTTOM VIEW



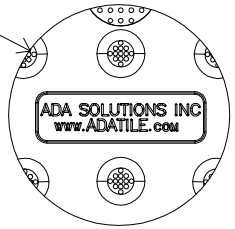
SIDE VIEW

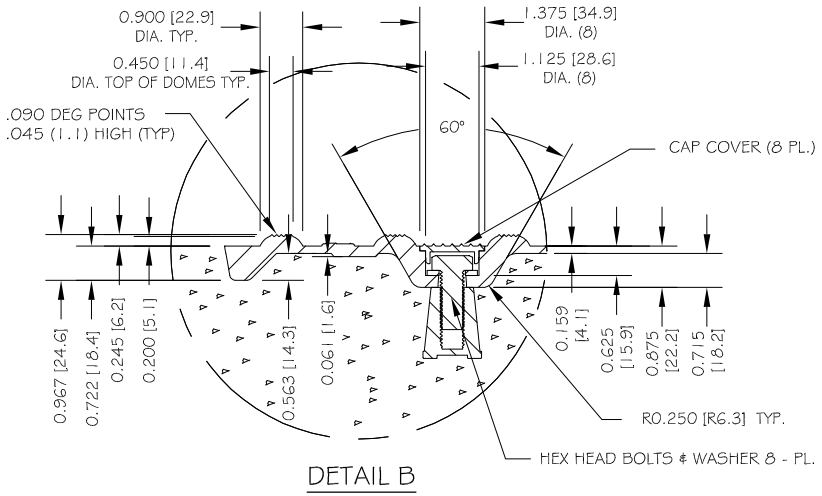


END VIEW

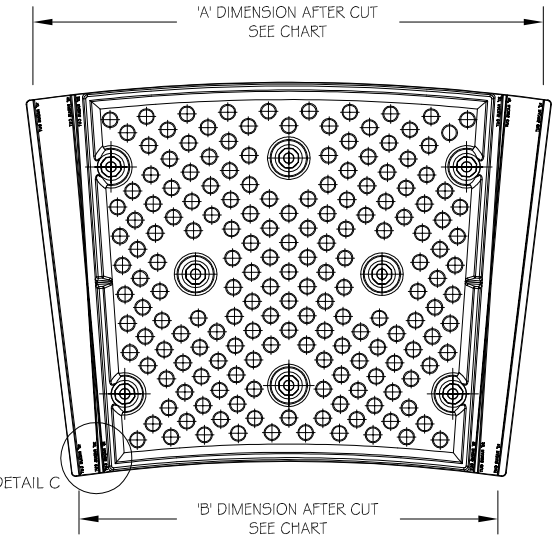


SECTION A-A





DETAIL B



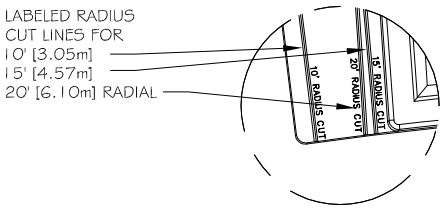
BOTTOM VIEW

Curb Radius	'A' Dimension	'B' Dimension
10'	2' - 8 5/16"	2' - 2 7/16"
15'	2' - 3 5/8"	1' - 11 7/16"
20'	2' - 3 1/16"	1' - 11 15/16"

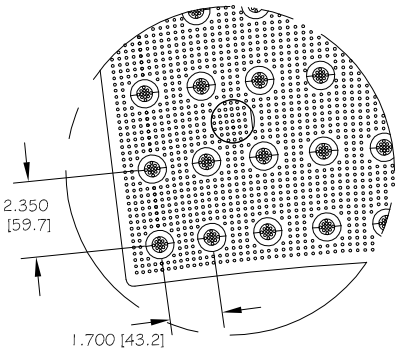
IMPERIAL UNIT CHART

Curb Radius (m)	'A' Dimension (mm)	'B' Dimension (mm)
3.05	821	671
4.57	702	595
6.10	687	608

METRIC UNIT CHART



DETAIL C



DETAIL A
FIELD DOT 13 DOME LAYOUT

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

U.S. PATENT #9,365,984

TRADE	PART NO.
TACTILE WARNING SURFACE	248RADREP_

MATERIAL
SMC COMPOSITE

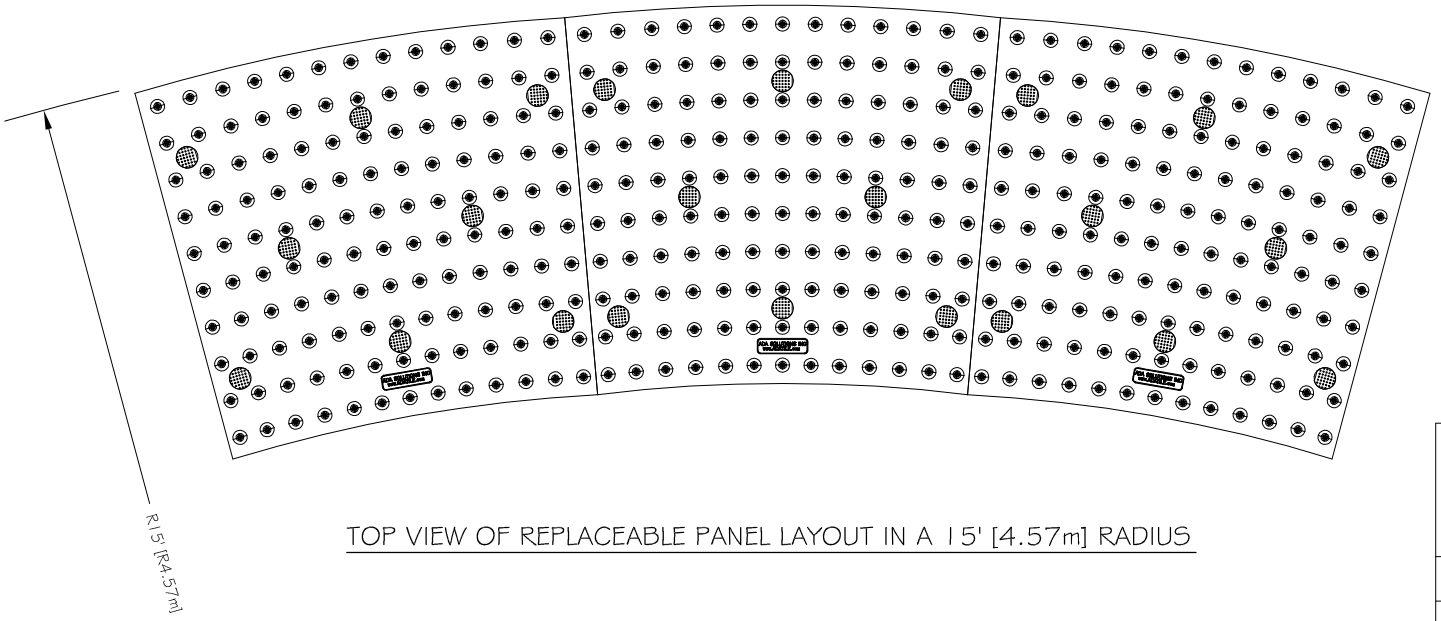
PROJECT

WET SET ADA REPLACEABLE TACTILE
WARNING SURFACE UNIT
8-BOLT LOCATIONS
2.350"(59.7mm) IN LINE TRUNCATED DOME
PART SIZE 24"(610mm) x 10'(3.05m),
15'(4.57m), 20'(6.1m) RADIAL
PLANS AND DETAILS

DRAWING NO.	DATE
ADA-REP24RAD	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES FOR PEDESTRIAN CROSSINGS

WWW.ADATILE.COM
PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM



TOP VIEW OF REPLACEABLE PANEL LAYOUT IN A 15' [4.57m] RADIUS

ALL DIMENSIONS NOMINAL

PRIMARY DIMENSION INCHES
mm IN PARENTHESES

U.S. PATENT #9,365,984

TRADE	PART NO.
TACTILE WARNING SURFACE	24RAD8REP_

MATERIAL
SMC COMPOSITE

PROJECT

ADA WET SET REPLACEABLE
TACTILE WARNING SURFACE UNIT LAYOUT
2.350" (59.7mm) IN LINE TRUNCATED DOME
PART SIZE 24" x 15' RADIAL
(610mm x 4.57m RADIAL)

DRAWING NO.	DATE
ADA-REP24RADLAY	06-15-17

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES
FOR PEDESTRIAN CROSSINGS

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PHONE: (800)372-0519
EMAIL: INFO@ADATILE.COM

ADA SOLUTIONS, INC.

Wherever you go, there we are.®

Composite Tactile Walking Surface Indicator (TWSI) Products

MAINTENANCE GUIDELINES:

1. ADA Composite TWSI Products:
   - A. Surface Applied (SA) TWSI Panels
   - B. Cast-In-Place (CIP) Permanently Embedded Composite Shell TWSI Panels
   - C. Cast-In-Place Replaceable (CIPR) Wet Set TWSI Panels

2. Cleaning of ADA Composite TWSI Products:
   - A. All Composite TWSI Products can be periodically pressure washed as required for cleanliness.
   - B. Using 20,684kPa to 27,579 kPa (3,000psi to 4,000psi) water pressure nozzle at a minimum of 305mm (12”) distance between the spray nozzle and the surface of the TWSI Panel to be cleaned.
   - C. Any standard industrial cleaning solution can be used to clean the TWSI products.
   - D. Gum, Asphalt, and similar contaminants: Carefully scrape material off TWSI Products. A solvent such as acetone or xylene may be used to dissolve any residual contamination.

3. Fasteners: Surface Applied and Cast-In-Place Replaceable (Wet Set) Tactile Walking Surface Indicators Products only.
   - A. Inspect Surface Applied fasteners and Cast-In-Place Replaceable (Wet Set) caps to ensure they are securely installed and at appropriate finish grade.
   - B. Adjust fastener installation as necessary.

4. Sealant: Surface Applied TWSI Panels only.
   - A. Inspect sealant for integrity.
   - B. Replace any loose, damaged, or missing sealant.
   - C. Clean TWSI Panel and Substrate.
   - D. Install new sealant in accordance with sealant manufacturers recommendations (generally on a clean, dry substrate in a temperature range of 5°C to 35°C (41°F to 95°F).

Thank you,

Brad D’Andrea

ADA Solutions, Inc.

323 Andover Street - Suite 3 ▪ Wilmington, MA 01887
Tel: 800.372.0519 Fax: 978.262.9125
www.adatile.com

ADA SOLUTIONS, INC.

Wherever you go, there we are. ®

Tactile Walking Surface Indicators
(7) Year Product Warranty

Contract Number:	(INSERT HERE)	
Completion Date:	(INSERT HERE)	
Project Description:	(INSERT HERE)	
No. – Type of Panels:	(INSERT HERE)	(INSERT HERE)
Project Installer:	(INSERT HERE)	
Project Owner:	(INSERT HERE)	

Warranty becomes effective 24 hours after the date of installation

ADA SOLUTIONS, INC. ("ADA Tactile Systems") warrants to the Project Owner and Project Purchaser that the Tactile Walking Surface Indicators ("TWSI") product supplied by ADA is free from defects in workmanship and material including deformation, discoloration, severe fading, and breakage for a period of Seven (7) Years from the date of acceptance of the Project. The warranty is valid only upon completion of the job, proper maintenance of the TWSI product, and payment in full to ADA.

EXCLUSIVE REMEDIES: ADA, at its cost, will repair or replace any defective material promptly reported during the warranty period to ADA. This warranty includes labour costs and the cost of removal of the TWSI product(s). Repair or replacements will be done on site.

All TWSI products manufactured by ADA Solutions, Inc. are hereby warranted to comply fully with all applicable AODA, CSA B651 (R2017), ISO 23599:2012, ISO 21542:2011, and NBC.

WARRANTY LIMITATIONS: ADA's warranty does not apply to conditions resulting from improper use, improper installation, external causes, acts of God, intentional misuse or abuse, neglected or improper annual maintenance, vandalism, modifications to the TWSI product, with the exception of the Owner's right to immediately eliminate an unsafe condition.

DISCLAIMER OF WARRANTY: The above warranty is the Owner's and Purchaser's exclusive warranty. No other warranty expressed or implied shall apply. ADA specifically makes no warranty of merchantability and/or fitness for a particular purpose. (In no event will ADA be liable for any damages, lost profit, consequential or economic damages) .

Scott Ober
Vice President
ADA Solutions, Inc.

SAMPLE

323 Andover Street - Suite 3 ▪ Wilmington, MA 01887
Tel: 800.372.0519 Fax: 978.262.9125
www.adatile.com

ADA SOLUTIONS, INC.

Wherever you go, there we are.®

Certificate of Compliance

Contract Number: (INSERT HERE)

Date: (INSERT HERE)

Project Description: (INSERT HERE)

Installer: (INSERT HERE)

Owner: (INSERT HERE)

MANUFACTURER: ADA Solutions, Inc.

SUBJECT: Tactile Walking Surface Indicators

PRODUCT: Fibreglass and carbon reinforced polyester based composite. Sheet moulded compound (SMC) Colour-fast and UV stable; Cast-in-Place Pavers, Cast-in-Place Replaceable and Cast-in-Place Radius Replaceable as well our line of Cast Iron TWSI products.

We certify that the above material(s) conform(s) with all Tactile Walking Surface Indicator requirements as specified by the:

- ISO 23599:2012 - Assistive Products for Blind and Vision-Impaired Persons - Tactile Walking Surface Indicators.
- ISO 21542:2011 - Building Construction - Accessibility and Usability of the Built Environment. CSA B651-12 (R 2017) - Accessible Design for the Built Environment.
- Accessibility For Ontarians With Disabilities Act (AODA), 2005 - O. Reg. 413/12: Integrated Accessibility Standards Regulation (IASR) 191/11 – Sections 80.25 to 80.29
- National Building Code of Canada

Please feel free to contact us with any questions or requests for additional information.

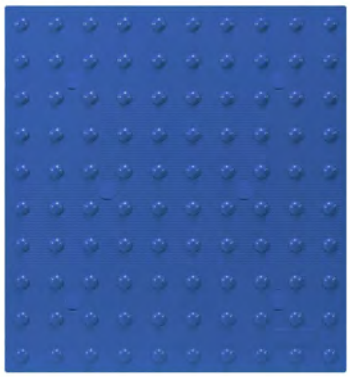
Sincerely,

Brad D'Andrea
ADA Solutions, Inc.
brad@adatile.com
O: (978) 262-9900
C: (978) 831-3060

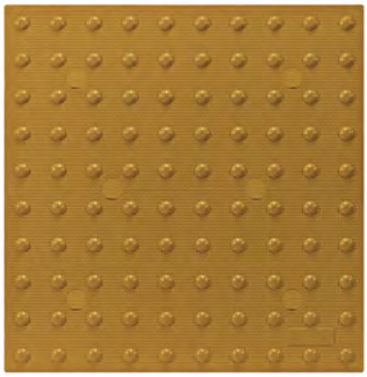
SAMPLE

ADA SOLUTIONS, INC.
DETECTABLE WARNING SURFACES

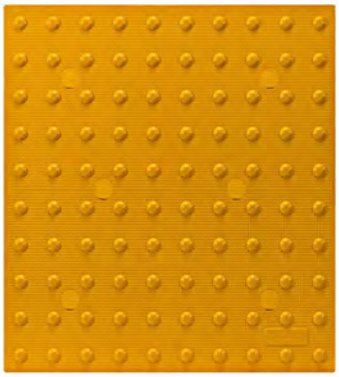
Colour Chart



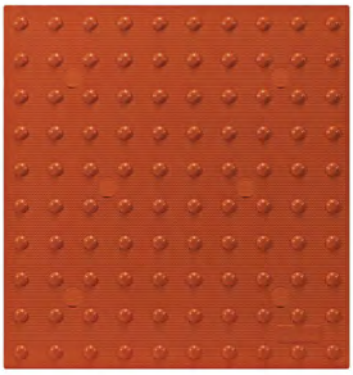
Safety Blue (B) Colour No. 15187



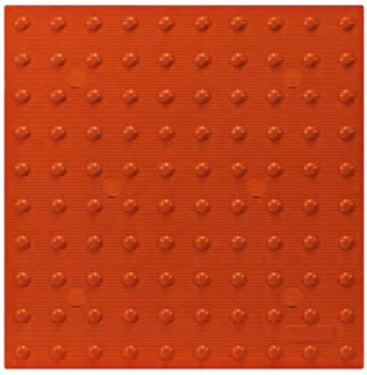
Seattle Yellow (SY) Colour No. 23594



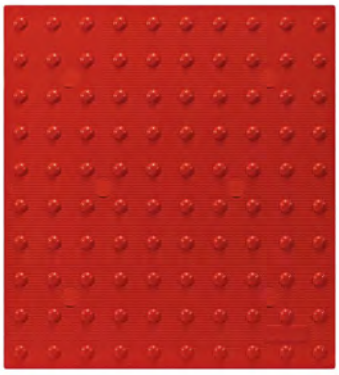
Federal Yellow (Y) Colour No. 33538



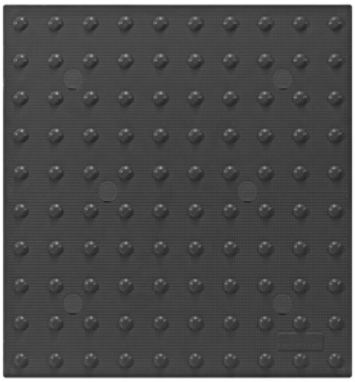
Clay Red (CR) Colour No. 22144



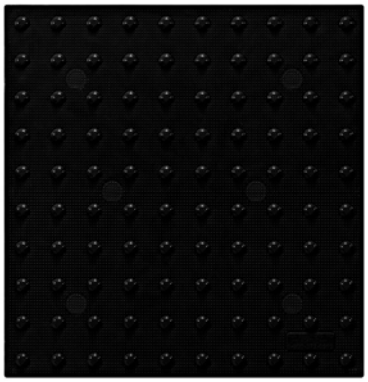
Brick Red (R) Colour No. 20109



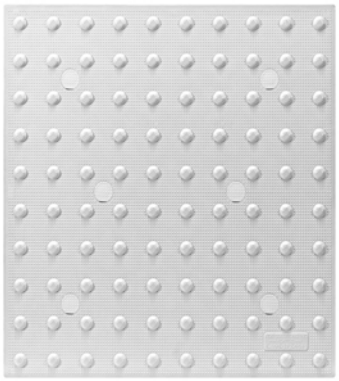
Safety Red (SR) Colour No. 31350



Dark Grey (G) Colour No. 36081



Black (B) Colour No. 37038



White (W) Colour No. 27925

Material Safety Data Sheet

Prepared By: Scott Ober

1. MATERIAL IDENTIFICATION

Product Name: Reinforced Molding Compound

Chemical Family: Polyester/Vinyl Ester

Chemical Formula: Proprietary

Material Use: Sheet Molding Compound

Manufacturer: ADA Solutions, Inc.

2. INGREDIENTS

Hazardous Ingredients	Approximate Concentration %	CAS No. or UN No.	Exposure Limits
Organic Peroxide	0.1 – 1.5%	CAS#614-45-9	N/A
Carbon Black	0.01 – 0.05%	CAS#1333-86-4	N/A

3. PHYSICAL DATA

Appearance and Odor:	Solid mass, no odor
Specific Gravity:	1.1 – 2.0
Freezing Point:	N/A
Solubility in Water:	N/A
% Volatile by Volume:	N/A
Boiling Point:	N/A
pH:	N/A

4. FIRE AND EXPLOSION INFORMATIONHEALTH HAZARD DATA

Flammability:	Class A Rating
Means of Extinction:	Water or Chemical Fire Extinguisher
Special Procedures:	None
Explosion Data:	None Known
Sensitivity Mech. Impact:	N/A
Hazardous Combustion:	None Known
Auto Ignition Temp.:	490 Degrees C
Sensitivity to Static:	N/A

5. HEALTH HAZARD DATA

Permissible Exposure:	N/A for product (See section 2)

6. REACTIVITY DATA

Chemical Stability:	Yes
Reactivity:	N/A

7. SPILL OR LEAK PROCEDURES

Spill:	None (Solid Mass Product)
Waste Disposal:	Recycle or deposit in landfill in accordance with Local, State & Federal Regulations.

8. PROTECTIVE EQUIPMENT TO BE USED

Protective Gloves:	Wear resistant gloves
Eye Protection:	Safety glasses when cutting tiles

9. LEGAL DISCLAIMER

The information contained in this data sheet is furnished in good faith and without warranty, representations, or inducement or license of any kind, except that it is accurate to the best of ADA Solutions, Inc.'s knowledge, or was obtained from sources believed by ADA Solutions, Inc. to be reliable. The accuracy, adequacy or completeness of health and safety precautions set forth herein cannot be guaranteed, and the buyer is solely responsible for ensuring that the product is used, handled, stored, and disposed of safely and in compliance with applicable federal, state and local laws. ADA Solutions, Inc. disclaims liability for loss, damage, or personal injury that arises from, or is in any way related to, use of the information contained in this data sheet.

Safety Data Sheet: Molded SMC Tactile Warning Surface and Wayfinding Products

According to Federal Register / Vol.77, No.58 / March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the Substance / Mixture and of the Company / Undertaking

1.1 Product Identifier

Product — Molded SMC (Sheet Molding Compound) Parts.

1.2 Relevant Identified Uses of the Substance or Mixture

Use: PROWAG, ADA/ABA, CBC-2013 compliant Tactile Warning Surface and Wayfinding Products to warn pedestrians of curb ramps, hazardous vehicular areas and vertical drop-offs such as platform edges.

1.2 Details of the Supplier of the Safety Data Sheet

Continental Structural Plastics
255 Rex Boulevard
Auburn Hills, MI 48326
Telephone : (248) 823-5664 or (248) 237-7800

ADA Solutions, Inc.
323 Andover Street – Suite 3
Wilmington, MA 01887
Telephone: (800) 372-0519 or (978) 262-9900

1.2 Emergency Telephone Number

Emergency Number — 24 Hour Contact CHEMTREC 1-800-424-9300

SECTION 2 : Hazards Identification

2.1 Classification of the Substance or Mixture

GHS – US Classification — None

2.2 Label Elements

GHS - US Labelling:

Hazard Pictograms (GHS-US)	None
Signal Word (GHS-US)	None
Hazard Statement (GHS-US)	None

Precautionary Statements (GHS-US)

P264 - Wash hands and face thoroughly after handling.

P280 - Wear protective gloves and eye protection.

P302+P352 - If on skin : wash with soap and water.

P305+P351+P338 - If in eyes : rinse cautiously with water for several minutes. Remove contact lenses if present and continue rinsing.

P501 - Dispose of contents in compliance with federal, state and local regulation.

2.3 Other Hazards

No Additional Information Available.

SECTION 3 : Composition / Information on Ingredients

3.1 Substances

Not Applicable.

3.2 Components of Sheet Molding Compound

Ingredient Name	Product Identifier	GHS-US Classification
None	(CAS No.) : N/A	Not Classified

Sheet Molding Compound Molded Parts would be considered "articles" as defined under Section 29 CFR 1910.1200 (c). This Safety Data Sheet is prepared for dust generating processes (grinding, cutting, drilling, etc.) from the molded SMC parts.

SECTION 4 : First-Aid Measures

4.1 Description of First-Aid Measures

First-Aid Measures after Inhalation	Assure fresh air breathing. Allow the person to rest.
First-Aid Measures after Skin Contact	Do not rub affected area. Wash with plenty of soap and water. If skin irritation occurs, get medical advice / attention.
First-Aid Measures after Eye Contact	Rinse immediately with plenty of water. Obtain medical attention if pain blinking or redness persists. Direct contact with eyes is likely irritating.
First-Aid Measures after Ingestion	Rinse mouth. DO NOT induce vomiting. Seek emergency medical attention.

4.2 Most Important Symptoms and Effects, both Acute and Delayed

Symptoms / Injuries	None other than listed in sections below
Symptoms / Injuries after Inhalation	Shortness of breath
Symptoms / Injuries after Skin Contact	Causes skin irritation

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

No Additional Information Available.

SECTION 5 : Firefighting Measures

5.1 Extinguishing Media

Extinguishing Media	Foam. Dry powder. Carbon dioxide. Water spray. Sand.

5.2 Special Hazards Arising from the Substance or Mixture

Fire Hazard	Not applicable
Explosion Hazard	Not applicable

5.3 Advice for Firefighters

Firefighting Instructions	Use water spray or fog for cooling containers. Exercise caution when fighting any fire. Avoid firefighting water to enter environment. In case of fire : evacuate area.
Precaution during Firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6 : Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

General Measures	Not Applicable

6.1.1 For Non-emergency Personnel

Emergency Procedures	Not Applicable

6.1.2 For Emergency Responders

Protective Equipment	Not Applicable
Emergency Procedures	Ventilate area

6.2 Environmental Precautions

Precautionary Actions	Not Applicable

6.3 Methods and Material for Containment and Clean-up

Methods for Cleaning Up	On land; sweep, shovel or lift into suitable containers.

6.4 Reference to Other Sections

See Section 8. Exposure Controls and Personal Protection.

SECTION 7 : Handling and Storage

7.1 Precautions for Safe Handling

Precautions for Safe Handling	Wash hands and other exposed areas with mild soap and water before eating, drinking, smoking or leaving work. Provide good ventilation in process area to prevent formation of dust. Keep away from sources of ignition - no smoking. Obtain special instructions before use. Wash hands and face thoroughly after handling.

7.2 Conditions for Safe Storage - Including any Incompatibilities

Storage Conditions	Not Applicable
Incompatible Products	Not Applicable
Incompatible Materials	Not Applicable
Storage Area	Not Applicable

7.3 Specific End Use(s)

Molded Fiberglass Reinforced Plastic Parts.

SECTION 8 : Exposure Controls / Personal Protection

8.1 Exposure Parameters / Control

SMC Dust (CAS No. N/A)

USA ACGIH	ACGIH TWA (mg/m3)	10 mg/m3 Inhalable Dust
USA OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ Total Dust

SECTION 8 : Exposure Controls / Personal Protection (Continued)

8.2 Exposure Controls

Appropriate Engineering Controls	Ensure that eyewash stations and safety showers are close to the workstation location. Ensure exposure below occupational exposure limits. Proper ventilation required.
Personal Protective Equipment	Avoid all unnecessary exposure. Safety glasses and gloves.
Hand Protection	Wear protective gloves.
Eye Protection	Safety glasses or goggles.
Respiratory Protection	Wear approved mask when Necessary.

SECTION 9 : Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical State	Solid
Color	Various
Odor	None
Odor Threshold	Not Applicable
pH	Not Applicable
Relative Evaporation Rate (butyl Ac=1)	Not Applicable
Melting Point	Not Applicable
Freezing Point	Not Applicable
Boiling Point	Not Applicable
Flash Point	Not Applicable
Self Ignition Temperature	No Data Available
Decomposition Temperature	No Data Available
Flammability (Solid, Gas)	Not Applicable
Vapor Pressure	Not Applicable
Relative Vapor Density @ 20 deg. C	Not Applicable
Relative Density	Specific Gravity - (1.15 - 2.00)
Solubility	Insoluble in water
Viscosity (Kinematic)	Not Applicable
Viscosity (Dynamic)	Not Applicable
Explosive Properties	Not Applicable
Oxidizing Properties	No Data Available
Explosive Limits	Not Applicable

9.2 Other Information

No Additional Information Available.

SECTION 10 : Physical and Chemical Properties

10.1 Reactivity

No reactivity hazard other than the effects described in sub sections below.

10.2 Chemical Stability

Stable

10.3 Possibility of Hazardous Reactions

Not Applicable

10.4 Conditions to Avoid

Not Applicable

10.5 Incompatible Materials

Not Applicable

10.6 Hazardous Decomposition Products

Not Applicable

SECTION 11 : Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity	Not classified
Skin Corrosion / Irritation	May cause skin irritation.
Eye Damage / Irritation	May cause eye irritation.
Respiratory or Skin Sensitization	Not classified
Germ Cell Mutagenicity	Not classified based on available data, the classification criteria not met.
Carcinogenicity	Persistence and degradability
Reproductive Toxicity	Not classified based on available data, the classification criteria not met.
Specific Target Organ Toxicity (1-Expos.)	Not classified based on available data, the classification criteria not met.
Specific Target Organ Toxicity (Repeat)	Not classified based on available data, the classification criteria not met.
Aspiration Hazard	Not classified based on available data, the classification criteria not met.
Potential Adverse Human Health Effects	Not classified based on available data, the classification criteria not met.
Symptoms / Injuries after Inhalation	Possible shortness of breath.
Symptoms / Injuries after Skin Contact	May cause skin irritation.

SECTION 12 : Ecological Information

12.1 Toxocity

No additional information available.

12.2 Persistence and Degradability

Molded SMC Parts	
Persistence and degradability	Not applicable

12.3 Bio accumulative Potential

Molded SMC Parts	
Bio accumulative potential	Not applicable

12.4 Mobility in Soil

Not applicable

12.5 Other Adverse Effects

None known

SECTION 13 : Disposal Considerations

13.1 Waste Disposal / Treatment Methods

Waste Disposal Recommendations — Dispose of in a safe manner in accordance with local, state and federal regulations.

SECTION 14 : Transportation Information

**** THIS PRODUCT NOT REGULATED BY USDOT ****

14.1 UN Number

UN-No. (DOT) — Not applicable

14.2 UN Proper Shipping Name

DOT Proper Shipping Name — Not applicable

14.3 Additional Information

Other Information — Not applicable

SECTION 15 : Regulatory Information

15.1 US Federal Regulations

Sheet Molding Compound

EPA TSCA Regulatory Flag — Not applicable

SARA Section 311 / 312 Hazard Classes — Not applicable

SARA Section 313 TRI - Emission Reporting

Not Applicable

Material			Material		

15.2 US Federal Regulations

CANADA

EU - Regulations

Classification According to Regulation (EC) No.1272 / 2008 [CLP]

Classification According to Directive 67 / 548 / EEC or 1999 / 45 / EC

15.2.2 National Regulations

No additional information available.

15.3 US State Regulations

Not regulated.

SECTION 16 : Other Information

Date Prepared: **January 27, 2016**

HMIS Label – SMC	
0	FIRE HAZARD
1	HEALTH HAZARD
0	REACTIVITY
B	PERSONAL PROTECTION

SDC – US (GHS HazCom – 2012)

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