# **Compliant Products Register for Tactile Ground Surface Indicators (TGSI)**

Assessed as compliant to AS/NZS 1428.4.1:2009 and other criteria as determined by Transport and Main Roads.

TGSI are truncated cones and or bars installed on the ground or floor surface designed to provide pedestrians who are blind or vision impaired with warning or directional orientation information.

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#### **Feedback**

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# Contents

1	Introduction	1
1.1	Relevant information for installation	1
2	Definitions	1
3	Disclaimer	1
4	Standards	2
4.1	Governing manuals, specifications or guidelines	2
5	'Compliant' Tactile Ground Surface Indicators	3
6	Contact for enquiries and proposed changes	. 15
Арр	endix A: Compliant products criteria checklist	. 16

#### 1 Introduction

This is a controlled document that presents a listing of Tactile Ground Surface Indicator (TGSI) products, which the Department of Transport and Main Roads considers to be compliant with:

- a) Australian Standard AS/NZS 1428.4.1: Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment Tactile ground surface indicators
- b) Australian Standard AS 4586 Slip resistance classification of new pedestrian surface materials, and
- c) other criteria as specified by the department.

Transport and Main Roads does not recommend any specific TGSI for particular applications. Practitioners will need to assess the style most suitable for the particular application, taking into account substrate, luminance contrast, aesthetics, availability, consistency in areas and whole-of-life cost.

Companies that supply TGSI may distribute or supply and install a range of products. Compliant TGSI listed in Table 5 are the products that have satisfied the criteria specified by the department.

This document is subject to periodic review and will be updated when new product registrations are received. If printed, practitioners are requested to access the <u>Transport and Main Roads</u> website for confirmation of the latest products register.

#### 1.1 Relevant information for installation

Where TGSI are installed on a ramp steeper than 1 in 14 (such as the face of a kerb ramp that has a slope of 1 in 8), a wet pendulum test result of P5 is required for the product. Please refer to Standards Australia Handbook SA HB 198 Guide to the specification and testing of slip resistance of pedestrian surfaces Table 3B: Wet pendulum test or oil-wet inclining platform classifications for applications where the National Construction Code does not require slip resistance.

#### 2 Definitions

 Refer AS/NZS 1428.4.1 Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators.

#### 3 Disclaimer

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## 4 Standards

## 4.1 Governing manuals, specifications or guidelines

- AS/NZS 1428.4.1 Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment – Tactile ground surface indicators
- AS 4586 Slip resistance classification of new pedestrian surface materials
- Standards Australia Handbook SA HB 198 Guide to the specification and testing of slip resistance of pedestrian surfaces
- Queensland <u>Manual of Uniform Traffic Control Devices</u>
- Road Planning and Design Manual 2nd edition
- Transport and Main Roads <u>Standard Drawings</u> 1446,1447, KRG1 and KRG2.
- Transport and Main Roads Specification (Measurement) MRS14 Road Furniture, and
- Transport and Main Roads <u>Technical Specification</u> MRTS14 *Road Furniture*.

# 5 'Compliant' Tactile Ground Surface Indicators

Table 5 – 'Compliant' Tactile Ground Surface Indicators

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Sirus TGSI™ large format integrated warning plate #14-1		METAL P5, R11  platinum (displayed), Allgrip, natural or anodised metal  sizes available 2400, 1500, 1200, 900 in 600 or 300 mm wide	Alltac Pty Ltd  www.alltac.com.au  Phone: 1300 255 822 / 1300 ALL TAC  Email: info@alltac.com.au  Installation warranty  10+ years for foot traffic  ability to touch up insitu  extend life  UV resistance warranty
Sirus TGSI™ large format integrated directional plate #14-2		P5, R11      Allgrip     sizes available 1500, 1200, 900, 600, 300 in 600 or 300 mm wide	minimum 10 years     Other information     Australian-made products, large format metal plates (custom angles, sizes, colours, and widths available), low profile 1.6 mm base thickness, one-piece with patented self-cleaning hazard dome     registered design and trademark protected products  Note: Products with less than 10 year warranty for manufacture or installation
Allstar Warning Discrete #14-3		P5, R12 • stainless steel metal studs	may not suit long term exterior use bu may be suitable for temporary exterio use.

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
CME Integrated Warning #16-1		FIBRE POLYMER fibreglass reinforced resin polymer P5, R11  white and yellow 300 mm x 600 mm  mutual man thick plate cone height	CME Composite Materials Engineering Pty Ltd www.cmetactile.com.au Bruno Tassone Mobile: +61 473 555 717 Email: Bruno.Tassone@composite.com.au Phone: 03 8720 7600  Authorised distributor:
CME Integrated Directional #16-2		P5, R12  Note: Deteriorated polymer may affect waterways and associated environment.	Classic Architectural Group Ph: 1300 244 377 Email: info@classic-arch.com  Manufacturer warranty  • 10 years material manufacturer warranty (conditional warranty)  UV resistance warranty  • tested to Australian UV and weather conditions up to 10 years (conditional warranty)  Installation warranty  • usually provided by the separate installer  Luminance reflectance value (LRV) tested.  • white and yellow  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Austact® - Warning Stud #7-1		POLYMER (polyurethane) P5, R11  installation warranty 2 years  individually inserted indicators (discrete)  suited to new or retrofit installations  adhesive-free installation  UV resistant polymer  9 colours available  Note: Deteriorated polymer may affect waterways and associated environment.	CTA (QLD) Pty Ltd  www.ctagroup.com.au Phone: 1300 282 282 Email: craig.rogers@ctagroup.com.au  UV resistance warranty • may be affected by high UV exposure Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
Austact® – Directional Strip #7-2		P5, R11	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Rhinotac® Warning Plate #7-3		FIBRE REINFORCED POLYMER P5, R12  installation warranty 2 years  installed with fixings and adhesive  retrofit solution  internal & external	CTA (QLD) Pty Ltd (continued)  www.ctagroup.com.au Phone: 1300 282 282 Email: craig.rogers@ctagroup.com.au  UV resistance warranty  may be affected by high UV exposure Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
Rhinotac® Directional Plate #7-4		P5, R13  • installation warranty 2 years  Note: Deteriorated polymer may affect waterways and associated environment.	
PolyPad® Warning Pad (directional product is a variant, not registered) #7-5		RUBBER P5, R11  Installation warranty 2 years  Internal & external  9 colours available	
PolyStud® Warning Studs #7-6		POLYMER P5, R11  Installation warranty 5 years  discrete adhesive-free installation  7 colours available	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Eigen FibreTac Warning #11-1		FIBRE POLYMER fibreglass reinforced resin polymer P5, R12 • new or retrofit installation Note: Deteriorated polymer may affect waterways and associated environment.	EIGEN HOLDINGS PTY LTD (Eigen Tactile) www.eigentactile.com Phone: 03 9018 7954 Michael Lim Mobile: 0412 544 795 Email: info@eigentactile.com  Manufacturer warranty
Eigen FibreTac Directional #11-2		P5, R11	Warranty conditions     warranty may void if installation do not follow minimum 10 days 'bleed' requirement for asphalt surface, and/or minimum 7 days 'dried' requirement for concrete surface     Other information     UV stabilised resin reinforced with embedded fibreglass, may be affected by high UV exposure     Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
ESP VISIM tile integrated Warning #20.1		Fibre reinforced polymer P5, R12 Screwed and glue application, suitable for retrofit installation	ESP Australia Pty Ltd  www.espaust.net.au  Mathew Shallard  Phone: 1300 665 761  E: sales@espaust.net.au  Manufacture warranty
ESP VISIM tile integrated Directional #20.2		Fibre reinforced polymer P5, R11 Screwed and glue application, suitable for retrofit installation	5 years manufacturer's warranty (conditional warranty)      Installation warranty     Usually provided by installation contractor      UV resistance warranty     Not available (although Supplier asserts that product includes UV stabilizer designed for QLD conditions).
ESP Warning Integrated Surface Applied Access Tile #4-1		FIBRE POLYMER fibre reinforced polymer P5, R11  • screwed and glue application, perfect for retrofit installation	ESP Australia Pty Ltd  www.espaust.net.au  Mathew Shallard Phone: 1300 665 761  Email: sales@espaust.net.au  Manufacture warranty  10 years manufacturer's warranty (conditional warranty)
ESP Warning Integrated Cast-In-Place Access Tile #4-2		P5, R11  • pressed into place for new concrete pours	Installation warranty     Usually provided by installation contractor     UV resistance warranty     Not available (although Supplier asserts that product includes UV
ESP Directional Surface Applied Access Tile #4-3•		P4, R11  Due to the P4 rating, this product suits flat surfaces but not ramps.  Note: Deteriorated polymer may affect waterways and associated environment.	stabilizer designed for QLD conditions). Product may be affected by high UV exposure.  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
ESP Directional Cast-In-Place Access Tile #4-4		P4, R11  Due to the P4 rating, this product suits flat surfaces but not ramps.	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Warning Tactile #10-1		POLYMER polyurethane, PU P5, R11	Guardian Tactile Systems Pty Ltd  www.guardiantactile.com  Phone: 08 9240 1888  Email: sales@guardiantactile.com  Polyurethane products  10 year warranty (manufacturing, UV resistance, excludes
FRP Warning Tactile #10-3		fibre reinforced resin polymer – FRP P5, R12  • 300 mm x 600 mm  • black, yellow, white Note: Deteriorated polymer may affect waterways and associated environment.	installation)  Fibre reinforced resin polymer (FRP) products  • 2 year warranty (manufacturing, UV resistance, excludes installation). Product may be affected by high UV exposure  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
FRP Directional Tactile #10-4		P5, R11	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Renzo Classic – Warning (Discrete) #18-1		POLYMER P5, R11 Note: Deteriorated polymer may affect waterways and associated environment.	Korb Pty Ltd https://www.korb.com.au/ Contact: Julien Buhagiar Phone: 1300 00 KORB (5672) Email: info@korb.com.au  • Product warranty: 5 years (check limitations). Product may be affected by high UV exposure. Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
Renzo Tile – Warning (Integrated) #18-2		POLYMER P5, R11 Note: Deteriorated polymer may affect waterways and associated environment.	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Ultimate Tactile Integrated Hazard #13-1		POLYMER recycled polyethylene terephthalate (RPET) P5, R11  • made from recycled material, plastic bottles  • tactile suited to new or retrofit installations  • 300 mm x 600 mm  • black, yellow or white  Note: Deteriorated polymer may affect waterways and associated environment.	SAFETY XPRESS Pty Ltd  www.safetyxpress.com.au Phone: 1300 049 246 (VIC) Email: gldsales@safetyxpress.com.au Nic Eason (QLD) Mobile: 0435 760 692  Life of warranty • high pedestrian foot traffic 5+ years material manufacturing warranty only, excludes installation warranty Installation warranty • installation warranty is supplied by third party which will follow the installation guideline Guaranteed 5 years of UV protection and colour fasting • an ultra UV stabilised resin guaranteed to last without fading for at least 5 years, and luminance contrast tested • Australian made Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Securatile integrated Warning #21.1	Securalie	Fibre reinforced polymer P5, R12 Installed with fixings and adhesive	Securatread  www.securatread.com.au/ Matthew Bonner Phone: 1300 921 106 E: sales@securatread.com.au  Manufacture warranty  • 5 years manufacturer's warranty  Installation warranty  Usually provided by installation
Securatile integrated Directional #21.2		Fibre reinforced polymer P5, R12 Installed with fixings and adhesive	contractor <u>UV resistance warranty</u> Supplier states UV testing has been completed and there is no fade or change of colour and the product is UV stable).  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
316 Marine Grade TGSI Warning Discrete Studs #15-1		METAL Stainless steel P5, R11	supplym8 QLD PTY LTD  www.supplym8qld.com.au  Email: info@supplym8qld.com.au  QLD representatives  Rob Ninness, Suzy Black  Phone: 0487 132 575  Warranty guarantee
FRP Hazard Integrated Tactile #15-2		FIBRE POLYMER fibreglass and resin polymer P5, R12  2 mm & 20 mm thick  600 mm x 300 mm	installation 10 years with terms and conditions  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.
FRP Directional Integrated Tactile #15-3		P5, R13  2 mm & 20 mm thick  600 mm x 300 mm	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Pre-cast Concrete Tactile Pavers, Warning #15-4		PRECAST REINFORCED CONCRETE PAVER P5, R11 300 mm x 300 mm	
Pre-cast Concrete Tactile Pavers, Directional #15-5		P5, R11	
TSA Warning Discrete TGSI Single Stem #12-1		POLYMER polyurethane plastic P5, R12 • tactile suited to new or retrofit installations	Tactile Systems Australia (TSA)  www.tactilesystems.com.au  Contact: Sam Tatters  Phone: 07 5580 6993  Email: sales@tactilesystems.com.au
TSA Warning Discrete TGSI Bladed Shaft #12-2		Polyurethane plastic P5, R12 Installation warranty • 2 year Note: Deteriorated polymer may affect waterways and associated environment.	Manufacturing and UV resistance warranty  ■ manufacturing and UV resistance warranty is not available. UV performance has been tested. Product may be affected by high UV exposure.  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior
TSA Warning Integrated TGSI Future-Tech #12-3		FIBRE-POLYMER fibreglass reinforced polymer P5, R12  • tactile suited to new or retrofit installations	use.
TSA Directional Integrated TGSI Future-Tec4 #12-4		600 mm x     300 mm      3 mm thick      black, yellow,     white,     terracotta      Product warranty      5 years – may     be affected by     high     UV exposure	

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
TSA Directional Integrated TGSI Paver #12-5		Wet cast concrete P5, R12  • 300 mm x 300 mm  • 40 mm & 60 mm thick  • black, yellow, ivory, grey, red Product warranty  • 5 years	
TSA Warning Integrated TGSI Paver #12-6			

Name / TGSI type / dept. internal ref	Product picture	Product description (material, rating, size)	Supplier website / contact / warranty conditions
Flexi Pave Integrated Warning #1-1		FIBRE POLYMER CONCRETE fibre reinforced polymer concrete P5, R13  • yellow, black, ivory  • size: 300 mm x 600 mm  • thickness: 2mm	United Civil Constructions Pty Ltd (UCC)  www.ucctactile.com.au Phone: (03) 9701 8498  Mobile (Danny Chee): 0417 322 886  E-mail: unitedcivil@hotmail.com  • suited to new or retrofit installations.  Installation warranty  • 7 years, warranty is available first 12 months with no conditions; after year 1, warranty is conditional on 2-yearly maintenance  UV resistance warranty  • UV resistance warranty is
Flexi Pave Integrated Directional #1-2		P5, R13  • yellow, black, ivory  • size: 300 mm x 600 mm  • thickness: 2 mm  Note: Deteriorated polymer may affect waterways and associated environment.	available first 12 months  UV resistant paint can be renewed every 2 years to increase the usage life and restore UV resistant capability  UV protection is approximately 95% when sealed with the paint, namely Dulux road master line marking A1  Product may be affected by high UV exposure  Manufacturing warranty  warranty is available first 12 months with no condition  Other information  Australian made products  Note: Products with less than 10 year warranty for manufacture or installation may not suit long term exterior use but may be suitable for temporary exterior use.

# 6 Contact for enquiries and proposed changes

To be included in the 'Compliant Products Register', TGSI suppliers should supply evidence to the contact following, demonstrating that the product meets the criteria requirements specified in Appendix A *Compliant products criteria requirements*. Upon satisfying the criteria, the supplier will be included on this 'Register'. If you have any other questions regarding this document or if you have feedback on the performance of certain products, please contact:

**Contact:** Traffic Engineering - Walking and Cycling Infrastructure, Safer Roads Infrastructure,

Engineering & Technology Branch

Email: CyclePedTech@tmr.qld.gov.au

# Appendix A: Compliant products criteria checklist

Products are required to meet the following criteria to be included on the 'Compliant Products Register' of tactile ground surface indicators (TGSI).

M – Mandatory Requirements (if applicable); D – Desired Requirements; I – Information only If you do not think a specific criterion is applicable to your product, please supply reasons.

**1. M** Slip resistance, tested in accordance with AS 4586 *Slip resistance classification of new pedestrian surface materials* linked to the specific product being registered. Tests results confirming the product is in accordance with both slip resistance tests is required. If the manufacturing process has changed, new tests are required.

'Wet Pendulum Test' assessment group = P4 or P5

'Oil Wet Inclining Platform Test' assessment group = R11 or better

- **2. M** TGSI design (size and spacing) compliant with AS/NZS 1428.4.1 Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment Tactile ground surface indicator
- **3. M** Minimum guarantee of product including UV resistance and installation (if applicable) of 5 years
- **4. M** For ceramic TGSI tile products, minimum breaking strength = 1100N tested in accordance with AS ISO 10545.4 *Ceramic tiles, Method 4: Determination of modulus of rupture and breaking strength*
- **5. M** For ceramic TGSI tile products, water absorption (E) <= 3%, tested in accordance with AS ISO 10545.3 Ceramic tiles, Method 3: Determination of water absorption, apparent porosity, apparent relative density and bulk density.
- 6. D Installation and production specification.
- **7. D** Variability in products to provide luminance contrast specified in AS 1428.4.1 to be achieved in typical footways and kerb ramps (concrete, asphalt, pavers).
- 8. M Product name and TGSI type (Discrete or Integrated & Directional or Warning)
- **9. M** Material type. Major material component and generic classification only (Ceramic, Concrete, Plastic, Polymer, Fibre Polymer or Metal)