

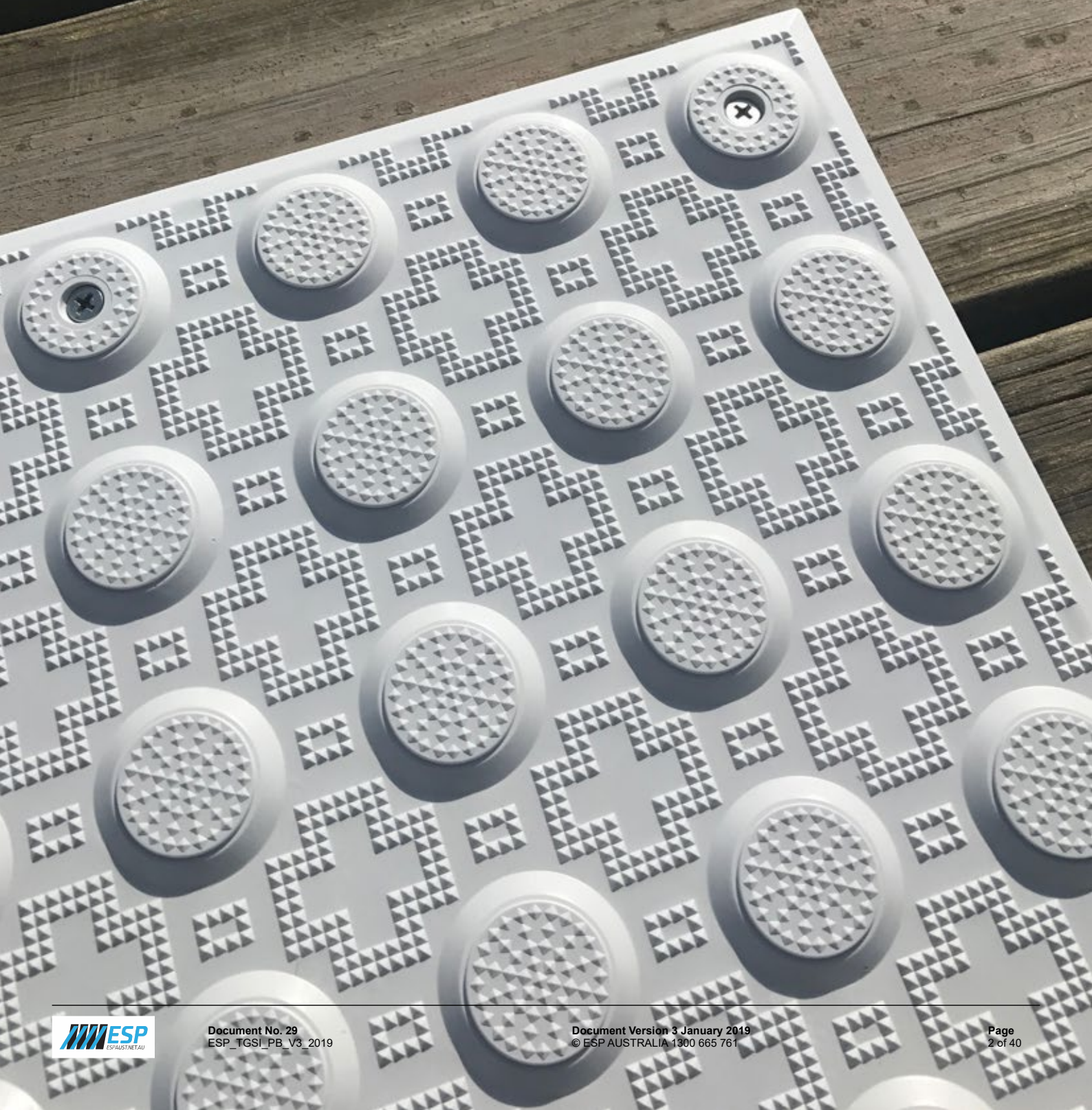
Warning & Directional Tactile Ground Surface Indicators

Surface Applied & Cast In Place
Fibre-reinforced Herculite Polymer
Integrated TGSi Access Tile System



espaust.net.au
1300 665 761

*Independently tested for slip
resistance to AS4586:2013
(Amdt 1:2017) **achieving**
total compliance with
AS/NZS 1428.4.1:2009
Amdt No.s 1 & 2.*



Contents

Introduction

Be the solution 5

A personal message from Richard Vernon, Co-Founder
& Director of Eco Safety Products Australia P/L (ESP
AUSTRALIA)

Five facts about Tactile Ground

Surface Indicators (TGSIs) 6

1. Why are TGSIs mandatory on our footpaths
and in buildings?
2. What do TGSIs achieve for our footpaths
and buildings?
3. Why we must have TGSIs in our buildings
and on our streets?
4. Who and what governs the use of TGSIs
within Australia?
5. When and where are TGSIs used in the built environment?

Who is ESP Australia P/L 9

Our Team, Our Company, Our Commitment

The industry product standard redefined 11

ESP Australia's TGSi product testing

- Why are ESP Australia's TGSIs the product of choice?
- Product Material Testing (ASTM)
- Slip Resistance Testing (ASTM & AS/NZS)
- Luminance Contrast Testing (AS)
- Design Compliance and TGSi Product approval (AU)
- Verification & Transparency

Product Catalogue

SURFACE APPLIED (SA) Integrated TGSIs 12

Fast, efficient & cost-effective 14

A new standard in retrofittable Integrated TGSIs

SA (WARNING) TGSi Access Tile 16

Product Summary & Technical Drawings 16

Product Image & Independent Test Results 17

SA (DIRECTIONAL) TGSi Access Tile 20

Product Summary & Technical Drawings 21

Product Image & Independent Test Results 22

continued top right...

INSTALLATION - SURFACE APPLIED TGSIs 24

Method 1 25

Ceramic Tiles, Vitrified Tiles, Escalator and Travellator
Motor Covers, Metal Checker Plate & Access Covers

Method 2 25

Timber Floor Boards, Timber & WPC Decking,
Timber Floating Floors & Engineered Floor

Method 3 26

Concrete, Masonry, Exposed Aggregate, Terrazzo,
Concrete Pavers, Brick Pavers, Asphalt, Bluestone, Granite,
Limestone, Sandstone, Engineered Stone,
Artificial Grass & External Matting, Vinyl, Epoxy/Self-
levelling Compounds

Method 4 27

Carpet (Thin) & Carpet Tiles, Carpet (Thick) - Loop Pile
(With Underlay)

CAST IN PLACE (CIP) Integrated TGSIs 28

Renew & Repair your streetscape 30

A picture speaks a thousand words 31

A new standard in retrofittable Integrated TGSIs

CIP (WARNING) TGSi Access Tiles 33

Product Summary & Technical Drawings 33

Product Image & Independent Test Results 34

CIP (DIRECTIONAL) TGSi Access Tiles 36

Product Summary & Technical Drawings 36

Product Image & Independent Test Results 37

INSTALLATION - CAST IN PLACE TGSIs 38

Method 5 38

Concrete, Masonry, Exposed Aggregate, Terrazzo

Method 6 38

Concrete Pavers, Brick Pavers, Asphalt

Method 7 39

Ceramic Tiles, Vitrified Tiles, Bluestone, Granite, Limestone,
Sandstone, Engineered Stone, Carpet (Thick) - Loop Pile
(With Underlay)


Method 8 39

Vinyl

Method 9 39

Timber Floor Boards, Timber & WPC Decking

Contact 40

A black and white photograph of a man, Richard Vernon, smiling and holding a large, rectangular white tile. The tile has a grid of circular indentations, resembling a warning sign or a safety surface. He is wearing a light-colored, long-sleeved button-down shirt. The background is a blurred industrial or construction setting.

*Co-founder & Director of ESP
Australia P/L, Richard Vernon,
pictured holding a **Cast In
Place (CIP) 1200 x 600
Warning TGSI Access Tile.***

Be The Solution

*Having used
tactiles in my
construction
company,
I became
frustrated with
the absence of
quality, care
and compliance
knowledge from
TGSI suppliers.
I was let down
many times
losing a lot of
time and money.*

*As a problem-
solver, I personally
decided to solve
the issue and...*

*During the creation of the ESP surface applied
and cast in place TGSI Access Tile systems,
I got to know first hand just how litigious and
compliance-driven tactile ground surface
indicators (TGSIs) actually were. I learned of the
responsibilities and The Code requirements that
govern the design, application and maintenance
of TGSIs.*

I now freely give my knowledge and expertise to you.



Richard Vernon
Founder and Director
Eco Safety Products Australia Pty Ltd
(ESP AUSTRALIA)
ABN 81431940805

21 Ceylon St
Nunawading Victoria
3131 Australia
www.espaust.net.au
sales@espaust.net.au

National Office
1300 665 761

5

Facts

About Tactile Ground Surface Indicators (TGSIs)

1. Why are TGSIs mandatory on footpaths and in buildings?

The practical need for accessible built environments is evident in the fact that 20% of Australians will experience a permanent or temporary disability over their lifetime.⁽¹⁾ That's an astounding four million people who require universal access in Australia.

Australian Federal Legislation, The Disability Discrimination Act (DDA), passed into law in 1992 making it unlawful to discriminate against any person with a disability.⁽²⁾ This law paved the way for many ingenious Australian innovations in this field, including Tactile Ground Surface Indicators (TGSIs), and prepared the way for inclusion of Universal Access in many other codes and standards.

The use of TGSIs, their design and their application, is founded on AS/NZS 1428.4.1. ESP Australia uses this Australian Industry Standard as the benchmark to its TGSi Access Tile product design, procedures and policies.

2. What do TGSIs achieve for our footpaths and buildings?

TGSIs assist persons with a temporary, permanent, full or partial vision-impairment to negotiate a built environment.⁽³⁾

They provide guidance and/or warning of an obstruction or hazard in any location where insufficient alternative or 'natural' tactile cue exists in a built environment. When combined with other environmental information, TGSIs assist people who are blind or vision-impaired with their orientation.⁽⁴⁾

3. Why must we have TGSIs in our buildings and on our streets?

The Australian Bureau of Statistics data revealed that in 2010, approximately 600,000 Australians were blind or living with some form of vision-impairment.⁽⁴⁾ These persons who are classed as experiencing a vision impairment are mostly over 65 years of age.⁽⁵⁾ According to Vision Australia, these figures are expected to climb to 1,200,000 by the year 2035.⁽⁶⁾

4. Who and what governs the use of TGSIs within Australia?

Australian Federal Legislation, Australian & New Zealand Standards, Australian State & Territory Codes, and self-governing legal entity guidelines that may apply, affect and/or govern the design, use, application and placement of TGSIs are set out below:

1. Australian Federal Legislation - (requires mandatory compliance) - The Federal Disability Discrimination Act 1992 (DDA) - Provides protection for everyone in Australia against discrimination based on disability.
2. Access to Premises (Buildings) Standard (APS) - (Mandatory for New Building work or when a Permit is required for a building upgrade): A Guideline on the Application of the Premises Standards Version 2 February 2013.
3. The National Construction Code (NCC) - Building Code The Building Code of Australia (BCA) Section D Clause 3.8 - (Mandatory Compliance).
4. Australian State & Territory Codes, and Self Governing Regulatory Entity Guidelines.
5. AS/NZS 1428.2009 Design for Access and Mobility Part 4.1 - Means to Assist the Orientation of People with Vision Impairment - TGSIs, including and not limited to:
 - AS/NZS 1428.4.1. Amdt 1 - 2010-11-26
 - AS/NZS 1428.4.1. Amdt 2 - 2014-12-10
 - AS 1428.1 Part 1 - Design for Access and Mobility - General Requirements for Access New Building Work.
 - AS 1428.2 Part 2:1992 - Design for Access and Mobility Enhanced and Additional Requirements - Buildings & Facilities
 - AS 4586:2013 - Slip Resistance Classification of New Pedestrian Surface Materials Amdt 1:2017
 - AS 4663:2013 - Slip Resistance Measurement of Existing Pedestrian Surface.
 - SA HB 198:2014 - Guide to the Specification and Testing of Slip Resistance of Pedestrian Surfaces.
 - AS 1657:2013 - Fixed Platforms, Walkways, Stairways and Ladders Design, Construction and Installation.
 - AS 1735.5:2015 - Lifts, Escalators and Moving Walks Part 5: Escalators and Moving Walks.
 - AS 1428.4.2:2018 - Design for Access and Mobility Means to Assist the Orientation of People with Vision Impairment - Wayfinding Signs
 - AS 1742.7:2016 - Manual of Uniform Traffic Control Devices - Part 7 Railway Crossings.
 - AS 1742.10.2009 - Manual of Uniform Traffic Control Devices - Part 10 Pedestrian Control & Protection.
 - AS1742.10.2014 - Manual of Uniform Traffic Control Devices - Part 14 Traffic Signals

5. When and where are TGSIs used in the built environment?

According to Australian & New Zealand Standard AS/NZS 1428.2009 Design for Access and Mobility Part 4.1 - Means to Assist the Orientation of People with Vision Impairment - TGSIs, TGSIs should be used at a 'minimum' in the following situations ⁽⁷⁾:

- Stairs and Stair landings
- Escalators & Travellators
- Pedestrian Ramps (not premises threshold ramps)
- Overhead Hazards (including potential obstructions wall protruding fixtures)
- Carriageways without kerbs - (i.e, that intersect at the same grade)
- Railway, Tramway and Light Rail Pedestrian - (Waiting platforms and level crossings)
- Waterbodies -(wharves, lakes and ponds accessible by pedestrians)

(1) ABS LIVING WITH A DISABILITY ABS 29/04/2016
4430.0.10.001 - Disability, Ageing and Carers, Australia: First Results, 2015

(2) Disability Discrimination Act 1992, Act No. 135 of 1992
Administered by: Attorney-General's Date of Assent 05 Nov 1992, [https:// www.legislation.gov.au/Series/C2004A04426/Compilations](https://www.legislation.gov.au/Series/C2004A04426/Compilations)

(3), (4), (5) & (6) Source: AS/NZS 1428.4.Part 1 (2009) AMDT No.1.1 Nov 2010

(7) Please Note: This is a summary of AS/NZS 1428.4.1. 2009 Clause 2. There are various other situations and applications that are exempt and or are called for under The Building Code of Australia, The Access to Premises Standards. Professional consultants should always be consulted with prior to the intended application of TGSIs.



We Work Together

***'Our products
are exceptional,
our team is
professional,
and our service
is memorable.'***

*Richard Vernon,
Founder & Director,
ESP Australia*

Who is ESP Australia?

ESP Australia is a company of TGSI trained and accredited individuals who genuinely care about supplying the appropriate TGSI product for each application and situation.

We do this by having a simple philosophy:

Our Team at ESP Australia

Founded on real construction experience and 'know-how', ESP Australia values clear communication, employs practical business process and delivers on what it promises. Our customers tell us that, 'this is what makes ESP Australia stand out and keeps us coming back'.

We have a professional team that is actively engaged in the management, estimation, delivery and installation of TGSIs. They are all trained in the use of TGSIs and experienced in their fields of expertise.

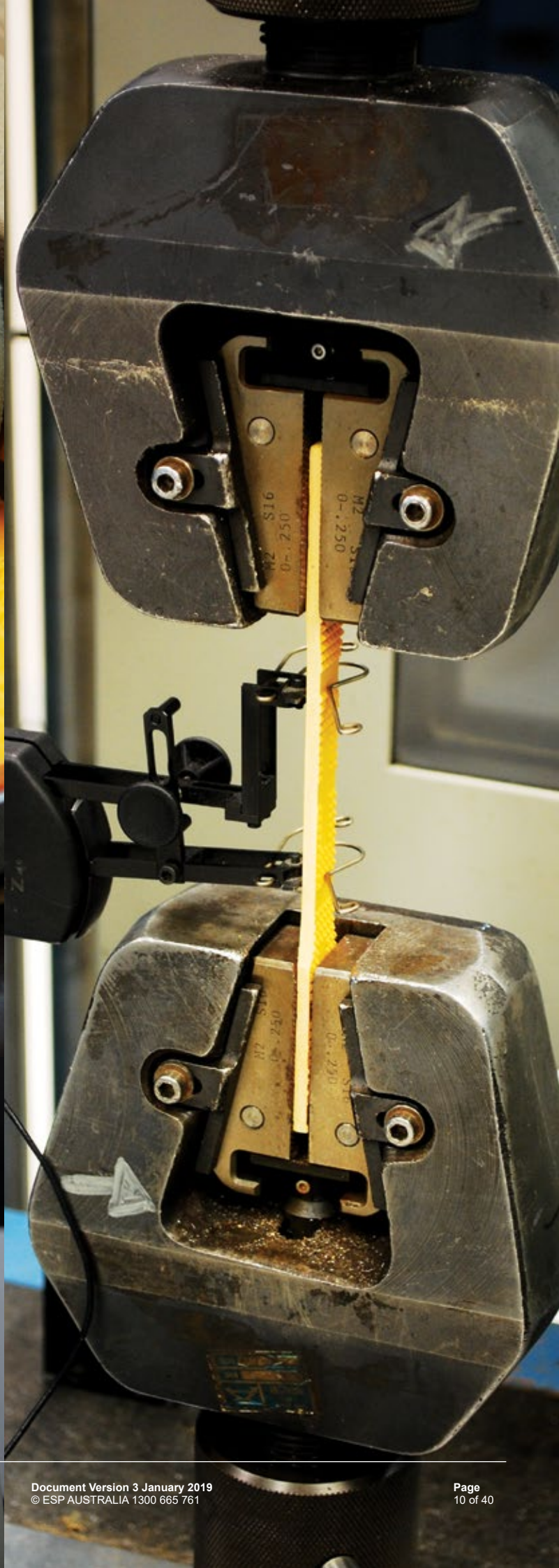
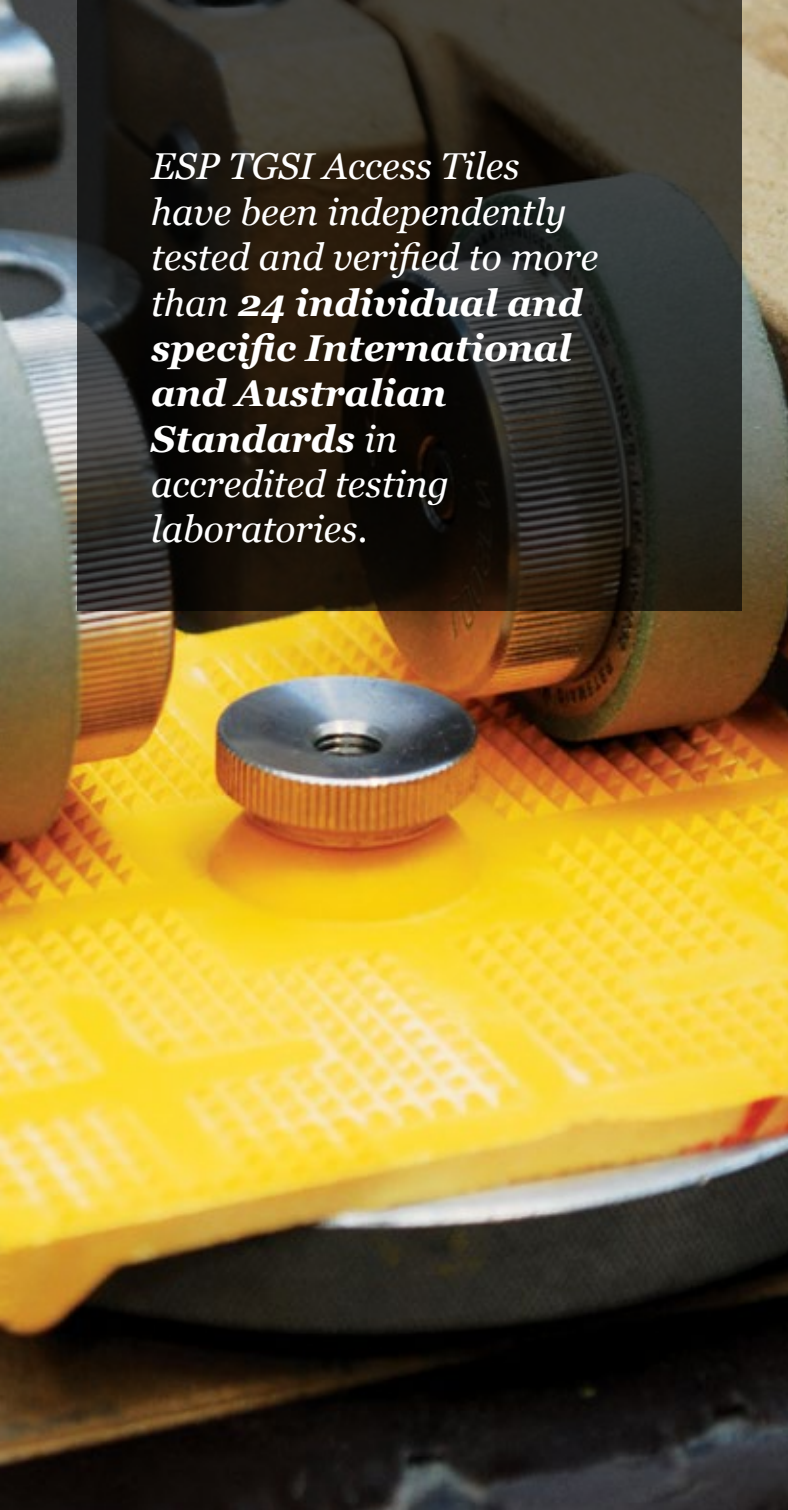
Location & Capacity

From our distribution centre in Nunawading, Victoria, ESP Australia supplies and services both local and national projects.

Our services include:

- Design and Production of TGSIs
- Engineer TGSI Drawings & Specifications
- Special TGSI Products for Municipalities
- TGSI Application and Installation Advice
- TGSI Estimating and Project Quantity Surveying
- Direct TGSI Sales & Distribution
- Coordination of TGSI Installation
- TGSI Product Induction & Training
- Project TGSI Luminance Testing

*ESP TGSI Access Tiles
have been independently
tested and verified to more
than **24 individual and
specific International
and Australian
Standards** in
accredited testing
laboratories.*



**The TGSI
product industry
standard redefined**

It's never just about the product. It's always about what the product gives you. With ESP Australia's TGSI Access Tiles, we promise that you will have:

No more Peeling, Lifting or Cracking TGSI's

We have worked tirelessly to design and create the best performing TGSI's in the world.

We have achieved our goal through subjecting our designs and materials to over 24 International and Australian Standard independent tests. We have remained committed to research and development and listened to the individual requirements of our diverse and specialised clients.

We behaved like this to give you the peace of mind that when you specify and install ESP Australia's TGSI Access Tiles, you will be confident, informed and certain of your selection.

Here's a list of some of the tests and analysis we have conducted in good faith.

Product Material Testing in Accordance with the American Standard Testing Methods (ASTM)

All ESP Surface Applied (SA) & Cast In Place (CIP) TGSI Access Tile product materials have been independently tested for their performance and compliance as follows:

- ASTM D 638-08 - Test: Tensile Properties
- ASTM D 790-07-A - Test: Flexural Properties of Plastic
- ASTM D 695-08 - Test: Compressive Strength
- ASTM D1037-07.3.1 - Test: Accelerated Ageing Cycle (UV): (freeze & thaw chamber)
- ASTM D 696-03 - Test: Linear Thermal Expansion
- ASTM C 1583-04 - Test: Tensile Bond Test (Bond & Seal of Polymer Composite) to Concrete - Pull-o Method
- AASHTO C HS20-44 - Test: Load Test
- ASTM D 543-06 - Test: Standard Practices for Evaluating the Resistance of Plastic Parts to Chemical Agents.
- ASTM D B117-07 - Test: Salt Spray Test (300hrs)
- ASTM E 84-08 - Test: Flame Spread Index - Surface Burning Characteristics of Building Materials.
- ASTM D 570-98 - Test: Water Absorption
- ASTM C 501-84 - Test: Relative Resistance To Wear

Slip Resistance Testing:

- AS 4586:2013 - Slip Resistance Classification of New Pedestrian Surface Material - Appendix A - WET PENDULUM TEST METHOD (Slider 96)
- AS 4586:2013 - Slip Resistance Classification of New Pedestrian Surface Material - Appendix A - WET PENDULUM TEST METHOD (Slider 55)
- AS 4586:2013 - Slip Resistance Classification of New Pedestrian Surface Material - Appendix C - WET-BAREFOOT INCLINING PLATFORM TEST METHOD
- AS 4586:2013 - Slip Resistance Classification of New Pedestrian Surface Material - Appendix D - (Amendment No. 1:2017) - OIL-WET-BAREFOOT INCLINING PLATFORM TEST METHOD

Luminance Testing:

AS/NZS 1428.4.1:2009 "Design for Access and Mobility" Part 4.1: Means to Assist the Orientation of People with Vision Impairment – Tactile Ground Surface Indicators. - Appendix E3 – LABORATORY MEASUREMENT OF LUMINANCE CONTRAST SECTION 3 - Dry and Wet Luminous Reflectance

Design Compliance and TGSI Product Approval

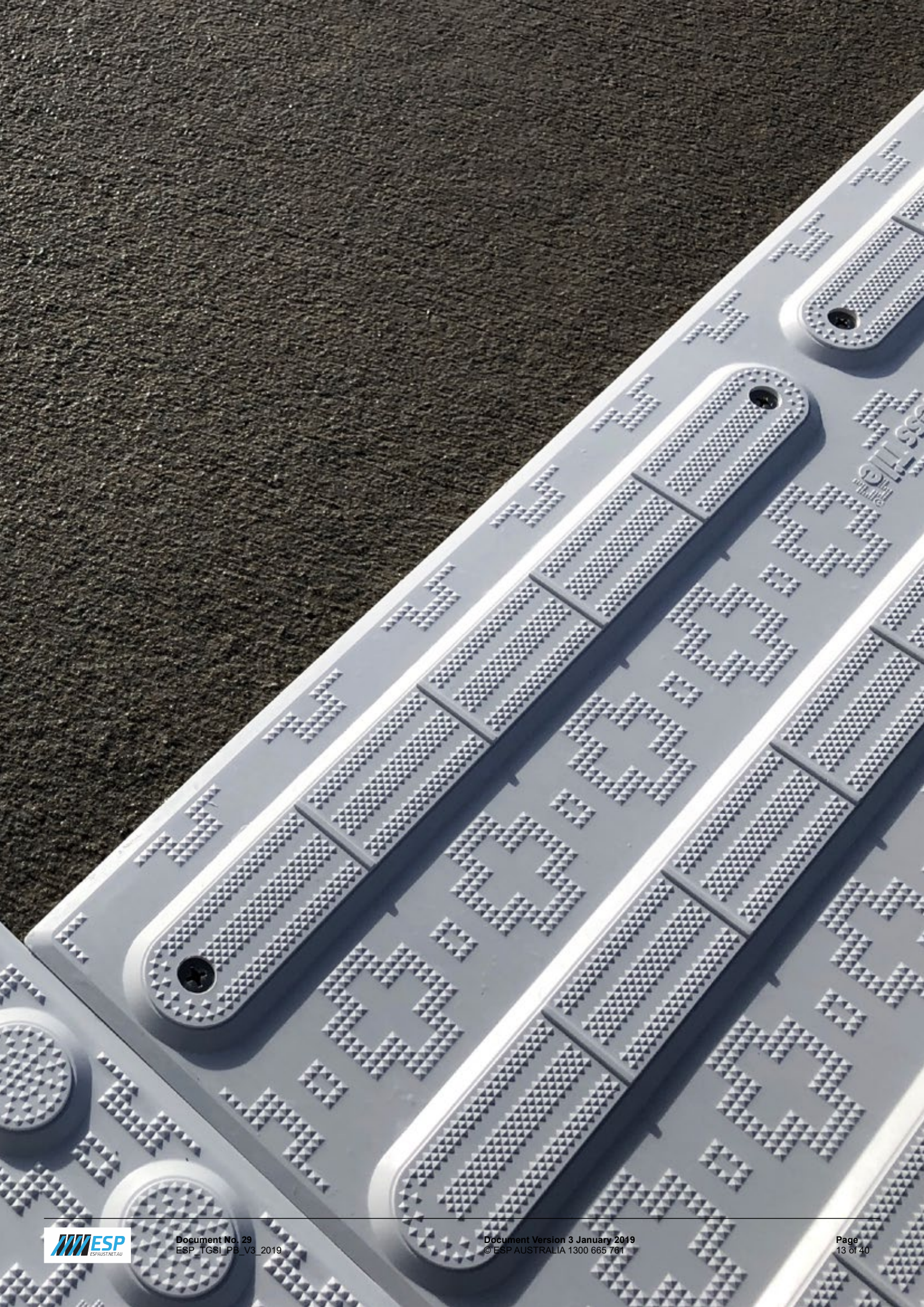
- AS/NZS 1428.4.1:2009 Section 2 - Criteria And Application Of Warning Tactile Ground Surface Indicators - The Design and Arrangement of Warning TGSI's Clause 2.3.2 and Directional TGSI's Clause 3.2.3
- VIC Roads Approved
- WA Main Roads Approved
- QLD Roads Approved
- ACT Government Territory and Municipal Services Approved

Verification & Product Data

- Detailed Technical Product Data (TPD) Documents of each ESP Integrated TGSI Access Tile product is freely available. Engineering drawings can also be provided by written request to ESP Australia.

Surface Applied Integrated TGSIs Warning & Directional





Fast, efficient, cost-effective.

A new standard in retrofittable Integrated TGSIs

More than dots and bars on the ground

The ESP Surface Applied (SA) TGSi Access Tiles are a series of compliance products that will renew your confidence in specifying and applying Tactile Ground Surface Indicators (TGSIs). Made from durable, fibre-reinforced Herculite polymer, the ESP SA TGSi Access Tiles are fast to install, simple to retrofit and withstand the toughest pedestrian use.

All ESP SA TGSi Warning & Directional Access Tiles have been independently tested for their Slip Resistance Value to be used in conjunction with SA HB 198:2014 - Guide to the Specification and Testing of Slip Resistance of Pedestrian Surfaces. These tests have been conducted in compliance with AS/NZS 1428.4.1:2009 Amdt No.s 1 & 2 - Clause 2.3.1 and tested in Accordance with AS4586:2013 (Amdt 1:2017) Appendices A, C & D.

With ESP Access Tile you get a great product and peace of mind. Thank goodness, no more broken, peeling or missing tactiles. That's ESP Australia's promise to you.



This is the new product standard for Integrated TGSIs

The ESP Warning and Directional Integrated SA TGSi Access Tiles are both mechanically and chemically secured to ANY stable finished surface. This applies to internal and external, wet and dry, hot and freezing applications.

Nylon composite, corrosion resistant anchors and 304 stainless steel fasteners, provide an additional mechanical connection between the ESP SA TGSi Access Tile and the finished substrate or surface.

The addition of high-quality adhesive polymer to the bottom of the base surface eradicates the likelihood of the Access Tile perimeter lifting. These unique features are designed to meet compliance with AS/NZS 1428.4.1:2009 Amdt No.s 1 & 2 - Clause 2.3.1.(a) for Warning TGSIs and Clause 3.2.1.(a) for Directional TGSIs.

What makes the ESP SA Access Tiles so tough?

Each ESP TGSi Access Tile is manufactured through the process of high-pressure compression process of a Sheet Moulding Compound (SMC). Produced with our unique Herculite material, we construct every ESP Access Tile of the highest quality polymer components and, with additional UV stabilisers for the harsh Australian sun, the ESP Access Tiles will maintain their individual Luminance Contrast Values over the long term.

What do I need to meet compliance requirements and ensure that the SA TGSi Access Tiles are effective?

The intended use of this product must comply with AS/NZS 1428.4.1:2009 Amdt No.s 1 & 2 - Section A 2.1 (a), (b), (c), (d), (e), (f) and, 2.2 (a), (b) (i) and installed as to the product test results, as independently verified, in accordance with Appendix E of the above standard.

What about Slip Resistance?

Each ESP Warning or Directional TGSi Access Tile has a Diamond Grip Pyramid Micro texture design, on the truncated horizontal dome or bar surface and the horizontal base surface. The Diamond Grip Pyramid Micro texture between the tactile truncated domes or bars is designed to reduce the possibility of slipping during a stiletto heel strike, walking stick, crutches and bike tyres.

All weather Slip Resistance Ratings:

Independently certified to be rated as:

Warning TGSIs - P5

Directional TGSIs - P4



*ESP Surface Applied
TGSi Access Tiles can
be mechanically and
chemically secured
to ANY stable surface.
Now even easier with
the new ESP Integrated
1200 x 600 mm TGSIs*

Surface Applied Integrated TGSIs

Warning TGSIs

Product Summary

ESP Product Code

ESP-SA-INT-WAR-TGSI-600x300

ESP-SA-INT-WAR-TGSI-1200x600

Group

Tactile Ground Surface Indicators (TGSIs)

Type

WARNING

(Truncated Domes)

Configuration

Integrated Type - (TGSIs that are in a defined pattern and which are of the same luminance and material as the product's base surface)

Available Product Colours

White, Yellow, Black, Blue

Surface Application

Each ESP Warning Access Tile, is applied to the finished substrate or existing finished surface, that possesses suitable and stable structural integrity

Physical Environments

Internal & External

Hot & Freezing

Wet & Dry

Finished Surface/Substrate Application

Ceramic & Vitrified Tiles, Escalator & Travellator Motor Covers, Metal Checker Plate & Access Covers, Timber Floor Boards, Timber & WPC Decking, Timber Floating Floor & Engineered Floor, Concrete, Masonry, Exposed Aggregate, Terrazzo, Concrete Pavers, Brick Pavers, Asphalt, Bluestone, Granite, Limestone, Sandstone, Engineered Stone, Artificial Grass & External Matting, Vinyl, Epoxy/Self-Levelling Compounds, Carpet (Thin) & Carpet Tiles, Carpet (Thick) - Loop Pile (with Underlay)

Installation Methods

Method 1 - Clean & Glue

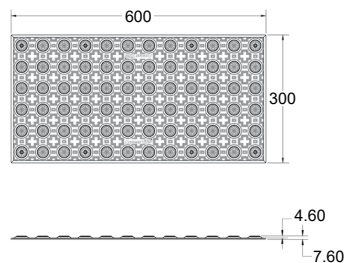
Method 2 - Drill, Clean, Glue & Fixing

Method 3 - Drill, Clean, Glue, Plug and Hammer

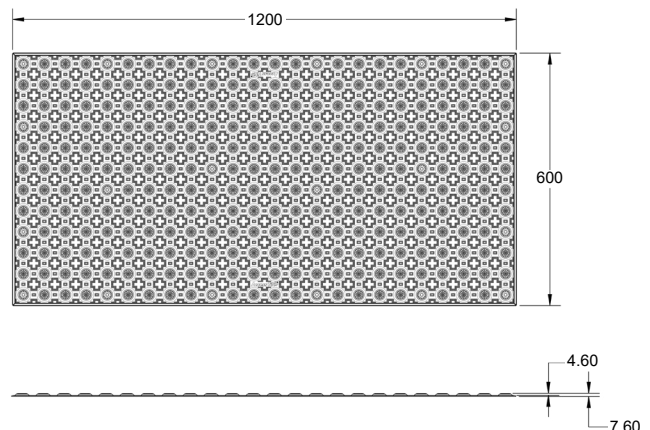
Method 4 - Recess, Drill, Clean, Glue & Fixing

Dimensional Drawings

600x300 mm



1200x600 mm



Dimensional Drawing Notes

Detailed and specific technical, engineering and compliance product information about the ESP Surface Applied (SA) TGSI Access Tile, is available from ESP Australia on request. Please quote the applicable product code for each Technical Product Data (TPD) document as required.

Note: All dimensions are in millimetres and are not to scale

Warning TGSIs

Product Colour

White

Luminance Contrast Rating

Dry= 73.5

Wet= 72.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

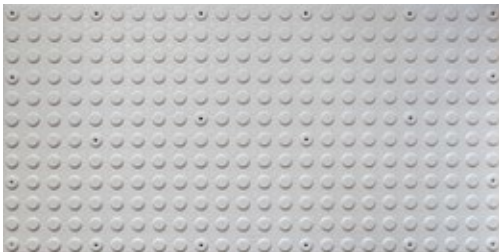
ESP Product Code

ESP-SA-INT-WAR-TGSI-600x300-WHITE



ESP Product Code

ESP-SA-INT-WAR-TGSI-1200x600-WHITE



Product Colour

Yellow

Luminance Contrast Rating

Dry= 55.3

Wet= 54.2

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

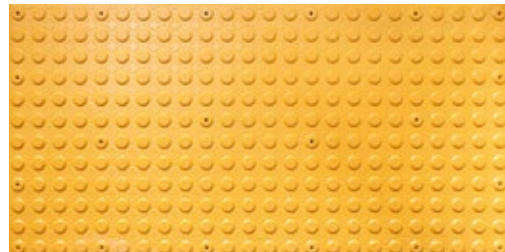
ESP Product Code

ESP-SA-INT-WAR-TGSI-600x300-YELLOW



ESP Product Code

ESP-SA-INT-WAR-TGSI-1200x600-YELLOW



Warning TGSIs

Product Colour

Black

Luminance Contrast Rating

Dry= 3.1

Wet= 2.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

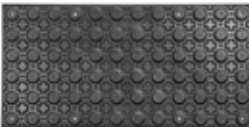
AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

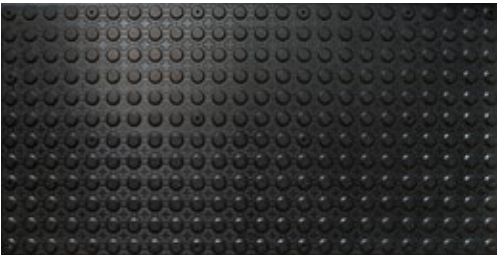
ESP Product Code

ESP-SA-INT-WAR-TGSI-600x300-BLACK



ESP Product Code

ESP-SA-INT-WAR-TGSI-1200x600-BLACK



Product Colour

Blue

Luminance Contrast Rating

Dry= 19.5

Wet= 18.4

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

ESP Product Code

ESP-SA-INT-WAR-TGSI-600x300-BLUE





*ESP SA TGSI Access
Tiles are fast to install,
simple to retrofit
and withstand
high pedestrian
foot traffic.*

Access lids, service covers, Telstra and communication pits, ESP SA TGSi Tiles affix to ALL stable finished surfaces.

Surface Applied Integrated TGSIs

Directional TGSIs

Product Summary

ESP Product Code

ESP-SA-INT-DIR-TGSI-600x300

Group

Tactile Ground Surface Indicators (TGSIs)

Type

DIRECTIONAL
(Truncated Bars)

Configuration

Integrated Type - (TGSIs that are in a defined pattern and which are of the same luminance and material as the product's base surface)

Available Product Colours

White, Yellow, Black, Blue

Surface Application

Each ESP Directional Access Tile, is applied to the finished substrate or existing finished surface, that possesses suitable and stable structural integrity

Physical Environments

Internal & External
Hot & Freezing
Wet & Dry

Finished Surface/Substrate Application

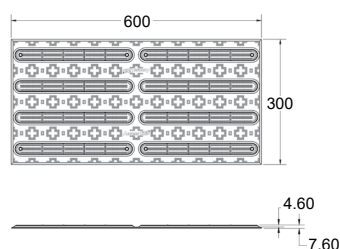
Ceramic & Vitrified Tiles, Escalator & Travellator Motor Covers, Metal Checker Plate & Access Covers, Timber Floor Boards, Timber & WPC Decking, Timber Floating Floor & Engineered Floor, Concrete, Masonry, Exposed Aggregate, Terrazzo, Concrete Pavers, Brick Pavers, Asphalt, Bluestone, Granite, Limestone, Sandstone, Engineered Stone, Artificial Grass & External Matting, Vinyl, Epoxy/Self-Levelling Compounds, Carpet (Thin) & Carpet Tiles, Carpet (Thick) - Loop Pile (with Underlay)

Installation Methods

Method 1 - Clean & Glue
Method 2 - Drill, Clean, Glue & Fixing
Method 3 - Drill, Clean, Glue, Plug and Hammer
Method 4 - Recess, Drill, Clean, Glue & Fixing

Dimensional Drawing

600x300 mm



Dimensional Drawing Notes

Detailed and specific technical, engineering and compliance product information about the ESP Surface Applied (SA) TGSI Access Tile, is available from ESP Australia on request. Please quote the applicable product code for each Technical Product Data (TPD) document as required.

Note: All dimensions are in millimetres and are not to scale

Surface Applied Integrated TGSIs

Directional TGSIs

Product Colour

White

Luminance Contrast Rating

Dry= 74.6

Wet= 73.7

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

AS4586:2013 A - (Slider 55) - Class:41 Result: P4

AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-SA-INT-DIR-TGSI-600x300-WHITE



Product Colour

Yellow

Luminance Contrast Rating

Dry= 57.2

Wet= 54.3

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

AS4586:2013 A - (Slider 55) - Class:41 Result: P4

AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-SA-INT-DIR-TGSI-600x300-YELLOW



Product Colour

Black

Luminance Contrast Rating

Dry= 5.2

Wet= 3.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

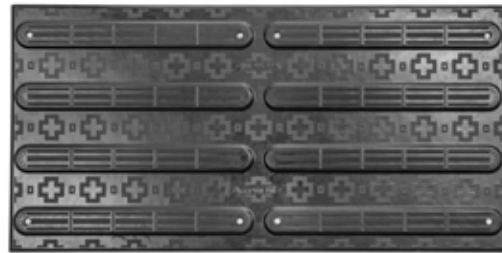
AS4586:2013 A - (Slider 55) - Class:41 Result: P4

AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-SA-INT-DIR-TGSI-600x300-BLACK



Product Colour

Blue

Luminance Contrast Rating

Dry= 20.9

Wet= 19.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

AS4586:2013 A - (Slider 55) - Class:41 Result: P4


AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-SA-INT-DIR-TGSI-600x300-BLUE





*Nylon composite, corrosion resistant Stainless Steel anchors, provide **mechanical connection** between the ESP Surface Applied TGSI Access Tile and the finished surface*

*ESP SA TGSI Access
Tiles can be anchored
to ANY stable
finished surface.
No Lifting.
No Peeling.
No Cracking.*



Installation

Surface Applied Integrated TGSIs

Warning & Directional TGSIs

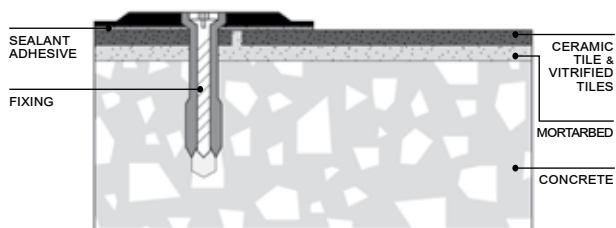
Installation Method - 1

Clean & Glue

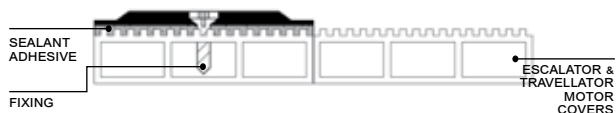
Tools & Equipment Required

Cordless drill, drill bits, Tap to create a thread, Isopropyl alcohol, clean rags & rubber mallet. Fixings are supplied.

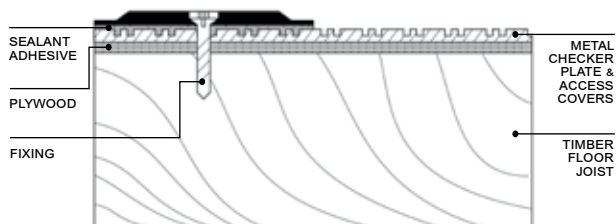
1. Ceramic & Vitrified Tiles



2. Escalator & Travellator Motor Covers



3. Metal Checker Plate & Access Covers



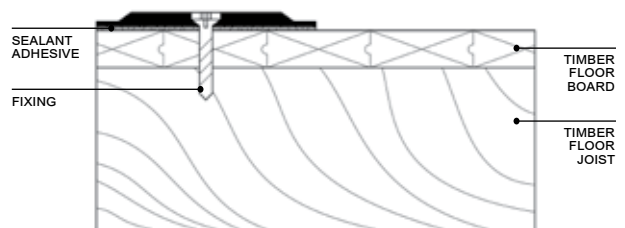
Installation Method - 2

Drill, Clean, Glue & Fixing

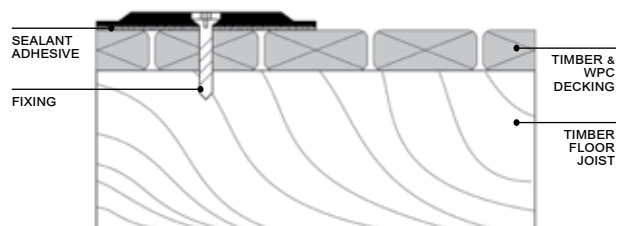
Tools & Equipment Required

Cordless drill, drill bits, Isopropyl alcohol, clean rags & rubber mallet. Fixings are supplied.

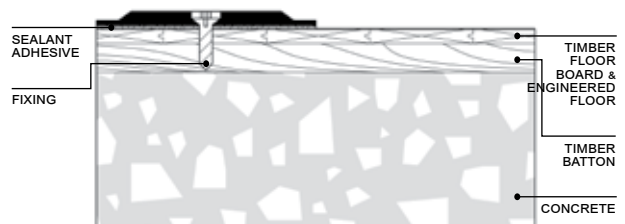
4. Timber Floor Boards



5. Timber & WPC Decking



6. Timber Floating Floor & Engineered Floor



Installation

Surface Applied Integrated TGSIs

Warning & Directional TGSIs

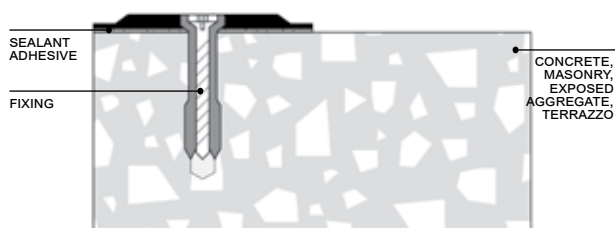
Installation Method - 3

Drill, Clean, Glue, Plug & Hammer

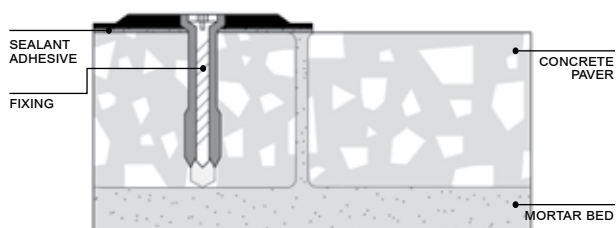
Tools & Equipment Required

Cordless drill, drill bits, Isopropyl alcohol, clean rags, hammer & rubber mallet. Fixings & plugs are supplied

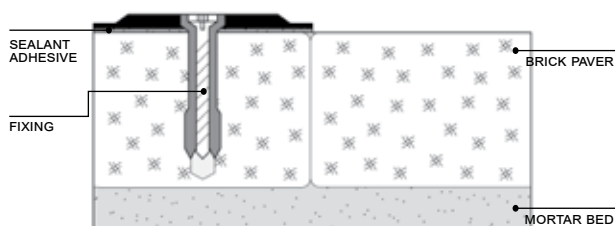
7. Concrete, Masonry, Exposed Aggregate, Terrazzo



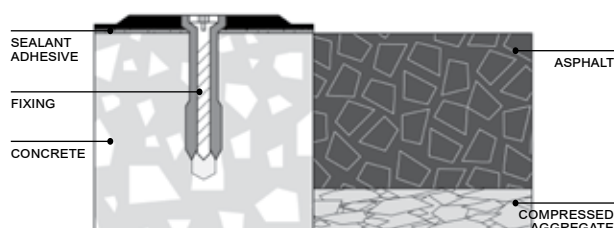
8. Concrete Pavers



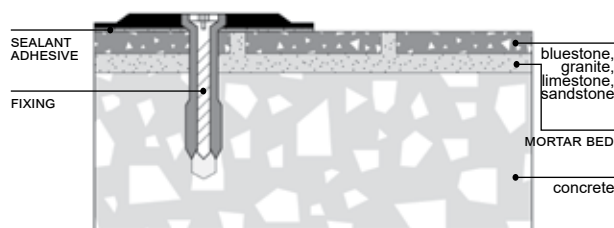
9. Brick Pavers



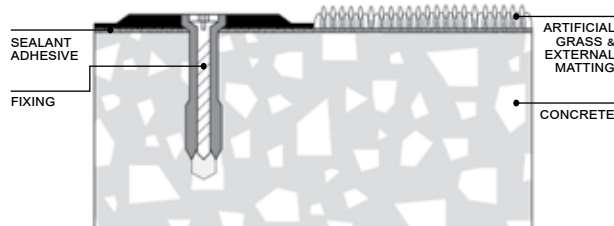
10. Asphalt



11. Bluestone, Granite, Limestone & Sandstone, Eng. Stone



12. Artificial Grass & External Matting



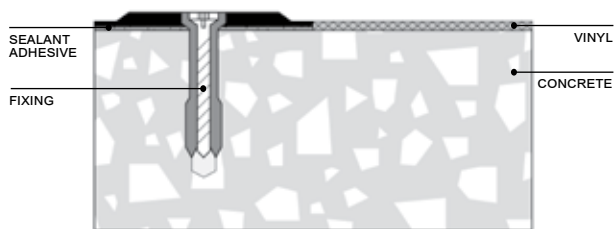
Installation Method - 3

Drill, Clean, Glue, Plug & Hammer

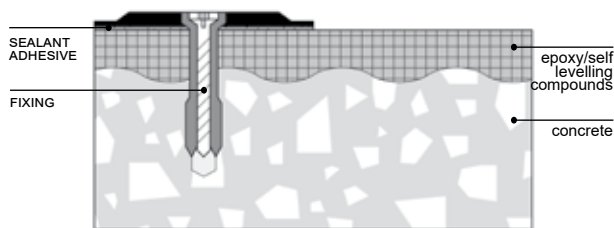
Tools & Equipment Required

Cordless drill, drill bits, Isopropyl alcohol, clean rags, hammer & rubber mallet. Fixings & plugs are supplied

13. Vinyl



14. Epoxy/Self-levelling Compounds



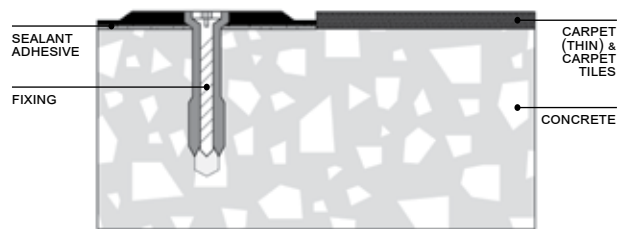
Installation Method - 4

Recess, Drill, Clean, Glue & Fixing

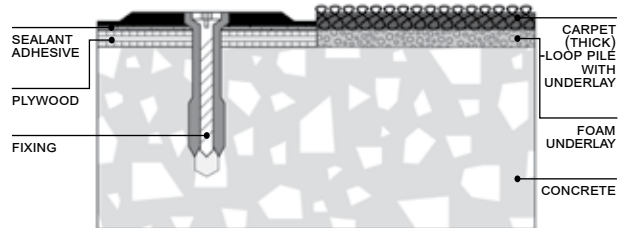
Tools & Equipment Required

Cordless drill, drill bits, Isopropyl alcohol, clean rags, hammer & rubber mallet. Fixings & plugs are supplied

15. Carpet (Thin) & Carpet Tiles



16. Carpet (Thick) - Loop Pile (With Underlay)



Cast In Place Integrated TGSIs Warning & Directional





Tougher than trucks. Stronger than concrete.

ESP Cast In Place Integrated TGSIs

A picture speaks a thousand words

So what happens when large, heavy trucks cut corners and repeatedly drive over the nature strip? What about when they drive over the pedestrian kerb ramps with TGSIs installed on them? Which comes off better? The ESP TGSIs or the concrete kerb ramp?

As you can see from the images below, where trucks have driven over the pedestrian crossing, the concrete around the ESP CIP TGSI Access Tiles has cracked. The ESP CIP TGSI Access Tiles have not. They are as good as the day that they were installed and remain fit-for-purpose.

With 24 international engineering tests and over 20 years of application experience throughout the world, ESP CIP TGSI Access Tiles are the most robust, durable and functional TGSIs for pedestrian streetscapes.



The ultimate solution to a growing and litigious problem

The ESP Warning and Directional Integrated Cast in Place (CIP) TGSI Access Tile is applied during the curing of wet concrete.

When the concrete becomes cured, the ESP CIP TGSI Access Tile, is subsequently mechanically fixed to the finished substrate.

Corrosion resistant, nylon composite hexagonal anchors and counter sunk tamper proof 304 stainless steel fasteners, provide an additional mechanical connection between the ESP CIP TGSI Access Tile and the substrate.

The ESP CIP TGSI Access Tile also eradicates any likelihood of its perimeter lifting over its lifespan. This unique product feature is designed to meet compliance with AS/NZS 1428.4.1:2009 Amdt No.s 1 & 2 - Clause 2.3.1.(a) for Warning TGSIs and Clause 3.2.1.(a) for Directional TGSIs

What makes the ESP CIP Access Tiles so tough?

Each ESP TGSI Access Tile is manufactured through the method of high-pressure compression process of a Sheet Moulding Compound (SMC). Produced with our unique Herculite material, we construct every ESP Access Tile from the highest quality polymer components and, with additional UV stabilisers for the harsh Australian Sun, the ESP Access Tiles will maintain their individual Luminance Contrast Values over the long term.

What do I need to meet compliance and ensure that the CIP TGSI Access Tiles are effective?

The intended use of this product must comply with AS/NZS 1428.4.1:2009 Amdt No.s 1 & 2 - Section A 2.1 (a), (b), (c), (d), (e), (f) and, 2.2 (a), (b) (i) and installed as to the tested results, as independently verified, in accordance with Appendix E of the above standard.

What about Slip Resistance?

Each ESP Warning or Directional TGSI Access Tile has a Diamond Grip Pyramid Micro texture design, on the truncated horizontal dome or bar surface and the horizontal base surface. The Diamond Grip Pyramid Micro texture between the tactile truncated domes or bars is designed to reduce the possibility of slipping during a stiletto heel strike, walking stick, crutches and bike tyres.

All weather Slip Resistance Ratings:

Independently certified to be rated as:

Warning TGSIs - P5

Directional TGSIs - P4



***Repair & Renew
Your Streetscape.***
*Replace your broken and
missing TGSIs with ESP
CIP TGSi Access Tiles*

Cast In Place during the curing of wet concrete, ESP CIP TGSIs are also replaceable.

Product Material

Fibre-reinforced Herculite polymer

Suitability for Physical Environments

External or internal, hot or freezing conditions.

Intended Use

The intended use of this product must meet compliance with AS/NZS 1428.4.1:2009 Amdt No.s 1 & 2 - Section A 2.1 (a), (b), (c), (d), (e), (f) and, 2.2 (a), (b) (i) and installed as to the tested results, as independently verified, in accordance with Appendix E of the above standard.

Removable Film - to Protect the TGSi during the Cast In Place Process with wet concrete.



Cross section of CIP TGSi - Set in concrete



Typical re-installation sequence

Step 1 - Remove Existing TGSIs



Step 2 - Replace ESP CIP TGSi Tile



Step 3 - Affix with tamper proof fixings



Cast In Place Integrated TGSIs

Warning TGSIs

Product Summary

ESP Product Code

ESP-CIP-INT-WAR-TGSI-600x300
ESP-CIP-INT-WAR-TGSI-1200x600

Group

Tactile Ground Surface Indicators (TGSIs)

Type

WARNING
(Truncated Domes)

Configuration

Integrated Type - (TGSIs that are in a defined pattern and which are of the same luminance and material as the product's base surface)

Available Product Colours

White, Yellow, Black

Surface Application

Each ESP CIP Warning TGSI Access Tile is designed to be applied to the un-set or un-cured substrate or surface; predominately concrete. Additional installation methods are referenced in the ESP Technical Product Data (TPD) Documents for each ESP TGSI Access Tile product.

Physical Environments

Internal & External
Hot & Freezing
Wet & Dry

Finished Surface/Substrate Application

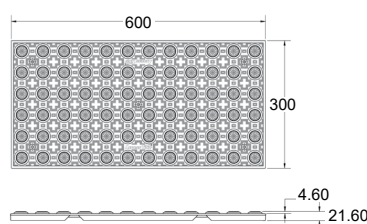
Ceramic & Vitrified Tiles, Timber & WPC Decking, Concrete, Masonry, Exposed Aggregate, Concrete Pavers, Brick Pavers, Asphalt, Bluestone, Granite, Limestone, Sandstone, Engineered Stone, Vinyl, Carpet (Thick) - Loop Pile (with Underlay)

Installation Methods

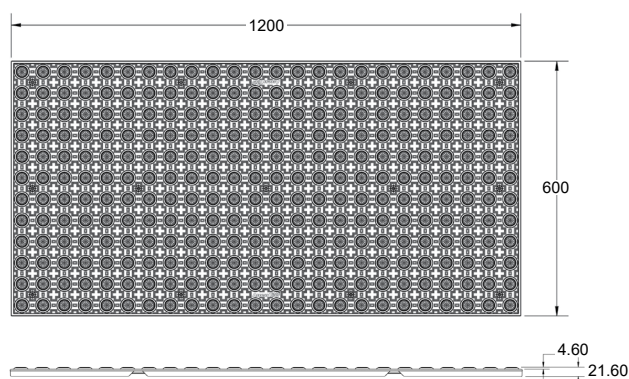
Method 5 - Cast In Place - (during the curing of wet concrete)
Method 6 - Boxed, Cast In Place - (during the curing of wet concrete)
Method 7 - Drill, Clean, Plug, Pack, Glue & Fixing
Method 8 - Set-Down, Drill, Clean, Plug, Pack, Glue & Fixing
Method 9 - Recess, Board, Drill, Clean, Plug, Pack, Glue & Fixing

Dimensional Drawings

600x300 mm



1200x600 mm



Dimensional Drawing Notes

Detailed and specific technical, engineering and compliance product information about the ESP Cast In Place (CIP) TGSI Access Tile, is available from ESP Australia on request. Please quote the applicable product code for each Technical Product Data (TPD) document as required.

Note: All dimensions are in millimetres and are not to scale

Cast In Place Integrated TGSIs

Warning TGSIs

Product Colour

White

Luminance Contrast Rating

Dry= 73.2

Wet=72.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

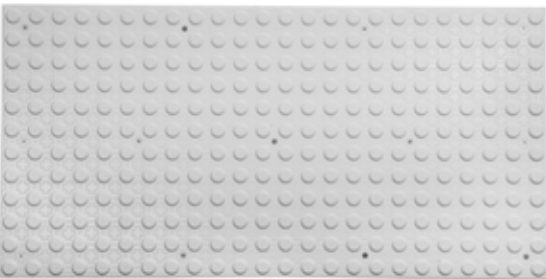
ESP Product Code

ESP-CIP-INT-WAR-TGSI-600x300-WHITE



ESP Product Code

ESP-CIP-INT-WAR-TGSI-1200x600-WHITE



Product Colour

Yellow

Luminance Contrast Rating

Dry= 55.3

Wet= 54.2

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

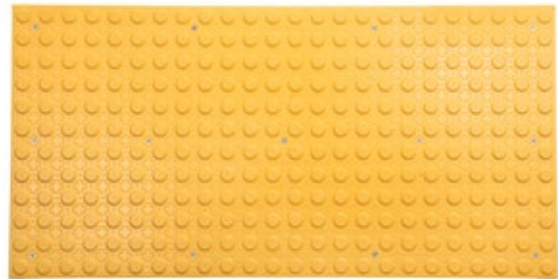
ESP Product Code

ESP-CIP-INT-WAR-TGSI-600x300-YELLOW



ESP Product Code

ESP-CIP-INT-WAR-TGSI-1200x600-YELLOW



Cast In Place Integrated TGSIs

Warning TGSIs

Product Colour

Black

Luminance Contrast Rating

Dry= 3.1

Wet= 2.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:68 Result: P5

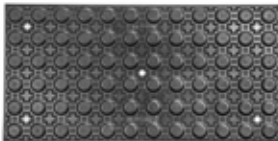
AS4586:2013 A - (Slider 55) - Class:55 Result: P5

AS4586:2013 C - Class:29° Result: C

AS4586:2013 D - (Amdt 1:2017) - Class:24° Result: R11

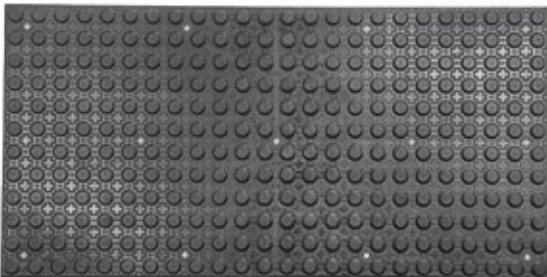
ESP Product Code

ESP-CIP-INT-WAR-TGSI-600x300-BLACK



ESP Product Code

ESP-CIP-INT-WAR-TGSI-1200x600-BLACK



Cast In Place Integrated TGSIs

Directional TGSIs

Product Summary

ESP Product Code

ESP-CIP-INT-DIR-TGSI-600x300

Group

Tactile Ground Surface Indicators (TGSIs)

Type

DIRECTIONAL
(Truncated Bars)

Configuration

Integrated Type - (TGSIs that are in a defined pattern and which are of the same luminance and material as the product's base surface)

Available Product Colours

White, Yellow, Black

Surface Application

Each ESP CIP Directional TGSI Access Tile is designed to be applied to the un-set or un-cured substrate or surface; predominately concrete. Additional installation methods are referenced in the ESP Technical Product Data (TPD) Documents for each ESP TGSI Access Tile product.

Physical Environments

Internal & External
Hot & Freezing
Wet & Dry

Finished Surface/Substrate Application

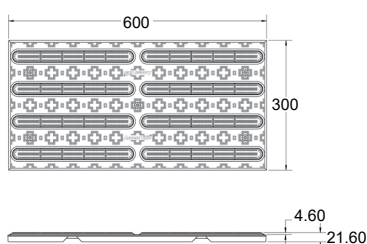
Ceramic & Vitrified Tiles, Timber & WPC Decking, Concrete, Masonry, Exposed Aggregate, Concrete Pavers, Brick Pavers, Asphalt, Bluestone, Granite, Limestone, Sandstone. Engineered Stone, Vinyl, Carpet (Thick) - Loop Pile (with Underlay)

Installation Methods

Method 5 - Cast In Place - (during the curing of wet concrete)
Method 6 - Boxed, Cast In Place - (during the curing of wet concrete)
Method 7 - Drill, Clean, Plug, Pack, Glue & Fixing
Method 8 - Set-Down, Drill, Clean, Plug, Pack, Glue & Fixing
Method 9 - Recess, Board, Drill, Clean, Plug, Pack, Glue & Fixing

Dimensional Drawing

600x300 mm



Dimensional Drawing Notes

Detailed and specific technical, engineering and compliance product information about the ESP Cast In Place (CIP) TGSI Access Tile, is available from ESP Australia on request. Please quote the applicable product code for each Technical Product Data (TPD) document as required.

Note: All dimensions are in millimetres and are not to scale

Cast In Place Integrated TGSIs

Directional TGSIs

Product Colour

White

Luminance Contrast Rating

Dry= 74.6

Wet= 73.7

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

AS4586:2013 A - (Slider 55) - Class:41 Result: P4

AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-CIP-INT-DIR-TGSI-600x300-WHITE



Product Colour

Yellow

Luminance Contrast Rating

Dry= 57.2

Wet= 54.3

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

AS4586:2013 A - (Slider 55) - Class:41 Result: P4

AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-CIP-INT-DIR-TGSI-600x300-YELLOW



Product Colour

Black

Luminance Contrast Rating

Dry= 5.2

Wet= 3.5

Slip Resistance Classifications

AS4586:2013 A - (Slider 96) - Class:54 Result: P4

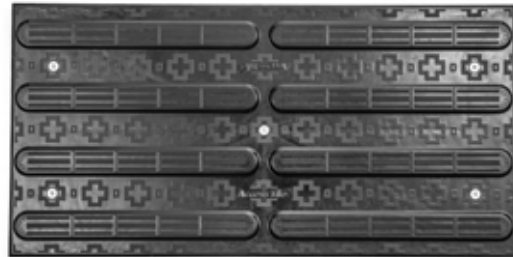
AS4586:2013 A - (Slider 55) - Class:41 Result: P4

AS4586:2013 C - Class:16° Result: A

AS4586:2013 D - (Amdt 1:2017) - Class:22° Result: R11

ESP Product Code

ESP-CIP-INT-DIR-TGSI-600x300-BLACK



Installation

Cast In Place

Integrated TGSIs

Warning & Directional

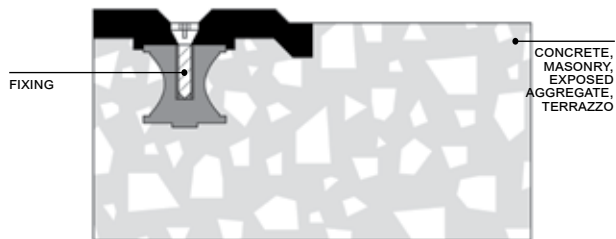
Installation Method - 5

Cast In Place - (during the curing of wet concrete)

Tools & Equipment Required

Set down TGSi frame, rubber mallet, tape measure. Fixings are supplied.

17. Concrete, Masonry, Exposed Aggregate , Terrazzo



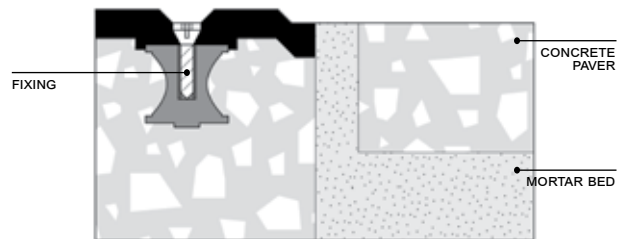
Installation Method - 6

Boxed, Cast In Place - (during the curing of wet concrete)

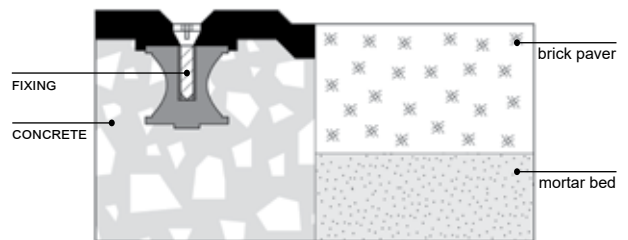
Tools & equipment Required

Set down TGSi frame, rubber mallet, tape measure & concrete boxing. Fixings are supplied.

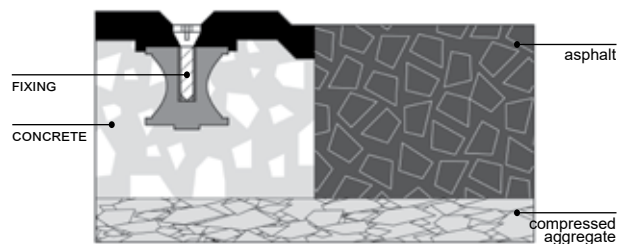
18. Concrete Pavers



19. Brick Pavers



20. Asphalt

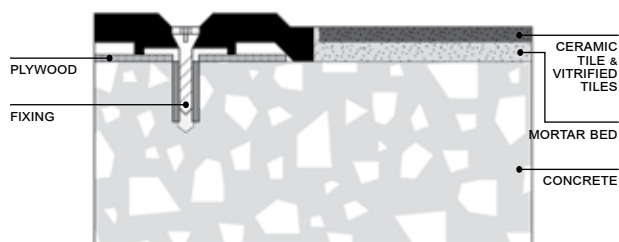


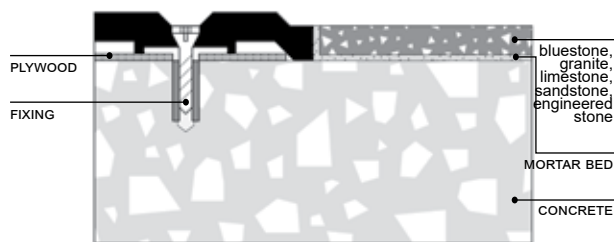
Installation Method - 7

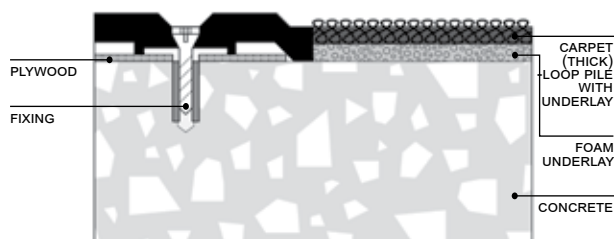
Drill, Clean, Plug, Pack, Glue & Fixing

Tools & Equipment Required

Set down TGSI frame, Plywood, tape measure & concrete boxing. Cordless drill, drill bits, Isopropyl alcohol, clean rags, hammer & rubber mallet. Fixings & plugs are supplied.

21. Ceramics, Vitrified Tiles

22. Bluestone, Granite, Limestone, Sandstone, Eng. Stone

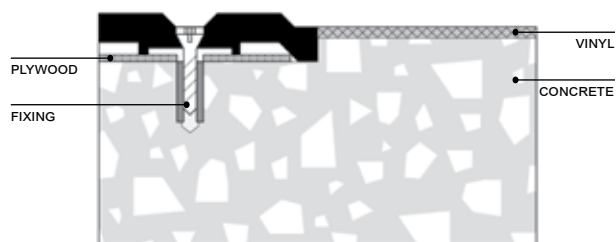
23. Carpet (Thick) - Loop Pile (With Underlay)

Installation Method - 8

Set-Down, Drill, Clean, Plug, Pack, Glue & Fixing

Tools & Equipment Required

Concrete recess, set down TGSI frame, plywood, tape measure. Cordless drill, drill bits, Isopropyl alcohol, clean rags, hammer & rubber mallet. Fixings & plugs are supplied.

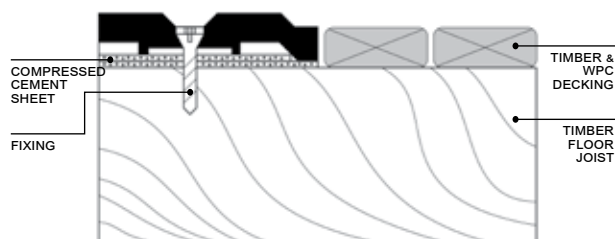
24. Vinyl

Installation Method - 9

Recess, Board, Drill, Clean, Plug, Pack, Glue & Fixing

Tools & Equipment Required

Compressed cement sheet on joists and packing, tape measure, cordless drill, drill bits, Isopropyl alcohol, clean rags, Fixings & plugs are supplied.

25. Timber & Wood Plastic Composite (WPC) Decking timber

Call Now Advice & Service 1300 665 761



www.espaust.net.au sales@espaust.net.au
21 Ceylon St Nunawading Victoria 3131 Australia
Eco Safety Products (ESP) Australia P/L ABN 8143194080