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# TEST REPORT

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## TEMPORARY EDGE PROTECTION



CLIENT – TECHPLAS

PRODUCT – KICKBOARD

TESTED BY

AZUMA DESIGN PTY LTD

AZT0437.19

NATA ACCREDITED LABORATORY NO. 15147

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Test results in this report are relevant only to the sample tested

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

# 1 Customer Requirements

The customer has provided a test specimen to be tested in accordance with AS/NZS 4994.1:2009 Temporary edge protection - General requirements. The customer wishes to only test to Appendix B.

# 2 Standards

The following standard is used:

- AS/NZS 4994.1:2009 Temporary edge protection - General requirements
  - Appendix B – Static Testing of Top Rail, Midrail, Infill Panel, Bottom Rail or Toeboard

# 3 General Information

<b>Model No./Name</b>	50 mm SHS KickBoard
<b>Customer</b>	TechPlas
<b>Manufactured by</b>	TechPlas
<b>Address</b>	321 Wentworth Avenue, Pendle Hill NSW 2145
<b>Azuma Testing Number</b>	AZT0437.19
<b>Date of Test</b>	11/09/2019
<b>Drawing Supplied</b>	See attached
<b>Drawing Number</b>	Handrail Detail and TP891
<b>Overall Size</b>	Toeboard (Kickboard) – 2500 mm (Length) x 200 mm (Height) x 32 mm (Width) x 4 mm (Thickness)
<b>Test Sample Description</b>	Temporary Edge System – Two post frames with attachment cradles for Rail panel. Slots and vertical clamping for toeboard panels. Frames fixed by two anchor screws in frame base into concrete. TechPlas Assembly – Steel clamping jig with vertical clamping. Fixed to concrete with anchor screws
<b>Materials</b>	PVC plank with proprietary formula
<b>Number of Samples</b>	2



Figure 1: Test Setup



Figure 2: Toeboard Installation



Figure 3: TechPlas Test Setup

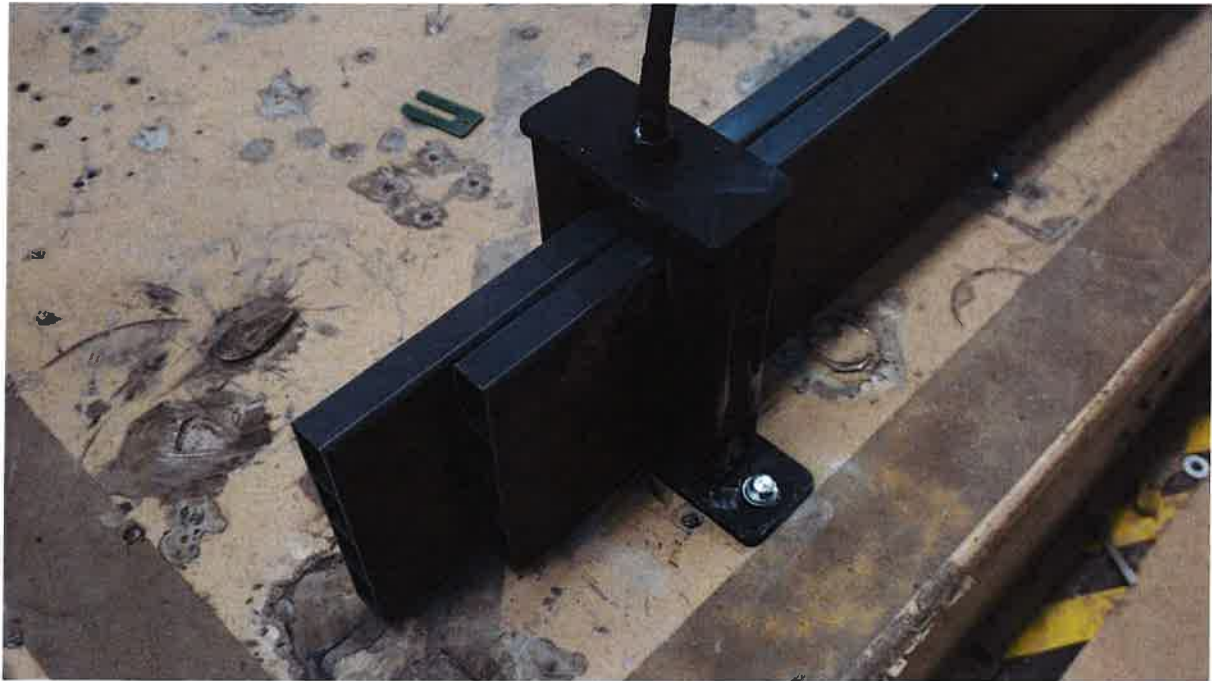


Figure 4: Toeboard Installation

## 4 Results

### 4.1 Static Testing

#### 4.1.1 Procedure

The edge protection shall be fixed to the framing members or supporting structure at the maximum span in the manner intended for installation.

Each component shall be tested separately.

Rails that are designed as backing rails to Type 1, Type 2 and Type 3 non-structural infill panels shall be tested with the panels removed.

The procedure shall be as follows (the sequence of tests may be varied to suit the test set-up):

- (a) *Vertical test downward* - Before the test, apply a preload of 100 N vertically downward to the midpoint of the component being tested, to stabilize the assembly.
- (b) Remove the preload and measure the distance in between the midpoint of the span of the component under test and a datum point that is rigid and independent of the test rig.
- (c) Apply, in a smooth manner, the test force of 600 N vertically downward to the midpoint of the span of the top rail, midrail or top of the infill panel for a period of 300  $-0, +15$  s.
- (d) Measure any deflection of the top rail, midrail or top of the Type 4 structural infill panel.
- (e) Remove the test force.
- (f) *Horizontal test inward* - before the next test, apply a preload of 100 N horizontally inward to the midpoint of the component being tested, to stabilize the assembly.
- (g) Repeat Step (e).
- (h) Apply in a smooth manner the test force of 600 N horizontally inward to the midpoint of the span of the top rail, midrail or top of the infill panel for a period of 300  $-0, +15$  s.
- (i) Measure any deflection of the top rail, midrail or top of the Type 4 structural infill panel.
- (j) Remove the test force.
- (k) *Horizontal test outward* - before the test, apply a preload of 100 N horizontally outward to the midpoint of the component being tested, to stabilize the assembly.
- (l) Repeat Step (e).

(m) Apply, in a smooth manner, the test force of 600 N horizontally outward to the midpoint of the span of the top rail, midrail or top of the infill panel components for a period of 300 –0, +15 s.

(n) Measure any deflection in the top rail, midrail or top of the Type 4 structural infill panel.

(o) Remove the test force.

(p) Repeat Steps (a) to (o) for each different component combination to top rail, midrail, infill panel or toeboard as outlined in Paragraph B2.

NOTE: A Type 3 non-structural infill panel (see Figure 4.2) bottom rail and toeboard do not require to be tested for a vertical downward or inward force. Accordingly, Steps (e) to (n) are not required for these components.

#### 4.1.2 Results

<b>Dimensions</b>	Toeboard (Kickboard) – 2500 mm (Length) x 200 mm (Height) x 32 mm (Width) x 4 mm (Thickness)
<b>Number of Samples Tested</b>	2

#### Vertical Test Downward

Not required for Toeboards

#### Horizontal Test Inward

Not required for Toeboards

#### Horizontal Test Outward

<b>Test Sample</b>	<b>Frame</b>	<b>Techplas Test Jig</b>
<b>Length of Support</b>	2200 mm	2200 mm
<b>Length of Overlap</b>	200 mm packer extending 100 mm either side of the support cradle	400 mm second board extending 200 mm either side of the support cradle
<b>Test Load Applied</b>	600 N	600 N
<b>Preload</b>	100 N	100 N
<b>Datum Measurement</b>	352 mm	294 mm
<b>Deflection Under Load</b>	303 mm	254 mm
<b>Performance Criteria</b>	< 101 mm	49 mm
	Structural Failure	No
<b>Result</b>	Pass	Pass



Figure 5: Force Application



Figure 6: Deflection



Figure 7: TechPlas - Force Application



Figure 8: TechPlas - Deflection



## 4.2 Dynamic Testing

Testing not requested by customer

## 5 Additional Testing

Using the same test method as in Appendix B the 600 N Load was increased until a 101 mm deflection limit was achieved. This test was conducted to observe at what force would the sample need to be subjected to before reaching the allowable acceptance criteria of 101 mm deflection.

Datum	300 mm
Deflection of Sample	199 mm (101 mm)
Force at Deflection	2290 N
Permanent Deflection	294 mm (6 mm)



Figure 9: 101 mm Deflection



Figure 10: Force Applied at 101 mm Deflection

## 6 Signatories

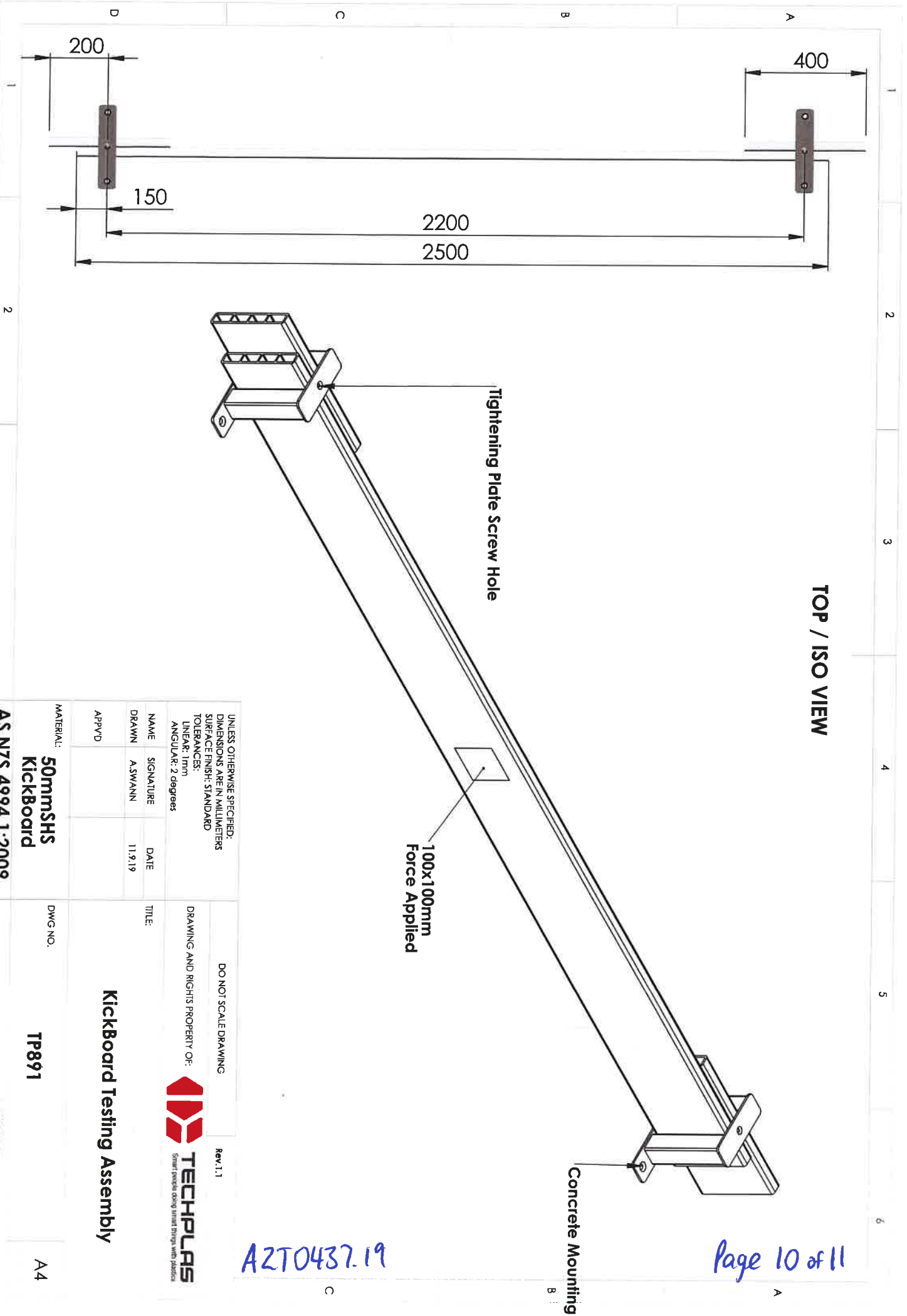
Tested By: Ash Horne

Signature: AHorne

Date: 11/09/2019

**END OF REPORT**

**TOP / ISO VIEW**



Tightening Plate Screw Hole

100x100mm Force Applied

Concrete Mounting

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH: STANDARD  
TOLERANCES:  
LINEAR: 1mm  
ANGULAR: 2 degrees

NAME	SIGNATURE	DATE
DRAWN	A.SWANN	11.9.19
AP/PVD		

MATERIAL:  
**50mmSHS KickBoard**  
AS.NZS 4994.1:2009

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Rev. 1.1

TITLE:

**KickBoard Testing Assembly**

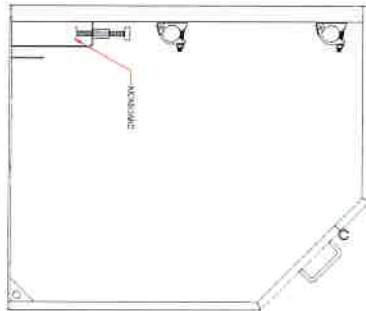
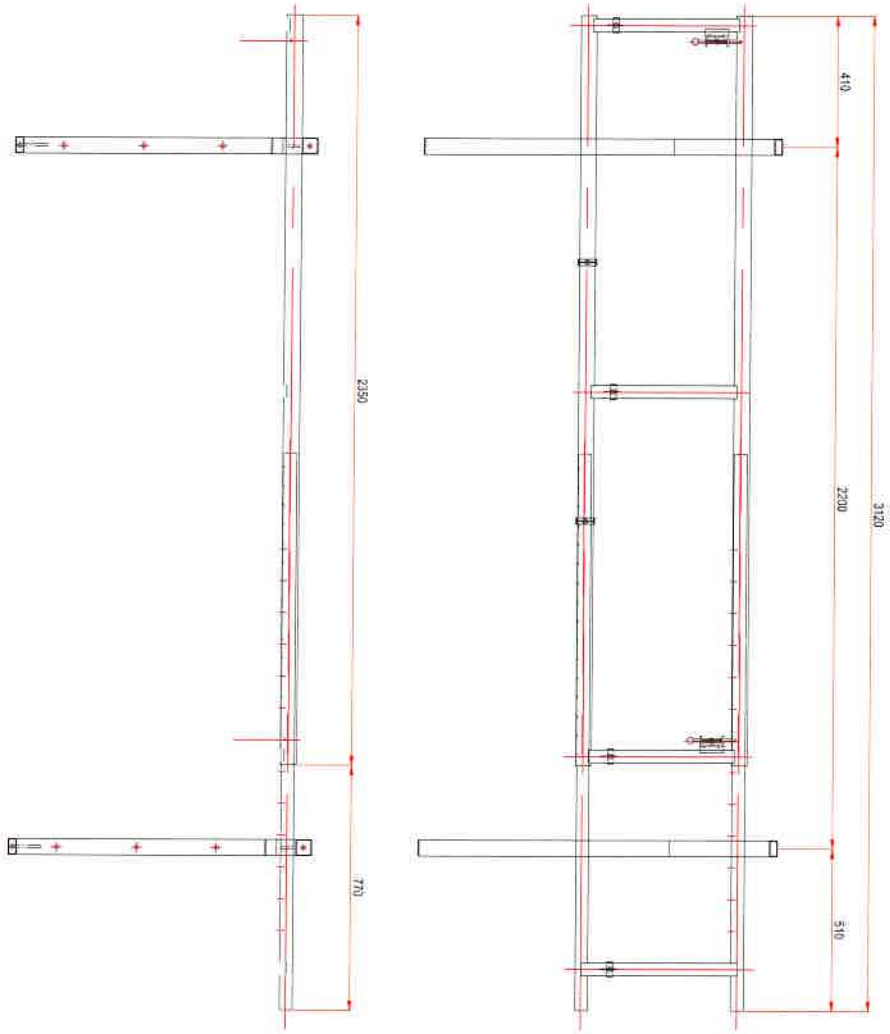
DWG NO.

**TP891**

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REV.	DATE	DESCRIPTION	BY	CHKD
1		ISSUED FOR INFORMATION		

PROJECT NO.	TECHPLAS	NO. OF SHEETS	18
TITLE	HANDRAIL DETAIL	SHEET NO.	200/0

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