

TERRAÇADE TN₅

technical manual – fifth edition



AUSTRALIA

tterraçadeTM
TERRACOTTA FAÇADE SYSTEMS

CONTENTS

Page	Section
04	01. Installation
05	Safe Working Instructions
06	Components
08	02. System Description
16	03. Structural Performance
30	04. Technical Specifications
31	Materials Schedule and Properties
33	Fasteners
35	System Performance
36	05. Components
44	06. System Design – Common Details
46	Overview
47	Side Detail
48	Horizontal Detail
49	External Corner
50	Internal Corner
51	Base Detail
52	Parapet
53	Window Sill
54	Window Head
55	Window Jamb
56	Window Reveal Option
57	Set-Out Tool
58	Rake Detail
59	Top Restraint for Earthquake Zones
60	Timber – Horizontal Detail
61	Timber – Vertical Detail
62	Timber – Termite Detail (Recessed Slab)
63	Steel – Horizontal Detail
64	Steel – Vertical Detail
65	Concrete – Horizontal Detail
66	Concrete – Vertical Detail
67	Masonry – Horizontal Detail
68	Masonry – Vertical Detail
69	Membrane
71	07. Maintenance Guide

For the most up to date information on
Terraçade products and the latest version
of this manual, please refer to our website.
www.terraçade.com.au

INSTALLATION



For the most up to date information on Terraçade products and the latest version of this manual, please refer to our website; www.terraçade.com.au

SAFE WORKING INSTRUCTIONS:

Site Preparation

Reworking Tiles

Silica dust can be liberated from the Terraçade TN tiles when they are reworked. Chronic inhalation of crystalline silica has been associated with impairment of lung function. Please refer to SDS for Terraçade, which is available from the Terraçade website (www.terraçade.com.au) for further information.

Care should be taken when reworking Terraçade TN tiles to maintain the exposure to crystalline silica below the Exposure Standard proscribed by Worksafe Australia (0.1 mg/m³). Safe working procedures should include:

- Utilising a wet saw when cutting or reworking tiles. Contact the saw manufacturer for further details.
- Wear appropriate personal protective equipment, such as approved dust mask and safety goggles, when utilising power tools or abrasive hand tools on the tiles.
- Ensure that dust is disposed of during clean up and disposal appropriately, by either wetting or vacuuming. (refer to the below diagram).

Using Brick/Tile Saws or Power Saws

- Ensure that adequate personal protective equipment, such as approved safety glasses, gloves, dust mask and hearing protection, is worn.
- Try and use a wet saw to cut tiles, or ensure that adequate ventilation or dust extraction equipment is available if dry cutting is used.

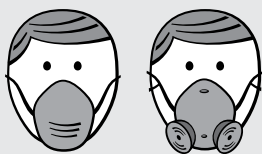
Handling

- Care should be taken when handling suspension rails and trims to avoid cuts and abrasions. The use of appropriate gloves may be of benefit. Extra care should be taken when handling cut pieces of tiles.
- It is recommended that large packs of suspension rails should be broken up, so that they may be handled individually.
- Ensure clear passage when moving the suspension rails and trims due to their size. Also allow for adequate storage of the suspension rails and trims to avoid trip hazards.
- Take care when handling cut tiles, to avoid cuts or abrasions from sharp surfaces or broken tiles.
- Consider manual handling issues when lifting tiles.
- Ensure that an adequate number of people are available to support the weight of the roll when rolling out the membrane.

Surrounding Materials

- All materials should be stored to avoid damage. Particularly, ensure that the hangers on the suspension rails are protected from distortion and the edges and corners of the tiles are protected from chipping.
- Protect the tiles, rails and trims from exposure to rain, water or chemicals during storage.
- Ensure that pressure water jet cleaning of any surrounding surfaces is conducted prior to the installation of the tiles.
- Protect aluminium components during chemical cleaning of nearby materials, especially acid cleaning.

Recommended Safety Protection



Face Masks P1 or P2 type approved to the relevant Australian Standards.



Safety Goggles approved to the relevant Australian Standards.



Hearing Protection approved to the relevant Australian Standards.



Clean up, wet down or vacuum



Dispose containment of dust.

INSTALLATION

Components

Comment Description	Page Number	Available from Brickworks
Terraçade™ TN Tile	38	Yes
TN. 01 Vertical Suspension Rail	39 - 40	Yes
Joint Options		
TN. 02 Aluminium Jointing Angle	41	Yes
TN. 03 Aluminium Jointing Channel	41	Yes
Corner Trim Options		
TN. 04 Aluminium External Corner	41	Yes
TN. 05 Aluminium Internal Corner	41	Yes
Surround Trim Options		
TN. 06 Aluminium Surround Profile	41	Yes
Other Components		
TN. E2 Fitment Sponge	42	Yes
TN. E3 Breathable Membrane	42	Yes
Rail Setting Tool	57	Yes

SYSTEM DESCRIPTION



For the most up to date information on Terraçade products and the latest version of this manual, please refer to our website; www.terraçade.com.au

SYSTEM DESCRIPTION

Overview

TERRAÇADE™ IS AN INNOVATIVE AUSTRALIAN TERRACOTTA FAÇADE SYSTEM DEVELOPED TO PROVIDE THE NATURAL BEAUTY AND AESTHETIC APPEAL OF TERRACOTTA TO YOUR PROJECT.

Terraçade TN has been designed in consultation with Australia's leading engineers to act as a rain screen and rear ventilated façade system. It is a lightweight system and is simple to install.

System Assembly

The Terraçade TN system is easily installed as the tiles are attached securely by a purpose designed vertical suspension rail. The system can be installed onto a timber framed, steel framed, concrete or masonry structural wall.

The Terraçade TN system is comprised of:

- A galvanised vertical suspension rail incorporating unique tile hangers,
- Lightweight clay tiles designed to fit securely onto the suspension rails,
- Two vertical jointing strip options,
- Fitment sponge,
- A waterproof membrane.

In addition, a full range of trims are available in anodised or powder coated finish to complement or highlight your design, including:

- Internal and external corners,
- A surround that accommodates windows, doors, bases and parapets.

Benefits of Terraçade TN

Terraçade TN is a rear ventilated façade, which creates an airspace outside the load-bearing wall. This minimises thermal transfer to the building structure, improving comfort levels and providing energy savings. The airspace provides natural ventilation with a chimney effect, which facilitates the removal of heat, humidity and condensation away from the building structure.

Exposure Grade

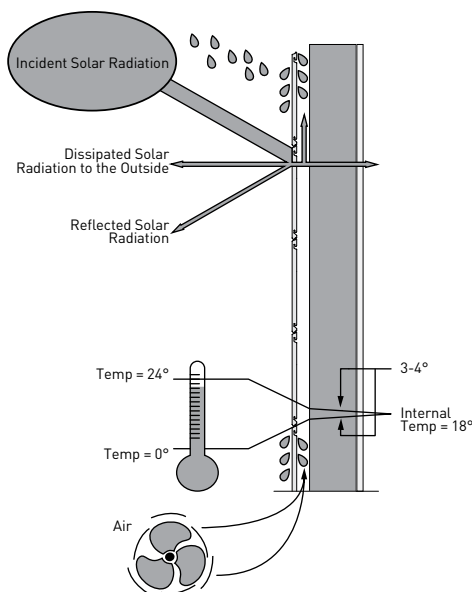
Terraçade TN tiles are classified exposure grade so they can be used in all environments including severe marine environments and areas subject to heavy industrial pollution.

The coastal version incorporates ZAM® precoated steel or stainless steel suspension rails to ensure that the Terraçade TN will stand the test of time

Tested Performance

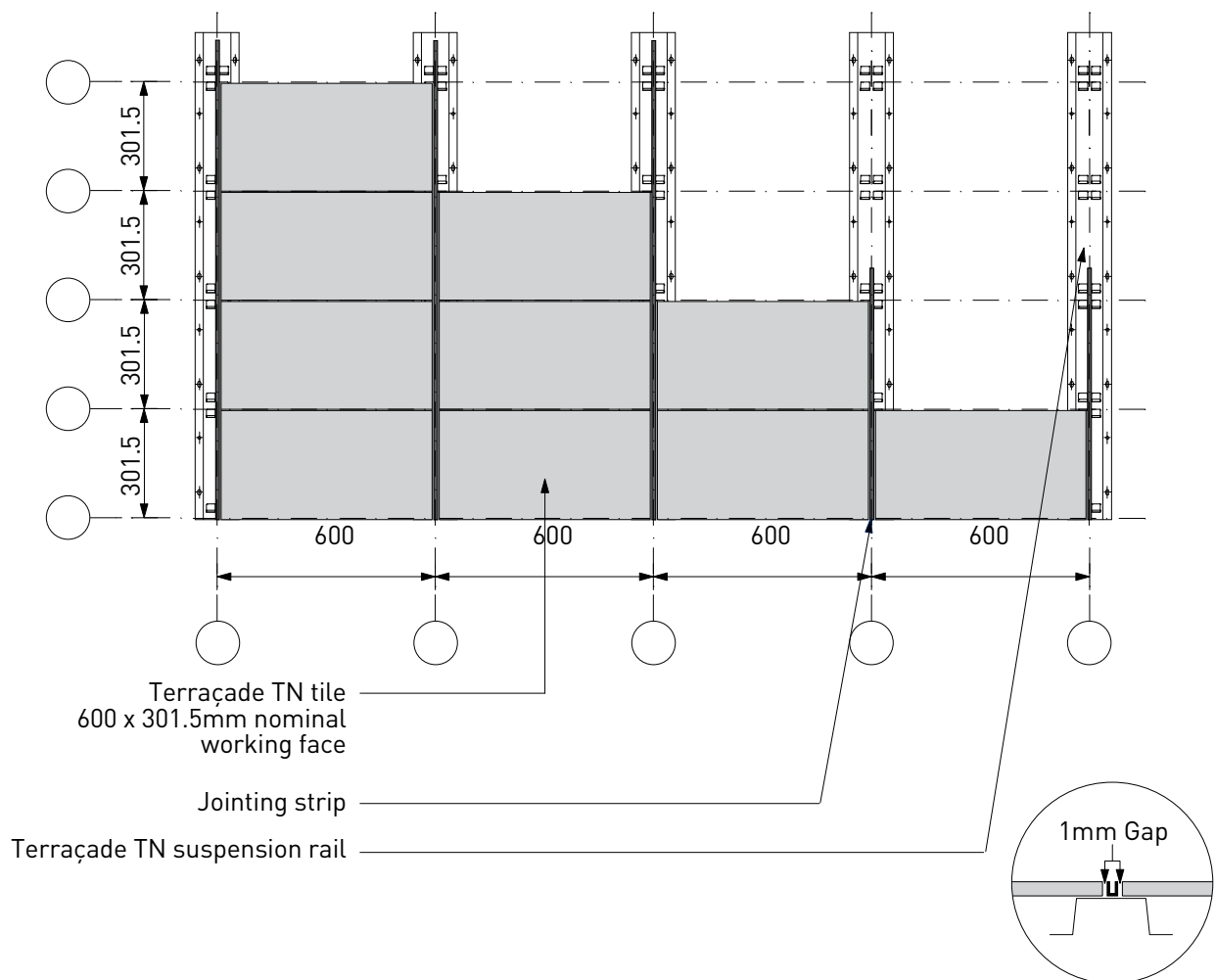
The terracotta tile acts as part of a rain screen system, where the tile is the first line of defence against water penetration and must be used in conjunction with a waterproofed and drained backup wall. A waterproof membrane is supplied as part of the system's tested performance. The system has demonstrated structural and weather performance, as shown through the extensive wind load and water penetration testing conducted to AS/NZS 4284.

The performance of the Terraçade TN tiles has been extensively tested in Austral's NATA accredited laboratory to AS/NZS 4455 and AS/NZS 4456 and in independent NATA accredited laboratories. In addition to the standard TN system a coastal version of Terraçade TN is available for severe marine environments.



SYSTEM DESCRIPTION

Terraçade TN System with Joint Channel



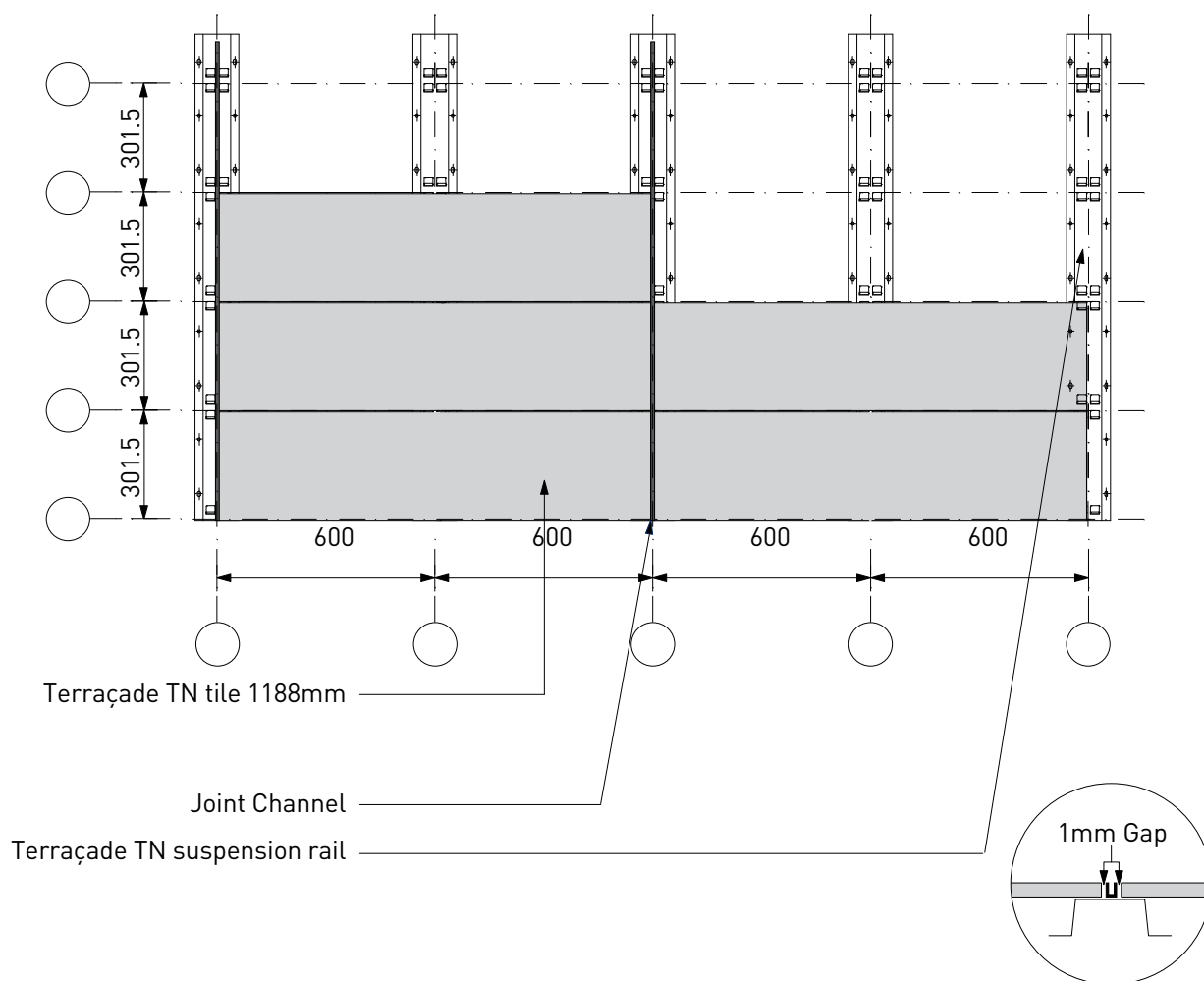
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESCRIPTION

Terraçade TN System with Joint Channel



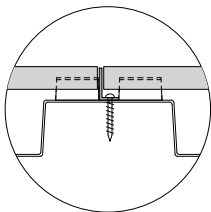
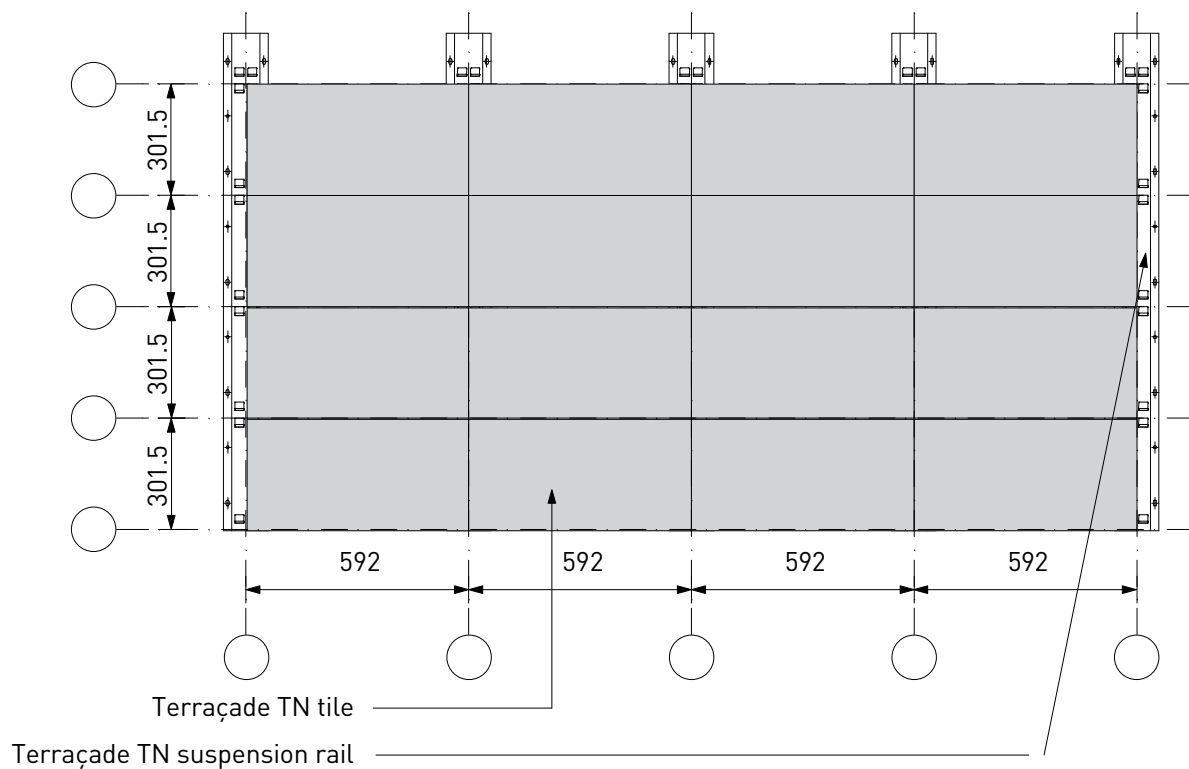
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESCRIPTION

Terraçade TN System with Joint Angle



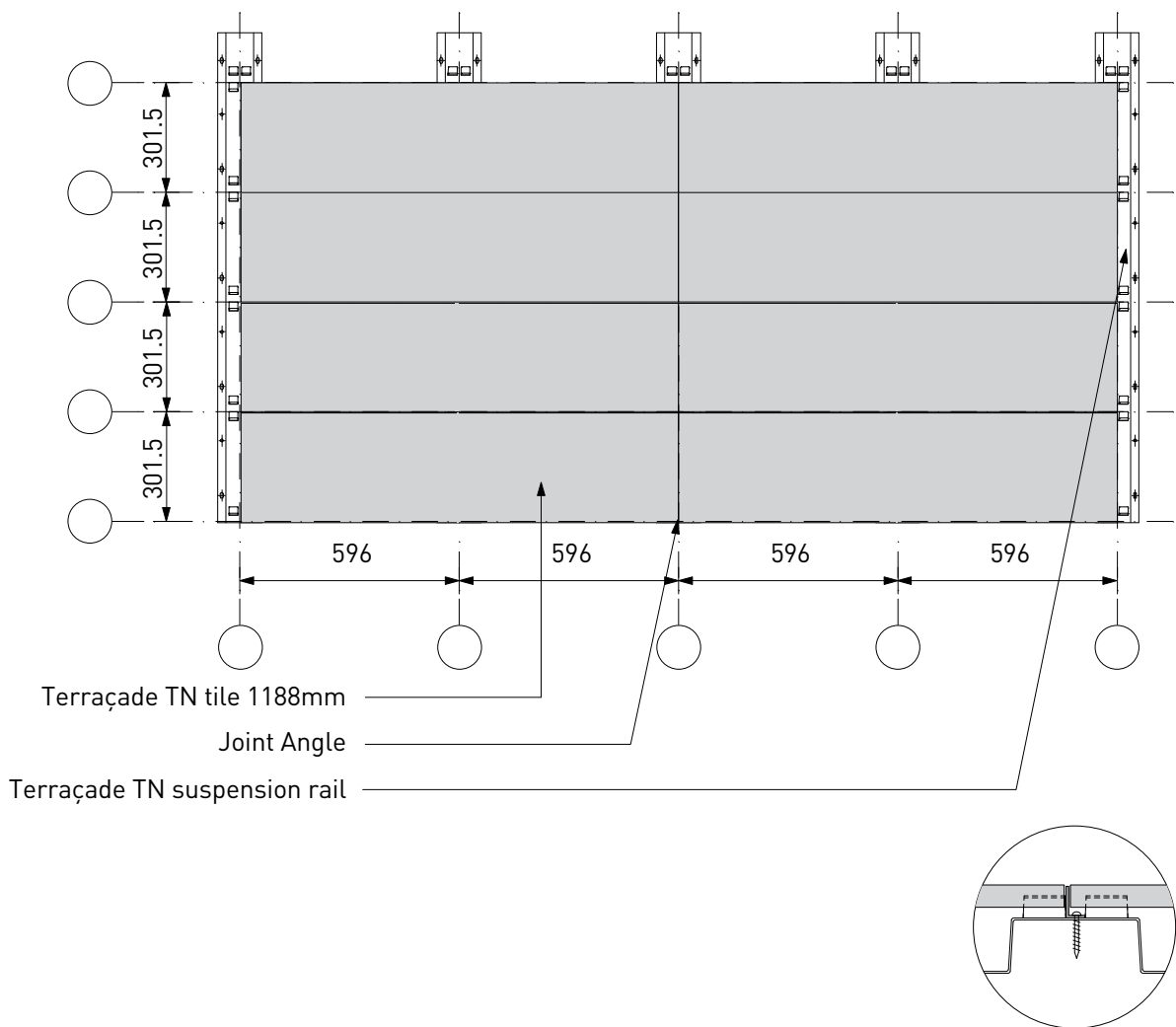
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESCRIPTION

Terraçade TN System with Joint Angle

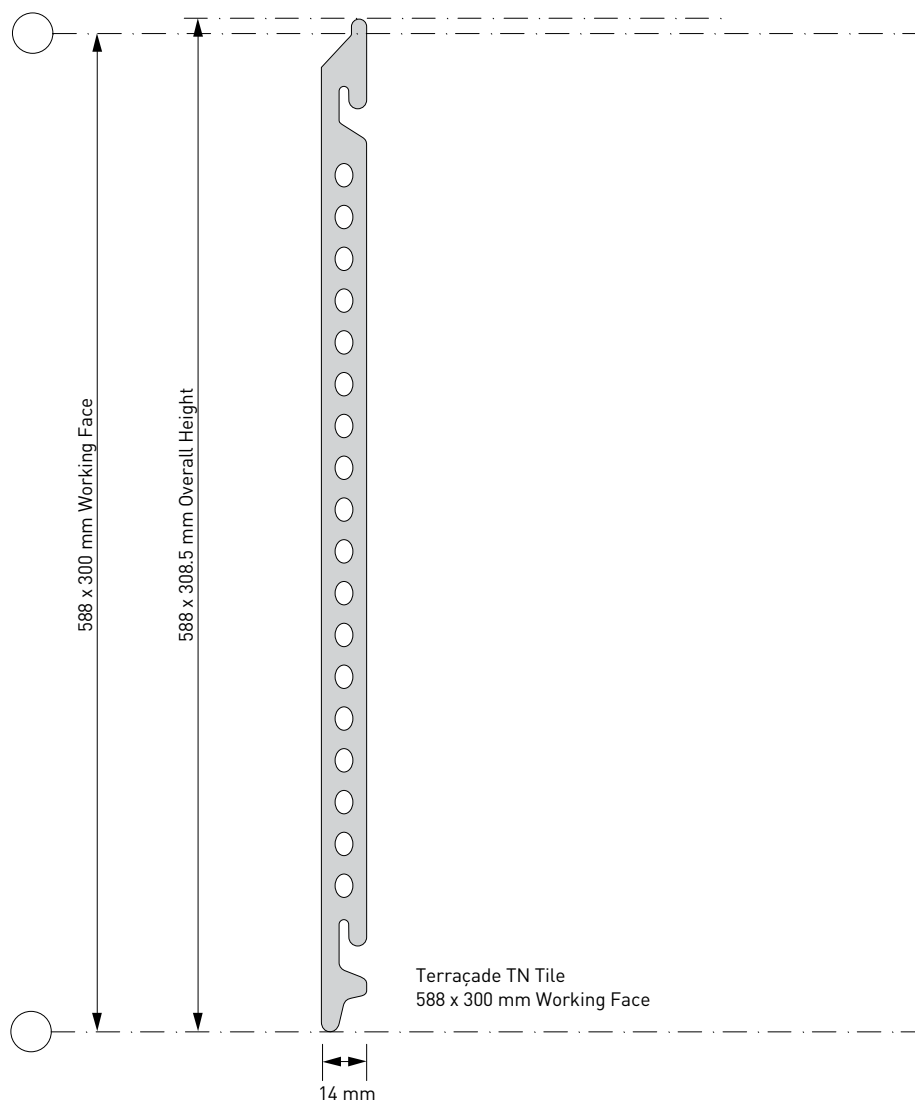


ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

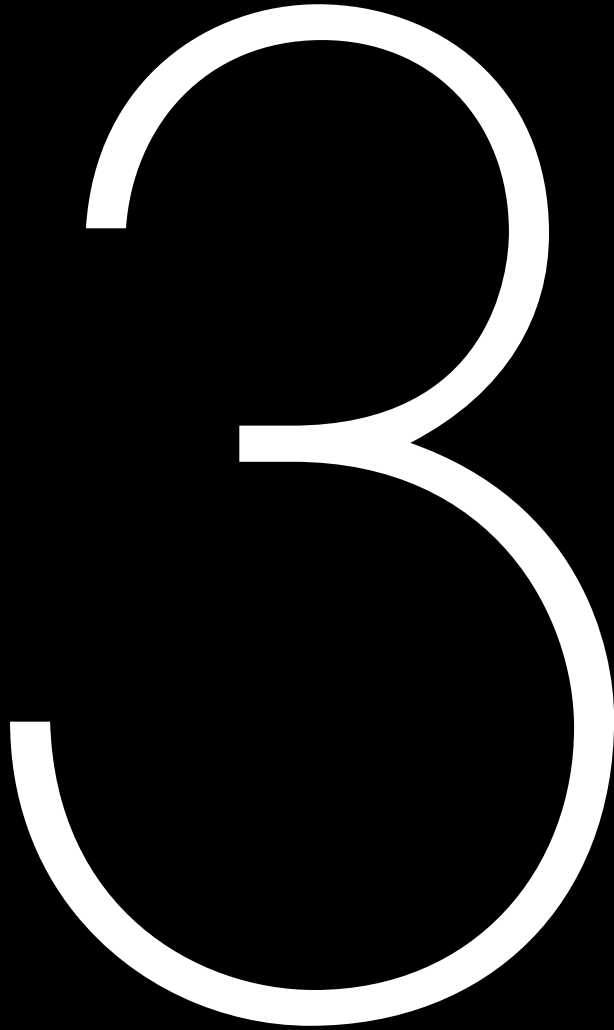
SYSTEM DESCRIPTION

Terraçade TN System Side Profile**ISSUE E-1117**

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

STRUCTURAL PERFORMANCE



For the most up to date information on Terraçade products and the latest version of this manual, please refer to our website; www.terraçade.com.au

STRUCTURAL PERFORMANCE

System Performance for Earthquake and Wind Loads

Supply and Testing Statement

The Terraçade TN system has been tested to AS/NZS 4284 (Testing of building façades) for structural performance and has passed the deflection criteria under serviceable limit state.

System and structural advice has been obtained from Core Project Consulting (Australia) Pty. Ltd. and they have also provided engineering guidance on the structural testing.

Earthquake Performance

The Terraçade TN system has been checked for compliance with AS 1170: Part 4 Earthquake loads.

From analysis of AS 1170.4 the derived acceleration imparts a load which is approximately equal to the cladding self weight. When such loads are compared to the system's allowable wind pressures it is evident that the wind load is the dominating load case.

As the Terraçade TN system develops small forces from the action of inertia during seismic events, the horizontal directions of movement are accommodated by the inherent strength of the system. No further action is therefore necessary to resist such movements, and the system is acceptable to AS 4100: 1998 Steel Structures.

Movement however in a true vertical direction does require restraint against the tiles lifting directly off the rail system under such an action.

For installation in earthquake prone areas, the Terraçade TN system requires an anti-lift block or trim installed along its top edge to ensure tiles under the action of vertical seismic events, are unable to detach from their supporting rail.

When the anti-lift block or trim is installed the system is suitable for installation against earthquakes in earthquake prone areas. However this precaution does not alleviate the system's requirements for installation against wind load.

(Statement supplied by Core Project Consulting).

Ultimate Wind Pressures

The following charts and tables have been calculated assuming a building consequence of failure importance level of 2 and a design life of 50 years in accordance with AS/NZS 1170.

Contact Brickworks Building Products for further engineering advice for buildings that are outside the above criteria.

The ultimate wind pressures have been calculated for both the standard (galvanised steel) and the coastal (ZAM® pre-coated steel and stainless steel) support rail versions; the pertinent table should be referred to for a particular project. The ultimate wind pressure tables have been characterised by a particular span configuration. The ultimate wind pressures listed refer to the span configuration directly above it.

The span configuration charts should be used in accordance with the fastener specifications given in the Technical Specification section. Design documentation should accommodate the ultimate wind pressures and fastener specifications for a particular project.

Chart 1: Ultimate Wind Pressures for the standard suspension rail (galvanised steel) & Coastal Suspension Rail (ZAM® Pre-Coated Steel).

Span Configurations for Terraçade TN							
1	2	3	4	5	6	7	8
Ultimate Wind Pressure (kPa) for Support Rails at 600mm Centres:							
0.80	1.00	1.90	2.10	3.75	3.75	3.75	3.75
Maximum Reactions (permissible) kN:							
0.71	0.67	1.17	1.17	1.52	1.40	1.52	0.74

Chart 2: Ultimate Wind Pressures for the Coastal Suspension Rail (Stainless Steel).

Span Configurations for Terraçade TN							
1	2	3	4	5	6	7	8
Ultimate Wind Pressure (kPa) for 600mm Centres:							
0.48	0.65	1.15	1.38	2.51	2.51	2.51	2.51
Maximum Reactions (permissible) kN:							
0.43	0.44	0.71	0.78	1.02	0.94	1.02	0.50

* Note: The arrows in the allowable pressures tables indicate the fastener locations and the distance noted is the span (mm) between the fasteners.

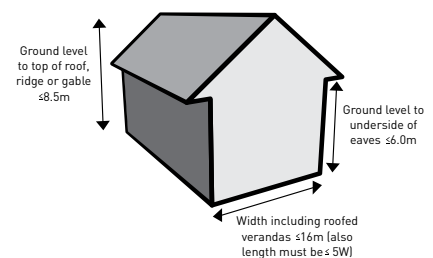
STRUCTURAL PERFORMANCE

System Performance for Wind Loads

PART A – DETERMINING SPAN CONFIGURATIONS USING THE HOUSING CODE

The following wind load requirements on Terraçade TN only apply to buildings that comply with Australian Standard AS 4055 (Wind loads for housing). In general, AS 4055 applies to houses that are within the dimensions shown in the diagram to the right. However, the applicability of AS 4055 and subsequent compliance of individual projects should be verified.

Leading engineers at Core Project Consulting have considered the wind pressure requirements for Terraçade TN and have derived the following procedure for determining the minimum span configurations required for buildings complying with AS 4055.



Step A1: Wind Pressure Requirements

Identify the wind class applicable to the particular project in accordance with AS 4055. The wind pressure requirements applicable to Terraçade TN have been determined by Core Project Consulting and are given in Table A1.

Table A1

Wind Class	General Pressure (kPa)
N1	0.62
N2	0.86
N3	1.35
N4	2.01
N5	2.96
N6	3.99
C1	1.80
C2	2.68
C3	3.94
C4	5.33

Note: A superseded version of AS 4055 used permissible wind speed categories to indicate required performance. No relation to this version has been included to reduce confusion as only ultimate wind speeds are quoted in the current version. The wind class should be quoted as N1-N6 or C1-C4.

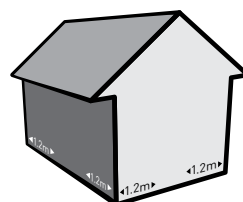
Step A2: Wind Pressures at Building Corners

Corners of buildings experience higher wind pressures than the rest of the building. Check whether any Terraçade TN is being installed within 1.2 metres (see below diagram) of the building's corners.

The wind pressure requirements determined for building corners by Core Project Consulting are given in the table below.

Table A2

Wind Class	Corner Pressure (kPa)
N1	0.94
N2	1.30
N3	2.02
N4	3.01
N5	4.44
N6	5.99
C1	2.70
C2	4.02
C3	5.91
C4	7.99



Step A3: Span Determination

Minimum span configuration requirements (for buildings complying with AS 4055) have been determined for the Terraçade TN system in accordance with the procedure outlined by Core Project Consulting.

The allowable pressure tables were used to determine the minimum span configuration requirements for the wind pressure determined. These requirements are summarised in Tables A3 and A4.

The span number given in the tables indicates the lowest span number that the system must be installed at. For example Span 4 indicates that a span configuration of 900mm – 750mm – 900mm is required, any lower numbered spans, such as Span 3 which is 750mm – 900mm – 900mm, cannot be used.

Tables A3 applies to the Standard and Coastal Version (galvanised and ZAM® Rails), whilst Table A4 applies to the C5 Coastal Version stainless steel rails. The tables include both the general installation and the building corner installation requirements.

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Example 1

A typical project has been determined to have a wind class of N1. If the standard version (galvanised rails) is required then using Table A3 the required span is Span 1 for general areas and Span 2 at the corners. It may be worthwhile for the project to specify the higher rated Span 2 for the entire project to simplify installation.

Note: It is important to remember that particular projects within C5 Corrosion Zone, require the coastal version stainless steel rails and therefore should use Table A4.

Note: The span configurations determined should be specified along with the fastener requirements in all project documentation.

Note: Terraçade TN standard (galvanised) and coastal (ZAM® pre-coated steel & stainless steel) rails that are cut to lengths of less than 1.8 m should always be installed at 600 mm centres.

Note: If a span configuration is 'N/A' for a particular wind class, use the analysis technique in Part B AS 1170.2. The scope of the wind pressure analysis performed in this housing section is limited and more detailed analysis is performed in Part B.

Standard & Coastal Version

Table A3: Minimum installation for 600mm centres (Galvanised and ZAM® Rails).

Wind Class	Minimum Span Configuration Requirements	
	General Installation	Building Corner Installation
N1	Span 1	Span 2
N2	Span 2	Span 3
N3	Span 3	Span 4
N4	Span 4	Span 5-8
N5	Span 5-8	N/A
N6	N/A	N/A
C1	Span 3	Span 5-8
C2	Span 5-8	N/A
C3	N/A	N/A
C4	N/A	N/A

*N/A equals Not Available

C5 Coastal Version

Table A4: Minimum installation for 600mm centres (Stainless Steel Rails).

Wind Class	Minimum Span Configuration Requirements	
	General Installation	Building Corner Installation
N1	Span 2	Span 3
N2	Span 3	Span 4
N3	Span 4	Span 5-8
N4	Span 5-8	N/A
N5	N/A	N/A
N6	N/A	N/A
C1	Span 5-8	N/A
C2	N/A	N/A
C3	N/A	N/A
C4	N/A	N/A

*N/A equals Not Available

Suspension Rail Selection Guide

TABLE A5: Suspension rail selection based on site atmospheric corrosivity.

Distance from Breaking Surf*	Distance from Calm Salt Water Body, eg. Bay*	Corrosion Zone according to AS 4312	Recommended Suspension Rail Material
1001m+	101m+	Up to C3	Galvanised
501m to 1000m	0m to 100m	Up to C4	ZAM® Pre-Coated Steel
0m to 500mm	0m to 100m	Up to C5	304/316 Stainless Steel

* General guide only. Please refer to AS 4312-2008 for detailed corrosion zones.

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

PART B – DETERMINING SPAN CONFIGURATIONS USING THE STRUCTURAL DESIGN CODE

The following wind load requirements on Terraçade TN only apply to buildings that comply with Australian Standard AS/NZS 1170.2 (Structural design actions, Part 2: Wind actions). The applicability of AS/NZS 1170.2 and subsequent compliance of individual projects should be verified.

AS/NZS 1170.2 identifies four main wind regions pertinent to Australia as shown in the map below.

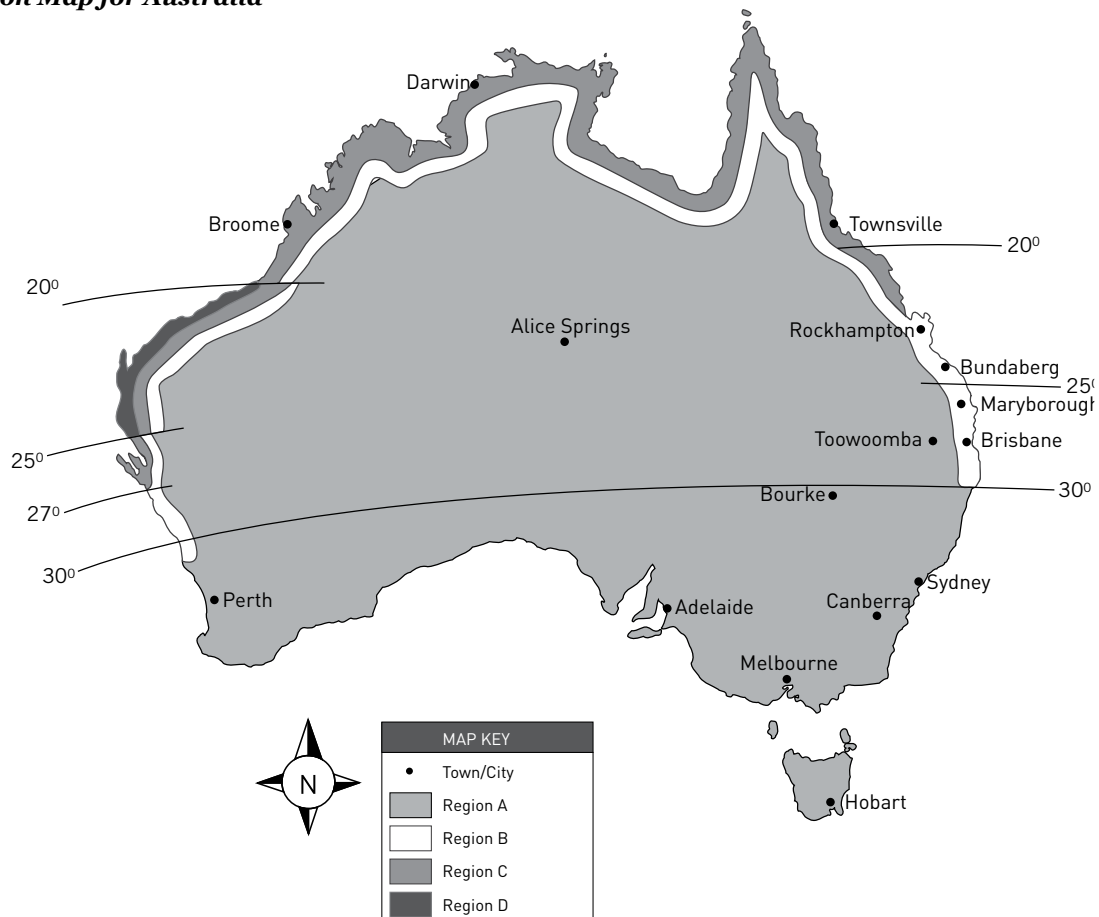
Leading engineers at Core Project Consulting have considered the wind pressure requirements for Terraçade TN

and have derived the following procedure for determining the minimum span configurations required for buildings complying with AS1170.2.

Note: Shielding was not considered in the analysis.

Note: Topography can affect wind pressure if a building is located high on a steep slope or escarpment. Brickworks Building Products should be contacted in such circumstances.

Wind Region Map for Australia



STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Step B1: Wind Region

Identify the wind region that the project is located in. If the wind region has not been specified, it should be determined in accordance with AS/NZS 1170.2. The map indicates the wind regions for Australia. It is important to note that regions C and D are affected by cyclones and Terraçade TN are not recommended for these regions.

Step B2: Height

Determine the height above ground level to which the Terraçade TN will be installed. AS/NZS 1170.2 outlines the method of determining reference heights. The wind pressure requirements have been categorised by specific limiting heights. Always select the limiting height that is larger or equal to the project installation height.

Step B3: Terrain Category

Identify the terrain category for the project. The terrain will affect the wind flow that a project is subjected to. The four terrain categories defined in AS/NZS 1170.2 are:

- **Category 1:** Very few or no obstructions and an exposed open terrain.
- **Category 1.5:** Open water surfaces subjected to shoaling waves, e.g. near-shore ocean water; large unenclosed bays on seas and oceans; lakes; and enclosed bays extending greater than 10 km in the wind direction.
- **Category 2:** Limited and well-spread obstructions in an open terrain. Typical terrains include grasslands and water surfaces.
- **Category 2.5:** Terrain with a few trees or isolated obstructions, typical of developing outer urban areas with scattered houses, or large acreage developments with fewer than ten buildings per hectare.

- **Category 3:** Numerous low (3-5 m) obstructions that are closely spaced. A typical terrain is a suburban housing estate.
- **Category 4:** High number of large and tall (10-30 m) obstructions that are closely spaced. A typical terrain is a large city centre.

Note: The terrain category should be determined in accordance with AS/NZS 1170.2 and obstructions should have permanence during a wind event.

Step B4: Wind Pressure

A wind pressure table (Table B1) has been provided as a reference. The wind pressure for an individual project can be determined from the table using the information determined in the preceding steps.

Example 1:

A typical project in a suburban area of Brisbane (i.e. Terrain Category 3, Region B) installed to a height of 4m. For this case using the limiting height of 10m, the wind pressure for Terraçade TN is 1.63 kPa (using Table B1).

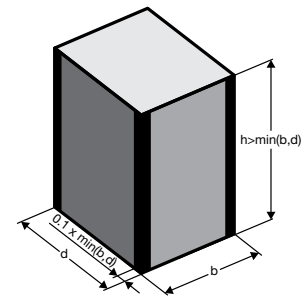
Step B5: Corner Wind Pressure

The corners of tall, slender buildings experience higher wind pressures than the rest of the building. When Terraçade TN is installed in this corner region, a different support rail span configuration may be required.

To determine the span configuration requirement, calculate the aspect ratio (r) of the building by dividing its average roof height (h) by its smallest plan dimension (b or d). If the aspect ratio is less than or equal to 1, no additional requirements are necessary for Terraçade TN being installed on the building corner.

(Note: AS/NZS 1170.2-2011 has equalised the worst-case magnitudes of positive and negative wind pressure coefficients and factors for permeable cladding on buildings with an aspect ratio of less than or equal to 1).

If the aspect ratio is greater than 1, then check whether any Terraçade TN is being installed on the building corners. The length of the corner region (for a tall building) is one-tenth of the shortest plan dimension (refer to below diagram).



STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Example 2:

A six storey building has plan dimensions of 32 metres and 16 metres, and has an average roof height of 20 metres. The aspect ratio found by dividing the height of 20m by the smallest plan dimension i.e., 16m, which equals 1.25. Since the aspect ratio is greater than 1, additional fixings for the Terraçade TN support rails are required at the corners of the building for the increased wind pressure.

The distance from the corners of the building requiring additional fixings for the Terraçade TN support rails is one-tenth of the shortest plan dimension, which in this example is $0.1 \times 16 = 1.6$ metres. This must be rounded up to a multiple of 600mm (support rail spacing), for this example, the distance from the corners of the building requiring additional support fixings is 1.8m.

A wind pressure table (Table B2) has been provided as a reference for the wind pressure at the building corners.

Example 3:

A medium-rise project in the central business district of Brisbane (i.e. Terrain Category 4, Region B) is installed to a height of 30m, with an aspect ratio of greater than one.

For this case, the wind pressure for general areas of Terraçade TN for a limiting height of 30m is 1.52kPa (using Table B1) and the wind pressure on at the corners is 2.16kPa (using Table B2).

The minimum span fastener configuration for general installation can be read from Table B3 for 600 mm centres (e.g., span configuration 3, for a height of 30 m in this example).

The minimum span fastener configuration for corner installation can be read from Table B4 for 600mm centres (e.g. span configurations 5 to 8, for a height of 30m in this example).

However, it is recommended to adopt the higher rated span 5 to 8 configuration for the entire project to simplify installation.

Step B6: Span Determination

Minimum span configuration requirements (for buildings complying with AS/NZS 1170.2) have been determined for the Terraçade TN system in accordance with the procedure outlined by Core Project Consulting. The allowable pressure tables were used to determine the minimum span configuration requirements for the wind pressure determined. These requirements are summarised in Tables B3-B6.

The span number given in the tables indicates the lowest span number that the system must be installed at. For example Span 4 indicates that a span configuration of 900mm – 750mm – 900mm is required (refer to span diagram below), any lower numbered spans, such as Span 3 which is 750mm – 900mm – 900mm, cannot be used.

Table B3 and B4 apply to the Standard and Coastal Version (galvanised and ZAM® Rails). Table B5 and B6 apply to the C5 Coastal Version (Stainless steel rails).

Note: It is important to remember that particular projects that require the C5 coastal version (stainless steel rails) should use Tables B5 and B6.

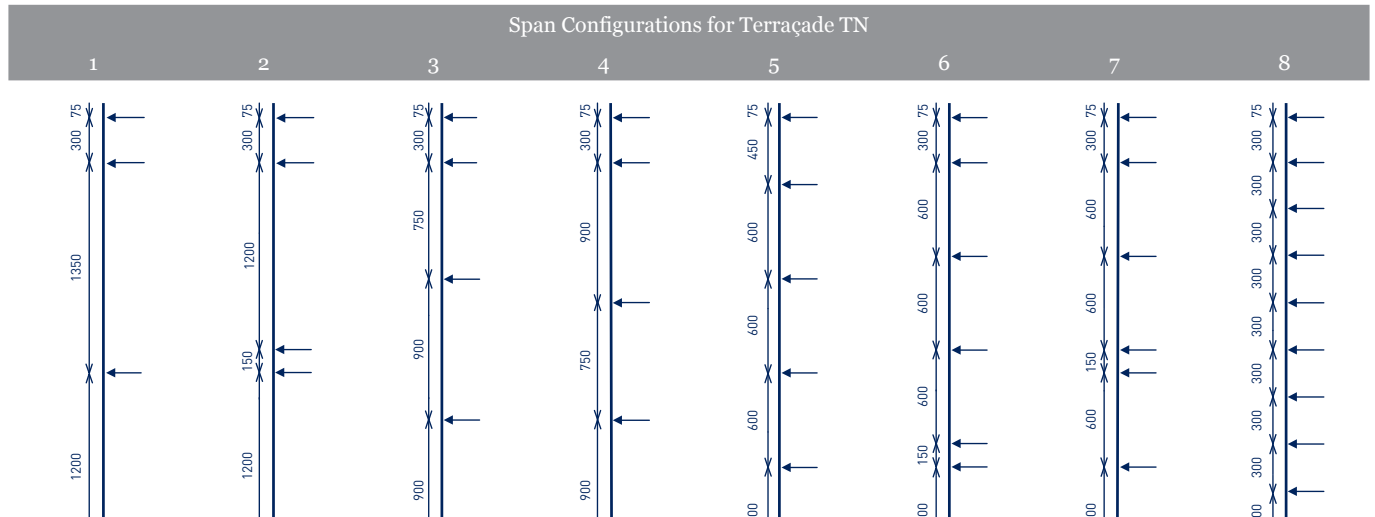
Note: The span configurations determined should be specified along with the fastener requirements (refer to the Technical Specifications - Fastener Section) in all project documentation.

Note: Terraçade TN rails that are cut to lengths of less than 1.8m should always be installed at 600mm centres.

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Chart 3: Span Configurations for Terraçade TN



* Note: The arrows in the allowable pressures tables indicate the fastener locations and the distance noted is the span (mm) between the fasteners.

Table B1: Wind Pressure.

Wind Region	Limiting Height (m)	Terrain Category 1	Terrain Category 1.5	Terrain Category 2	Terrain Category 2.5	Terrain Category 3	Terrain Category 4
A	10	1.88	1.69	1.50	1.26	1.03	0.84
	15	2.01	1.83	1.65	1.42	1.19	0.84
	20	2.12	1.93	1.75	1.53	1.32	0.84
	30	2.23	2.05	1.88	1.69	1.50	0.96
	40	2.30	2.16	2.01	1.82	1.62	1.08
B	10	2.97	2.67	2.37	2.00	1.63	1.33
	15	3.19	2.90	2.61	2.24	1.88	1.33
	20	3.35	3.06	2.76	2.43	2.09	1.33
	30	3.53	3.25	2.97	2.67	2.37	1.52
	40	3.64	3.41	3.19	2.87	2.56	1.71
C	10	4.48	4.02	3.57	3.01	2.46	2.01
	15	4.80	4.37	3.93	3.38	2.83	2.01
	20	5.05	4.61	4.16	3.66	3.15	2.01
	30	5.31	4.89	4.48	4.02	3.57	2.28
	40	5.49	5.14	4.80	4.33	3.86	2.58
D	10	7.14	6.41	5.69	4.80	3.92	3.20
	15	7.66	6.96	6.27	5.39	4.51	3.20
	20	8.06	7.35	6.64	5.83	5.03	3.20
	30	8.47	7.80	7.14	6.41	5.69	3.64
	40	8.75	8.20	7.66	6.90	6.15	4.11

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Table B2: Wind Pressure for Tall Building Corners (Aspect Ration > 1).

Wind Region	Limiting Height (m)	Terrain Category 1	Terrain Category 1.5	Terrain Category 2	Terrain Category 2.5	Terrain Category 3	Terrain Category 4
A	10	2.68	2.41	2.14	1.80	1.47	1.20
	15	2.87	2.61	2.35	2.02	1.69	1.20
	20	3.02	2.76	2.49	2.19	1.89	1.20
	30	3.18	2.93	2.68	2.41	2.14	1.37
	40	3.28	3.08	2.87	2.59	2.31	1.54
B	10	4.24	3.81	3.38	2.85	2.33	1.90
	15	4.55	4.14	3.73	3.20	2.68	1.90
	20	4.79	4.36	3.94	3.46	2.99	1.90
	30	5.03	4.64	4.24	3.81	3.38	2.16
	40	5.20	4.87	4.55	4.10	3.66	2.44
C	10	6.39	5.74	5.09	4.30	3.51	2.86
	15	6.85	6.23	5.61	4.82	4.03	2.86
	20	7.21	6.57	5.94	5.22	4.50	2.86
	30	7.58	6.98	6.39	5.74	5.09	3.26
	40	7.83	7.34	6.85	6.18	5.51	3.68
D	10	10.18	9.15	8.12	6.86	5.59	4.57
	15	10.92	9.94	8.95	7.69	6.43	4.57
	20	1150	10.48	9.47	8.32	7.17	4.57
	30	12.08	11.13	10.18	9.15	8.12	5.20
	40	12.48	11.70	10.92	9.85	8.78	5.87

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Table B3: General Installation (ZAM® Pre-Coated Steel and Galvanised Rails).

Wind Region	Limiting Height (m)	Terrain Category 1	Terrain Category 1.5	Terrain Category 2	Terrain Category 2.5	Terrain Category 3	Terrain Category 4
A	10	Span 3	Span 3	Span 3	Span 3	Span 3	Span 2
	15	Span 4	Span 3	Span 3	Span 3	Span 3	Span 2
	20	Span 5-8	Span 4	Span 3	Span 3	Span 3	Span 2
	30	Span 5-8	Span 4	Span 3	Span 3	Span 3	Span 2
	40	Span 5-8	Span 5-8	Span 4	Span 3	Span 3	Span 3
B	10	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3	Span 3
	15	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3	Span 3
	20	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3
	30	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
	40	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
C	10	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 4
	15	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	20	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	30	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	40	N/A	N/A	N/A	N/A	N/A	Span 5-8
D	10	N/A	N/A	N/A	N/A	N/A	Span 5-8
	15	N/A	N/A	N/A	N/A	N/A	Span 5-8
	20	N/A	N/A	N/A	N/A	N/A	Span 5-8
	30	N/A	N/A	N/A	N/A	N/A	Span 5-8
	40	N/A	N/A	N/A	N/A	N/A	N/A

*N/A equals Not Available

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Table B4: Corner Installation - Aspect Ratio > 1 (ZAM® Pre-Coated Steel and Galvanised Rails).

Wind Region	Limiting Height (m)	Terrain Category 1	Terrain Category 1.5	Terrain Category 2	Terrain Category 2.5	Terrain Category 3	Terrain Category 4
A	10	Span 5-8	Span 5-8	Span 5-8	Span 3	Span 3	Span 3
	15	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3	Span 3
	20	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3	Span 3
	30	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
	40	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
B	10	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 3
	15	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 3
	20	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 3
	30	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	40	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
C	10	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 4
	15	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	20	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	30	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	40	N/A	N/A	N/A	N/A	N/A	Span 5-8
D	10	N/A	N/A	N/A	N/A	N/A	N/A
	15	N/A	N/A	N/A	N/A	N/A	N/A
	20	N/A	N/A	N/A	N/A	N/A	N/A
	30	N/A	N/A	N/A	N/A	N/A	N/A
	40	N/A	N/A	N/A	N/A	N/A	N/A

*N/A equals Not Available

STRUCTURAL PERFORMANCE

System Performance for Wind Loads

Table B5: General Installation (Stainless Steel Rails).

Wind Region	Limiting Height (m)	Terrain Category 1	Terrain Category 1.5	Terrain Category 2	Terrain Category 2.5	Terrain Category 3	Terrain Category 4
A	10	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3	Span 3
	15	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3
	20	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3
	30	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
	40	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
B	10	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 4
	15	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	20	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	30	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	40	N/A	N/A	N/A	N/A	N/A	Span 5-8
C	10	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	15	N/A	N/A	N/A	N/A	N/A	Span 5-8
	20	N/A	N/A	N/A	N/A	N/A	Span 5-8
	30	N/A	N/A	N/A	N/A	N/A	Span 5-8
	40	N/A	N/A	N/A	N/A	N/A	N/A
D	10	N/A	N/A	N/A	N/A	N/A	N/A
	15	N/A	N/A	N/A	N/A	N/A	N/A
	20	N/A	N/A	N/A	N/A	N/A	N/A
	30	N/A	N/A	N/A	N/A	N/A	N/A
	40	N/A	N/A	N/A	N/A	N/A	N/A

*N/A equals Not Available

STRUCTURAL PERFORMANCE

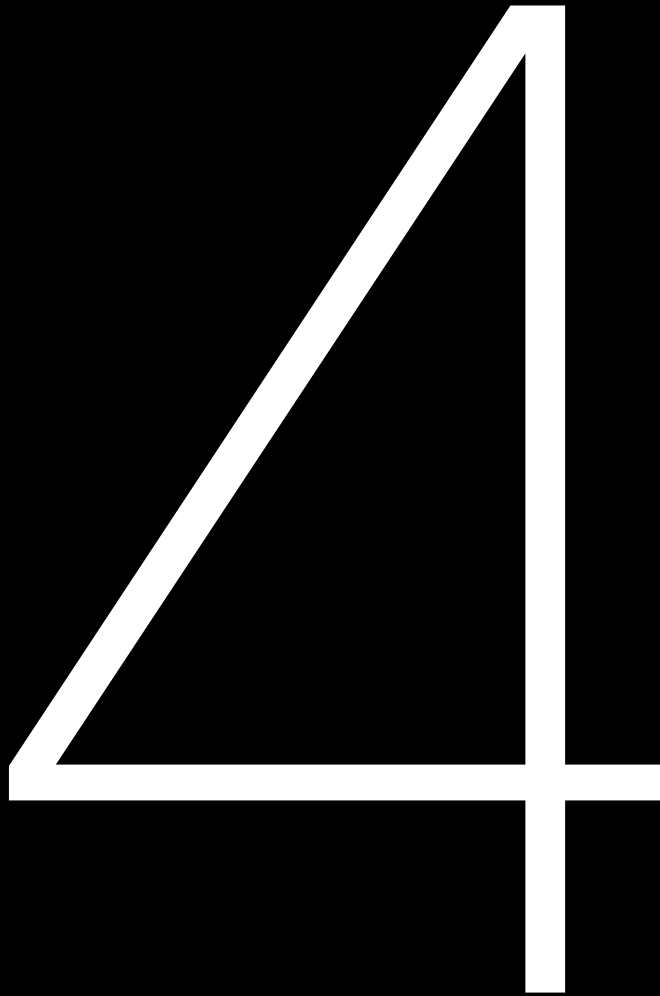
System Performance for Wind Loads

Table B6: Corner Installation - Aspect Ratio > 1 (Stainless Steel Rails).

Wind Region	Limiting Height (m)	Terrain Category 1	Terrain Category 1.5	Terrain Category 2	Terrain Category 2.5	Terrain Category 3	Terrain Category 4
A	10	Span 5-8	Span 5-8	Span 5-8	Span 3	Span 3	Span 3
	15	Span 5-8	Span 5-8	Span 5-8	Span 4	Span 3	Span 3
	20	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3	Span 3
	30	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
	40	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 5-8	Span 3
B	10	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 3
	15	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 3
	20	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 3
	30	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	40	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
C	10	N/A	N/A	Span 5-8	Span 5-8	Span 5-8	Span 4
	15	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	20	N/A	N/A	N/A	Span 5-8	Span 5-8	Span 4
	30	N/A	N/A	N/A	N/A	Span 5-8	Span 5-8
	40	N/A	N/A	N/A	N/A	N/A	Span 5-8
D	10	N/A	N/A	N/A	N/A	N/A	N/A
	15	N/A	N/A	N/A	N/A	N/A	N/A
	20	N/A	N/A	N/A	N/A	N/A	N/A
	30	N/A	N/A	N/A	N/A	N/A	N/A
	40	N/A	N/A	N/A	N/A	N/A	N/A

*N/A equals Not Available

TECHNICAL SPECIFICATIONS



For the most up to date information on Terraçade products and the latest version of this manual, please refer to our website; www.terraçade.com.au

TECHNICAL SPECIFICATIONS

Materials Schedule and Properties

C1: Material list used in the Terraçade TN system

Component	Material
01. Tiles	Fired extruded clay tile.
02. Suspension Rail	Standard - Galvanised (cold formed light galvanised sheet), or C4 Coastal - ZAM® pre-coated steel, or C5 Coastal - stainless steel sheet grade 316.
03. Visible Trims	Aluminium - All extrusions are aluminium Grade 6063-T5 and are produced to Australian Standard AS 1866 (Aluminium and Aluminium Alloys - Extruded Rod, Bar, Solid and Hollow Shapes). Trims are available in: <ul style="list-style-type: none"> • Mill finish, which is expected to have a design life in excess of twenty-five years for moderate environments (as defined in AS/NZS 2312). • Anodised finish in clear and black, which can have a design life in excess of forty years. • Powder coated finish to AS 3715 in various colours, which can come with a guarantee of ten years. Folded Metal Trims – These trims are available in Colourbond® or alternative finishes from other suppliers.
04. Waterproof Membrane	For framed systems a waterproof membrane can be supplied as part of the system's tested performance. The membrane is a spunbonded polypropylene material that allows the egress of vapour from within the frame, but restricts the ingress of rain and moisture.
05. Fitment Sponge	EPDM rubber with acrylic adhesive.
06. Set-out Tool	Specially designed tool to maintain vertical continuity if multiple lengths of the suspension rail are butted end to end.

Tile Properties:

Extensive testing is carried out in Austral Bricks' NATA accredited laboratory to Australian Standards AS/NZS 4455, AS/NZS 4456, and in independent NATA accredited laboratories to ISO 10545.8.

C2: TN Tile Property

(Nominal) Tile Dimensions	308 x 588mm	308 x 1188mm
Mass	~4.5kg	~9kg
Number of Tiles/m ²	5.6	2.7
Weight/m ²	25kg	25kg
Cold Water Absorption	<2.5%	<2.5%
Breaking Strength (Longitudinal)	~1.7kN	~1.7kN
Breaking Strength (Transverse)	~4.7kN	~4.7kN
Coefficient of Expansion	<0.02%	<0.02%
Coefficient of Thermal Expansion	~1.0 x 10 ⁻⁶ (°C) ⁻¹	~1.0 x 10 ⁻⁶ (°C) ⁻¹
Durability Class	Exposure	Exposure

* Brickworks Building Products reserves the right to change specifications without notice
– November 2017. Check the Terraçade website for updated results. ZAM® is a registered trade mark of Nisshin Steel.

Suspension Rail and Trim Options

C3: Standard Properties and Trim Materials

	Nominal Length	Coefficient of Thermal Expansion ('10-6/°C)	Iyy (mm ⁴)	E (GPa)
Stainless Steel Suspension Rails	3008mm	15.9 - 17.2	4.75x10 ⁴	190
Galvanised Suspension Rails	3008mm	11.7	4.75x10 ⁴	200
ZAM® Pre-Coated Steel Suspension Rails	3008mm	10.7	4.75x10 ⁴	210
Aluminium Trim	5500mm	23.4		69

Please ensure to create sufficient gaps between rails and trims to accommodate thermal expansion of the materials.

Suspension Rail Selection Guide

C4: Rail Selection Guide

Distance from Breaking Surf*	Distance from Calm Salt Water Body, eg. Bay*	Corrosion Zone according to AS 4312	Recommended Suspension Rail Material
1001m+	101m+	Up to C3	Galvanised
501m to 1000m	0m to 100m	Up to C4	ZAM® Pre-Coated Steel
0m to 500mm	0m to 100m	Up to C5	304/316 Stainless Steel

* General guide only. Please refer to AS 4312-2008 for detailed corrosion zones.

Fitment Sponge Properties

C5: Fitment Sponge Properties

Cell Type	Closed	Thermal Conductivity	0.3
Resistance to Water Penetration	Good	Flame Retardant	Yes
Abrasion / Tear Resistance	Average	Toxicity	Low
Resistance to Weathering (uv/ozone)	Excellent	Compatibility with Plastics	Good
Resistance to Chemicals	Good	Compatibility with Silicones	Good
Resistance to Petrol/Oil	Poor	Force to Compress	Medium
Temperature Resistance (°C)	105	Conformability	Moderate

Terraçade Membrane Properties

C6: Membrane Properties

Roll Dimensions	1.5m x 50m	
Weight of complete Roll	~7.5kg	
Thickness	0.5mm	
Weight	100 g/m ²	
Resistance to Water Penetration	Pass	
Water Vapour Permeability	7.5 µg/Ns	
Vapour Resistance	0.13 MNs/g	
Burst Strength, Wet Dry	294N	
Duty	Light	
Flammability Index	Low (<5)	
Air Permeability / Air Tightness	Air Permeable	
Allowable UV exposure prior to installation of cladding	2 months	
Tensile Strength	MD 3.8 kN/m	CD 3.1 kN/m

TECHNICAL SPECIFICATIONS

Fasteners

The fasteners specified below should be used in accordance with the allowable pressures of the system.
Design documentation should accommodate the allowable pressures and fastener specifications for a particular project.

C7: Fasteners

Substrate	Fixings	Size	Supplier	Product Code	Recommended Min. Embedment	Grade
Timber	Type 17 Hex Head Screw	14 - 10 x 50	Bremick	STHC5140502	Min. 45mm into supporting timber	SS 304
		14 - 10 x 50	Buildex	6-032-0023-1		SS 304
Metal	Hex Head Bolt	M8 x 30	Bremick	BHHM4080302	Min. thickness of base plate 1mm	SS 304
		M8 x 150	Bremick	BHHM4081502		SS 304
		M8 x 35	James Glen	2851		SS 304
		M8 x 150	James Glen	2897		SS 304
		M8 x 35	Hobson	BH04PCMo80035		SS 304
		M8 x 150	Hobson	BH04PCMo80150		SS 304
	Hex Head Tek Screw	14g x 50	Bremick	SMHC6140502		SS 304
		14g - 14 x 52	Buildex	6-392-0008-8		SS 305
Concrete Walls	Chemical Bolt	M10 x 130	Bremick	ACSM6101302	Min. 60mm embedment depth	SS 316
		M8 x 110	Ramset	CS08110SS		SS 316
		Chemset 101	Ramset	C101C		SS 316
		M8 x 110	Hobson	MCS16PCMo80110		SS 316
	Sleeve Anchor	M8 x 65 mechanical anchors	Bremick	ASNM6080652	Min. 50mm embedment depth	SS 316
		M8 x 80	Hobson	MTB16PMo80080		SS 316
Solid / Pressed Brick	Wall Plug + Screw	M8 x 50 Plug + 14g x 50 Screws	Bremick	PWPMFo80502 SPXT 4072002	Min. 50mm embedment depth	SS 304
		M8 x 50 Plug + 14g x 2" Screws	Hobson	MWPFB-50 TSS04PP#140200		SS 304

The above table is a guide to anchorage selection and does not alleviate the installers' responsibility to ensure the anchorage chosen is fit for purpose. Specifiers should review the maximum reaction section of the load span tables and review the design accordingly. If in doubt advice should be sought by the product design engineers.

Table continues on next page.

All screws and bolts are to be manufactured to AS 1111 and AS 3566.
* Note: Refer to the load span table (allowable pressures) for reaction output.

A4/70 indicates that the material required is cold worked, austenitic stainless steel.
M6, M8, #12 and #14 indicate the gauge or fastener diameter required.
These descriptions should be confirmed with the fastener manufacturer.

TECHNICAL SPECIFICATIONS

Fasteners (continued)

C7: Fasteners continued

Substrate	Fixings	Size	Supplier	Product Code	Recommended Min. Embedment	Grade
Concrete Filled Hollow Block	Chemical Bolt	M10 x 130	Bremick	ACSM6101302	Min. 65mm embedment depth	SS 316
		M8 x 110	Ramset	CS08110SS		SS 316
		Chemset 101	Ramset	C101C		
		M8 x 110	Hobson	MCS16PCMo80110		SS 316
	Sleeve Anchor	M8 x 65 mechanical anchors	Bremick	ACSM6080652	Min. 35mm embedment depth	SS 316
		M8 x 80	Hobson	MTB16PMo80080		SS 316
Extruded Hollow Brick	Chemical Bolt	M10 x 130	Bremick	ACSM6101302	Min. 65mm embedment depth	SS 316
		M8 x 110	Ramset	CS08110SS		SS 316
		Chemset 101	Ramset	C101C		
		M8 x 110	Hobson	MCS16PCMo80110		SS 316
Fixing TN. 03 Joint Channel to TN. 06 Suspension Rail	Pan phillips self tapping screw	#6 x 1-1/4	United Fasteners	6114		SS 304
	Pan head self tapping screw	4G x 25mm	Trifixx	STPS04025	Special order of 4000 - 5000	SS 304
	Pan head self tapping screw	6G x 1-1/4 long	Tower Fasterning System	KSTP0630	Packs of 1000	SS 304

The above table is a guide to anchorage selection and does not alleviate the installers' responsibility to ensure the anchorage chosen is fit for purpose. Specifiers should review the maximum reaction section of the load span tables and review the design accordingly. If in doubt advice should be sought by the product design engineers.

All screws and bolts are to be manufactured to AS 1111 and AS 3566.
 * Note: Refer to the load span table (allowable pressures) for reaction output.

A4/70 indicates that the material required is cold worked, austenitic stainless steel.
 M6, M8, #12 and #14 indicate the gauge or fastener diameter required.
 These descriptions should be confirmed with the fastener manufacturer.

TECHNICAL SPECIFICATIONS

System Performance

Acoustic Performance

The acoustic performances for particular wall constructions have been calculated by professional engineers from Hyder Consulting (Australia) Pty Ltd. The table below lists the weighted sound reduction value (Rw) for the wall constructions.

C8: Acoustic Performance

Back Up Wall	Acoustic Performance (Rw)
Lapped and taped sarking on timber stud wall with 50mm insulation and 12mm internal gyprock	41
Lightweight comprising 1.0mm zincanneal sheet externally on 100mm deep metal stud with 50mm insulation on 6mm internal gyprock sheet	44
110mm thick solid masonry blockwork with 12mm internal render	47
190mm thick hollow concrete blockwork with 12mm internal render	47

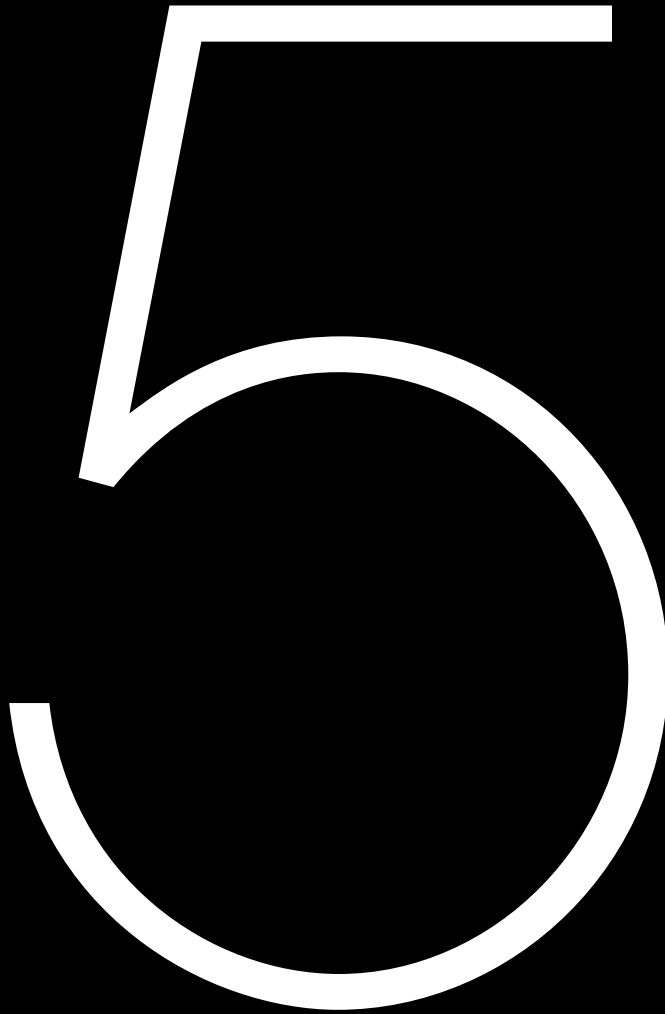
Thermal Resistance

The thermal resistance (R-value) values for particular wall constructions have been calculated by professional engineers from Hyder Consulting (Australia) Pty Ltd. The table below lists the R-value for the wall constructions.

C9: Thermal Resistance

Back Up Wall	Overall U-Value (W/m ² .K)	Overall U-Value (W/m ² .K)
Lapped and taped sarking on timber stud wall with 50 mm insulation and 12 mm internal gyprock.	0.55	1.81
Lightweight comprising 1.0 mm zincanneal sheet externally on 100 mm deep metal stud with 50 mm insulation on 6 mm internal gyprock sheet	0.55	1.81
110 mm thick solid masonry blockwork with 12 mm internal render	2.05	0.49
190 mm thick hollow concrete blockwork with 12 mm internal render	1.73	0.58

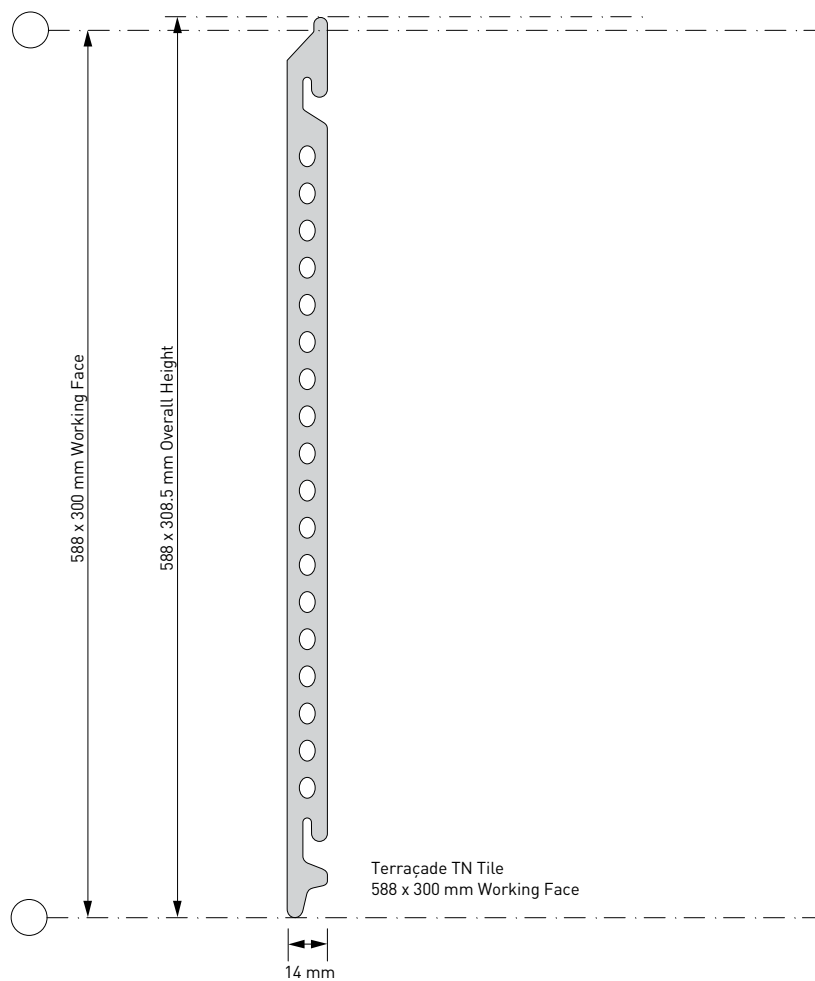
COMPONENTS



For the most up to date information on Terraçade products and the latest version of this manual, please refer to our website; www.terraçade.com.au

Comment Description	Page Number	Available from Brickworks
Terraçade™ TN Tile	38	Yes
TN. 01 Vertical Suspension Rail	39 - 40	Yes
Joint Options		
TN. 02 Aluminium Jointing Angle	41	Yes
TN. 03 Aluminium Jointing Channel	41	Yes
Corner Trim Options		
TN. 04 Aluminium External Corner	41	Yes
TN. 05 Aluminium Internal Corner	41	Yes
Surround Trim Options		
TN. 06 Aluminium Surround Profile	41	Yes
Other Components		
TN. E2 Fitment Sponge	42	Yes
TN. E3 Breathable Membrane	42	Yes
Rail Setting Tool	57	Yes

COMPONENTS

Terraçade TN Tile Profile

General tolerances for tiles: +/- 1% on all dimensions.

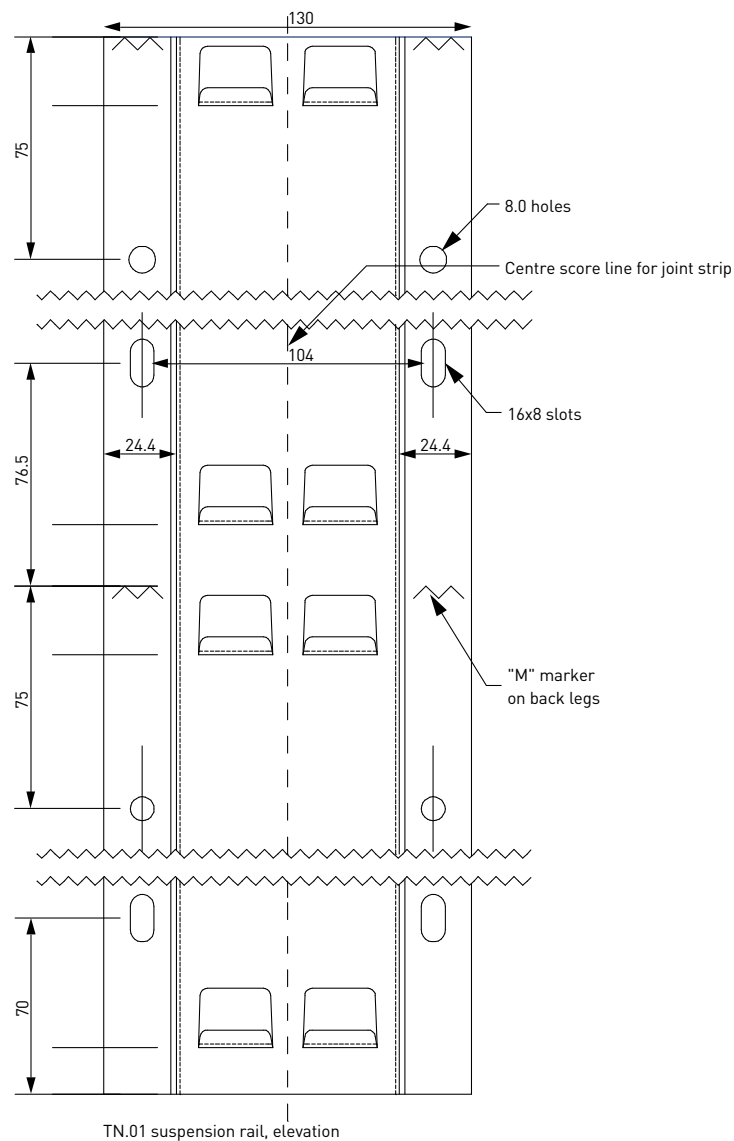
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

COMPONENTS

Terraçade TN Suspension Rail – Elevation

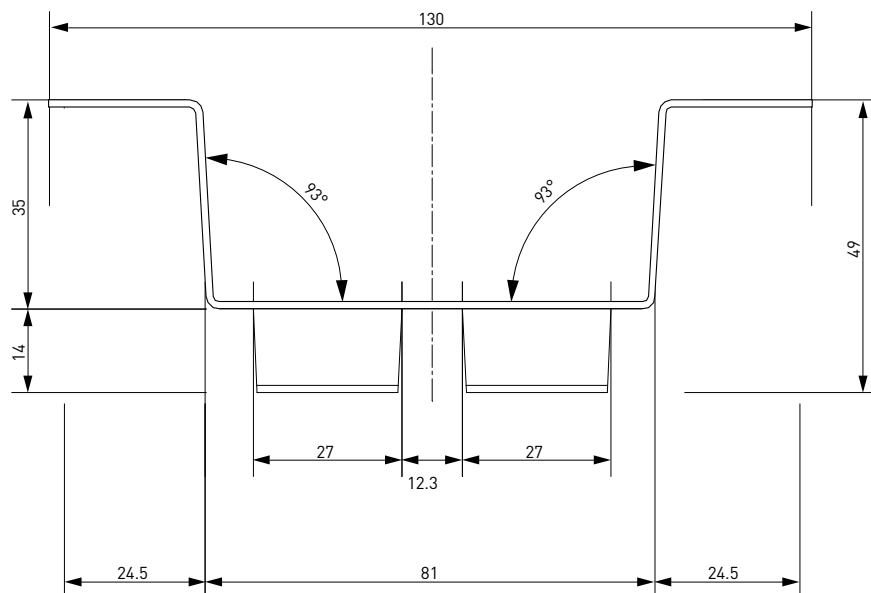


ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

COMPONENTS

Terraçade TN Suspension Rail – Plan

TN.01 suspension rail, plan

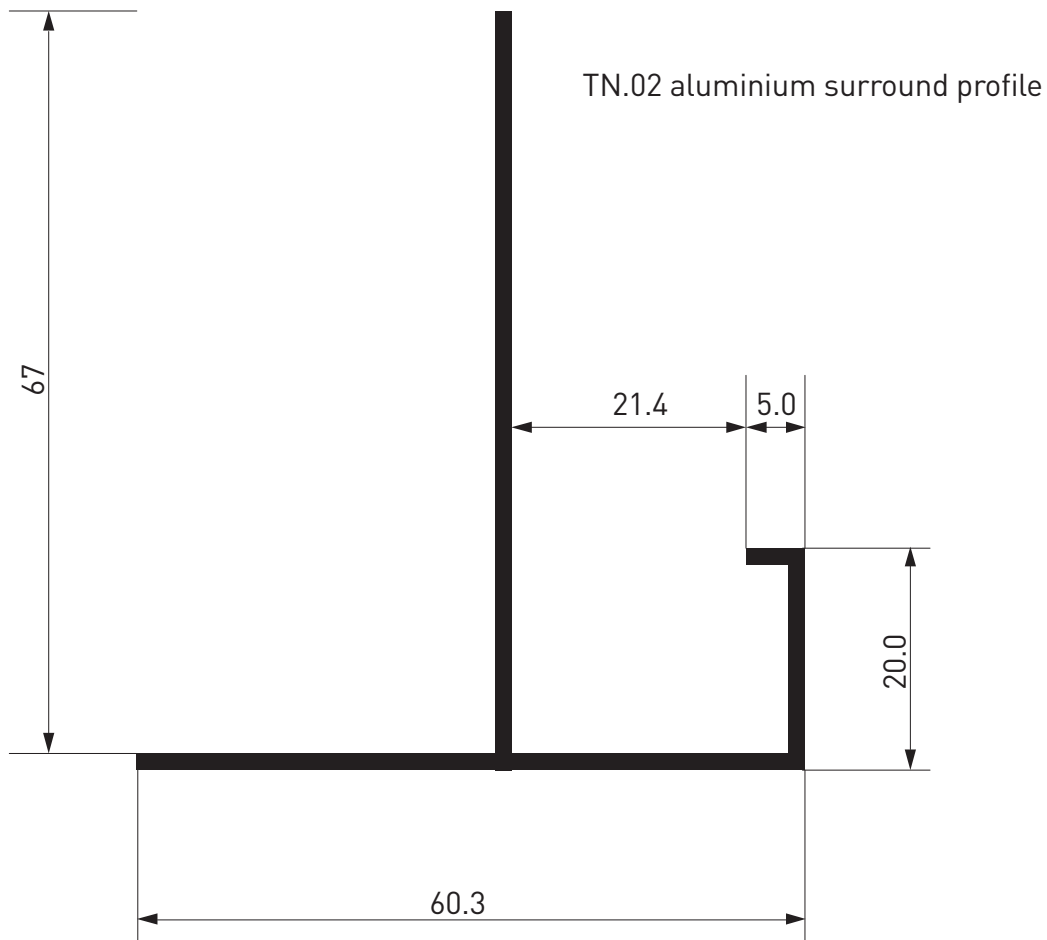
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

COMPONENTS

Surround Trim, Corner Trim and Joint Options



ISSUE E-1117

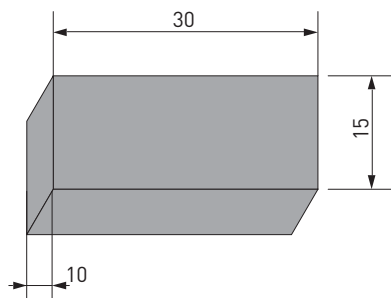
© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

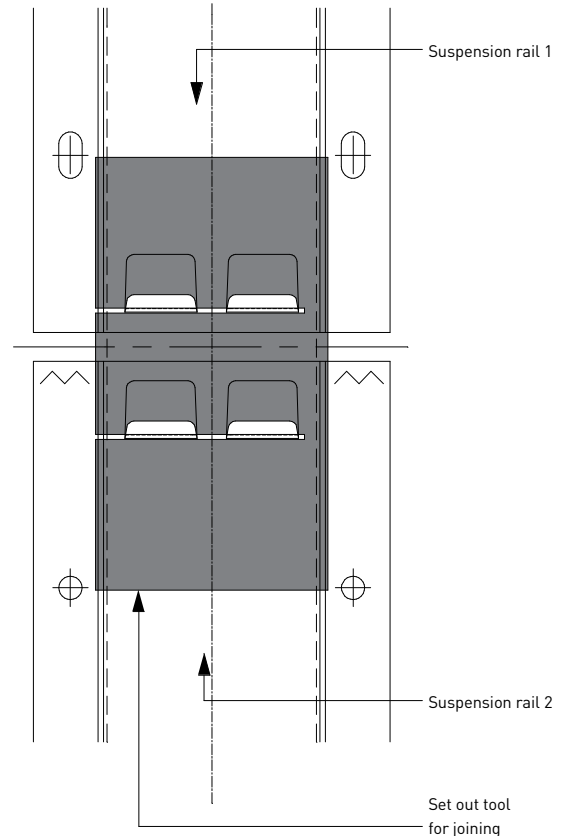
COMPONENTS

Other Components

TN. E2 Fitment Sponge



TN Set Out Tool



TN. E3 Breathable Membrane



ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN



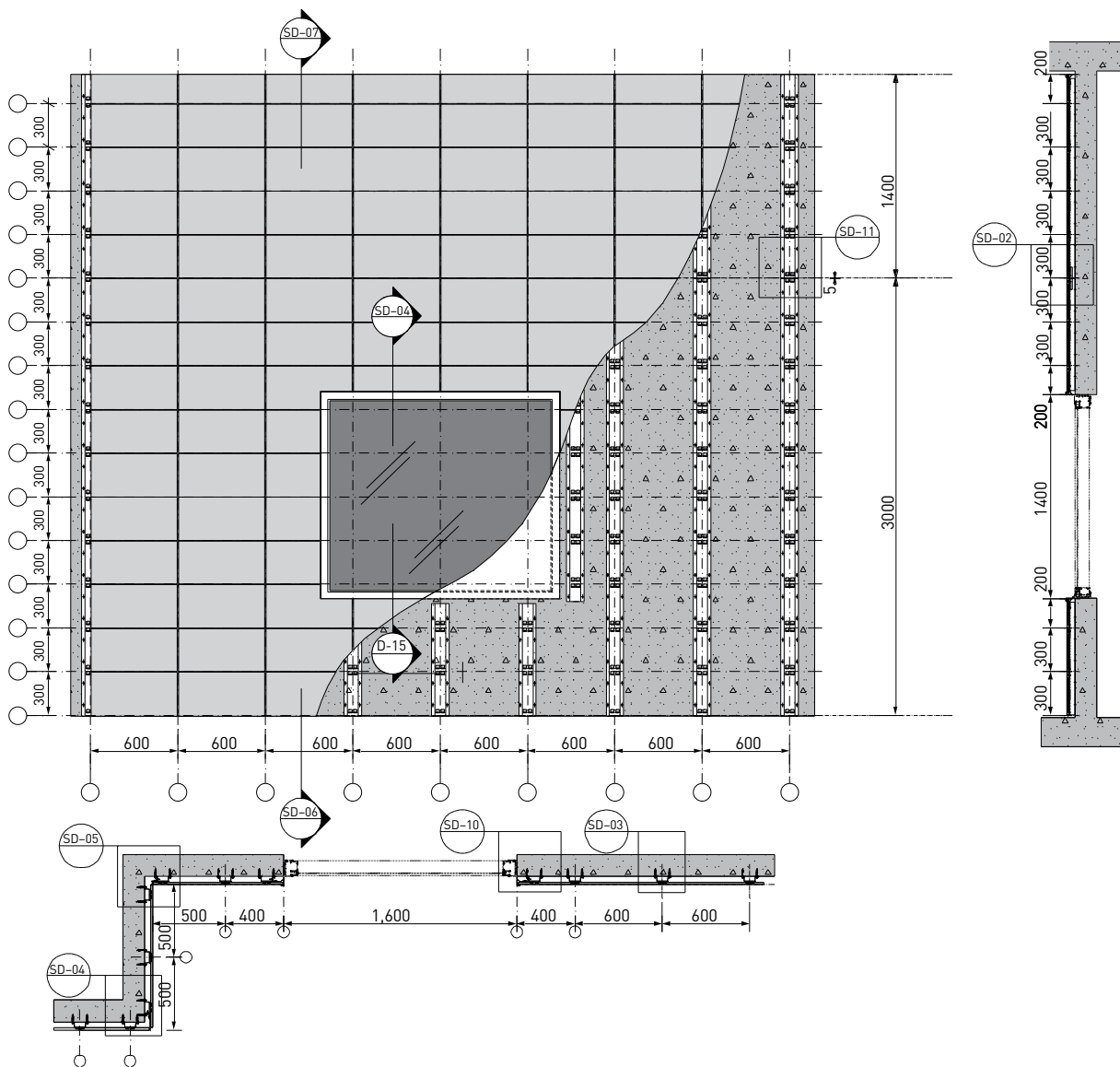
For the most up to date information on Terraçade products and the latest version of this manual, please refer to our website; www.terraçade.com.au

SYSTEM DESIGN

Common Details	Page Number
SD-01 Overview	46
SD-02 Side Detail	47
SD-03 Horizontal Detail	48
SD-04 External Corner	49
SD-05 Internal Corner	50
SD-06 Base Detail	51
SD-07 Parapet	52
SD-08 Window Sill	53
SD-09 Window Head	54
SD-10 Window Jamb Window Reveal Option	55 56
SD-11 Set-Out Tool	57
SD-12 Rake Detail	58
SD-13 Top Restraint for Earthquake Zones	59
Typical Details for Common Structural Walls	Page Number
D-01 Timber – Horizontal Detail	60
D-02 Timber – Vertical Detail	61
D-03 Timber – Termite Detail (Recessed Slab)	62
D-04 Steel – Horizontal Detail	63
D-05 Steel – Vertical Detail	64
D-06 Concrete – Horizontal Detail	65
D-07 Concrete – Vertical Detail	66
D-08 Masonry – Horizontal Detail	67
D-09 Masonry – Vertical Detail	68
Membrane	69

SYSTEM DESIGN

Overview – SD 01



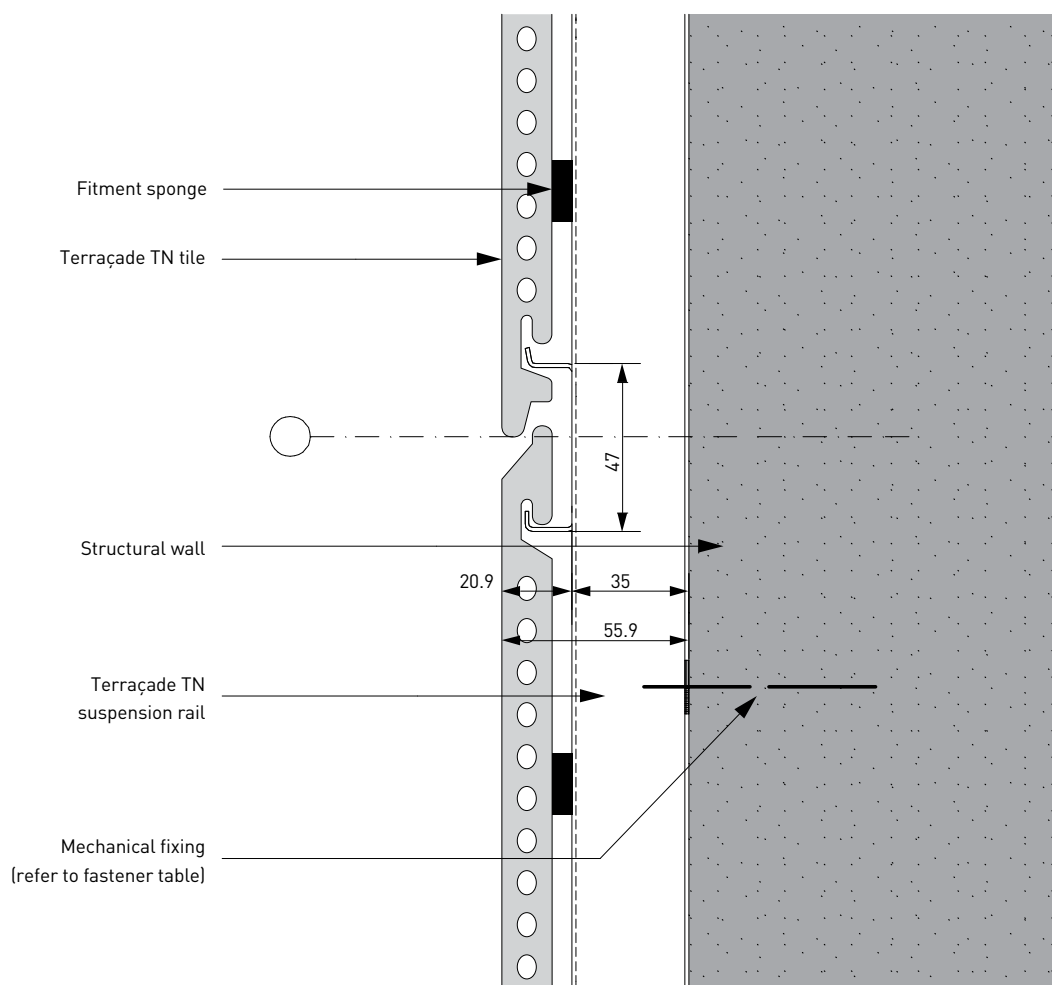
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Side Detail – SD 02



Handy Tip

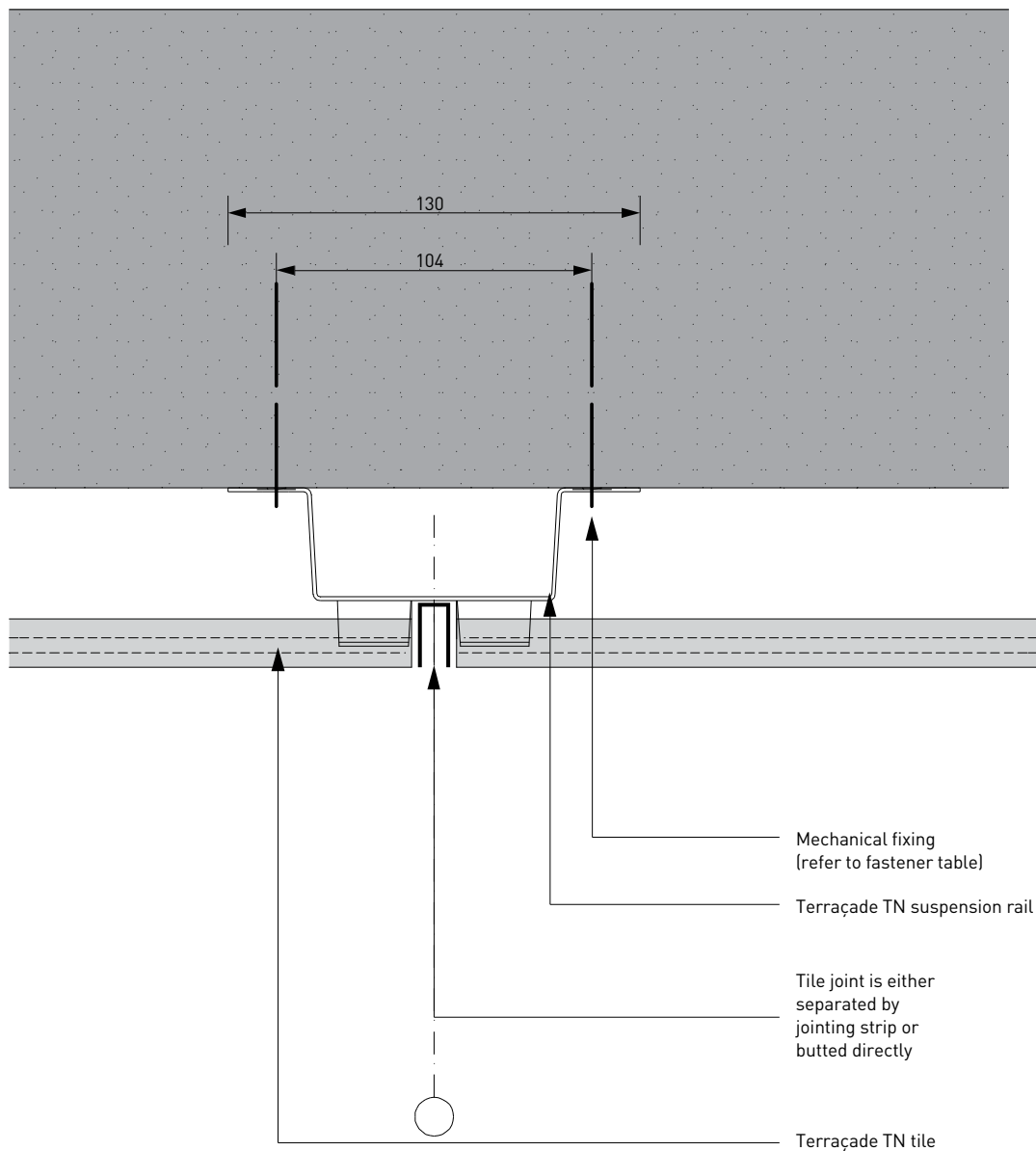
- Fitment sponges should be fitted immediately prior to installation of tiles.

ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

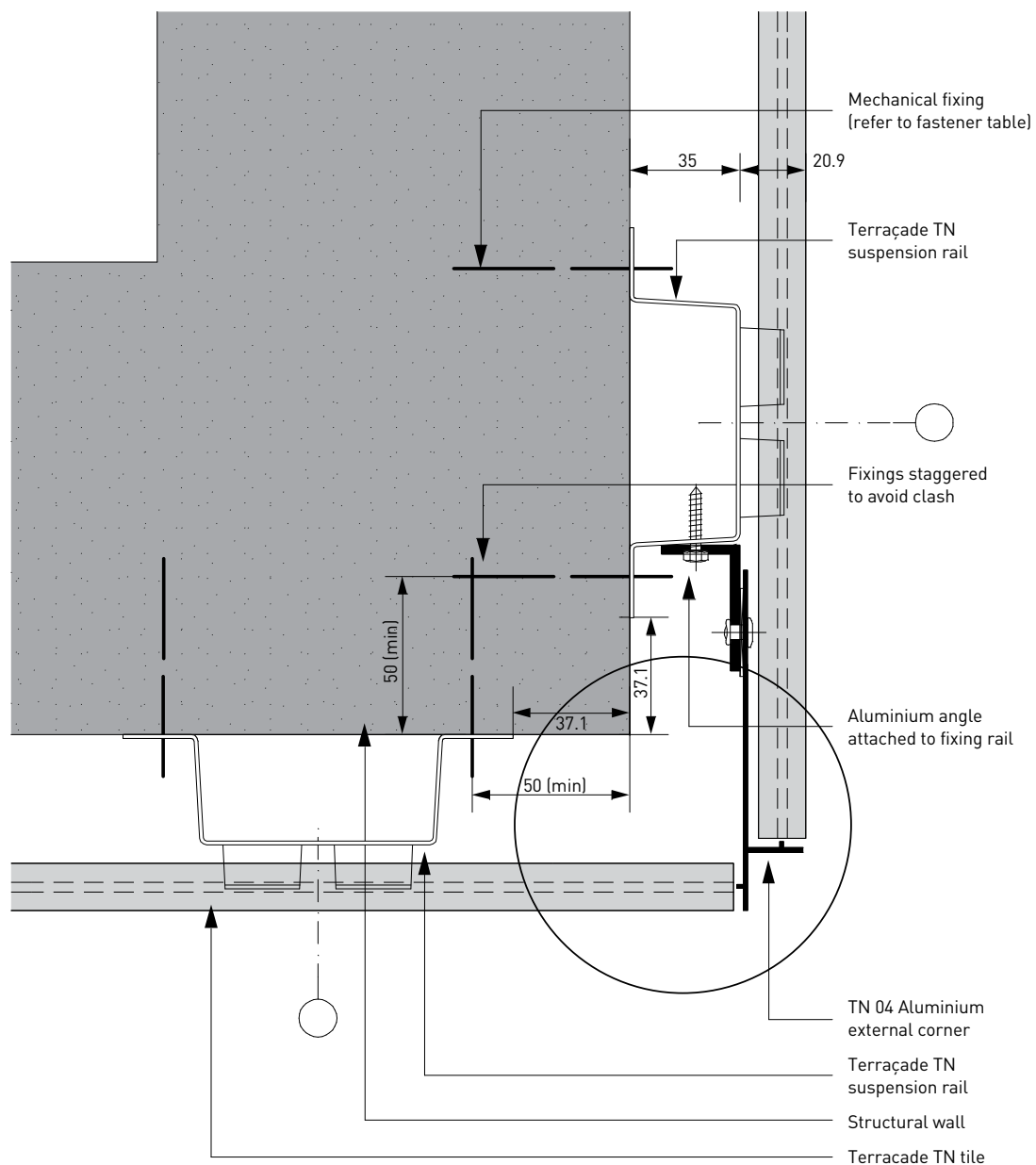
Horizontal Detail – SD 03**ISSUE E-1117**

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

External Corner – SD 04



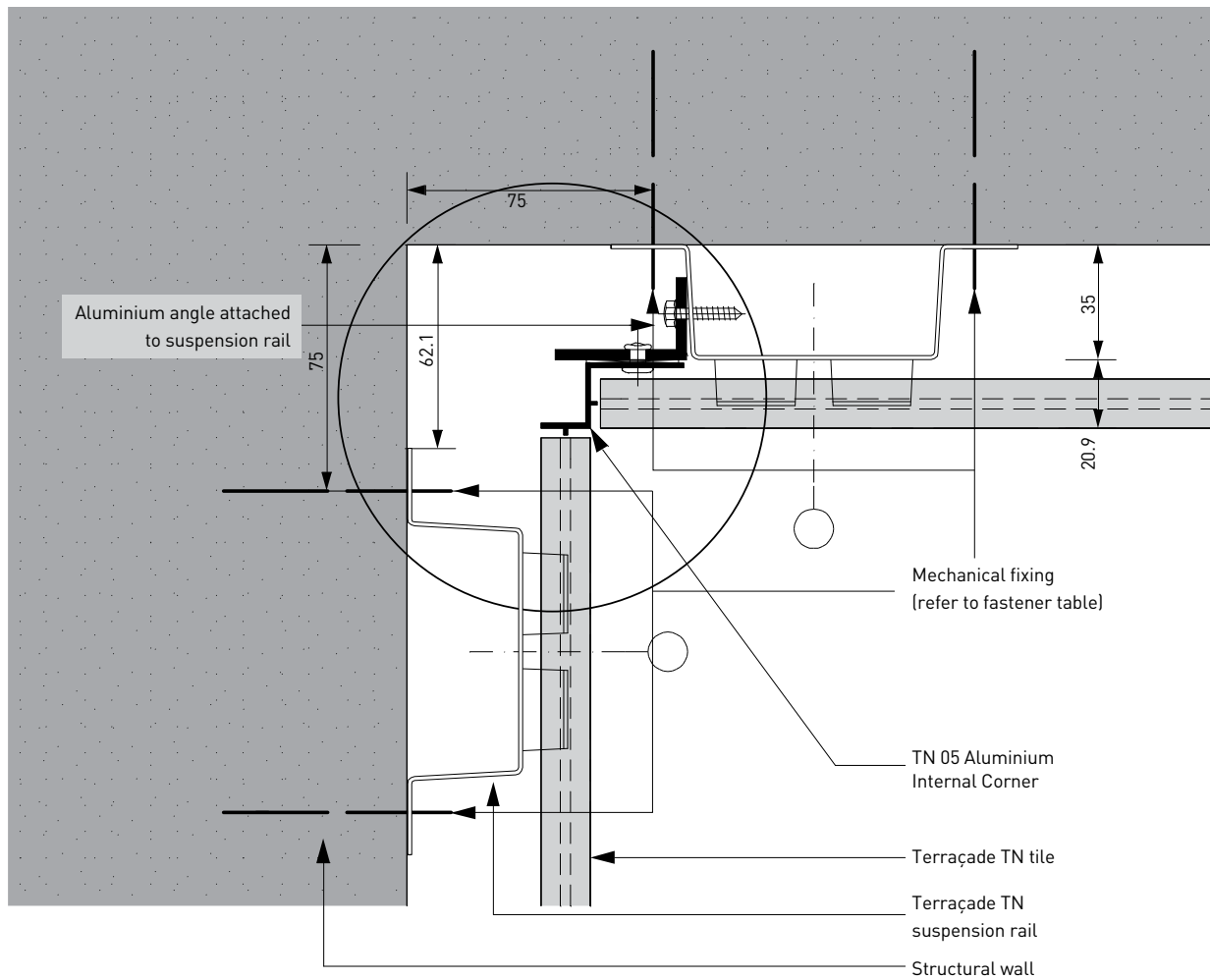
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Internal Corner – SD 05



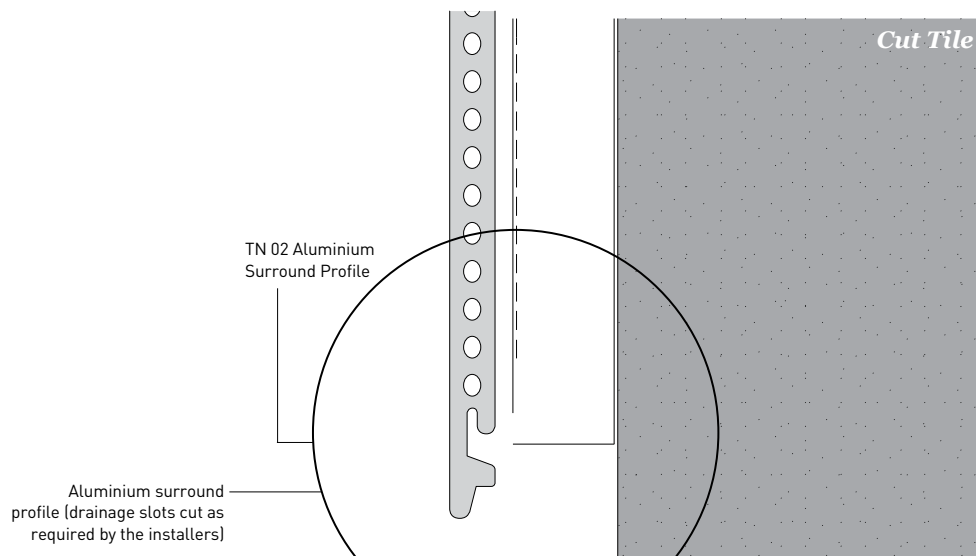
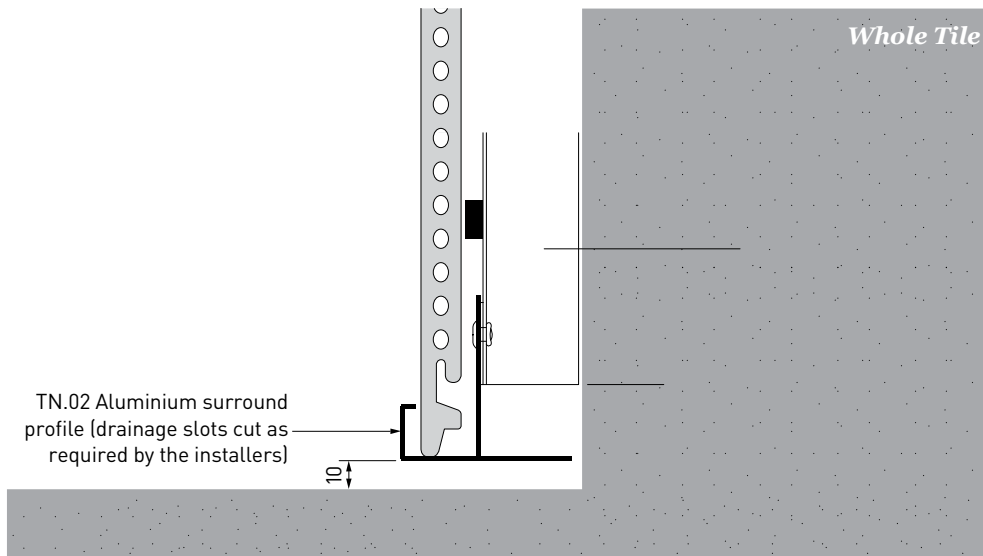
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Base Detail – SD 06



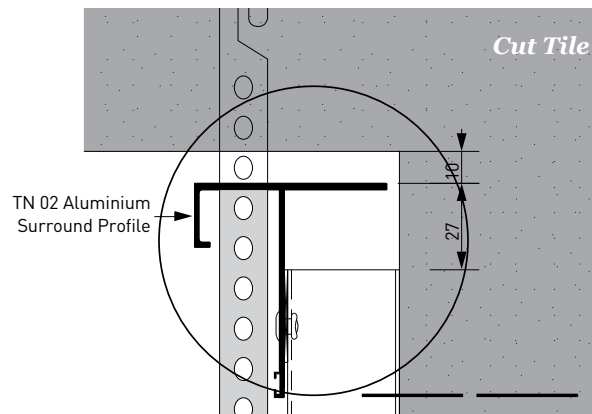
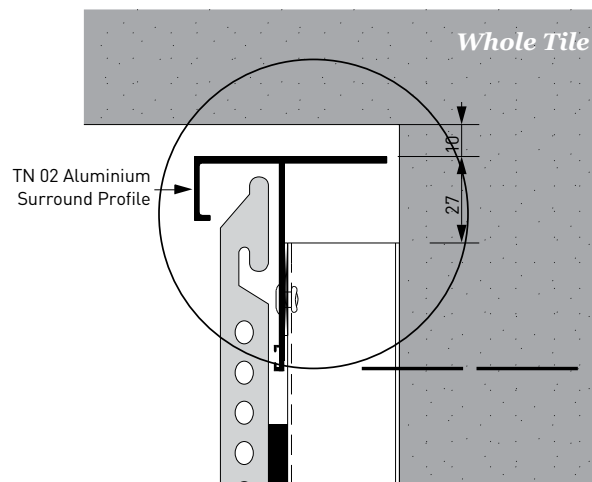
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Parapet Detail – SD 07



Handy Tip

- If fixing to structural wall and the suspension rail, allow a 10mm gap.

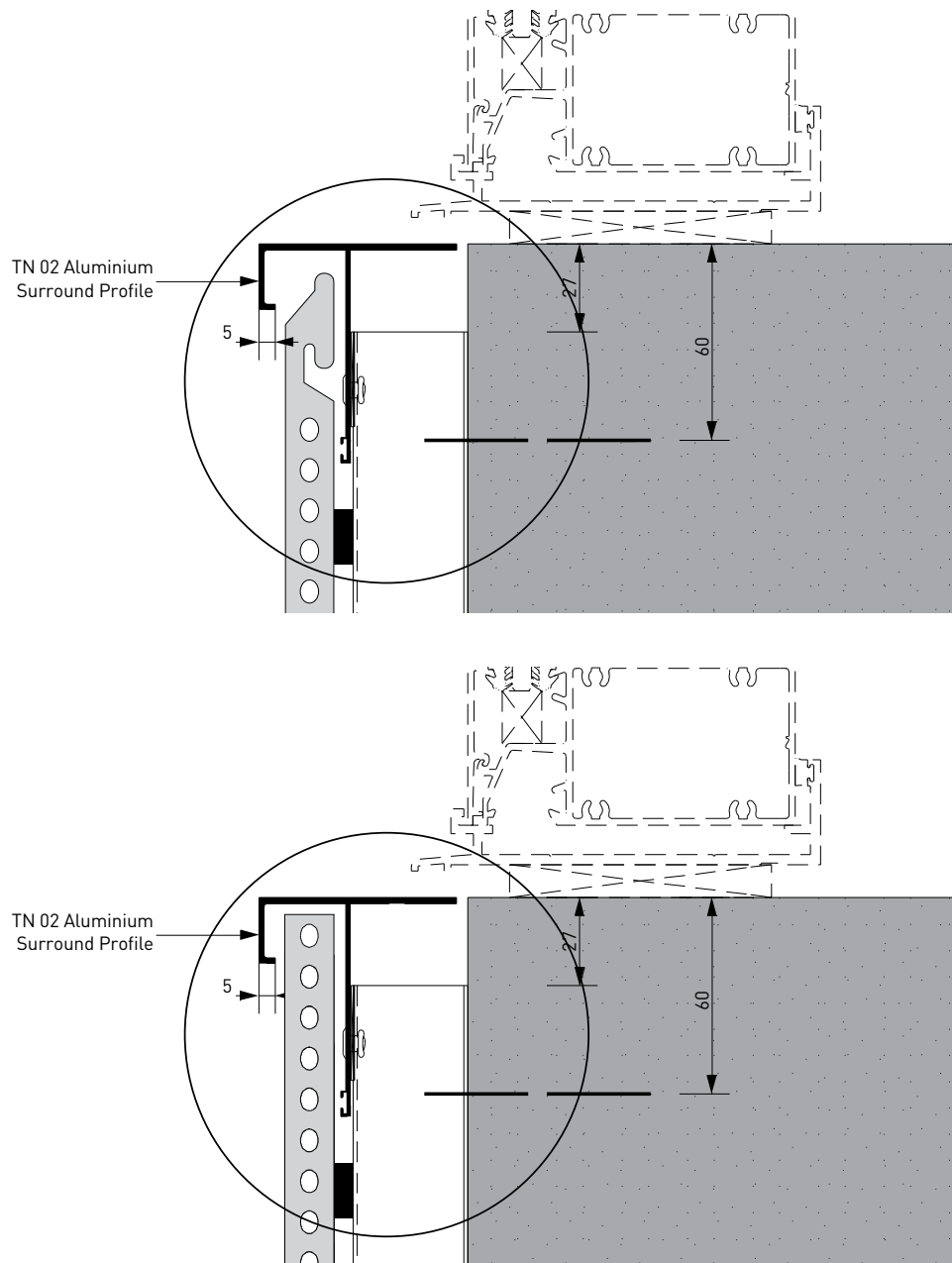
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Window Sill – SD o8

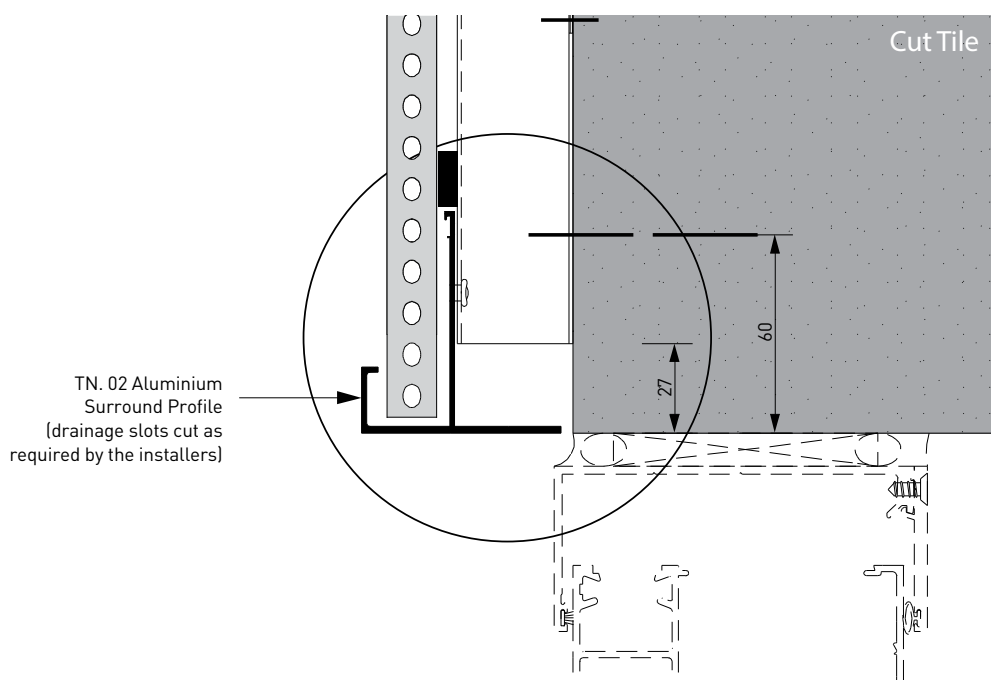
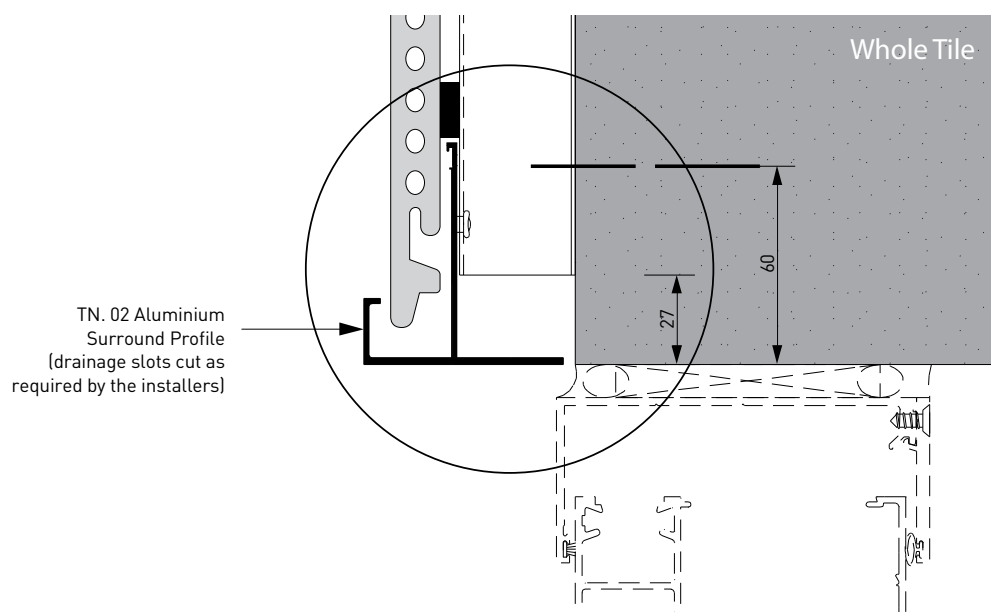


ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

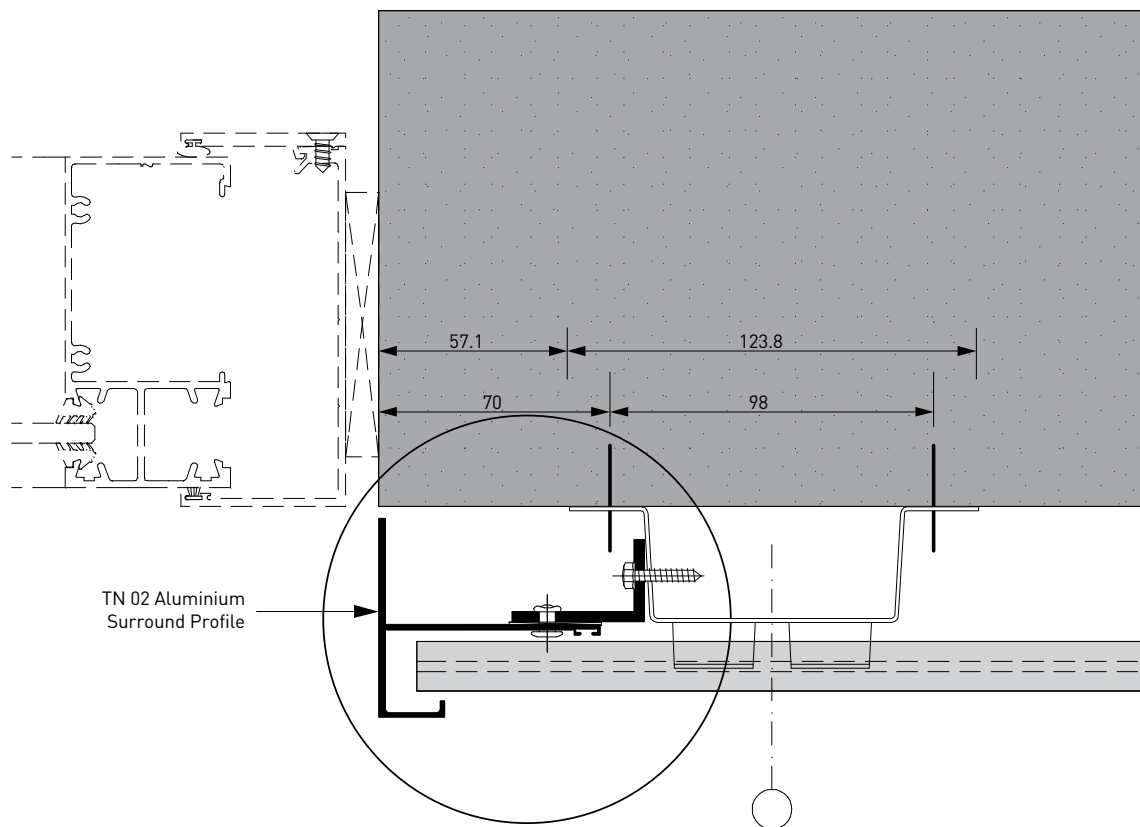
Window Head – SD 09**ISSUE E-1117**

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Window Jamb – SD 10



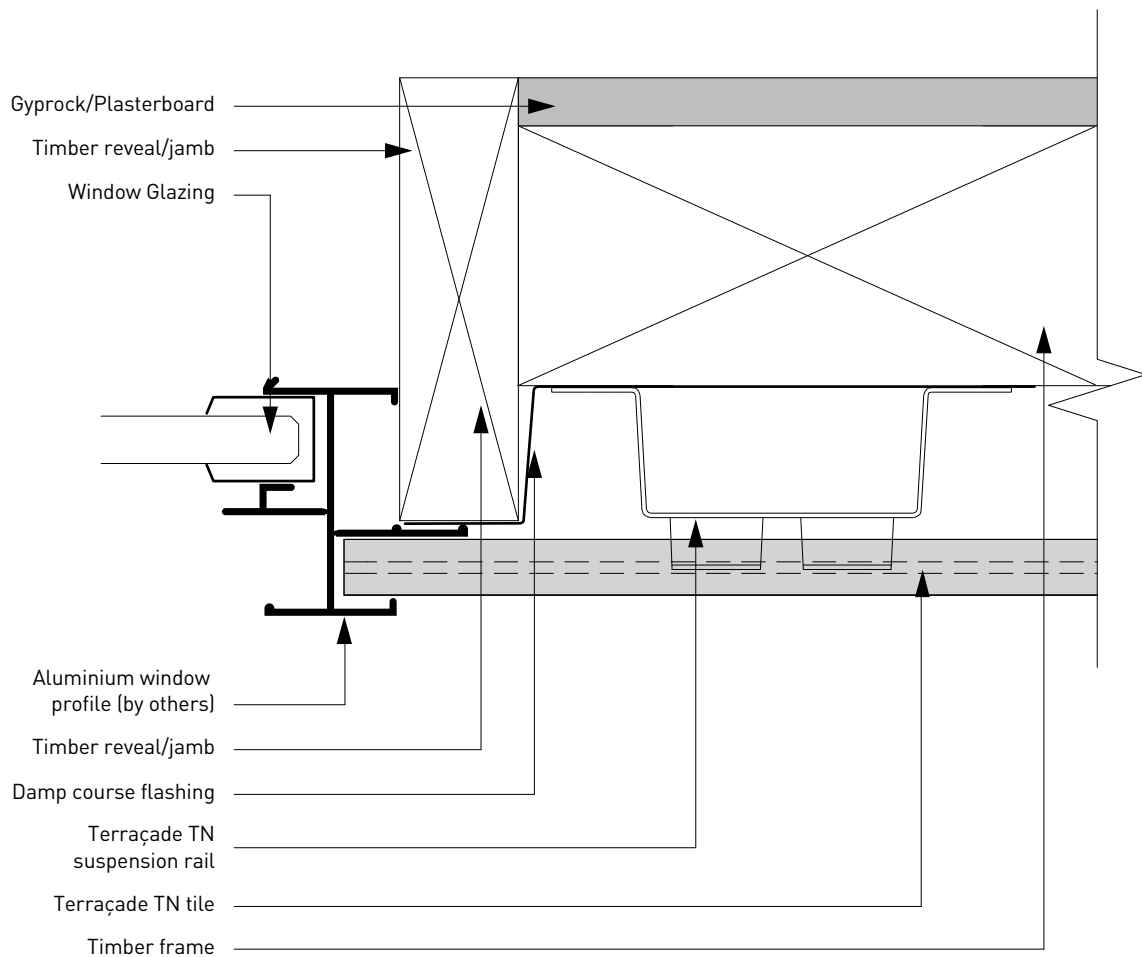
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Window Jamb – SD 10 Window Reveal Option



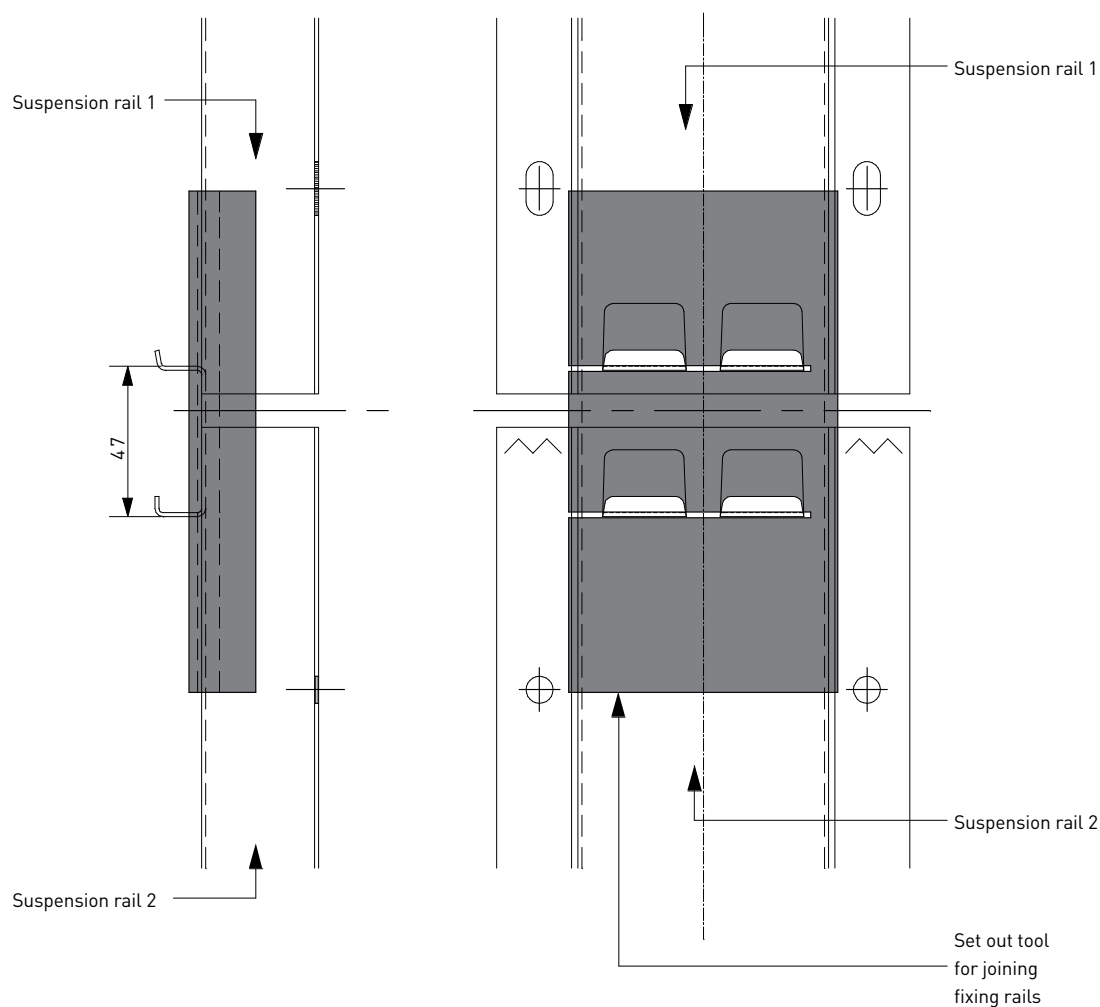
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Set-Out Tool – SD 11



Handy Tip

- The Set Out Tool maintains the vertical continuity of the system when joining rails on above the other. The tool is slotted onto the rails and then removed when both rails are fixed.

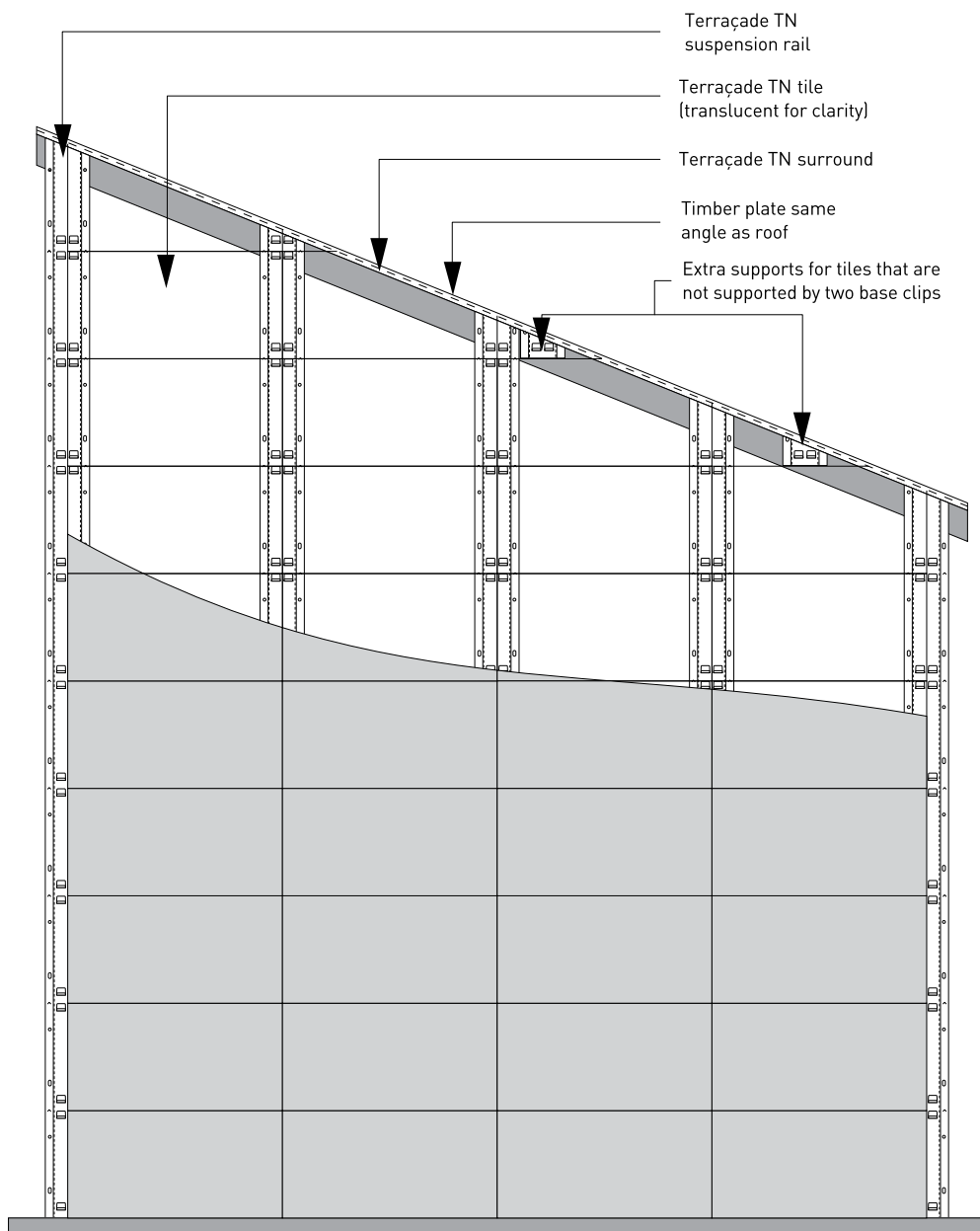
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Rake Detail – SD 12



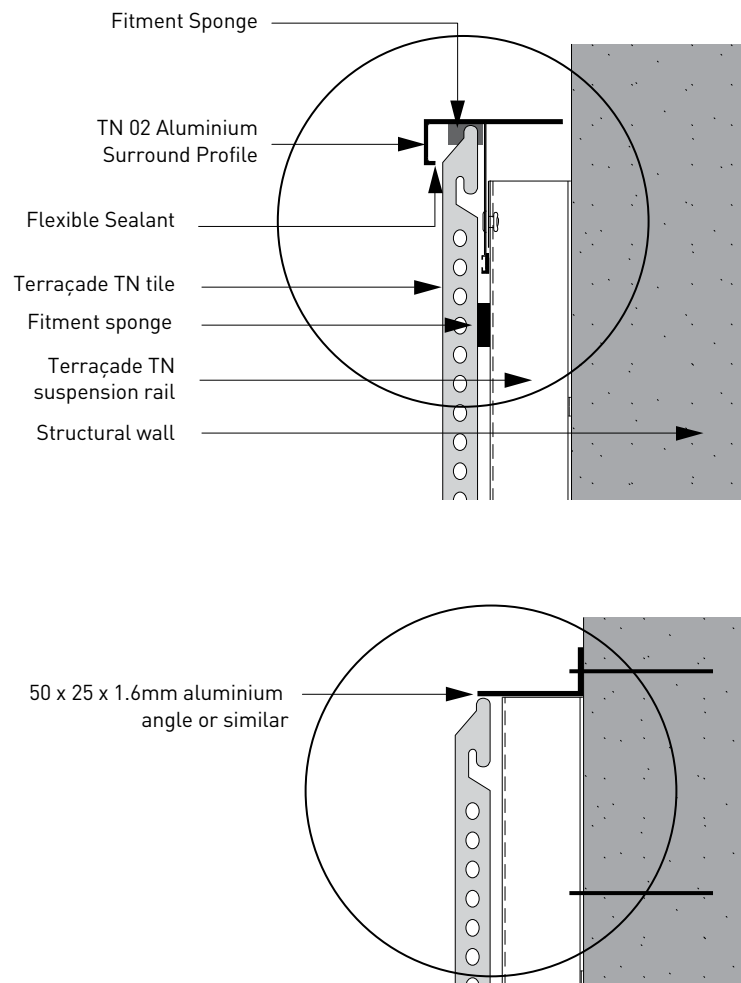
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Top Restraint for Earthquake Zones – SD 13



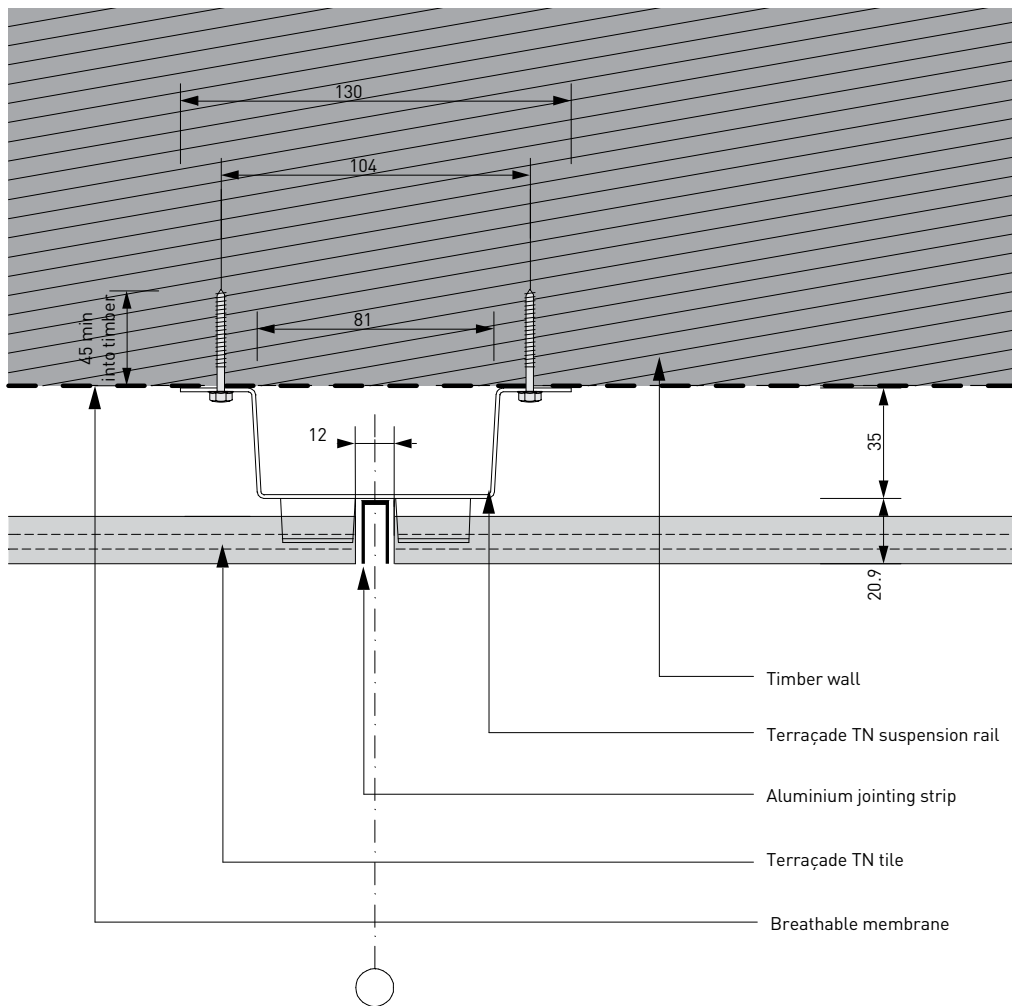
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Horizontal Detail – D-01 Timber



Handy Tip

- Spray or brush the central section of the coastal version suspension rail face (between the hanging tabs) matt black to reduce reflection through any gaps.

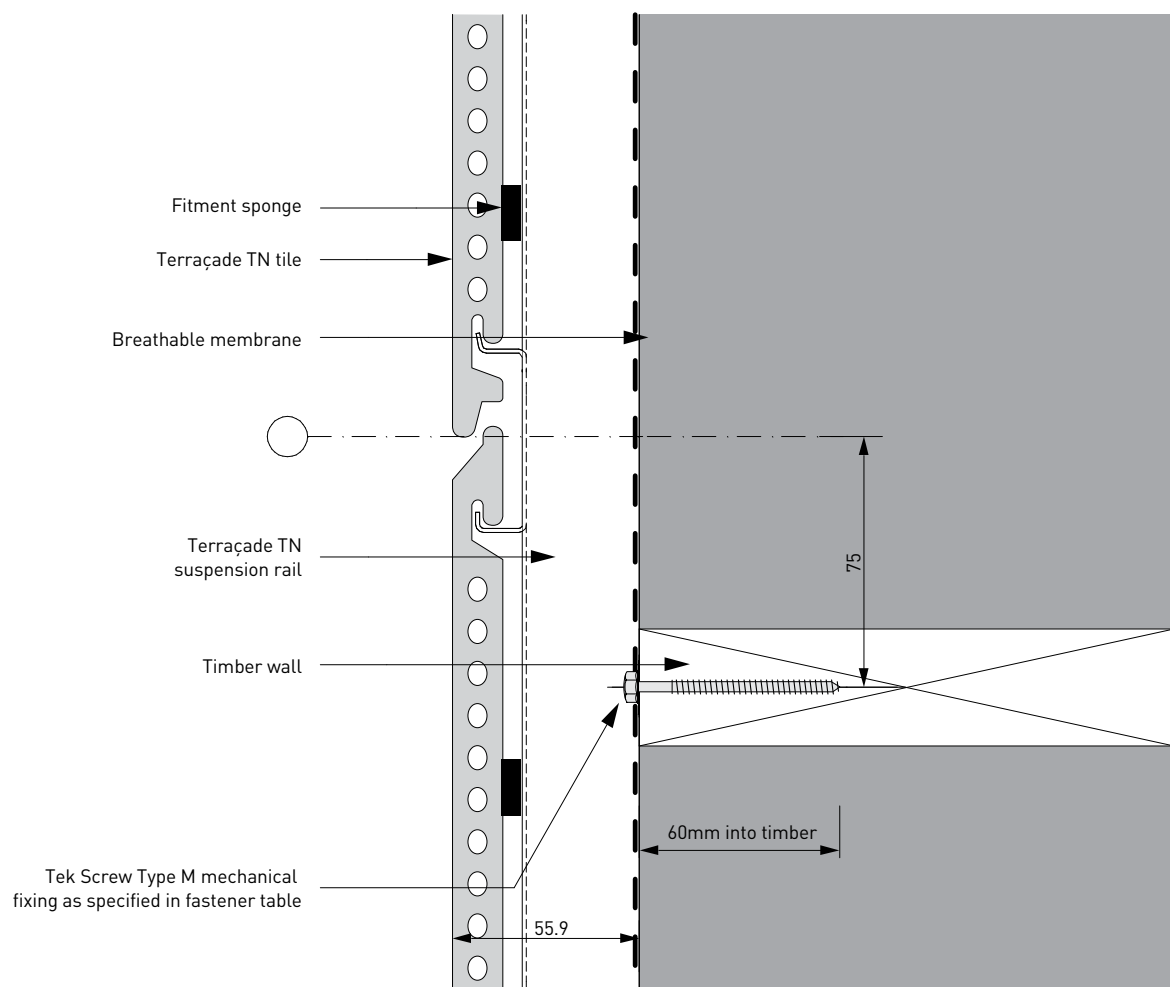
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Vertical Detail – D-02 Timber

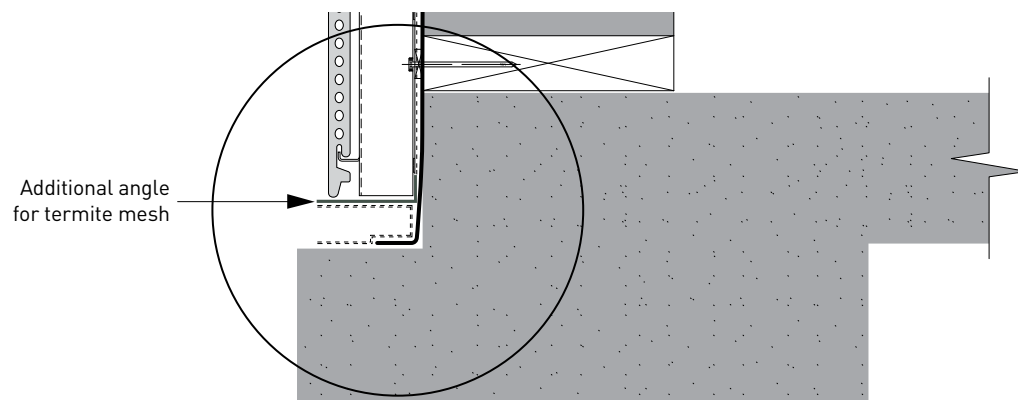
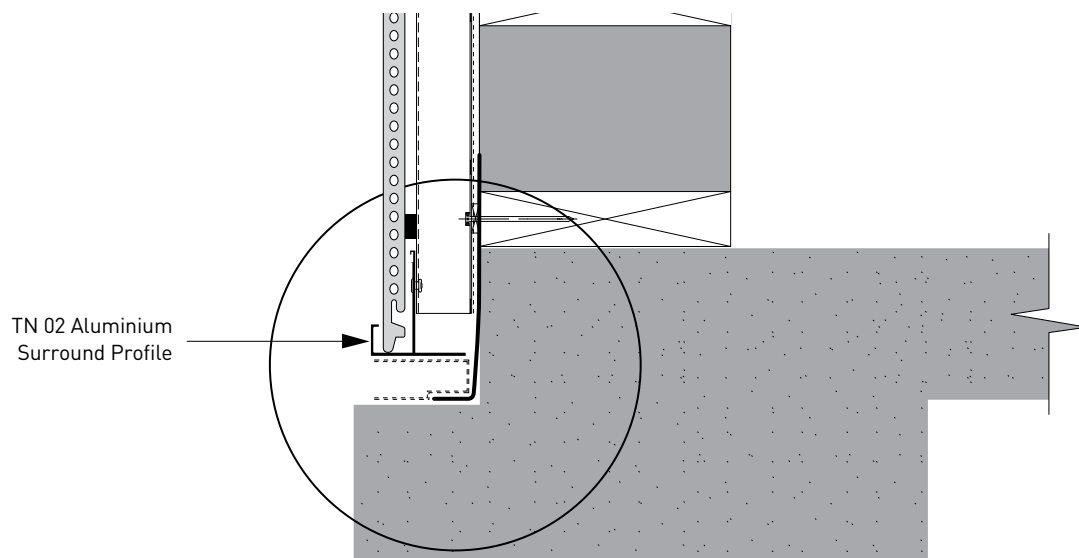


ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

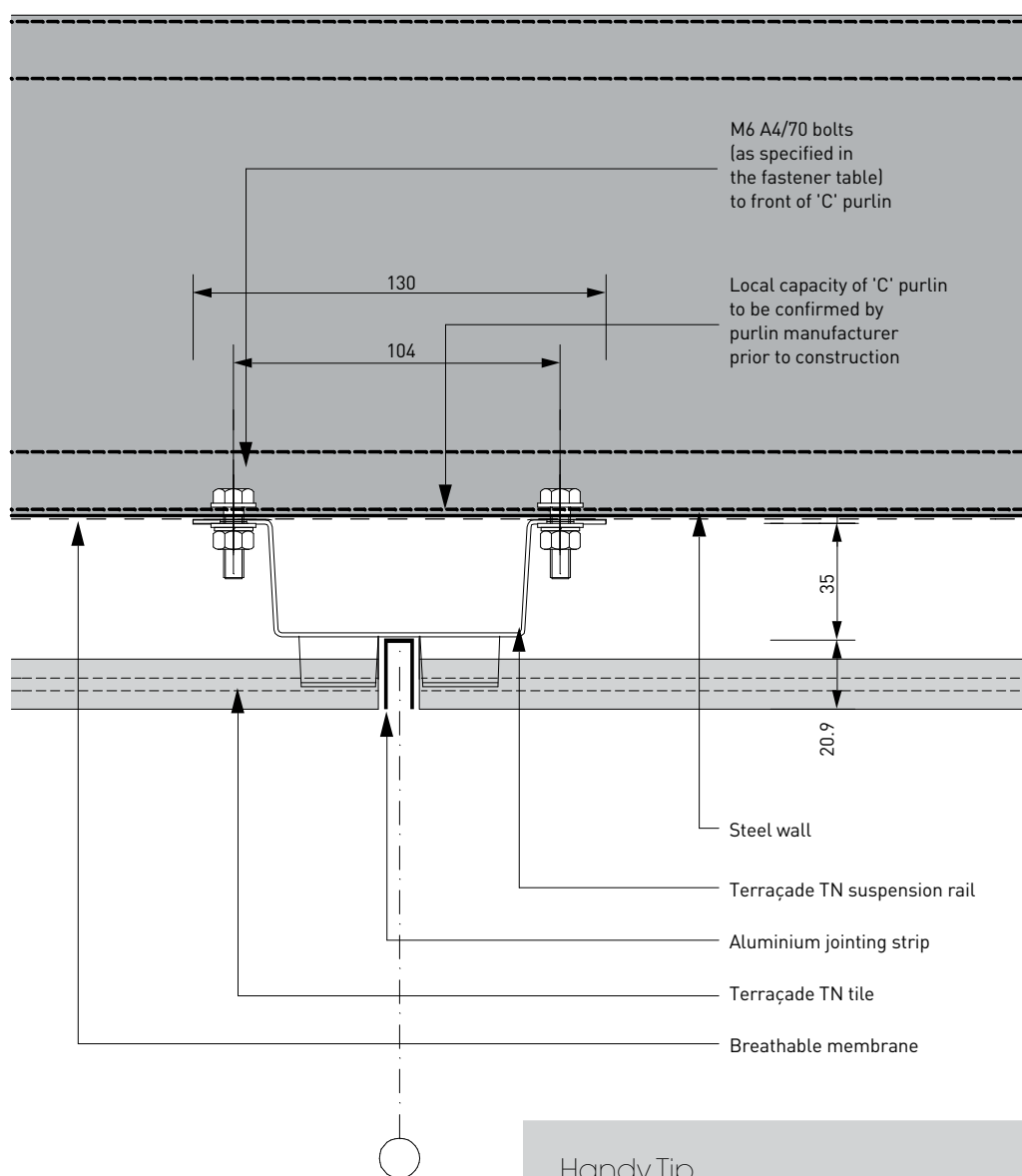
Recessed Slab – D-03 Termite Detail**ISSUE E-1117**

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Horizontal Detail – D-04 Stainless Steel



Handy Tip

- Spray or brush the central section of the coastal version suspension rail face (between the hanging tabs) matt black to reduce reflection through any gaps.

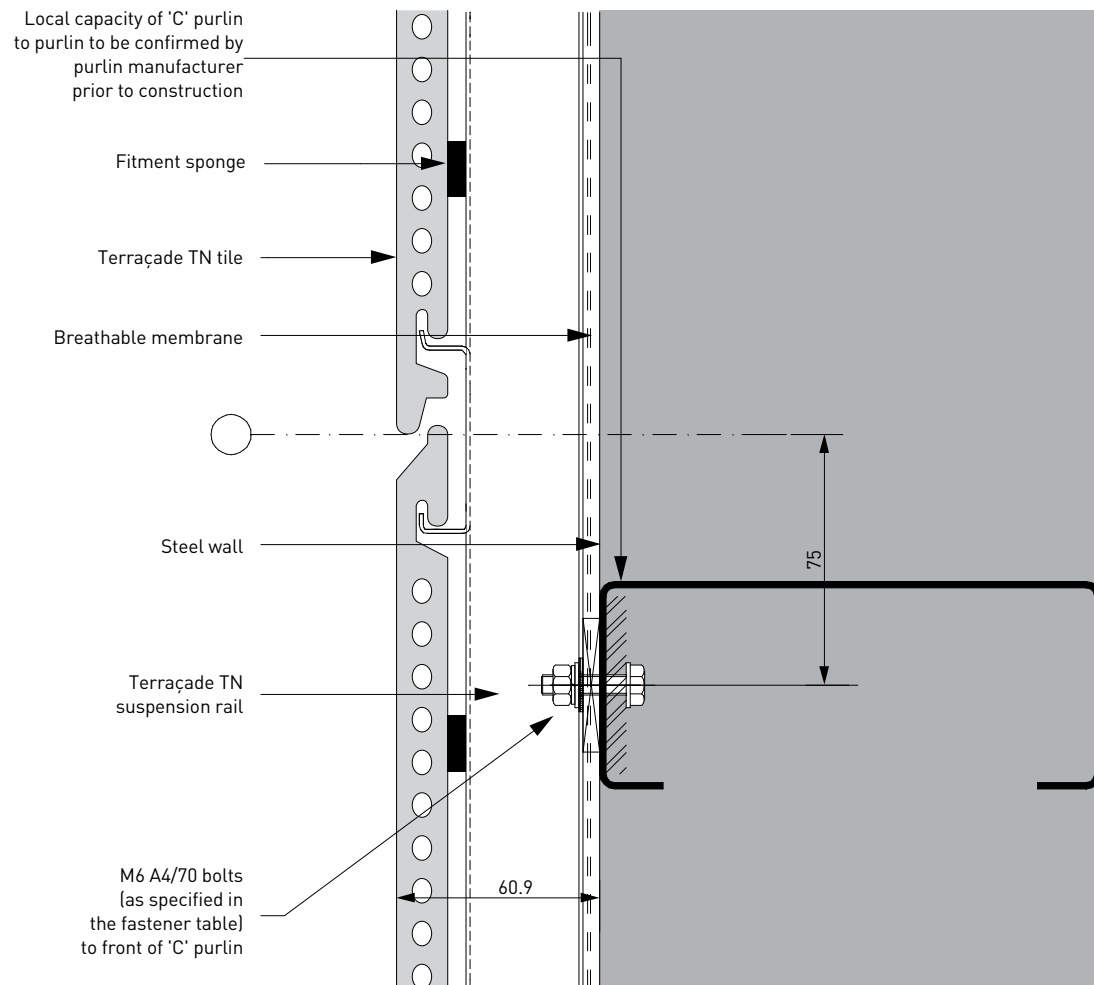
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Vertical Detail – D-05 Steel



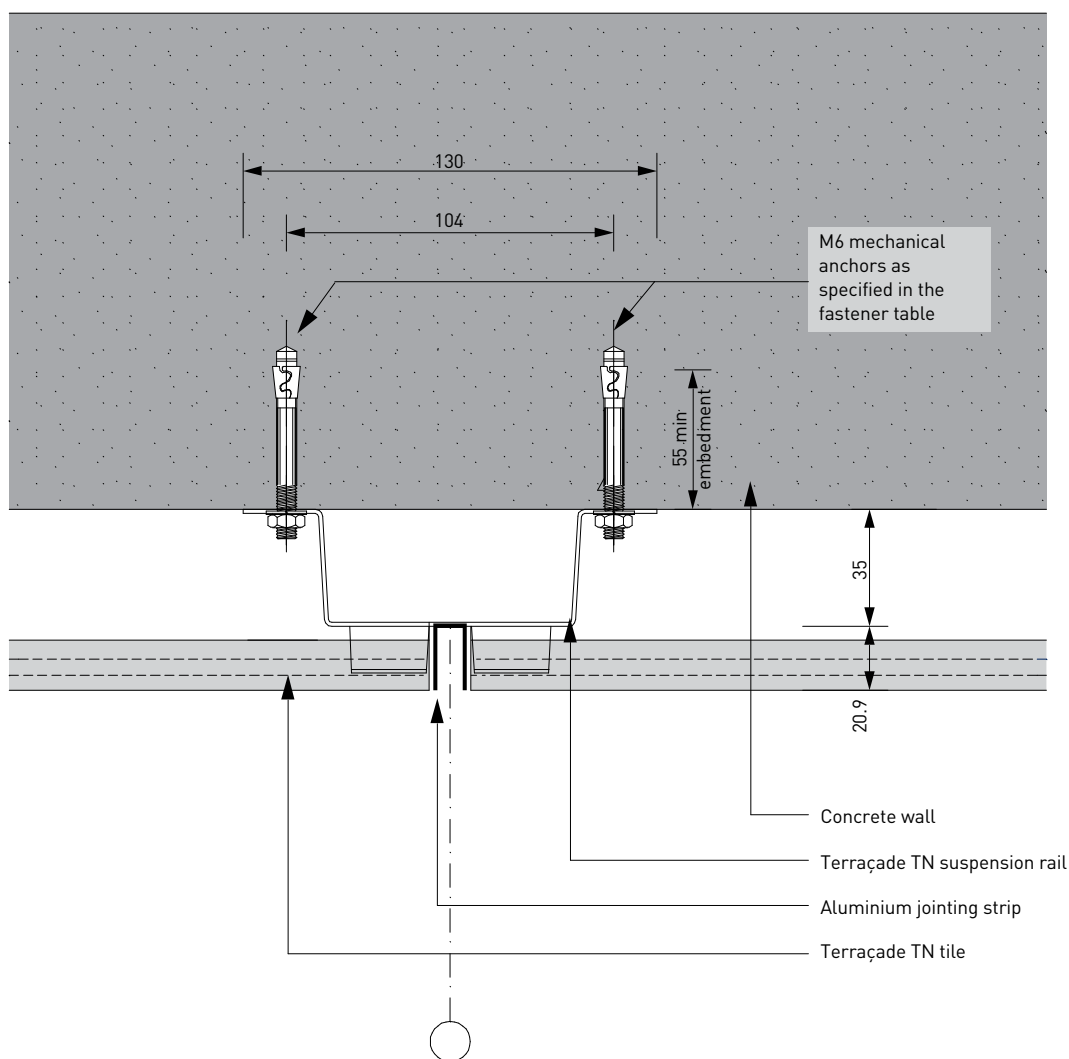
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Horizontal Detail – D-o6 Concrete



Handy Tip

- Spray or brush the central section of the coastal version suspension rail face (between the hanging tabs) matt black to reduce reflection through any gaps.

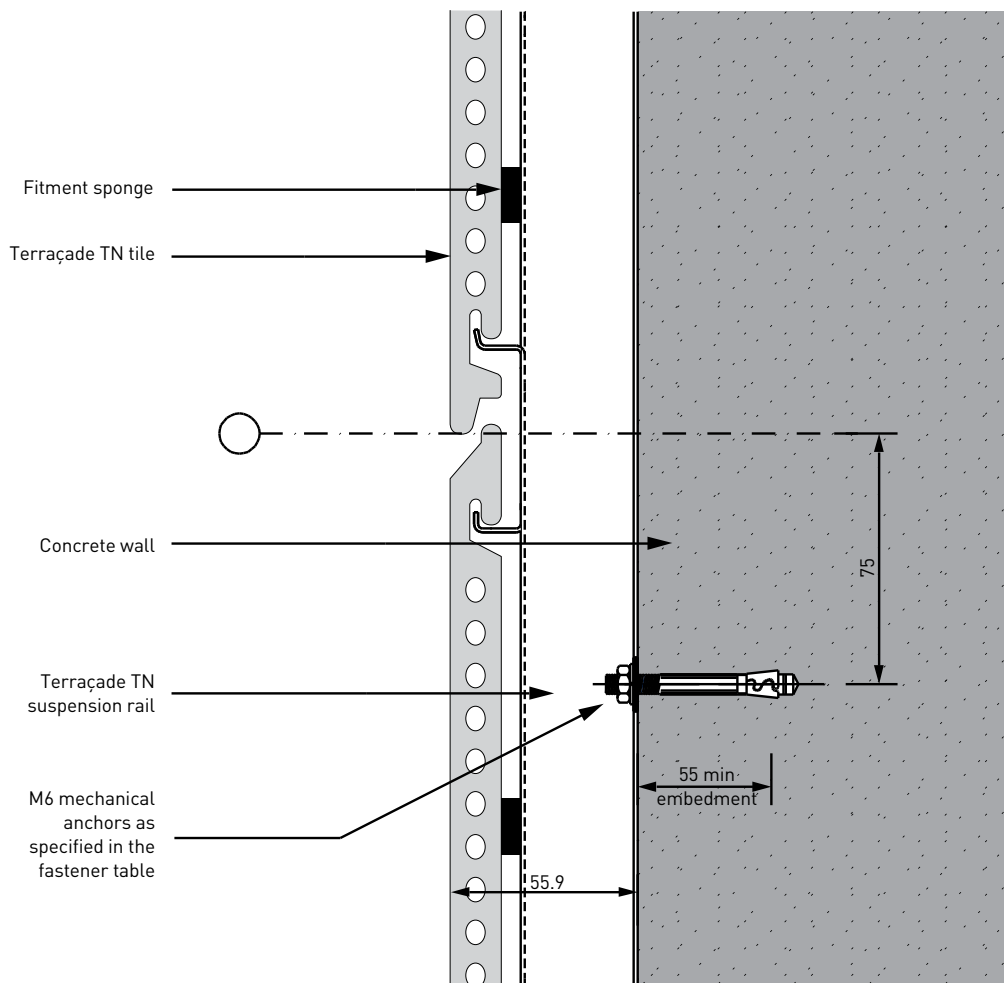
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Vertical Detail – D-07 Concrete



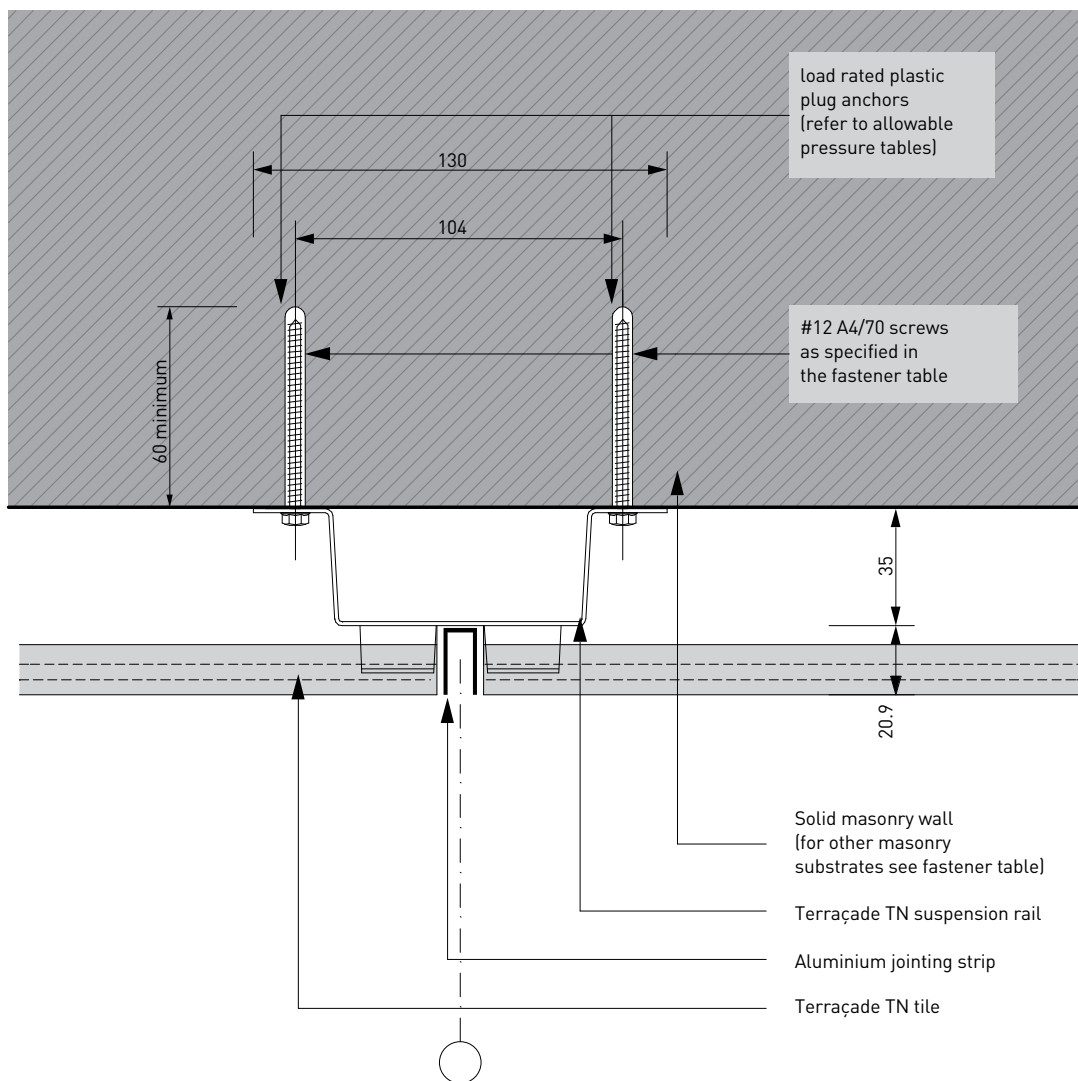
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Horizontal Detail – D-o8 Masonry



Handy Tip

- Spray or brush the central section of the coastal version suspension rail face (between the hanging tabs) matt black to reduce reflection through any gaps.

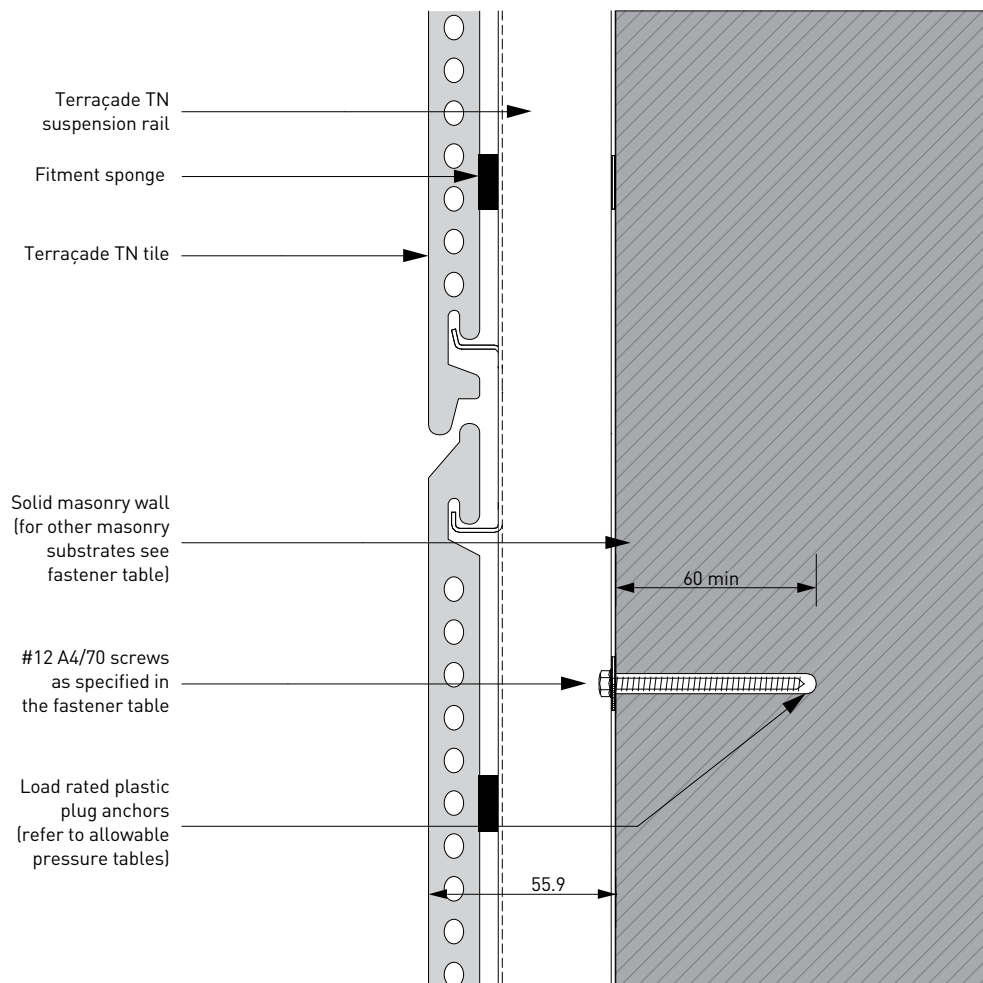
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Vertical Detail – D-09 Masonry



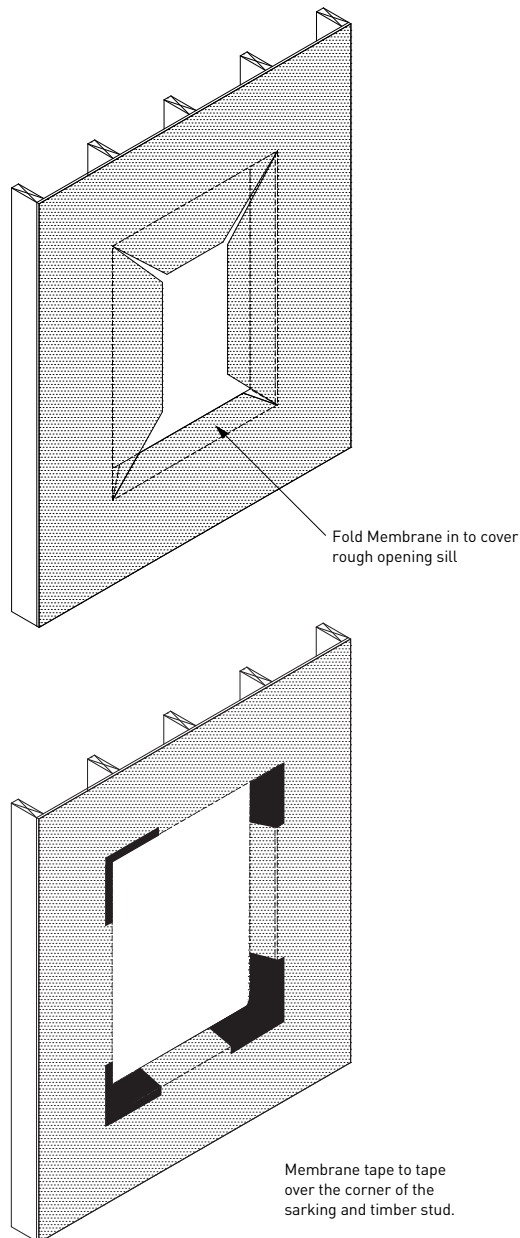
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Membrane



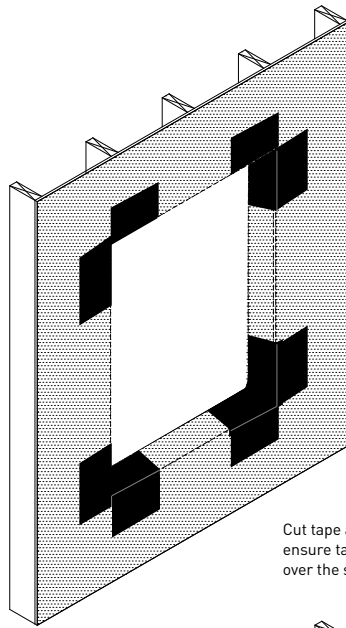
ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

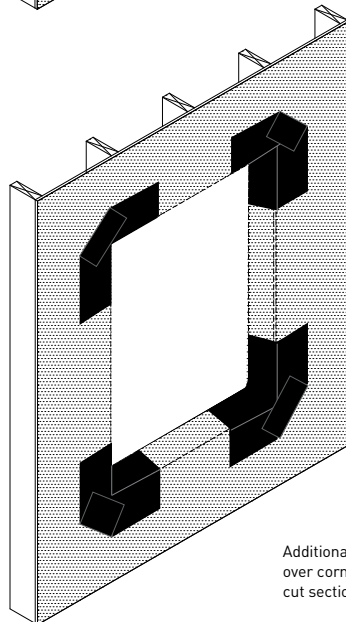
relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

SYSTEM DESIGN

Membrane



Cut tape at corner to ensure tape is sticking flat over the sarking.



Additional section of tape over corner to cover the cut section of the tape.

ISSUE E-1117

© Copyright 2017. Australian New Zealand Patent & Design Registrations. This drawing is indicative only and allowances should be made for material and onsite variations. The component and the assembly details demonstrate a design methodology only. Assembly and documentation drawings should only be undertaken after reference and compliance with the

relevant component's technical data. The diagram is not to scale. For more tailored solutions to suit individual applications, please contact Brickworks Building Products. Brickworks Building Products reserves the rights to add, alter or delete components without prior notice.

MAINTENANCE GUIDE

For Terraçade Facade System Components

1. System Inspection

It is recommended that the Terraçade façade system be inspected at regular intervals to ensure the integrity of the system. The inspection interval will vary according to the sub-frame and trim components utilised in the system. Below is a summary of cleaning and maintenance information that can be accessed at the Terraçade website.

2. Cleaning

Terraçade tiles are a natural terracotta product and are therefore virtually maintenance free. If you wish to remove any dirt or pollution grime that has built up over time, simply lightly hose or sponge down the tiles with water.

The tiles should be washed down during installation using a sponge with water and a neutral pH cleaner and then rinsed off with clean water. For ongoing maintenance the tiles may be hosed or sponged to remove dust and the build-up of dirt. Normally, cleaning the tiles will be as easy as letting the rain do the work for you.

3. Aluminium Trims

a. Care & Maintenance Instructions:

A simple regular clean will minimise the effects of weathering and will remove dirt, grime and other build-up detrimental to all powder coatings.

b. Recommended cleaning method:

Just a gentle clean with a soft brush and mild detergent, followed by a fresh water rinse, will maintain the long-term performance of your powder coated products. In rural or normal urban environments cleaning should occur every 12 months. In areas of high pollution, such as industrial areas, geothermal areas or coastal environments, cleaning should occur every three months. In particularly hazardous locations, such as beachfronts, severe marine environments or areas of high industrial pollution, cleaning should be increased to monthly.

c. Recommended cleaning products:

To protect the surface of your powder coated products, do not use strong solvents, abrasive cleaning products or those products that are recommended for thinning various types of paints. If you need to remove splashed paint, sealants or mastics from your powder coated products, you can use white spirits. When using white spirits, cleaning should be carried out in shade and during cooler temperatures using a soft cloth and gentle wiping only. It is also recommended that, prior to use, a small non-visible area of your powder coated products be tested to ensure that no visual colour change or damage will occur, particularly with bright and deep colours.

4. Sealing Tiles

Terraçade tiles have a hard wearing surface that is resistant to most normal staining agents. In particularly difficult environments, for instance high traffic city areas, Terraçade may be exposed to graffiti vandalism or build up of carbon dirt from passing motor vehicle traffic. A high quality impregnating (penetrating) sealer can be used to make the surface easier to clean and prevent permanent staining as much as possible.

5. Replacing Individual Tiles

It is difficult to remove individual tiles from a wall as it requires 'shuffling' of immediately adjacent tiles. It may be more practical to break the damaged tile with a rubber mallet so that it can be removed piece by piece. Care must be taken if this option is used as falling or sharp pieces of tiles may cause injuries.

To place a new tile into position, insert the top edge of the tile beneath the bottom edge of the tile above. Shuffle the tile above up slightly, ensuring that it is restrained from falling by an assistant. Capture the tile on the top hook first and then the bottom hook. Check that the tile and the tiles above are fully engaged by visual and manual checks.



QUALITY GUARANTEE

Brickworks Building Products continued commitment to quality and innovation ensures that Terraçade TN will remain the benchmark for excellence for many years to come. Our tradition, experience and financial strength have made Brickworks Building Products the first choice for many architects, builders and designers.

Terraçade TN has a warranty of 20 years on the system and a 100 year warranty on colour fastness and durability, as per Terraçade Warranty for Terraçade. Contact Brickworks Building Products to have an architectural consultant visit you with samples and technical information, or to discuss your next project.

Please note: Photographs should be considered indicative of colour and texture only. Variations in colour and shade are inherent in all clay fired products. All Terraçade tiles and accessories should be ordered at the same time to avoid the possibility of batch to batch variations. No responsibility will be accepted for colour selection, matching, blending and any other physical or colour related defects once the tiles have been incorporated into any construction. Terraçade™ and Terraçade TN™ are registered trademarks of the Brickworks Building Products or its wholly owned subsidiaries. ACN 119 059 513

Australian and New Zealand Patent & Australian and New Zealand Design Registrations.
© 2017 All rights reserved Brickworks Building Products. Whole or partial reproduction of this publication without Brickworks Building Products authorisation infringes reserved right; any utilisation must be previously requested.

terraçadeTM
TERRACOTTA FAÇADE SYSTEMS

www.terraçade.com.au



a member of



proud supporters



BRICKWORKS
BUILDING PRODUCTS