

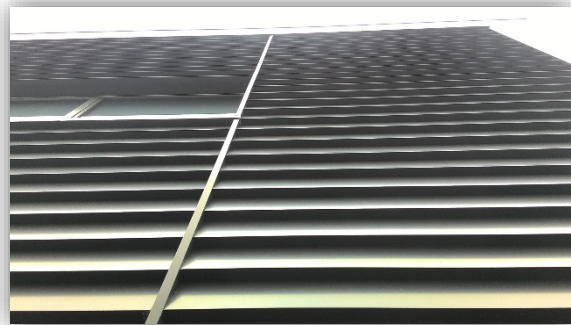
CMI EVALUATION REPORT CMI-ER30203 MASONS PLASTABRICK LTD – DURALI SUPERIOR WEATHERBOARD CLADDING SYSTEM

REPORT HOLDER



MASONS
Designed Smart, Built Tough.

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Source: Certificate Holder

1. PRODUCT

MASONS Durali Superior Weatherboard Cladding System.

2. PRODUCT DESCRIPTION

MASONS Durali Superior Weatherboard Cladding System consists of 4mm thick boards, manufactured from a fire resistant (FR) Thermoplastic Polyethylene core and a sheet of Aluminium fixed each side. The Aluminium thickness is 0.5mm (+/- 0.02mm), the board width being 200mm Each board is 4.8m long and weighs 7.29kgs each and 7.6kgs/sqm. Each board covers 0.96sqm. The product is supplied in packs of 10 boards which would give a coverage of 9.60sqm of wall and weigh 72.9kgs.

3. ASSESSED COMPLIANCE

New Zealand Building Code:

Structure – B1.3.1 & B1.3.2

Durability – B2.3.1(b)

Fire – C3.4(a), C3.5 (see condition and limitation 5.2)

External Moisture – E2.3.2, E2.3.3, E2.3.5

Hazardous Building Materials – F2.3.1 Non-hazardous

CertMark International Pty Ltd (CMI) has awarded this Certification to the company named above for the system described herein. The system has been assessed by CMI as Being fit for purpose providing they are installed, used and maintained as set out in this Evaluation Report.

For and on behalf of CMI

John Thorpe
Chief Executive Officer

12/12/2017

Date of Issue

CMA-ER30203

Report Number

This document has been produced by the Administration Department of CertMark International (CMI).
For technical information on the matters discussed in the document, contact us on 1800 CertMark (237 862), International Call +617 5445 2199 or e-mail Info@CertMark.org.

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4. SCOPE OF USE

- 4.1. MASONS Durali Superior Weatherboard Cladding System may be used and installed in the following circumstances:
- 4.1.1. Fixed, using a drained cavity, over a 20mm cavity batten system as in accordance with E2/AS1.
 - 4.1.2. Fixed, with a thermal break installed to steel framing.
 - 4.1.3. Fixed over a 20mm cavity batten system that is attached at centres not exceeding 600mm, over a concrete or concrete block substrate.

5. CONDITIONS AND LIMITATIONS

- 5.1. Prior to commencing the installation of MASONS Durali Superior Weatherboard Cladding System, ensure that all building wraps, flashing tapes and cavity batten systems are installed to their manufacturer's specifications and requirements. In addition, ensure that Acceptable Solutions in E2/AS1 have been met and that NZS 3604:2011 is complied with.
- 5.2. The fire testing of the panel system was conducted in accordance with NFPA 285 as required for Aluminium Composite Panels in New Zealand. However, the installation of the product as described in Durali Specification Document dated 23 November 2017, differs from the tested specimen. CMI recommend that a registered Fire Engineer be consulted in situations where the building requires fire compliance.
- 5.3. The building has an E2/AS1 risk score of 0 – 20.
- 5.4. The building is within the scope of NZS 3604:2011 Timber-framed buildings and E2/AS1.
- 5.5. Solutions as covered and detailed in the installation instructions and specification are adhered to.
- 5.6. The building is situated in wind zones given in NZS 3604:2011 up to and including 'Extra High'.
- 5.7. Outside sea spray areas of New Zealand as per NZS 3604:2011.
- 5.8. Only to be Installed in accordance with Durali Specification Document dated 23 November 2017.
- 5.9. The Certificate Holder must maintain compliance with the conditions set out in Section 15 of the Building (Product Certification) Regulations 2008.
- 5.10. Not to be installed in coastal sea spray zone. The sea spray zone is defined as within 500m of the sea including harbours, or 100m from tidal estuaries and sheltered inlets, as well as coastal areas. The sea spray zone also includes all offshore islands including Waiheke Island, Great Barrier Island, Stewart Island and the Chatham Islands and those areas shown in white in Figure 2.4 of the MBIE Simple House Acceptable solution document published by MBIE: [MBIE Simple House Acceptable Solution dated 31 March 2010](#).
- 5.11. It is the responsibility of the Architect/Designer/Installer to ensure that MASONS Durali Superior Weatherboard Cladding System is installed in a manner that is compliant with E2/AS1, and meets all requirements of the New Zealand Building Code.

6. TECHNICAL SPECIFICATION – SYSTEM COMPONENTS

Description	Size (mm)	Supplier
MASONS Durali Superior Weatherboards are 4mm thick, manufactured from a fire resistant Thermoplastic Polyethylene core and a sheet of Aluminium fixed each side. The Aluminium thickness is 0.5mm (+/- 0.02mm), the board width being 200mm. Each board is 4.8m long and weighs 7.29kgs each and 7.6kgs/sqm. Each board covers 0.96sqm. The product is supplied in packs of 10 boards which would give a coverage of 9.60sqm of wall and weighs 72.9kgs.	4.8m x 200mm	MASONS
Internal Corner	2.7m	MASONS
External Corner Moulding	2.7m	MASONS
Standard Durali Clip & Screw (stainless Steel) with separation layer on the back of clip. Note: separation layer must stay on permanently	35mm hex screw 316 Stainless Steel	MASONS
MASONS Internal "W" Mould 90° Etches primed aluminium extrusion used to create 90° internal corner	2.7m	MASONS
J Shaped	2.7m	MASONS
Vent Strip 20mm PVC moulding used as vermin proofing and cavity closer	20mm x 2.7m	Redway or similar
Corner Soaker Colour as per weatherboard (Standard colours only stocked)	220mm	MASONS
External corner Soaker 90° for Durali 200mm Weatherboard • Aluminium • Copper • Stainless Steel	245mm	MASONS
External corner soaker 135° for Durali 200mm Weatherboard • Aluminium	245mm	MASONS
Stainless Screws - Hexhead Self Tapping	35mm	MASONS
Braided Nail Stainless	40mm	MASONS
Joint Sealant Paintable flexible sealants are recommended for filling the joints.		Sika, Holdfast, Bostik
PEF Backer Rod		MASONS
Window Flashing Tape MASONS - 40 Below		MASONS
Flashing Material	E2/AS1 compliant	Merchant
Panel Tack Glue - For Gluing the boards		Bostik
ACM Scriber To scribe beside window, site cut to suit.	2.7m	MASONS

7. INSTALLATION REQUIREMENTS

7.1. Site & Foundation Requirements

- 7.1.1. The building location where MASONS Durali Superior Weatherboard Cladding System is to be installed must comply with the requirements of New Zealand Building Code.
- 7.1.2. The foundation design must be in accordance with NZS 3604:2011 and may be either timber or concrete foundation piles or alternative, of concrete slab construction.
- 7.1.3. Ground clearances are to comply with the Acceptable Solution E2/AS1 Table 18.
- 7.1.4. When installing the bottom (first) board, a clearance of 100mm is required for a sealed paved area, and in the case of unpaved ground, the clearance requirement is 175mm.
- 7.1.5. When designing, and installing the MASONS Durali Superior Weatherboard Cladding System, ensure a minimum overhang of the finished floor level is 50mm.

7.2. Supporting Structure

7.2.1. Timber Framing

- 7.2.1.1. The treatment of all timber framing must meet the requirements of NZS 3602:2003, and have a maximum moisture content of 18% prior to MASONS Durali Superior Weatherboard Cladding System being installed.
- 7.2.1.2. The frames are to be straight and true and should not deviate more than 4mm using a 2400mm straight-edge. Studs are to be located at a maximum 600mm centres with dwangs, fitted flush, at 800mm centres vertically.
- 7.2.1.3. All requirements with the scope limitations of NZS 3604:2011, relating to framing, must be complied with.
- 7.2.1.4. Where this scope is not met, specific design is required in accordance with NZS 4203:1992 and NZS 3603:1993 ensuring the stiffness provisions of NZS 3604:2011 are satisfied.

7.2.2. Steel Framing

- 7.2.2.1. Steel studs are to be located at a maximum 600mm centres with dwangs at 800mm centres vertically and are to be covered by a 'Specific Design' that will meet the performance clauses of the New Zealand Building Code. The minimum design specification for the 'C' section studs is 0.55mm in thickness with an overall section size of not less than 75mm web and a 32mm flange.
- 7.2.2.2. A 10mm thermal break is to be adhered to all steel framing prior to MASONS Durali Superior Weatherboard System being installed, using a minimum self-drilling countersunk 304 SS screw or a similar equivalent.

7.2.3. Wind loading

- 7.2.3.1. Where framing is not lined on the inside face, such as in gable areas, a rigid or flexible air barrier must be incorporated into the design, meeting the requirements of NZBC Acceptable Solution E2/AS1, Table 23; **Note:** the fixing lengths of the screws are to be extended to at least cover the thickness of the installed air barrier.

7.2.4. Weathertightness

- 7.2.4.1. It is the responsibility of the Architect/Designer/Installer to ensure that MASONS Durali Weatherboards are installed in a manner that is compliant with E2/AS1, and meet all requirements of the New Zealand Building Code.
- 7.2.4.2. Prior to the Cavity Battens being installed, ensure that the building wrap, is correctly fitted and installed in accordance with E2/AS1 – 9.1.7.
- 7.2.4.3. All punctures and tears must be repaired with the wrap being taken continuously around corners and lapped 150mm over studs in a vertical situation and 75mm at horizontal joints.

7.2.5. Flashings, Air Barriers and Seals

- 7.2.5.1. Ensure all flashing tapes at corners and across sill of all openings are installed in accordance with the Manufacturer's installation instructions.
- 7.2.5.2. All exterior walls, regardless of their location, that do not have internal linings, are to be covered

with a rigid or flexible air barrier fixed to the framing in accordance with Table 23, NZBC E2/AS1.

- 7.2.5.3. Flexible air seals are to be installed in around all windows, doors and other penetration openings to comply with NZBC E2/AS1 – 9.1.6.

7.2.6. Preparation

- 7.2.6.1. Prior to commencing the installation of MASONS Durali Superior Weatherboard Cladding System, ensure that all building wraps, flashing tapes and cavity batten systems are installed to their manufacturer's specifications and requirements. In addition, ensure that Acceptable Solutions in E2/AS1 have been met and that NZS 3604:2011 is complied with.

7.2.7. Mouldings and Flashings

- 7.2.7.1. Install all flashings, internal and external corner moulds, horizontal flashings above and below window and door openings, including WANZ support bars.
- 7.2.7.2. Ensure all mouldings and flashings are plumb and level.

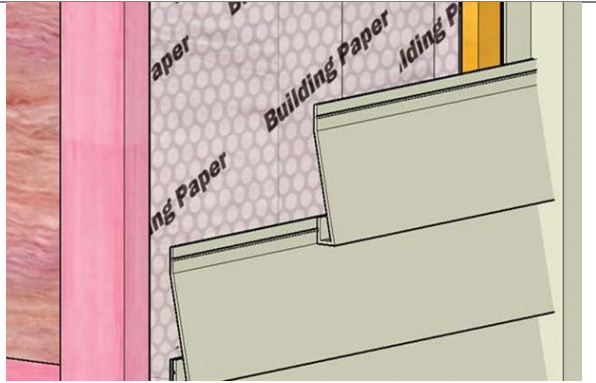
7.2.8. Fixing the Weatherboards

- 7.2.8.1. The bottom board must be perfectly level.
- 7.2.8.2. The weatherboards must hang 50mm below the finished floor level, consequently the first clips, in line with the studs at 600mm centres are to be screw-fixed to the edge of the slab.
- 7.2.8.3. The clips may require packing out to achieve the correct slope on the bottom board.
- 7.2.8.4. The top of the board is then screw fixed into the timber studs at 600mm centres to completely secure them.
- 7.2.8.5. The next row of clips can now be installed to take the second board and the process repeated over the height of the wall.
- 7.2.8.6. On reaching the top of the wall, or the underside of a window (would only apply to full lengths) and the board needs to be cut length-wise, prior to doing so, determine where the V groove needs to be positioned along the length of the board, and using a router and the supplied router bit, run a 3mm deep groove.
- 7.2.8.7. The board can be cut length-wise on a table saw and then fixed in the normal manner. Ensure the face of the board is not scratched in the process (any scratches to the surface of the board may result in corrosion in that area).
- 7.2.8.8. On external corners where instead of a vertical moulding being used, the junction of the boards is to be flashed with a metal soaker, it is important that the boards finish flush with the timber corner stud in both directions, so as not to impede the egress of any moisture that happened to be trapped.
- 7.2.8.9. When fixing to concrete or concrete block, drill a hole and insert plastic sleeves prior to inserting the screw in the normal manner to achieve secure fixing.

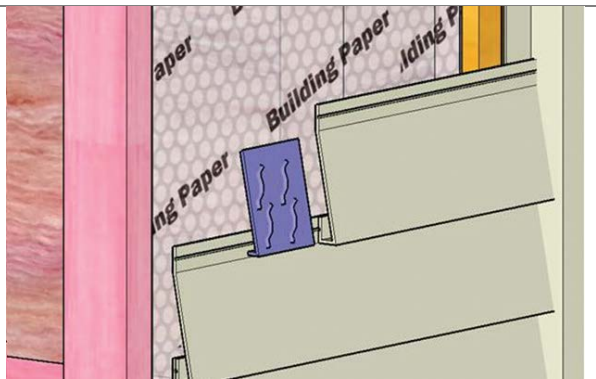
7.2.9. Joining Weatherboards

- 7.2.9.1. The best place to join a weatherboard is between two studs. Avoid joining weatherboards less than 900mm from the end of the board to ensure the 900mm length of board is supported by at least 2 studs.
- 7.2.9.2. Cut the base of the board back (as per diagram 1 below) and using a 200mm long backing piece of board, glue 100mm to one side, leaving a 100mm lap onto the new board to be positioned.

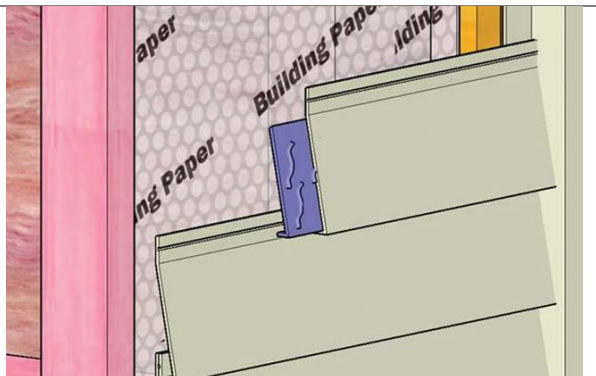
Durali Superior Weatherboard Cladding System to be extended by another joined piece



Durali Superior Weatherboard Cladding System folded strip used to join weatherboard



Place and Glue 100mm along each side of the weatherboard



Seam-joint between two pieces of weatherboard.

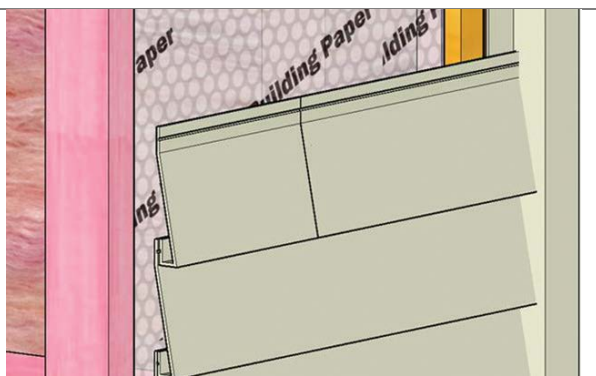


Diagram 1

8. MAINTENANCE

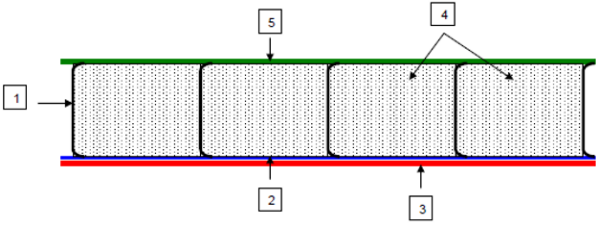
8.1. Cleaning and Painting

- 8.1.1. MASONS Durali Superior Weatherboard Cladding System requires minimal maintenance due to the PVDF powder coated Aluminium finish of the product.

- 8.1.2. However, to maintain the finished appearance of the product over an extended period, it is important that the surface of the boards is washed down with water and a mild detergent every six months to remove dirt, grime and organic growth to maximise the life and appearance of the board. This is especially important in areas that have minimal exposure to sunlight. Do not rub the surface with anything of an abrasive nature to avoid scratching the paint finish.
- 8.1.3. Should the product be scratched, repainting must be carried out in accordance with the paint Manufacturer's instructions for treatment of aged Powder Coated Aluminium.
- 8.1.4. It is also important to carry out annual inspections to ensure that all aspects of the cladding system remain in a weathertight condition. Damaged areas or areas that may allow water ingress, must be repaired immediately.
- 8.1.5. Check all flashings to ensure weathertightness, and repair annually.

9. PRODUCT TESTING

The following testing and reports were reviewed by CMI in completing this Evaluation Report:

Source	Content
(Durability Opinion) BTS 1737 TO dated 27th July 2017	Opinion on Performance of Components. Mason Plastabrick Limited's Aluminium Composite Material (ACM) based Weatherboard System is required to be resistant to the effects of the environment. From the data provided and subject to the manufacturer's recommended maintenance and cleaning requirements, the performance is expected to meet the requirement of 15 years; 2. The stainless Weatherboard Clips and screw fixings with appropriate durability rating according to local environment requirements, need to be resistant to the effects of the environment. From design details supplied it appears the performance requirement will be met. 3. This type of product has over the years been shown by way of in-service history, to be of a non-hazardous nature to users of buildings.
Intertek test report 100047795SAT -001-Rev.1	NFPA 285 testing. Sample assembly: An 18"x 13.4" wide wall constructed of galvanised steel studs, fibreglass insulation in the stud cavities, cladding and fireproof Aluminium Composite Panels.
	 <p>The diagram shows a cross-section of a wall assembly. Callout 1 points to the left vertical stud. Callout 2 points to the bottom horizontal track. Callout 3 points to the bottom horizontal track. Callout 4 points to the cladding and ACM panels. Callout 5 points to the top horizontal track.</p> <ol style="list-style-type: none"> 1. Studs – 3-5/8", 20ga steel studs, 16" o.c., secured to 20ga top and bottom tracks with 7/16" pan head self tapping sheet metal screws. 2. Exterior Cladding – 4"x 8"x 1/2" Temple Inland exterior sheathing, installed with the long dimension perpendicular to the studs and secured to the studs with 1-1/4" self drilling drywall screws, spaced 8" o.c. 3. 4"x 8"x 3/16" thick fireproof Aluminium Composite Panels, installed horizontally, using #12 x 2" Hex Head Tek® screws with washers, spaced 12" o.c.

4. Insulation - 16"x 96"x 3-1/2" thick R-13, unfaced PROPINK® Fibreglass Insulation batts (Owens Corning®), filled the stud cavities.
5. Interior Cladding – 4"x 10"x 5/8" Type X gypsum wallboard (USG), installed with the long seams perpendicular to the studs, using 1-1/4" self drilling drywall screws spaced 8" o.c. in the field. All seams and exposed fasteners on the wallboard side received a Level 2 finish.

The header, jams and sill of the 78" wide x 30" high window were covered with 20ga steel flashing, attached with #12 x 2" hex head screws.

Structural review
report form King
& Dawson
Architects &
Engineers Ltd.
Dated 17 July
2017

Report concludes that the Weatherboard is able to resist all required loads for any seismicity in New Zealand and for building in wind exposure of at least 70/sec (or 250kph) provided that:

- a. The boards are the same as tested.
- b. The Stainless Steel clips are 0.9mm thicker and configured as per sample supplied for test.
- c. The screw fixings are as noted in the report.

Facadelab
IANZ
accreditation
9055 Auckland
test report 16-
05 E2VM1
testing

Water Management Tests.		
Static water penetrations	Test Pressure 455Pa Duration 15 minutes	Pass
Cyclic water penetrations	Test Pressure 227 to 455Pa, then 455 – 910Pa Duration 5 minutes	Pass
Wetwall test Static water penetration	Test Pressure: 50Pa Duration: 15 minutes	Pass

10. OTHER RELEVANT TECHNICAL INFORMATION

10.1. Sea Spray Zone

- 10.1.1.** The sea spray zone is defined as within 500m of the sea including harbours, or 100m from tidal estuaries and sheltered inlets, as well as coastal areas. The sea spray zone also includes all offshore islands including Waiheke Island, Great Barrier Island, Stewart Island and the Chatham Islands and those areas shown in white in Figure 2.4. of the Simple house Acceptable solution document published by MBIE: [MBIE Simple House Acceptable Solution dated 31 March 2010.](#)



Source: Paragraph 2.5.2 of Simple House Acceptable Solution

11. EVALUATION SUMMARY

- 11.1. In the opinion of CertMark International that the Durali Superior Weatherboard Cladding System is fit for purpose and will comply with the clauses of the NZBC to the extent specified in this Evaluation Report, provided it is used, designed, installed and maintained as set out in this Evaluation Report.
- 11.2. The Evaluation Report is issued only to MASONS Plastabrick Pty Ltd and is valid until expiry, subject to the Conditions of this Evaluation Report.
- 11.3. This Evaluation Report should also be read in conjunction with CMI CodeMark certificate CMI-CM 40178.

12. CONDITIONS OF EVALUATION REPORT

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