

SYSTEM TECHNICAL STATEMENT

USG BORAL PARTIWALL®

PURPOSE OF THIS DOCUMENT:

USG Boral is the supplier and manufacturer of the Partiwall® System.

This document provides an executive summary of information necessary to consider when specifying or using this product.

Plasterboard is a commodity, building product. However, USG Boral recognises its importance in the ultimate performance of a building. Consequently, USG Boral has decided to provide this technical statement in order to demonstrate that it has met its s14G responsibilities. USG Boral is able to substantiate the claims of performance, based on robust, relevant evidence, which is available upon request providing that the information is not commercially sensitive.

RELEVANCE OF THE NZ BUILDING CODE TO PARTIWALL®

The NZ Building Code applies to *building work*¹. For the Partiwall® System, the Building Code obligations need to be considered in two ways:

1. the Code obligations that relate to Firestop® and Shaftliner™; and
2. the Code obligations that relate to the installation of the Partiwall® System in particular the Aluminium clips and the lamination of the plasterboard products to achieve different fire ratings.



Refer Appendix 1 for the Code compliance evidence.

DESCRIPTION & USE:

The USG Boral Partiwall® Wall System is a twin stud wall system incorporating a fire resistant plasterboard barrier within the wall cavity. Insulation is placed on either side of the wall to achieve acoustic ratings. The fire-resistant plasterboard panel can comprise:

- a single layer of 25mm Shaftliner™

- a layer of 25mm Shaftliner™ with a layer of 16mm Firestop® Plasterboard laminated to it, or
- two layers of 25mm Shaftliner™

The combination of Shaftliner™/Firestop® plasterboard depends on the level of Fire Resistance Rating (FRR) required (Refer Appendix 3).

The FRR panels are held in position by lightweight steel H or I section studs and secured to the framing with aluminium clips.

The purpose of the aluminium clips is to provide stability to the Partiwall® fire barrier and to prevent its damage through the collapse of the structure



on the fire side. The clips are attached to the timber framing on both sides and are engineered to melt on the fire side, allowing the Partiwall® fire barrier to become disconnected from the collapsing fire side structure therefore maintaining the structural integrity of the Partiwall® fire barrier.

All Partiwall® systems listed in the Partiwall® Installation Manual (PB200) achieve an acoustic rating of not less than STC 55. In NZ the following USG Boral linings may be used:

- 10mm/13mm Soundstop® Plasterboard
- 10mm/13mm Wet Area Plasterboard
- 10mm/13mm Fiberock®
- 10mm Regular Plasterboard
- 10mm Sheetrock® Ceiling/Wall Plasterboard
- 13mm Sheetrock® Plasterboard
- 13mm Multistop™ 5

Acoustic Rating of the Partiwall® System has been estimated based on the following insulation materials:

- R1.5 Fibreglass
- R2.0 Fibreglass
- 100mm Polyester 14kg/m³
- 90mm Fibreglass 32kg/m³
- 110mm Fibreglass 11kg/m³ min.
- 90mm Fibreglass 16kg/m³
- 89mm Polyester 9kg/m³
- 70mm Polyester 14kg/m³

Installation of insulation and internal linings is undertaken during framing using conventional installation methods.

¹ The meaning of italicised words are as defined in Clause A2, Building Regulations 1992, Schedule 1 (The NZ Building Code) or as defined in s7 of the Building Act 2004.

² Refer to the product technical statements for USG Boral lining products.

SCOPE OF USE

The Partiwall® system may be used:

- within the design scope of NZS 3604:2011 paragraph 1.1. The scope may be varied if designed in accordance with AS/NZS 1170:2002; and
- In conjunction with timber framing that complies with NZS 3604:2011 or is covered by a relevant Codemark.

The Partiwall® system must be used in conjunction with proprietary USG Boral plasterboard linings systems.

INSTALLATION:

The Partiwall® system must be installed in accordance with the USG Boral Partiwall® Installation Manual NZ (PB200). (Refer www.usgboral.com).

Where Shaftliner™ is to be laminated with USG Boral Firestop® plasterboard then all instructions as detailed in the Installation Manual are to be followed.

All USG Boral products must be installed with specified componentry in accordance with the USG Boral Installation Manual [refer www.usgboral.com and relevant Product Technical Statement(s)].

CONDITIONS & LIMITATIONS:

DESIGN LIMITATIONS

The specification and incorporation of the USG Boral Partiwall® system into a building design shall be carried out by a Designer / Architect / Engineer who:

- is a Licensed Building Practitioner (LBP) qualified to design the buildings covered under the scope of use of this product; and
- has ready access to all relevant technical information related to the specification and installation of the Partiwall® system, including the current version of the USG Boral Partiwall® Installation Manual NZ (PB200).

INSTALLATION LIMITATIONS

- Installation shall be undertaken by or supervised by a Licensed Building Practitioner (carpentry license)
- Installation shall be undertaken in accordance with all relevant technical information related to the systems including information contained within the USG Boral Partiwall® Installation Manual NZ (PB200). In particular refer to the Do's and Don'ts for installation of Partiwall®
- USG Boral recommends that exposure of the Shaftliner- fire barrier to the elements should be minimised when installed, and that protection is provided if exposure is likely to exceed one month when installed or when periods of intense inclement weather, such as heavy rain or high winds, are expected. Allow it to dry out before lining the occupancy areas.

- Upon completion, the RBW memorandum (where relevant) and the installation 'checklist' shall be completed. Both documents are to be provided to the Building Consent Authority (BCA) and to the head contractor.

MAINTENANCE

The Partiwall® System does not require maintenance but USG Boral recommends that a visual check of the wall is undertaken when the opportunity arises. In the event that moisture gets into the cavity then the lining must be removed and the Partiwall® inspected as moisture may cause degradation to the structural integrity of the Shaftliner™ or Firestop®.

QUALITY ASSURANCE RELEVANT TO THE PARTIWALL® SYSTEM:

Shaftliner™ and Firestop® are manufactured at USG Boral plants in Australia. These manufacturing sites are ISO9001:2008 accredited (SAI Global Certificate No: QEC0400).

WARRANTY

For details of the USG Boral warranty refer www.usgboral.com

DURABILITY STATEMENT

This statement is in relation to Clause B2 Durability of the New Zealand Building Code (NZBC). USG Boral Plasterboard products and systems are designed for internal use and when installed in accordance with the installation instructions detailed within the relevant Technical Installation literature they are fully compliant with the NZBC.

TECHNICAL LITERATURE REFERRED TO IN PREPARATION OF THIS DOCUMENT:

- AS/NZS 2588
- USG Boral Durability Statement
- BRANZ Assessment FAR2190
- CSIRO Assessment Number FCO-2256
- Renzo Tonin and Associates Pty Ltd Acoustic Opinion (May 2014)
- CSIRO Measurement (Nos: TL429em, TL429qrs, TL469) dated 2004 - 2006v

WHERE TO GO FOR FURTHER ASSISTANCE

For further information contact USG Boral TecASSIST – Freephone 0800 USGBORAL (0800 874 267)

SIGN OFF & REVIEW DATE

SIGNED	David Peck	DATE	1 June 2015
POSITION	New Zealand Manager	REVIEW DATE	1 June 2016

APPENDIX 1: NEW ZEALAND BUILDING CODE:

Shaftliner™ and Firestop® plasterboard complies with the following performance criteria of the NZ Building Code

NZBC Clause	EVIDENCE	COMMENT
B1.3.1 B1.3.2	Manufactured in accordance with AS/NZS 2588	Compliance with this Code relates to the <i>Building Element</i>
B1.3.3 (a, b, c, f, l, o, r)	Impact ASTM E695-75	
B1.3.4 (a, b, c, e)	Panel performance ASTM E72-80	
B2.3.1(a) B2.3.2	In Service history	USG and Boral have a combined plasterboard manufacturing experience in excess of 145 years. During this time USG Boral have supplied plasterboard along with plasterboard wall and ceiling systems for use within the residential and commercial sectors.
C3.4 (a)	BRANZ assessment FAR2190	<ul style="list-style-type: none"> Achieves material group 1 In service history
C6.2(a)	CSIRO assessment FCO-2256	<ul style="list-style-type: none"> CSIRO assessment evaluated likely fire resistance if tested in accordance with AS 1530.4-1997. In service history
F2.3.1	Manufactured in accordance with AS/NZS 2588	In-service use internationally and nationally

For information relating to Code compliance of USG Boral internal linings, refer to the relevant Product Technical Statement www.usgboral.com

Once installed the Partiwall® System will contribute to compliance with the following performance criteria of the NZ Building Code

NZBC Clause	EVIDENCE	COMMENT
B1.3.1 B1.3.2 B1.3.3 (a, b, c, f, l, o, r) B1.3.4 (a, b, c, e)	Aluminium manufactured to AS/NZS 1866	Producer Statement, dated 22 April 2015, provided by MecKechnie Aluminium Solutions Ltd, supplier of all relevant aluminium extrusions
B2.3.1(a), B2.3.2	In service history	USG Boral Durability Statement
C6.2(a) C6.4	CSIRO assessment FSV-0381	<p>For C6.2 (a)</p> <ul style="list-style-type: none"> CSIRO assessment evaluated likely fire resistance if tested in accordance with AS 1530.4-1997. In service history <p>For C6.4</p> <ul style="list-style-type: none"> Compliance with B1 (structure) in respect of the system as installed
G6.3.1	CSIRO Measurement No TL429em (2004) CSIRO Measurement No TL429qrs (2004) CSIRO Measurement No TL469 (2006)	All results concluded a Sound Transmission Class (STC) greater than STC 55

APPENDIX 2: COMPANY

The following information is provided to demonstrate the credibility of this document.

HISTORY OF THE COMPANY:

USG and Boral formed a joint venture in 2014 to become a market leader within Asia, Australasia and the Middle East to be known as USG Boral Building Products.

USG was the inventor of the first plasterboard product and is a well-established North American company with over 110 years of experience in the manufacturing and the distribution of construction products.

Boral is an Australian based company and has operated for over 50 years manufacturing and distributing construction products.

In Australia, USG Boral operates plasterboard manufacturing facilities in New South Wales, Queensland and Victoria. It also operates an Australia-wide distribution network of company owned stores and independent resellers.

In New Zealand USG has been in operation since 1969 and is a well-established manufacturer and national distributor of interior suspended ceiling and steel stud products and their components and systems. With its 45 years plus of knowledge and experience in this field and since joining forces with Boral in 2014 it can now provide a full and complete range of new and innovative plasterboard products and systems to the New Zealand building industry.

QUALITY ASSURANCE PRACTICES OF THE COMPANY:

USG Boral is ISO 9001:2008 Accredited in NZ (Telarc Certificate No: QEC5044). Certification dates from 1996.

APPENDIX 3: SYSTEM CONFIGURATIONS & ANCILLARY PRODUCTS

PARTIWALL® SYSTEM CONFIGURATIONS

Partiwall® System Type	Fire Barrier	FRR achieved
PWT60.1 60/60/60	1 x 25mm Shaftliner™	60/60/60 ¹
PWT90.1 90/90/90	1 x 25mm Shaftliner™ with 1 x 16mm Firestop® plasterboard laminated to the Shaftliner™	90/90/90 ²
PWT90.2 90/90/90	2 x 25mm Shaftliner™	90/90/90 ³

¹ CSIRO FCO-2256

² CSIRO FCO-2713

³ CSIRO FCO-2256, FCO-1446 and FCO-2016

ANCILLARY PRODUCTS

USG Boral specifies products to be used when installing the Partiwall® System. Refer Partiwall® Installation Manual (PB200).

www.usgboral.com

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