LOXO
CLADDING SYSTEMS

LOXO INTER TENANCY WALLS

FIRE AND ACOUSTIC REPORT

Edition December 2023

(always refer to the latest manual as set out on www.loxocladding.co.nz)

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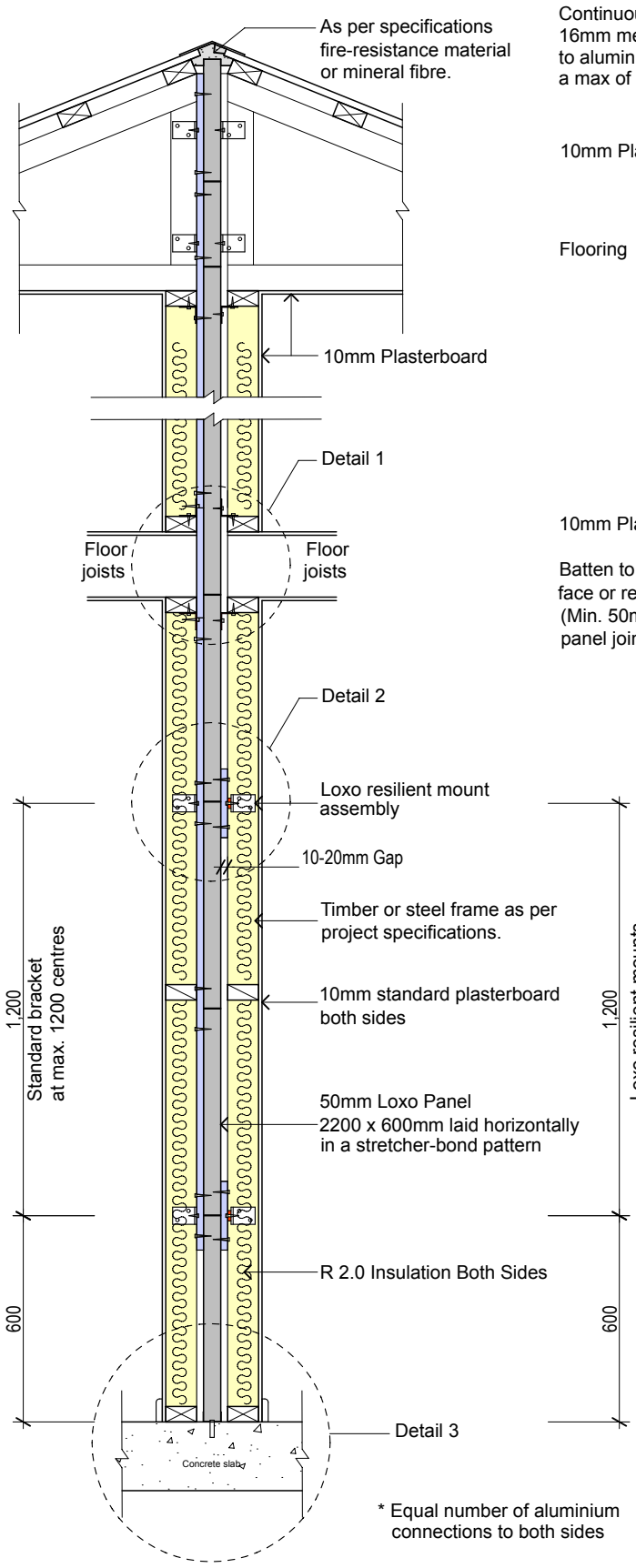
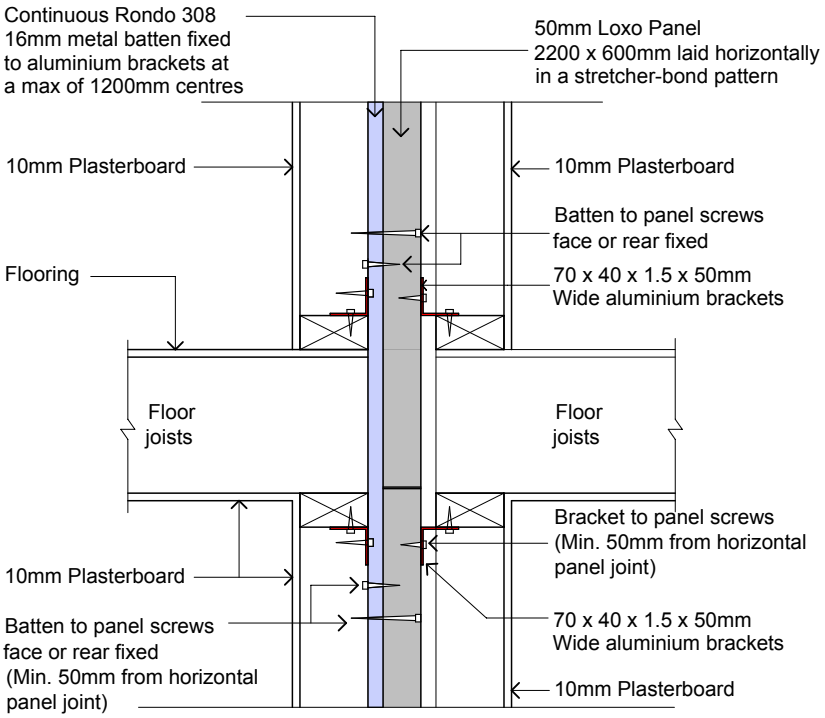
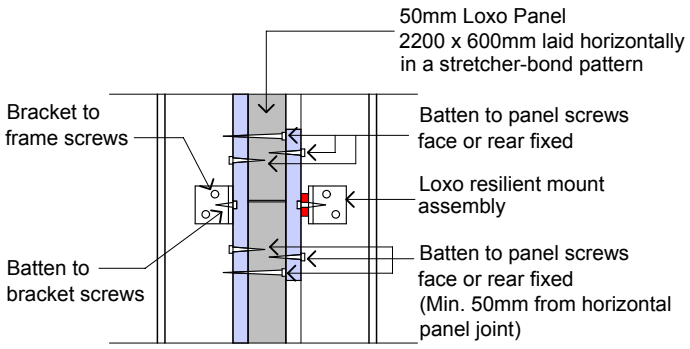




Detail 1



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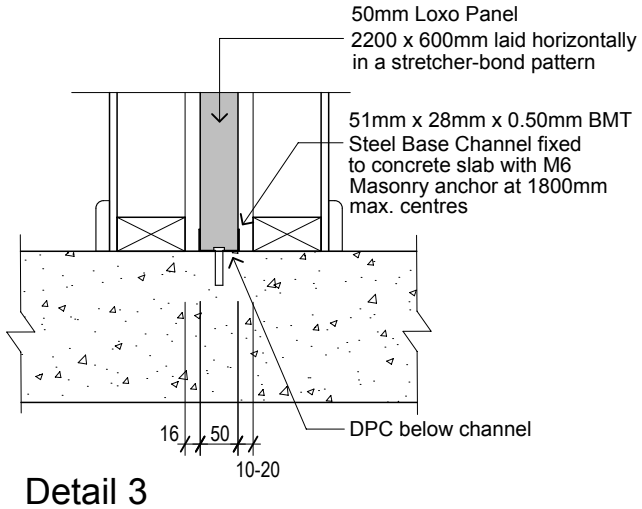
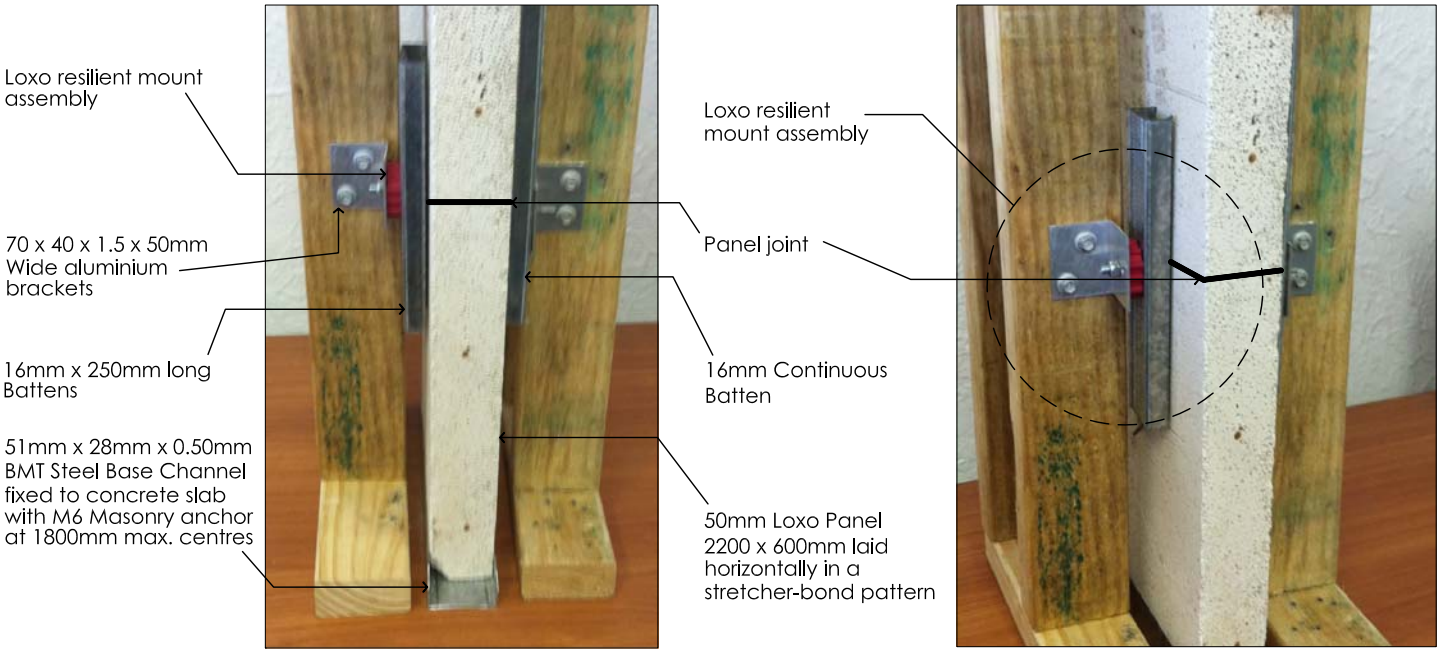


Detail 3

LOXO CLADDING SYSTEMS	TITLE:	50mm PANEL FIRE RATED PARTY WALL SYSTEM 1 - STRETCHER BOND - DETAILS	
	REVISION:	-	
	DATE:	05.02.15	DRAWING NUMBER: F07

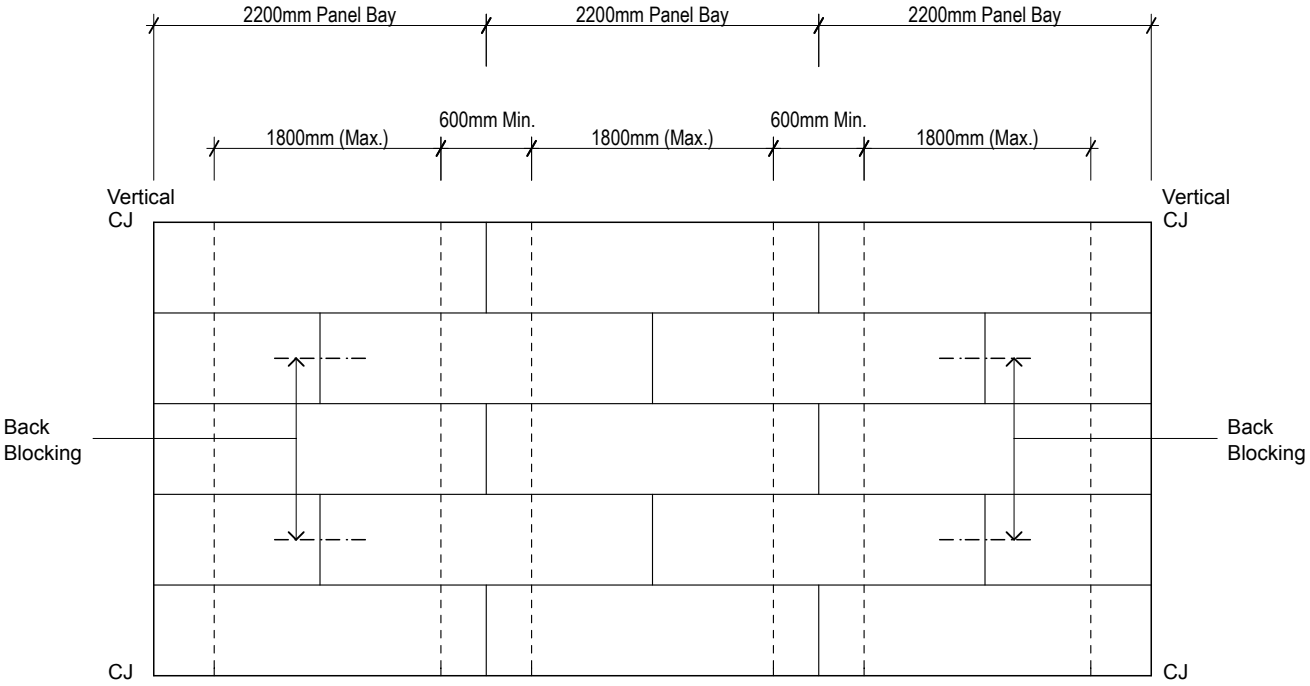


Loxo 50mm Party Wall System Components

Connection	Fixing	Quantity
Base channel to slab	51mm x 28mm x 0.50mm BMT channel fixed to slab M6 Masonry anchor.	1800 centres
Bracket to Frame Screws		
Timber Frame	12-11 x 25mm Hex Head Type 17 screws	2 per bracket
Steel Frame	10-16 x 16mm Hex Head self drilling screws	2 per bracket
Batten to Bracket	10-16 x 16mm Hex Head self drilling screws	2 per bracket
Batten to Panels		
Rear Fixed or	14-10 x 50mm Hex Head or Bugle Head Type 17 screws.	2 per 600mm
Face Fixed *	14-10 x 75mm Bugle Head Type 17 screws.	2 per 600mm
Bracket to Panels (rear fixing)	14-10 x 45mm Hex Head Type 17 screws.	2 per bracket
Resilient Mount Assembly	10-16 x 25mm Hex Head self drilling screws	1 per assembly

* Face fixed screws must be embedded approximately 5mm into the panel and covered with Loxo Adhesive.

Continuous Batten Layout - One side only

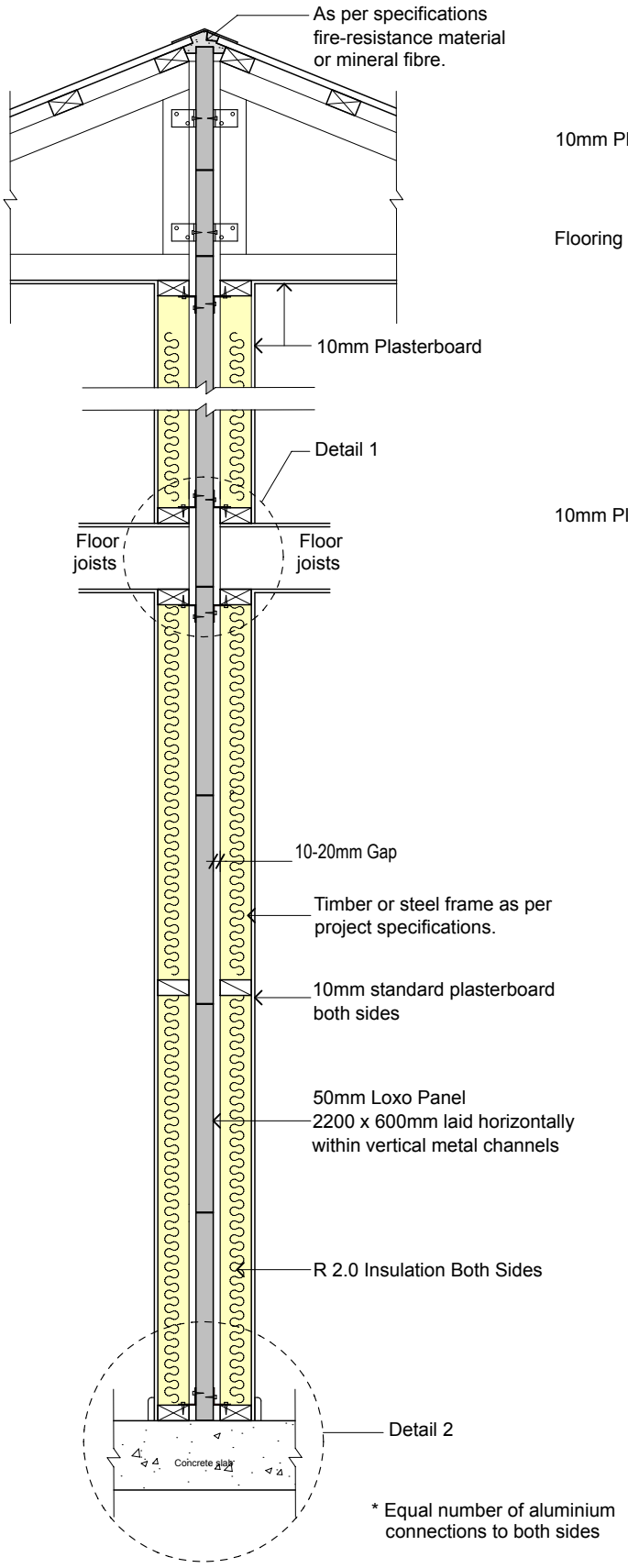


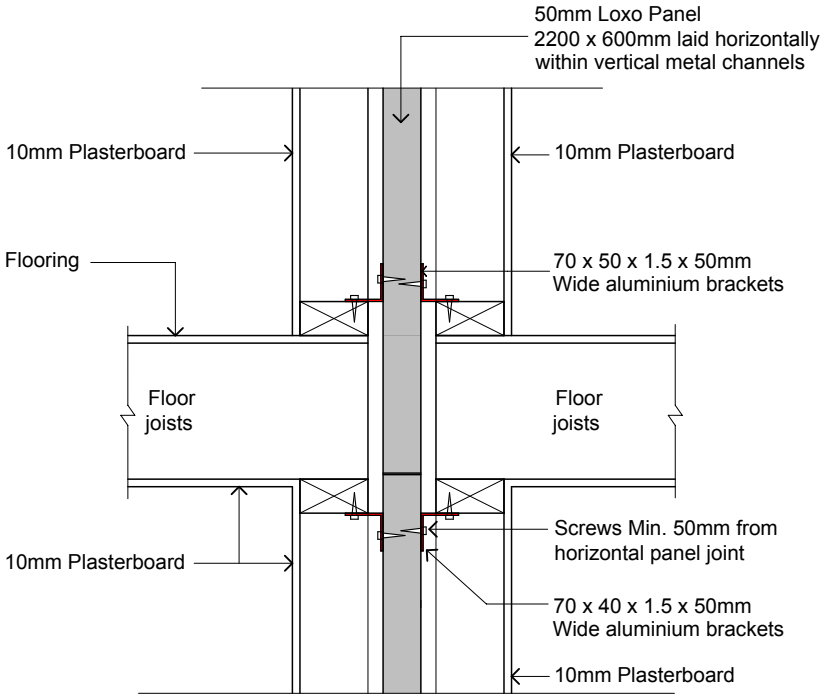
or — · — · — — Denotes Rondo 308 16mm metal batten

* Vertical control joints at 6.6m
* Horizontal control joints at 8.0m
* Back blocking required if panel is fixed to one batten only.
* 2 Battens required per 2200mm panel bay to a maximum of 1800mm centres.

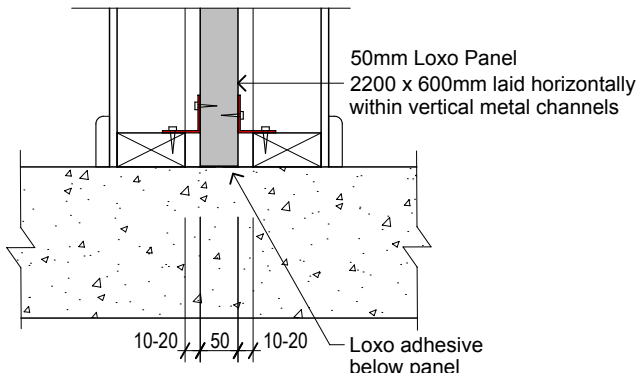
LOXO CLADDING SYSTEMS

TITLE: 50mm PANEL FIRE RATED PARTY WALL SYSTEM 1 - STRETCHER BOND - LAYOUT
REVISION: -
DATE: 05.02.15
DRAWING NUMBER: F09

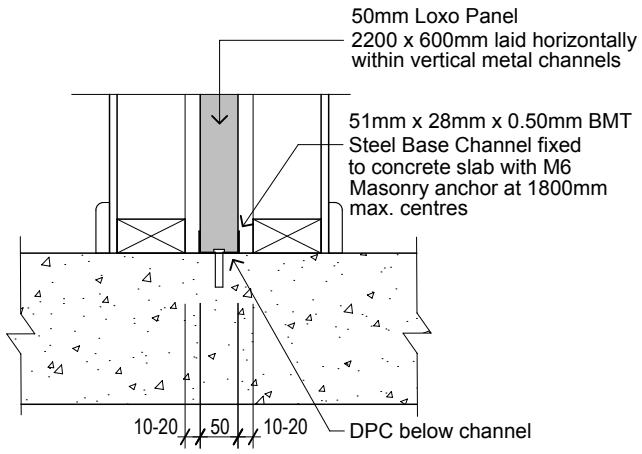




Detail 1



Detail 2 (Option 1)



Detail 2 (Option 2)

LOXO CLADDING SYSTEMS

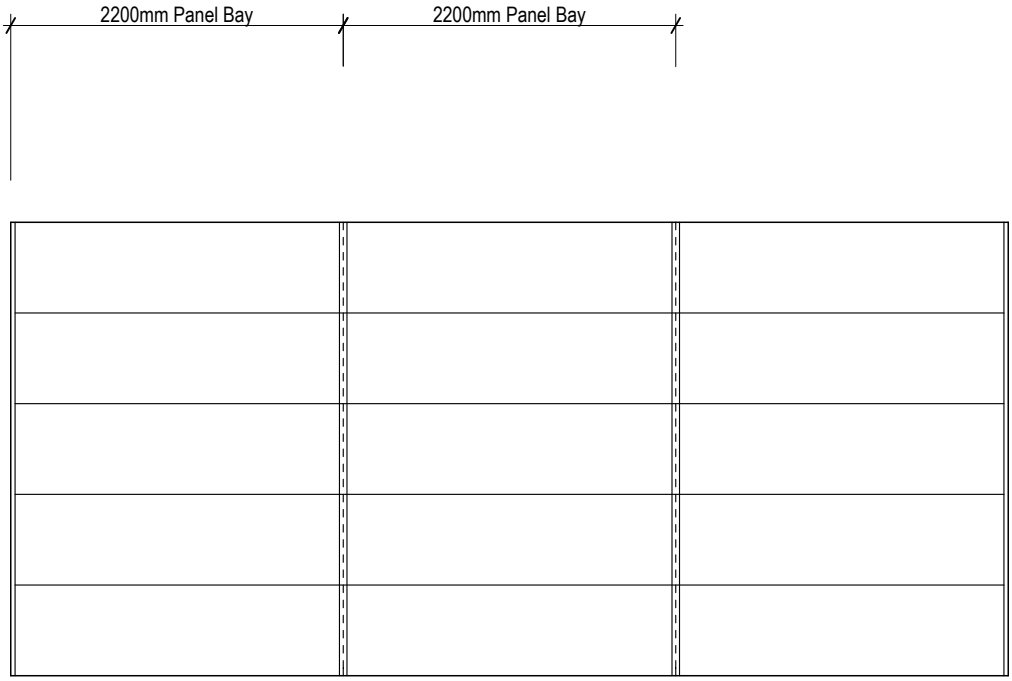
TITLE: 50mm PANEL FIRE RATED PARTY WALL SYSTEM 2 - STACK BOND - DETAILS

REVISION: -

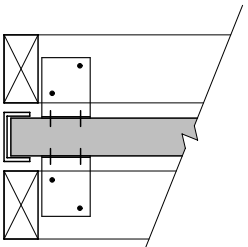
DATE: 05.02.15

DRAWING NUMBER: F10

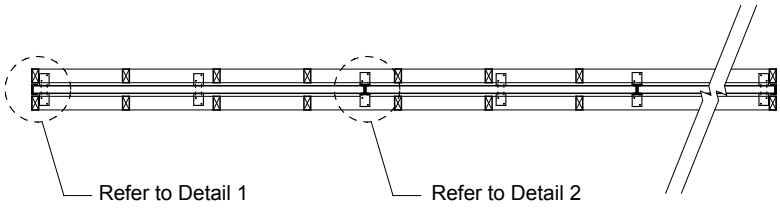
Panel Layout - Loxo Party Wall System

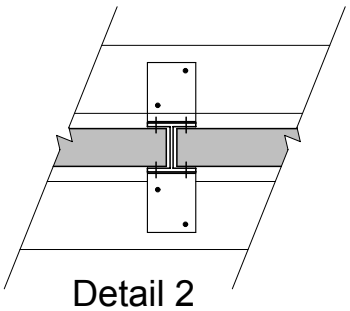


* C - Section metal channel at start & end of walls.
* H - Section metal channel at all intermediate panel joints (2200mm Max. spacing)
* Aluminium brackets fixed to top & bottom plates at 1100mm centres
  (on H - Section & mid span of panel).



Detail 1





Detail 2

LOXO CLADDING SYSTEMS

TITLE: 50mm PANEL FIRE RATED PARTY WALL SYSTEM 2 - STACK BOND - LAYOUT

REVISION: -

DATE: 05.02.15

DRAWING NUMBER: F11

Engenuity
CONSULTING ENGINEERS
027 491 5349
john@engenuity.co.nz
www.engenuity.co.nz

10 December 2023 Job No: 18013001

Loxo Cladding NZ Limited
Attn Marcus Stufkens

Via email: m.stufkens@loxocladding.co.nz

RE: Loxo 60/60/60 Fire Rated Inter-tenancy Wall Systems

Dear Marcus,

Following a review of the formal assessments completed by Warrington Australia Pty Ltd; including:

- Report 38259000 R6.3 (& Summary 38259000 SOA6.3 – expiring 28 Feb 2026) for the assessment of the boundary wall system, and
- Report 39410000 R9.1 (& Summary 39410000 SFC9.0 – expiring 30 Apr 2026) for the assessment of an inter-tenancy wall system,

Engenuity Consulting Engineers Limited conclude that the Loxo Inter-tenancy Wall Systems detailed in drawings '50mm Panel Fire Rated Party Wall System 1 & 2', sheets F07-F11, dated 05.02.15 and prepared by LOXO Cladding Systems (attached for reference), will provide not less than a 60/60/60 fire resistance rating in accordance with AS 1530.4:2014 (typically considered to be more onerous that the 2005 standard ratified by the NZBC).

No unrated penetrations are permitted through the Loxo core. Where penetrations are required, these shall be fire stopped using an appropriate passive fire stopping medium installed strictly in accordance with the manufacturers requirements for the product used.

The Loxo core shall extend vertically from the floor slab to the underside of the roofing above with any gap between the top edge of the Loxo core and the roofing being appropriately filled with Rockwool or mineral fibre insulation. The Loxo core shall also extend horizontally to the external façade of the building. This may require the use of appropriate solid blocking or fire rated barriers within the wall cavity space (dependant on cladding system used).

Note that this standard detail is appropriate for standard 'side by side' situations where only the inter- tenancy system is required to achieve the necessary compliance with the New Zealand Building Code C clauses.

Where the building design contains varying roof lines and external wall lines, additional site-specific fire rated junction/ cavity details and fire rated GIB wall linings may be necessary to ensure the fire separation between neighbouring properties are achieved. This shall be confirmed/ detailed in conjunction with the fire engineer working on the project as appropriate.

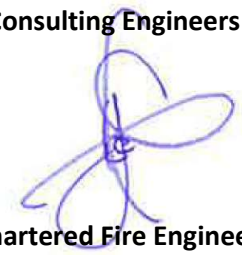
Take note that this letter does not specifically address the durability or post fire structural stability requirements of the New Zealand Building Code.

In lieu of the above however, it is understood that for standard 'side by side' construction (as per above), post fire stability requirements of the wall system will be meet inherently through the fact that the Loxo core is supported by the wall framing on both sides of the core. As such, in the event that the wall system on one side is compromised by fire, the fire rated core system will continue to be supported by the unaffected framing on the opposite side of the core.

Engenuity Consulting Engineers Limited reserves the right at any time to amend or withdraw this letter in the light of new knowledge. In lieu of the above, this letter is valid up to 28 February 2026.

If there are any questions, please do not hesitate to contact me.

Yours sincerely,
Engenuity Consulting Engineers Limited



John Collie
Director, Chartered Fire Engineer

MARSHALL DAY Acoustics

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www.marshallday.com

22 May 2015

Loxo Cladding NZ Ltd
PO Box 10176
Christchurch 8145

Attention: Andrew Ward

Dear Andrew

SOUND INSULATION PERFORMANCE OF INTERTENANCY WALLS

Introduction

Marshall Day Acoustics (MDA) has been asked to provide an opinion on the Sound Transmission Class (STC) and Weighted Sound Reduction Index (R_w) ratings that would be achieved by two intertenancy wall systems using Loxo product.

Our opinion is based on theoretical models for the sound transmission properties of triple panel wall systems.

Construction

The construction of the two wall systems (stacked bond and stretcher bond) are described in the attached documentation from Loxo dated 5th February 2015.

Discussion

MDA has considerable expertise in the modelling of the performance of construction systems based on theoretical models. These models have been validated against a wide range of construction types, tested in laboratories over an extended period of time.

The sound transmission loss of a triple panel wall is determined by the surface mass of the linings on each side, the stiffness and hence critical frequency of the linings, the air gap between linings, and the type of acoustic absorption within the cavity. In this case theoretical models have been used to predict the effect of the junction details that would be used in wall and floor systems described. Details of these models are available from MDA on request.

Calculations have been performed using INSUL v8.0.5.

Opinion

The estimated laboratory performance of the wall systems described in the attached documentation is given in Table 1.

Table 1: Estimated Sound Insulation for Loxo intertenancy walls

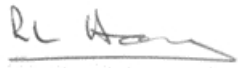
Description	STC	$R_{w\,(C,\,Ctr)}$ (dB)
Stretcher Bond	59	$58_{(-6,\,-14)}$
Stacked Bond	61	$61_{(-8,\,-17)}$

Limitations

The above opinions are an estimate of the laboratory performance (STC or R_w) and do not represent the field performance (FSTC, R'_w). In field installations, flanking may determine the sound reduction between spaces rather than the partition. The estimates are based on the materials as currently manufactured and the construction details set out above. Readers are advised to check that this opinion has not been revised by a more recently issued opinion. The estimates are expected to be in error by less than ± 2 STC/dB.

Yours faithfully

MARSHALL DAY ACOUSTICS LTD



Rob Hay

Senior Consultant

APPENDIX A GLOSSARY OF TERMINOLOGY

Sound Insulation	When sound hits a surface, some of the sound energy travels through the material. 'Sound insulation' refers to ability of a material to stop sound travelling through it.
Transmission Loss (TL)	The attenuation of sound pressure brought about by a building construction. Transmission loss is specified at each octave or third octave frequency band.
Flanking Transmission	Transmission of sound energy through paths adjacent to the building element being considered. For example, sound may be transmitted around a wall by travelling up into the ceiling space and then down into the adjacent room.
STC	Sound Transmission Class A single number system for quantifying the transmission loss through a building element. STC is based upon typical speech and domestic noises, and thus is most applicable to these areas. STC of a building element is measured in approved testing laboratories under ideal conditions.
FSTC	The 'field' or in situ measurement of Sound Transmission Class. Building tolerances and flanking noise have an effect on the performance of a partition when it is actually installed, which result in FSTC values lower than the laboratory derived STC values, typically 5 dB less.
R_w	Weighted Sound Reduction Index A single number rating of the sound insulation performance of a specific building element. Rw is measured in a laboratory. Rw is commonly used by manufacturers to describe the sound insulation performance of building elements such as plasterboard and concrete.
R'_w	Apparent Weighted Sound Reduction Index Similar to the Rw value except that measurements are conducted in the field. Building tolerances and flanking noise have an effect on the performance of a partition when it is actually installed, which result in R'w values lower than the laboratory derived Rw values.
C	A sound insulation adjustment, commonly used with Rw and $D_{nT,w}$. C adjusts for sources of mid-high frequency noise sources generated by typical living activities such as talking, music, radio, TV, children playing, etc. This term is used to provide information about the acoustic performance at different frequencies, as part of a single number rating system.
C_{tr}	A sound insulation adjustment, commonly used with Rw and $D_{nT,w}$. C_{tr} adjusts for low frequency noise, like noise from trucks and subwoofers. C_{tr} values typically range from about -4 to about -12. This term is used to provide information about the acoustic performance at different frequencies, as part of a single number rating system.