



# **FIRE** TECHNICAL OPINION

## **FC10022-001**

**FIRE RESISTANCE OF WINSTONE WALLBOARDS GIB FIRE RATED WALLS WITH  
A C-FRAME PANEL**

**CLIENT**

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## ASSESSMENT OBJECTIVE

To assess the fire resistance of a C-Frame panel when installed in symmetrical Winstone fire rated GIB® plasterboard walls as detailed in the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012 if tested in accordance with AS 1530.4. Consideration is given to symmetrical fire rated walls lined with plasterboard to each face of the wall only.

The C-Frame is proposed to be installed into steel stud or timber stud fire rated walls and include fire rated penetrations.

## CONCLUSION

It is considered that the inclusion of a C-Frame panel consisting of a steel perimeter frame, recessed faces lined with the same plasterboard as the fire rated wall and then overlaid with plasterboard, would not prejudice the fire resistance of the symmetrical plasterboard walls detailed in the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012 subject to the following conditions:

- The wall frame must be structurally designed for the opening required for the C-Frame.
- Where the C-Frame is to be installed in a non-load bearing wall the wall framing must be suitably designed to support the weight of the C-Frame, additional plasterboard and penetrations.
- The C-Frame must be lined with at least one layer of fire rated plasterboard each face of the panel prior to lining of the plasterboard for the wall.
- The C-Frame may only be used for GIB® fire rated walls lined with plasterboard to each face.
- Penetrations installed in the C-Frame must have previously been tested or assessed for use with GIB® fire rated wall systems.

## LIMITATION

This report is subject to the accuracy and completeness of the information supplied.

BRANZ reserves the right to amend or withdraw this assessment if information becomes available which indicates the stated fire performance may not be achieved.

This assessment report may only be quoted or reproduced in full.

## TERMS AND CONDITIONS

This report is issued in accordance with the Terms and Conditions as detailed and agreed in BRANZ Services Agreement for this work.

The results reported here relate only to the item/s described in this report.



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## DOCUMENT REVISION STATUS

ISSUE NO.	DATE ISSUED	REVIEW DATE	DESCRIPTION
01	6 August 2018	6 August 2023	Initial Issue



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# 1. INTRODUCTION

This report gives BRANZ's assessment on the fire resistance of a C-Frame panel when installed in Winstone fire rated GIB® symmetrical plasterboard walls as detailed in the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012 if tested in accordance with AS 1530.4. Consideration is given to symmetrical fire rated walls lined with plasterboard to each face of the wall only.

The C-Frame is proposed to be installed into steel stud or timber stud fire rated walls and include fire rated penetrations.

## 2. BACKGROUND

Winstone Wallboards have commissioned a number of fire resistance tests and assessments to support their fire rated systems. The specific tests and assessments are not listed here but reference made to the wall systems detailed in the BRANZ appraised *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012. Which has been subjected to a comprehensive review of the supporting tests and assessments.

## 3. DISCUSSION

### 3.1 C-Frame panel in Load bearing walls

The C-Frame consists of a perimeter steel frame nominally 1 mm thick x the framing depth of the wall i.e. 90 mm for a timber stud wall consisting of 90 mm x 45 mm framing. The frame is then closed in with 1 mm thick steel sheet which is recessed from the edge of the perimeter frame by the nominal thickness of plasterboard used in the fire rated wall. For example where the GIB® fire rated wall consists of timber framing nominally 90 mm x 45 mm and lined with 13 mm GIB® Fyrelite. The C-Frame is nominally 90 mm deep with the faces recessed by 13 mm each side. The C-Frame is then secured within the opening provided in the wall framing through the C-Frame perimeter frame. The panel is then lined with 13 mm thick GIB® Fyrelite in accordance with the manufacturers instructions. The wall (and C-Frame) are lined with 13 mm GIB® Fyrelite in accordance with the manufactures instructions. See Figure 1 to Figure 3 for details. See Table 1 for possible wall, framing and lining combinations. Note this is not the complete list of GIB® fire rated wall systems. Refer to the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012 for more details.

**Table 1: C-Frame and wall combinations**

GIB® Fire rated system	Framing	C-Frame recess	Wall lining	FRR
GBTL 30	90 mm x 45 mm	10 mm	10 mm GIB® Fyrelite	30/30/30
GBTL 60	90 mm x 45 mm	13 mm	13 mm GIB® Fyrelite	60/60/60
GBTL 60b	90 mm x 45 mm	10 mm	2 x 10 mm GIB® Fyrelite	60/60/60
GBSL 30a	64 mm steel stud	16 mm	16 mm GIB® Fyrelite	30/30/30



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Where the C-Frame panel is wider than the stud spacing the wall framing must be structurally designed for the opening width required for the C-Frame. The C-Frame is considered not to be a structural element within the wall.

On the condition that the fire rated wall framing has been designed to accommodate the opening required for the C-Frame panel it is considered the inclusion of the panel would not prejudice the previously established fire resistance rating (FRR) of the GIB® fire rated load bearing wall systems as detailed in the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012.

### 3.2 C-Frame in Non-load bearing walls

Where the C-Frame is to be installed into a non-load bearing wall, the wall framing must be suitably designed to support the weight of the C-Frame, additional plasterboard and the penetrations. The specific design of the wall frame/lintel is outside the scope of this assessment and shall be determined by others.

### 3.3 C-Frame penetrations

The C-Frame is to include sleeved openings for fire rated penetrations. The opening size is determined prior to the installation of the C-Frame and made to suit the specific penetration being installed. On the condition that any penetration has been tested or assessed to achieve the required fire rating performance in a GIB® fire rated wall it is considered the inclusion of the C-Frame would not prejudice the performance of the penetration or the GIB® fire rated wall.

The penetration must be installed in accordance with the manufacturer's instructions with fixings suitable for securing the penetration to the steel face of the C-Frame.

## 4. CONCLUSION

It is considered that the inclusion of a C-Frame panel consisting of a steel perimeter frame, recessed faces lined with the same plasterboard as the fire rated wall and then overlaid with plasterboard, would not prejudice the fire resistance of the walls detailed in the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012 subject to the following conditions:

- The wall frame must be structurally designed for the opening required for the C-Frame.
- Where the C-Frame is to be installed in a non-load bearing wall the wall framing must be suitably designed to support the weight of the C-Frame, additional plasterboard and penetrations.
- The C-Frame must be lined with at least one layer of fire rated plasterboard each face of the panel prior to lining of the plasterboard for the wall.
- The C-Frame may only be used for GIB® fire rated walls lined with plasterboard to each face.
- Penetrations installed in the C-Frame must have previously been tested or assessed for use with GIB® fire rated wall systems.



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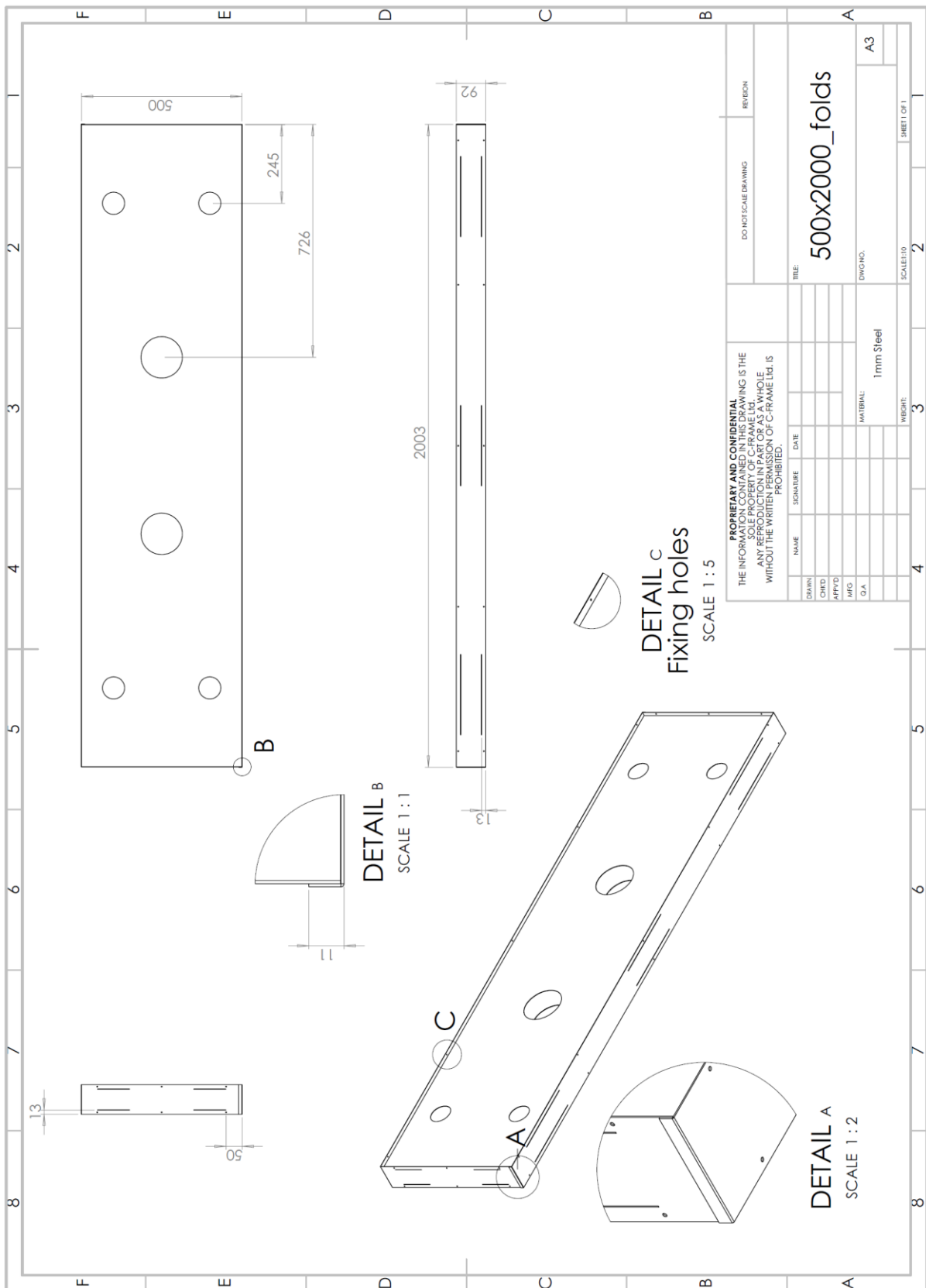
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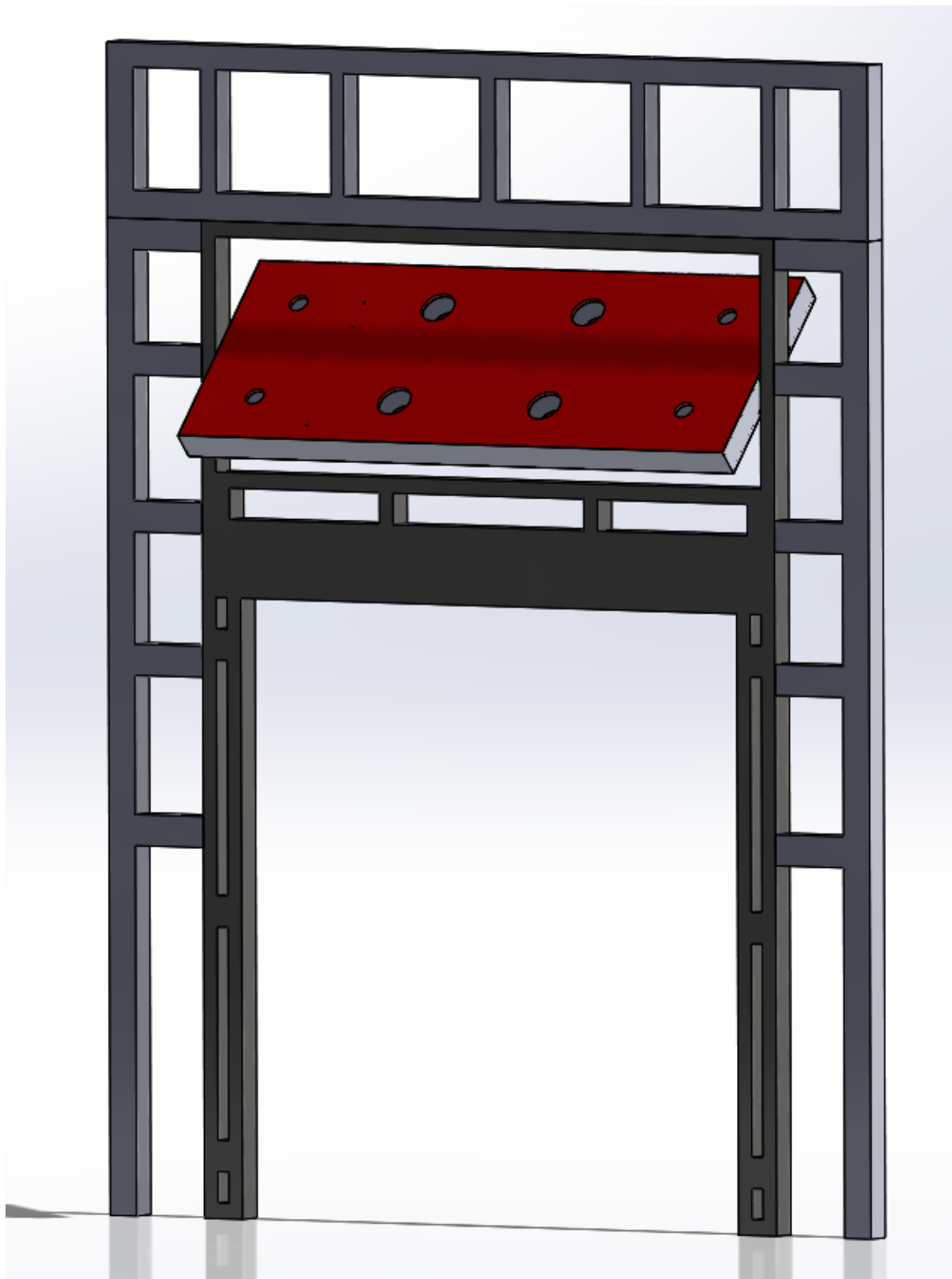
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Figure 1 Example of C-Frame panel

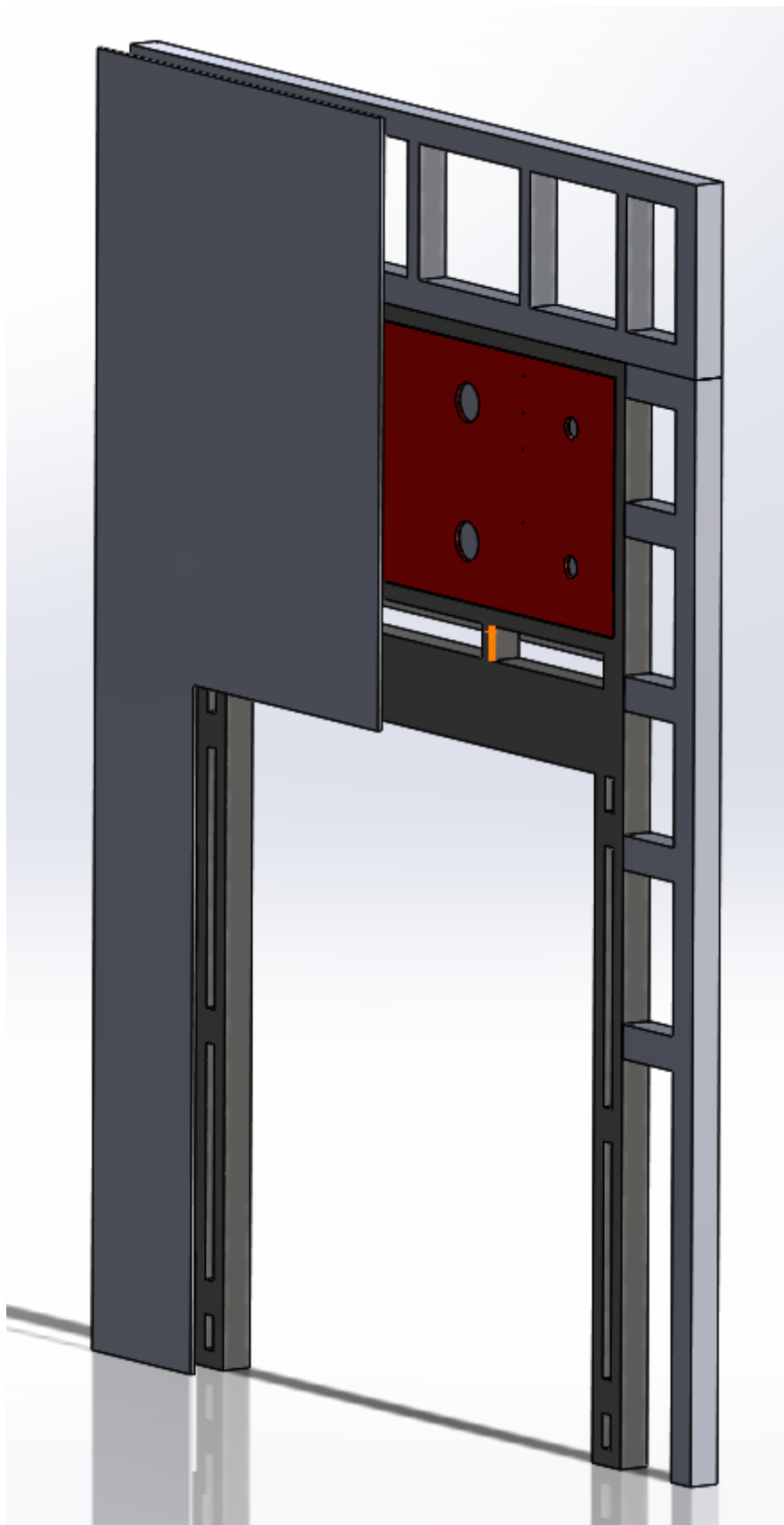


**Figure 2 Example of C-Frame panel installed in wall frame**





**Figure 3 Example of C-Frame panel installed in wall frame with wall lining**



# FC10022-001

## Technical Opinion Summary



This is to certify that the specimen described below has been examined by BRANZ on behalf of the sponsor.

### Sponsor

C-FRAME NZ Limited  
74 Wake Road RD3  
Albany 0793  
Auckland  
New Zealand

**Reference BRANZ Reports** FC10022-001

**Referenced Standard** AS1530.4:2005

**Specimen Name:** C-Frame panel in GIB® Fire Rated walls with penetrations

**Specimen Description:** A C-Frame steel framed panel nominally 1 mm thick with recessed faces installed into openings in GIB® Fire Rated load bearing walls, lined with one layer of plasterboard to each face of the panel. The wall and C-Frame panel are to be lined with GIB® plasterboard in accordance with the manufacturers instructions.

Penetrations must be installed in accordance with the manufacturer's instructions.

**Orientation:** Exposure from either side

### The assessed results were as follows

It is considered that the inclusion of a C-Frame panel consisting of a steel perimeter frame, recessed faces lined with the same plasterboard as the fire rated wall and then overlaid with plasterboard would not prejudice the fire resistance of the walls detailed in the *GIB® Fire Rated Systems specification and installation manual* CBI 5113 issued October 2012 subject to the following conditions:

- The wall frame must be structurally designed for the opening required for the C-Frame.
- Where the C-Frame is to be installed in a non-load bearing wall the wall framing must be suitably designed to support the weight of the C-Frame, additional plasterboard and penetrations.
- The C-Frame must be lined with at least one layer of fire rated plasterboard each face of the panel prior to lining of the plasterboard for the wall.
- The C-Frame may only be used for GIB® fire rated walls lined with plasterboard to each face.
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**Issue Date**  
6/08/2018

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**Expiry Date**  
6/08/2023

*Regulatory authorities are advised to examine test reports before approving any product.*