

FIRE ASSESSMENT REPORT

FC11449-01-2

FIRE RESISTANCE OF SPECIALIZED CONSTRUCTION PRODUCTS EZPANEL FIRE RATED WALLS

CLIENT

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ASSESSMENT OBJECTIVE

To assess the fire resistance, in accordance with AS 1530.4:2014, of Specialized Construction Products EZpanel loadbearing timber framed wall systems.

CONCLUSION

It is considered that loadbearing, timber framed, Specialized Construction Products EZpanel, wall systems, constructed as tested in BRANZ fire resistance test FR10017-01 but with the following plasterboard linings to the interior face, would achieve the stated fire resistance ratings (FRRs) if tested in accordance with AS 1530.4:2014.

EZpanel Light weight Concrete Cladding Systems with 50 mm thick EZpanel panels on the exterior face:

Interior face lining	Fire Resistance Rating (FRR)	Specification reference GIB® Fire Rated Systems Manual
1 x 10 mm GIB Fyreline®	30/30/30	GBTL 30
1 x 13 mm GIB® Standard	30/30/30	GBTL 30b
1 x 10 mm GIB® Standard	30/30/30	GBTL 30c
1 x 13 mm GIB Fyreline®	60/60/60	GBTL 60
2 x 10 mm GIB Fyreline®	60/60/60	GBTL 60b
1 x 16 mm GIB Fyreline®	90/90/90	GBTL 90
2 x 16 mm GIB Fyreline®	120/120/120	GBTL 120

It is also considered that the following variations of construction will not prejudice the stated fire resistance ratings:

- The stud spacing is increased from 400 mm to 600 mm; and/or
- The EZpanel panels may be suspended off the wall as shown in Figure 1 or supported on the floor slab as shown in Figure 2.

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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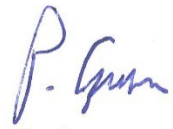

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1. INTRODUCTION

This report gives BRANZ's assessment of the fire resistance, in accordance with AS 1530.4:2014, of Specialized Construction Products EZpanel, loadbearing, timber framed cavity based, wall cladding systems.

The systems are given in Table 1.

Table 1: EZPanel Lightweight Concrete Cladding Systems

Interior face lining	Fire Resistance Rating (FRR)	Specification reference GIB® Fire Rated Systems Manual
1 x 10 mm GIB Fyreline®	30/30/30	GBTL 30
1 x 13 mm GIB® Standard	30/30/30	GBTL 30b
1 x 10 mm GIB® Standard	30/30/30	GBTL 30c
1 x 13 mm GIB Fyreline®	60/60/60	GBTL 60
2 x 10 mm GIB Fyreline®	60/60/60	GBTL 60b
1 x 16 mm GIB Fyreline®	90/90/90	GBTL 90
2 x 16 mm GIB Fyreline®	120/120/120	GBTL 120

Figure 1 shows a sectional view of the system with 10 mm thick GIB® Standard plasterboard to the interior face and with the AAC panels mounted above the floor slab and Figure 2 shows a sectional view of this system with the AAC panels supported on the floor slab.

2. BACKGROUND

2.1 BRANZ fire resistance test FR10017-01

In BRANZ fire resistance test FR10017-01 the test specimen consisted of a loadbearing timber framed wall nominally 2,900 mm high x 3,000 mm wide.

The wall frame was constructed using SG8 timber studs nominally 90 mm x 45 mm. The timber frame was lined on the unexposed face with a single layer of 10 mm thick GIB® standard plasterboard.

The exposed face of the timber frame was lined with a Watergate Plus membrane, 50 mm wide x 20 mm thick timber battens and a single layer of 50 mm thick EZpanel autoclaved aerated concrete (AAC) panels.

The exposed face of the EZpanel panels was plastered with a coat of EZpanel Base Coat and a layer of Float Finish. The plaster layer was coated with Cotec Plastershield Exterior.

The cavity voids between the timber studs were filled with a 90 mm thick layer of Pink® Batts® insulation. A drawing of the cross section of the tested wall is shown in Figure 1.

The wall was tested in accordance with fire resistance test standard AS 1530.4:2014 and achieved a fire resistance of:

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Structural Adequacy	190 minutes No failure
Integrity	190 minutes No failure
Insulation	190 minutes No failure

2.2 BRANZ Assessment FC10390-001

In BRANZ assessment report FC20112-01-1 it was considered that the GIB® plasterboard systems given in the Winstone Wallboards GIB® Fire Rated Systems manual, dated September 2024, would achieve their specified Fire Resistance Ratings if tested in accordance with AS 1530.4.

Winstone Wallboards has given permission to use that assessment for the purposes of this assessment report.

3. DISCUSSION

3.1 EZPanel Lightweight Concrete Cladding Systems

3.1.1 Fire From EZPanel Side

In BRANZ fire resistance test FR10017-01 the fire exposure was on the EZpanel face and the system achieved an FRR of at least 180/180/180.

The unexposed face lining was 10 mm GIB® Standard plasterboard which is the thinnest and least fire resistant of the range of GIB® plasterboard linings. It is therefore considered that lining the unexposed face with any of the GIB® plasterboard products given in Table 2 would not be detrimental to the EZpanel wall system with fire exposure on the EZpanel face.

Table 2: Winstone Wallboards plasterboard linings

Winstone Wallboards linings
1 x 10 mm GIB® Standard
1 x 13 mm GIB® Standard
1 x 10 mm or 2 x 10 mm GIB Fyreline®
1 x 13 mm GIB Fyreline®
1 x 16 mm or 2 x 16 mm GIB Fyreline®

3.1.2 Fire from GIB® Plasterboard Face

Table 1 gives the FRR specified for the systems listed In the Winstone Wallboards GIB® Fire Rated Systems manual, dated September 2024, for walls lined on both faces with the stated plasterboard.

These Winstone Wallboards systems have been assessed as demonstrating their stated FRRs. Each system is loadbearing which means that the wall lining has been designed to limit the extent of charring sufficient to maintain the loadbearing capacity of the wall.

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In the proposed systems the EZpanel panels are fixed through to the timber framing which, as a consequence of the plasterboard lining providing protection, is considered to remain intact in order to support the EZpanel panels for the duration of the stated FRR, with exposure from the plasterboard lined face.

3.1.3 Whole system Two Way performance

For the systems to maintain their expected FRR with fire exposure from either direction, the most onerous direction must be chosen. In this case for all systems given in Table 1, except for the 120/120/120 system which has an equal FRR from either direction, the most onerous direction is from the plasterboard lining side and the systems would therefore achieve an FRR from either direction as given in Table 1.

3.2 System Variations

3.2.1 Increase in stud spacing

It is proposed to increase the stud spacing from 400 mm centres as tested to 600 mm.

In fire resistance test FR10017-01 the EZpanel panels remained in place attached to the timber studs for the 190 minutes duration of the test with only the loss of significant portions of the plaster coating and very minimal degradation of the AAC panels with no apparent loss of fixings.

Also, the Winstone Wallboards timber framed plasterboard lined walls discussed in 3.1.2 above are based on walls with the studs spaced at 600 mm centres.

It is therefore considered that increasing the stud spacing from 400 mm to 600 mm is unlikely to prejudice the tested results for at least 120 minutes.

3.2.2 EZpanel supported on the floor slab

In fire resistance test FR10017-01 the EZpanel panels were fixed to the timber studs with the bottom edge of the panels set at 50 mm below the bottom timber plate and approximately 50 mm above the concrete specimen frame. At the bottom of the panels the 20 mm gap between the panels and the wall framing was closed with a PVC EZpanel Base Bead as shown in Figure 1. This base bead included small slots to vent the cavity between the panels and the wall frame.

A proposed alternative arrangement where the panels are supported on a concrete floor slab is shown in Figure 2. In this arrangement small vents are included in the base of the wall panels to vent the cavity between the panels and the wall frame. The vents are made from combustible material.

In both arrangements, when exposed to fire, the base bead or the vents will burn away and allow hot gases to enter the cavity between the EZpanel panels and the wall frame. However, as the base of the wall is in the negative pressure zone any hot gases entering the cavity will be minimal and, as demonstrated in the fire resistance test, do not significantly affect the fire resistance of the wall system. In addition, supporting the EZpanel panels on the concrete floor will reduce the loading on the screw fixings of the panels to the wall studs. It is therefore considered that the alternative arrangement as shown in Figure 2 is not expected to prejudice the fire resistance of the wall system for at least 120 minutes.

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4. CONCLUSION

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It is also considered that the following variations of construction will not prejudice the stated fire resistance ratings:

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Figure 1: EZPanel Lightweight Concrete Cladding System Suspended off the Wall Framing

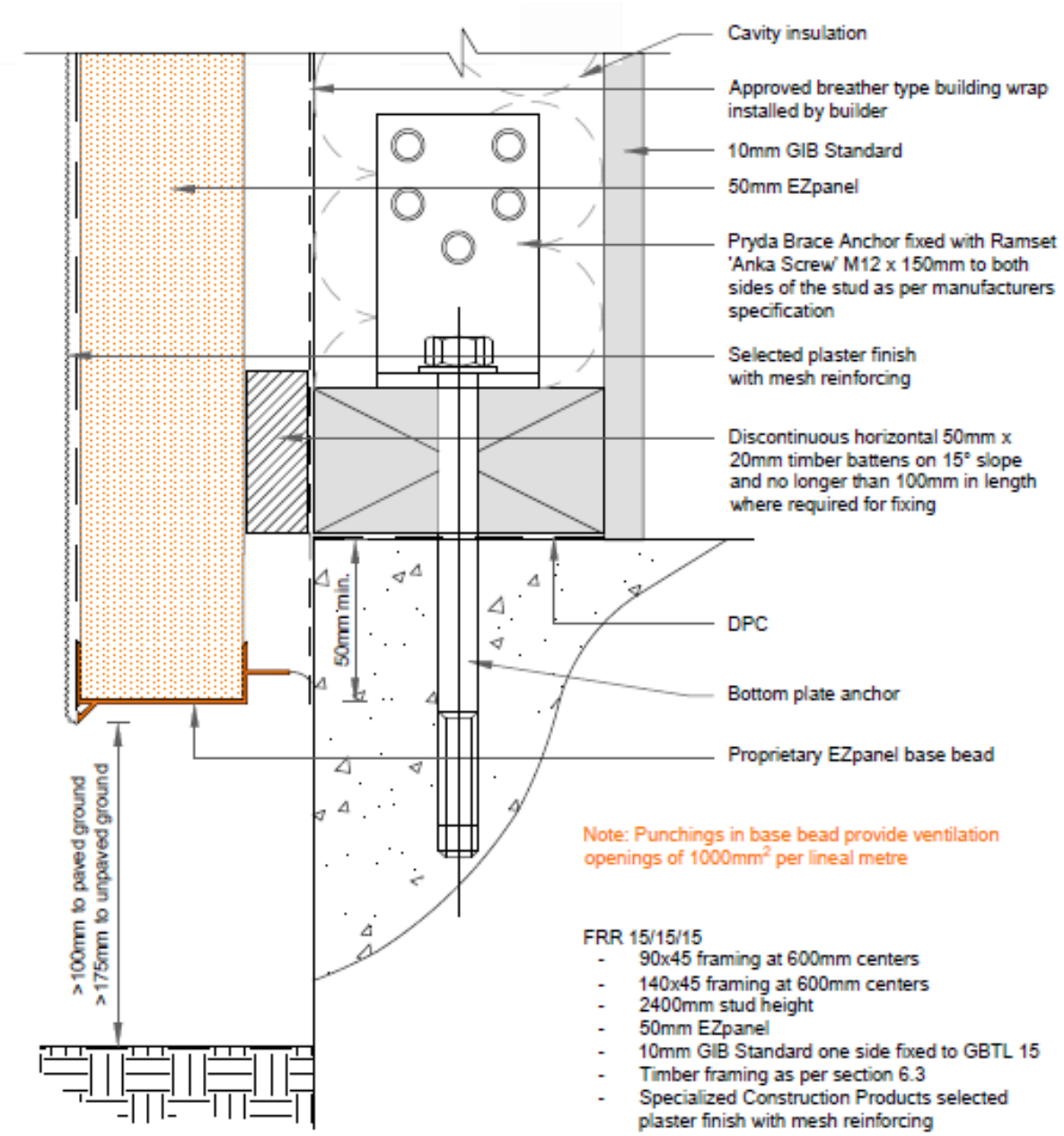

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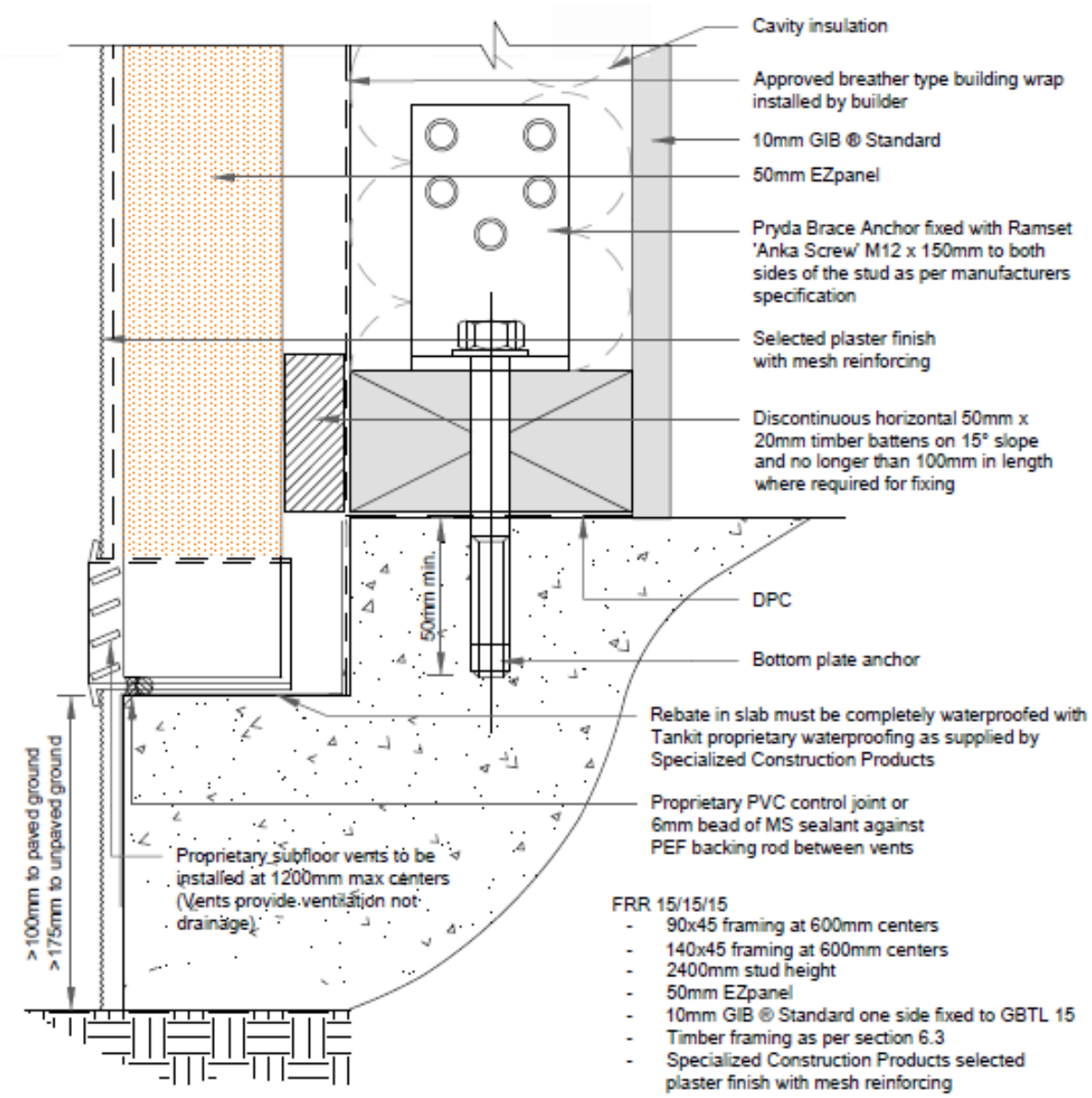
Figure 2: EZPanel Lightweight Concrete Cladding System Supported on the Floor Slab



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