



FIRE ASSESSMENT REPORT FAR 4271 ISSUE 2

FIRE RESISTANCE OF FYREGUARD FYREHATCH WALL ACCESS HATCHES IN SPEEDPANEL WALLS

CLIENT Nofire Pty Ltd 8 Hampton Road Burleigh heads QLD 4220 Australia

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ASSESSMENT OBJECTIVE

To assess the fire resistance in accordance with AS 1530.4-2005 of Fyreguard Fyrehatch wall hatches constructed from 30 mm and 52 mm Promatect L500 with optional MDF or aluminium composite panel facings, installed in walls of 51 mm, 64 mm and 78 mm Speedpanel.

CONCLUSION

It is considered that the fire resistance level (FRL), if tested in accordance with AS 1530.4-2005, of a Fyreguard Fyrehatch screw fixed wall access hatch constructed generally as described in the following table, installed into a Speedpanel wall as described in this report, would be at least as stated when exposed from either direction at the maximum sizes noted in the table. A detailed description of the construction and installation of the hatch is included in the text of this report.

ltem	Description				
Hatch Material	30 mm thick	52 mm thick	52 mm thick		
	Promatect L500	Promatect L500	Promatect L500		
Optional Facing –	4.75 mm MDF or A	luwell "Fireproof Alui	ninium Composite		
one or both sides	Panel"				
Intumescent seal	30 x 3 mm	50 x 3 mm	50 x 3 mm		
	graphite based	graphite based	graphite based		
	intumescent strip	intumescent strip	intumescent strip		
	to all edges of the	to all edges of the	to all edges of the		
	hatch	hatch	hatch		
Support frame	30 x 40 x 1.6 mm 30 x 60 x 1.6 mm 30 x 60 x 1.6 mm				
	steel angle or steel Z section as described in section 3 of				
	this report, with Pro	maseal Acrylic Seal	ant and Promaseal		
	IBS foam				
Protection to	30 x 30 mm strip of	Promatect L500 scr	ewed to steel		
support frame	support frame.				
Wall	51 mm thick	64 mm thick	78 mm thick		
	Speedpanel wall wi	th vertical panels, wi	ith additional fixings		
	at joints as describe	ed in this report.			
Wall opening	Opening in Speedp	anel wall to be trimm	ned with D x 50 mm		
	C tracks of nominal	1.2 mm thick galvar	nised steel where D		
	equals thickness of	wall. Tracks are to b	be fixed to the		
	Speedpanel with 10 gauge steel self-drilling screws at				
	250 mm maximum centres, starting not more than 100 mm				
	from each end of ea	ach track. At the top	and bottom tracks		
	the fixings are to al	ign with Speedpanel	joints where		
	possible.				



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	The trimmed opening is to be lined with one layer of 13 mm					
	fire grade plasterboard. One layer of 13 mm fire grade					
	plasterboard is to be attached to each face of the wall or two					
	layers of 13 mm to	the face of the wall f	lush with the face of			
	the hatch, extending at least 100 mm from the opening.					
	The maximum clearance between the hatch and the					
	plasterboard lining to the opening is to be 3 mm.					
Hatch maximum	1,200 mm high x 1,500 mm high x 1,500 mm high x					
size	700 mm wide 1,020 mm wide. 1,020 mm wide.					
FRL	-/60/60 -/90/90 -/120/120					

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.

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DOCUMENT REVISION STATUS

ISSUE NO.	DATE ISSUED	DESCRIPTION
1	10 June 2014	Initial Issue
2	10 January 2017	Extended scope to include 40 mm panel and installation in 51 mm and 64 mm thick walls.

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INTRODUCTION 1.

This report gives BRANZ's assessment of the fire resistance in accordance with AS 1530.4-2005 of screw fixed wall hatches constructed from 30 mm and 52 mm thick Promatect L500. The Promatect L500 may be faced on one or both faces with 4.75 mm medium density fibreboard (MDF) or with Aluwell "Fireproof Aluminium Composite Panel".

The hatches are to be installed into 51 mm, 64 mm or 78 mm thick Speedpanel walls.

2. BACKGROUND

In BRANZ assessment report FAR 4028 a Fyreguard Fyrehatch of similar construction to the proposed 52 mm thick Fyrehatch was assessed for installation into concrete or masonry or steel or timber framed, plasterboard lined walls. The hatch was assessed as likely to achieve a fire resistance level (FRL), in accordance with AS 1530.4-2005, of at least -/120/120 for maximum size of 1,500 mm high x 1,020 mm wide.

In BRANZ assessment report FAR 1480 a Fyreguard Fyrehatch of similar construction to the proposed 30 mm thick Fyrehatch was assessed for installation into concrete or masonry or steel or timber framed, plasterboard lined walls. The hatch, with maximum dimensions of 1,200 mm high x 700 mm wide, was assessed as likely to achieve a fire resistance level (FRL), in accordance with AS 1530.4, of at least -/60/60 if installed in a wall of at least 60 minutes FRL.

In EXOVA Warringtonfire Assessment Report No. 28928-03 the fire resistance of 51 mm, 64 mm and 78 mm thick Speedpanel walls was assessed in relation to AS 1530.4-2005. The assessment concluded that fire resistance level (FRL) of the walls would be at least:

- -/60/60 for a wall 51 mm thick
- -/90/90 for a wall 64 mm thick
- -/120/120 for a wall 78 mm thick

In EXOVA Warringtonfire Assessment Report No. 21622-28 the fire resistance of 51 mm, 64 mm and 78 mm thick Speedpanel walls with a range of openings was assessed in relation to AS 1530.4-2005. The assessment allows walls up to 6 m high with apertures up to 2,000 mm wide x 1,000 mm high, or up to 1,200 x 1,200 mm, with a range of closures, for an FRL up to -/60/60, -/90/90 and -/120/120 respectively. The assessment considered that the Speedpanel wall can include apertures without significantly affecting their integrity, and the critical feature is the interface between the wall and the closure in the aperture.



3. PROPOSED CONSTRUCTION

It is proposed that screw fixed wall access hatches may be constructed from 30 mm or 52 mm thick Promatect L500, up to 1,200 mm high x 700 mm wide or 1,500 mm high by 1,020 mm wide respectively, without prejudice to the fire resistance to AS 1530.4-2005 of the Speedpanel wall for integrity and insulation for up to 120 minutes, when exposed to fire on either face.

The Promatect L500 may be faced on one or both sides with either 4.75 mm MDF or up to 4 mm thick Aluwell "Fireproof Aluminium Composite Panel" attached with contact adhesive. A 30 mm or 50 mm wide x 3 mm thick graphite based intumescent strip is to be fixed to the edge of the Promatect L500 on all edges of the hatch. The clearance on each edge of the hatch shall not exceed 3 mm.

The wall is to be of 51 mm, 64 mm or 78 mm thick Speedpanel, with the panels oriented vertically, up to 6 m high, generally as described in Exova Warringtonfire Report No. 21622-28.

A rectangular opening is to be formed in the wall, trimmed with 51 mm, 64 mm or 78 mm x 50 mm C tracks of 1.6 mm galvanised steel. The trimming tracks are to be fixed to the wall with 10 gauge steel self-drilling screws at 250 mm maximum centres starting not more than 100 mm from each end of each track, on both sides of the wall. The screws in the top and bottom trimming tracks are to align with the Speedpanel joints where possible.

The Speedpanel panels are to be fixed together at panel joints with 10 gauge selfdrilling steel screws as follows:

- Nominally 50 mm above the top trimming track and below the bottom trimming track,
- At 400 mm vertical centres both above and below the opening,
- At 400 mm vertical centres in the next two panel joints on each side of the opening, starting 50 mm below the bottom trimming track and extending 50 mm above the top trimming track.

The face of the wall surrounding the opening is to be lined with one layer of 13 mm thick fire grade plasterboard extending 13 mm into the opening and at least 100 mm from the opening and fixed to the Speedpanel with 8 gauge steel screws at 150 mm centres starting no more than 50 mm from each end of each piece of plasterboard. The screws are to be in two rows, 20 mm from each side of the plasterboard strip. Alternatively, on the hatch side only, the opening is to be lined with two layers of 13 mm fire grade plasterboard extending 13 mm into the opening and at least 100 mm from the opening (see Figures) and fixed as described above.



The inside face of the opening is to be lined with one layer of 13 mm fire grade plasterboard fixed with 8 gauge steel screws at 150 centres starting no more than 50 mm from each end of each piece of plasterboard. The screws are to be in two rows, 20 mm from each side of the plasterboard strip.

A support frame of 1.6 mm thick steel is to be fixed to the inside face of the wall opening with 10 gauge steel screws at 400 mm maximum centres starting not more than 100 mm from each end of each side of the opening. The frame is to be an angle either 30 mm x 40 mm for the 30 mm panel, or 30 mm x 60 mm for the 52 mm panel or a 30 mm x h x 30 mm Z section, where "h" is the distance from the hatch fixing location to the face of the trimming plasterboard, as shown in Figure 1 attached.

A bead of Promat Promaseal Acrylic Sealant is to be placed between the support frame and the inside face of the opening.

For the purpose of this assessment the face of the hatch away from the support frame is referred to as the front face, and the side against the support frame as the back face.

The support frame is to be fixed such that the front face of the hatch is flush with the face of the wall on the same side.

A 30 mm x 10 mm gasket of Promaseal IBS foam shall be placed between the support frame and the back face of the hatch, compressed to 5 mm thickness.

The access hatch is to be fixed to the steel support frame using 5 mm machine screws engaging in speed clip nuts. Screws are to be at 400 mm maximum centres starting not more than 100 mm from each end of each side of the hatch. Where the height or width of the hatch is less than 800 mm a single screw may be used centrally within the length of those sides provided the other two sides have at least two screws spaced as described above.

A 30 mm x 30 mm strip of Promatect L500 is to be fixed to the steel support frame using 8 gauge self-tapping steel screws at 400 mm centres starting no more than 100 mm from each end of each strip.

The installation details are shown in Figure 1 to Figure 6 attached.

4. **DISCUSSION**

4.1 Wall

As per EXOVA Warringtonfire Assessment Report No. 21622-28 the Speedpanel wall is expected to remain intact and support the Fyrehatch for at least the required period. The wall is expected to provide at least 60, 90 or 120 minutes integrity and insulation, respective to the thickness, remote from the hatch.



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The proposed opening is taller than the maximum height opening assessed in EXOVA Warringtonfire 21622-28 however the overall area is smaller. It is considered that the width of the opening is more significant than the height, due to the potential for panels to move relative to each other. Therefore, reducing the width and increasing the height while maintaining less than the previously assessed area is not expected to significantly affect the performance of the wall.

4.2 Hatch

The hatch panel, including facings, and its fixing to the support frame including the IBS foam gasket are identical to those assessed in BRANZ FAR 4028 and FAR 1480 and are expected to maintain integrity and insulation up to at least 120 minutes and 60 minutes respectively.

4.3 Installation Details

The steel trimming tracks at the perimeter of the opening will conduct heat from the exposed to the unexposed face of the wall. The provision of a double plasterboard lining at the inside face of the opening or a single lining on each face, as shown in Figure 7, will provide similar protection to the hatch and its support frame against heat conduction to the lining for steel framed walls as previously assessed.

The provision of layers of plasterboard to the face of the wall around the opening will provided additional protection to the C track similar to that used at the wall head as assessed in EXOVA Warringtonfire 21622-28, and is expected to maintain the appropriate insulation performance.

The fixings of the plasterboard to the Speedpanel are similar to plasterboard fixings for framed and lined wall constructions, and are expected to similarly retain the linings in place.

The fixings of the hatch support frame to the wall are similar to the fixings used for the steel channel lining the opening, and are expected to retain the support frame in place.

5. CONCLUSION

It is considered that the fire resistance level (FRL), if tested in accordance with AS 1530.4-2005, of a Fyreguard Fyrehatch screw fixed wall access hatch constructed generally as described in the following table, installed into a Speedpanel wall as described in this report, would be at least as stated when exposed from either direction at the maximum sizes noted in the table. A detailed description of the construction and installation of the hatch is included in the text of this report.



ltem		Description		
Hatch Material	30 mm thick	52 mm thick	52 mm thick	
	Promatect L500	Promatect L500	Promatect L500	
Optional Facing –	4.75 mm MDF or A	luwell "Fireproof Alui	ninium Composite	
one or both sides	Panel"			
Intumescent seal	30 x 3 mm 50 x 3 mm 50 x 3 mm			
	graphite based	graphite based	graphite based	
	intumescent strip	intumescent strip	intumescent strip	
	to all edges of the	to all edges of the	to all edges of the	
	hatch	hatch	hatch	
Support frame	30 x 40 x 1.6 mm	30 x 60 x 1.6 mm	30 x 60 x 1.6 mm	
	steel angle or steel	Z section as describ	ed in section 3 of	
	this report, with Promaseal Acrylic Sealant and Promaseal IBS foam			
Protection to	30 x 30 mm strip of Promatect L500 screwed to steel			
support frame	support frame.			
Wall	51 mm thick	64 mm thick	78 mm thick	
	Speedpanel wall wi	th vertical panels, wi	th additional fixings	
	at joints as described in this report.			
Wall opening	Opening in Speedp	anel wall to be trimm	ned with D x 50 mm	
	C tracks of nominal	1.2 mm thick galvar	nised steel where D	
	equals thickness of	wall. Tracks are to b	be fixed to the	
	Speedpanel with 10) gauge steel self-dri	lling screws at	
	250 mm maximum	centres, starting not	more than 100 mm	
	from each end of ea	ach track. At the top	and bottom tracks	
	the fixings are to al	ign with Speedpanel	joints where	
	possible.			
	The trimmed opening	ng is to be lined with	one layer of 13 mm	
	fire grade plasterbo	oard. One layer of 13	mm fire grade	
	plasterboard is to b	e attached to each fa	ace of the wall or two	
	layers of 13 mm to	the face of the wall f	lush with the face of	
	the hatch, extendin	g at least 100 mm fro	om the opening.	
	The maximum clea	rance between the h	atch and the	
	plasterboard lining	to the opening is to b	be 3 mm.	
Hatch maximum	1,200 mm high x 1,500 mm high x 1,500 mm high x			
size	700 mm wide	1,020 mm wide.	1,020 mm wide.	
FRL	-/60/60	-/90/90	-/120/120	

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Figure 1 - Fyreguard Fyrehatch Installation Option 1

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Figure 3 - Fyreguard Fyrehatch Installation Option 3

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Figure 4 - Fyreguard Fyrehatch Installation Option 4

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Figure 5 - Fyreguard Fyrehatch Installation Option 5

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Figure 6 - Fyreguard Fyrehatch Installation Option 6

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Figure 7: Fyreguard Fyrehatch Installation Alternative Trim Details



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