



# FIRE ASSESSMENT REPORT

## FC18036-01-1

**FIRE RESISTANCE OF HB FULLER FIRESOUND SEALANT AS CONTROL JOINTS IN FIRE RATED WALLS IN ACCORDANCE WITH AS1530.4-2005/2014**

### CLIENT

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# ASSESSMENT OBJECTIVE

To assess the fire resistance of HB Fuller Firesound Sealant fire rated control joints in accordance with AS 1530.4-2005/2014 and with reference to AS 4072.1-2005 (including Amendment No. 1) with reference to Section 4, when installed in fire rated plasterboard, concrete or masonry walls.

# CONCLUSION

It is considered that the HB Fuller Firesound Sealant fire rated control joints would be expected to achieve the stated FRL if tested in accordance with AS 1530.4-2005/2014 with reference to AS 4072.1-2005 (including Amendment No. 1) with reference to Section 4, as stated in the following table.

## Summary of HB Fuller Firesound Sealant Control Joints in Fire Rated Walls

Control Joint Configuration (Sealant backing)	Minimum Wall Thickness	Maximum Joint Width (mm)	Minimum Sealant Depth (mm)	FRL
<b>Vertical Plasterboard Control Joints (with backing rod)</b>				
1 x 13 mm/ 1 x 13 mm	90 mm	20	13	-/60/60
1 x 13 mm/ 1 x 13 mm +stopping angle (13 mm x 28 mm x 0.4 mm)	90 mm	20	13	-/60/60
1 x 16 mm/ 1 x 16 mm	96 mm	15	16	-/90/60
1 x 16 mm/ 1 x 16 mm +stopping angle (16 mm x 28 mm x 0.4 mm)	96 mm	15	16	-/90/60
1 x 16 mm/ 1 x 16 mm	96 mm	20	20	-/90/60
1 x 16 mm/ 1 x 16 mm +stopping angle (16 mm x 28 mm x 0.4 mm)	96 mm	20	20	-/90/60
1 x 16 mm/ 1 x 16 mm +P35	96 mm	20	20	-/90/60
2 x 13 mm/ 2 x 13 mm	116 mm	15	20	-/120/120
2 x 13 mm/ 2 x 13 mm +stopping angle (13 mm x 28 mm x 0.4 mm)	116 mm	20	20	-/120/120
2 x 13 mm/ 2 x 13 mm + P35	116 mm	20	26	-/120/120
2 x 16 mm/ 2 x 16 mm	128 mm	15	20	-/180/180
2 x 16 mm/ 2 x 16 mm +stopping angle (16 mm x 28 mm x 0.4 mm)	128 mm	15	20	-/180/180
2 x 16 mm/ 2 x 16 mm + P35	128 mm	20	26	-/180/180
3 x 13 mm/ 3 x 13 mm	142 mm	20	26	-/180/180
3 x 13 mm/ 3 x 13 mm +stopping angle (13 mm x 28 mm x 0.4 mm)	142 mm	20	26	-/180/180
3 x 13 mm/ 3 x 13 mm +P35	142 mm	20	26	-/180/180



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## Summary of HB Fuller Firesound Sealant Control Joint Junctions in Fire Rated Walls

Control Joint Configuration (Sealant backing)	Minimum Wall Thickness	Maximum Joint Width (mm)	Minimum Sealant Depth (mm)	FRL
<b>Vertical (perimeter) or Horizontal (top or bottom) Plasterboard to Concrete/Masonry</b>				
1 x 13 mm/ Concrete/Masonry (framing)	90 mm	20	13	-/60/60
1 x 16 mm/ Concrete/Masonry (framing)	96 mm	20	16	-/90/90
2 x 13 mm/ Concrete/Masonry (framing)	116 mm	20	26	-/120/120
2 x 13 mm/ Concrete/Masonry (framing+ backing rod)	116 mm	20	20	-/120/120
2 x 16 mm/ Concrete/Masonry (framing)	128 mm	20	32	-/180/180
2 x 16 mm/ Concrete/Masonry (framing+ backing rod)	128 mm	20	20	-/180/180
3 x 13 mm/ Concrete/Masonry (framing+ backing rod)	142 mm	20	26	-/180/180

It is considered the control joints may be installed with the following variations:

- The fire rated wall steel framing may be increased in depth.
- The fire rated plasterboard facings may be increased in thickness.
- Equivalent alternative fire rated plasterboard walls (including, but not limited to Knauf Gypsum, CSR, Siniat or BGC) which have an established fire resistance rating by test or assessment in accordance with AS 1530.4-2005/2014.
- In concrete or masonry walls of the same minimum wall thickness as stated above. The walls shall be built to comply with the concrete or masonry standard as appropriate.

## 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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# 1. INTRODUCTION

This report gives BRANZ's assessment on the fire resistance of HB Fuller Firesound Sealant control joints in fire rated plasterboard walls if tested in accordance with AS 1530.4-2005/2014 with reference to AS 4072.1-2005 (including Amendment No. 1) with reference to Section 4.

# 2. BACKGROUND

In Warringtonfire Australia Pty Ltd fire resistance test FRT210007 a number of control joints were tested in a nominal 64 mm deep steel stud framed plasterboard wall in accordance with AS 1530.4:2014. The wall was divided in half vertically and lined with two different thicknesses of fire rated plasterboard. Specimen A to D were tested with 16 mm fire rated plasterboard, Specimen E to H with 13 mm fire rated plasterboard. Specimens A, D, E and H were horizontal control joints at the perimeter of the specimen. Specimens B and G were vertical control joints at the perimeter of the specimen. Specimens C and F were vertical control joints in the body of the specimen. HB Fuller Firesound Sealant was applied to each face of the wall and either backed by the perimeter steel framing or an open cell backing rod. See Table 1 for a summary of the tested control joints and results.

**Table 1: Summary of Fire Resistance Test FRT210007**

Specimen	Control Joint Configuration	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL
A	1 x 16 mm/Perimeter blockwork	Framing	20	16	-/120/90
B	1 x 16 mm/Perimeter blockwork	Framing	16	16	-/120/90
C	1 x 16 mm/1 x 16 mm	Backing rod	15	16	-/120/60
D	1 x 16 mm/Perimeter blockwork	Framing	10	16	-/120/90
E	1 x 13 mm/Perimeter blockwork	Framing	20	13	-/120/60*
F	1 x 13 mm/1 x 13 mm	Backing rod	15	13	-/120/60
G	1 x 13 mm/Perimeter blockwork	Framing	13	13	-/120/60
H	1 x 13 mm/Perimeter blockwork	Framing	10	13	-/120/90*

\* Specimen E and H were 584 mm long which does not comply with the minimum length required in AS 1530.4-2005/2014.

In Warringtonfire Australia Pty Ltd fire resistance test FRT210008 a number of control joints were tested in a nominal 64 mm deep steel stud framed plasterboard wall in accordance with AS 1530.4:2014. The wall was divided in half vertically and lined with two different thicknesses of fire rated plasterboard. Specimen A to D were tested with two layers of 16 mm fire rated plasterboard, Specimen E to H with two layers of 13 mm fire rated plasterboard. Specimen A, D, E and H were horizontal control joints at the perimeter of the specimen. Specimens B and G were vertical control joints at the perimeter of the specimen. Specimens C and F were vertical control joints in the body of the specimen. HB Fuller Firesound Sealant was applied to each face of the wall and either backed by the perimeter steel framing or an open cell backing rod. See Table 2 for a summary of the tested control joints and results.

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**Table 2: Summary of Fire Resistance Test FRT210008**

Specimen	Control Joint Configuration	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL
A	2 x 16 mm/Perimeter blockwork	Framing	20	32	-/180/180
B	2 x 16 mm/Perimeter blockwork	Framing	16	32	-/180/180
C	2 x 16 mm/2 x 16 mm	Backing rod	15	20	-/180/180
D	2 x 16 mm/Perimeter blockwork	Framing	10	32	-/180/180
E	2 x 13 mm/Perimeter blockwork	Framing	20	26	-/180/180*
F	2 x 13 mm/2 x 13 mm	Backing rod	15	20	-/180/120
G	2 x 13 mm/Perimeter blockwork	Framing	13	26	-/180/180
H	2 x 13 mm/Perimeter blockwork	Framing	10	26	-/180/180*

\* Specimen E and H were 584 mm long which does not comply with the minimum length required in AS 1530.4-2005/2014.

In Warringtonfire Australia Pty Ltd fire resistance test FRT220129 two control joints were tested in a nominal 64 mm deep steel stud framed plasterboard wall in accordance with AS 1530.4:2014. The wall was divided in half vertically and lined with two different thicknesses of fire rated plasterboard. Specimen A was tested with 13 mm fire rated plasterboard, Specimen B with 16 mm fire rated plasterboard. HB Fuller Firesound Sealant was applied to each face of the wall and backed by an open cell backing rod. See Table 3 for a summary of the tested control joints and results.

**Table 3: Summary of Fire Resistance Test FRT220129**

Specimen	Control Joint Configuration	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL
A	1 x 13 mm/1 x 13 mm Plaster stopping angles (13 mm x 28 mm x 0.4 mm)	Backing rod	20	13	-/120/60
B	1 x 16 mm/1 x 16 mm Plaster stopping angles (16 mm x 28 mm x 0.4 mm)	Backing rod	20	20	-/120/60

In Warringtonfire Australia Pty Ltd fire resistance test FRT220130 a number of control joints were tested in a nominal 64 mm deep steel stud framed plasterboard wall in accordance with AS 1530.4:2014. The wall was divided in half vertically and lined with two different thicknesses of fire rated plasterboard and insulated with fibre glass insulation. Specimen A, C, E and G were tested with two layers of 13 mm fire rated plasterboard, Specimen B, C, F and H with three layers of 13 mm fire rated plasterboard. Specimen E, F, G and H were horizontal control joints at the perimeter of the specimen. Specimens C and D were vertical control joints at the perimeter of the specimen. Specimens A and B were vertical control joints in the body of the specimen. HB Fuller Firesound Sealant was applied to each face of the wall and either backed

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by the perimeter steel framing, an open cell backing rod or both. All the plasterboard edges included a steel plaster stopping angle nominally 13 mm x 28 mm x 0.4 mm along the length of the control joints. See Table 4 for a summary of the tested control joints and results.

**Table 4: Summary of Fire Resistance Test FRT220130**

Specimen	Control Joint Configuration (with plaster stopping angles)	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL
A	2 x 13 mm/2 x 13 mm	Backing rod	20	26	-/180/120
B	3 x 13 mm/3 x 13 mm	Backing rod	20	26	-/180/180
C	2 x 13 mm/Perimeter blockwork	Framing	20	20	-/180/120
D	3 x 13 mm/Perimeter blockwork	Backing rod and Framing	20	26	-/180/180
E	2 x 13 mm/Perimeter blockwork	Backing rod and Framing	20	20	-/180/180*
F	3 x 13 mm/Perimeter blockwork	Backing rod and Framing	20	26	-/180/180
G	2 x 13 mm/Perimeter blockwork	Backing rod and Framing	20	20	-/180/180*
H	3 x 13 mm/Perimeter blockwork	Backing rod and Framing	20	26	-/180/180

\* Specimen E and G were 552 mm long which does not comply with the minimum length required in AS 1530.4-2005/2014.

In Warringtonfire Australia Pty Ltd fire resistance test No. 56967300.1 a number of control joints were tested in a nominal 64 mm deep steel stud framed plasterboard wall in accordance with AS 1530.4:2014. The wall was lined with two layers of 13 mm Firestop plasterboard to each face and included a control joint 19 mm wide with 20 mm deep Fulaflex FR sealant overlaid with a Rondo P35 stopping bead. The control joint was reported to have failed the Integrity criteria after 171 minutes and Insulation criteria after 133 minutes. The wall the control joint was tested in had an established FRL of -/120/120.

In Warringtonfire Australia Pty Ltd fire resistance test No. 56967400.1 a number of control joints were tested in a nominal 64 mm deep steel stud framed plasterboard wall in accordance with AS 1530.4:2014. The wall was lined with two layers of 13 mm Firestop plasterboard to each face and included a control joint 22 mm wide with 25 mm deep Fulaflex FR sealant. The control joint was reported to have failed the Integrity criteria after 176 minutes and Insulation criteria after 161 minutes. The wall the control joint was tested in had an established FRL of -/120/120.

## 3. DISCUSSION

### 3.1 AS 1530.4:2014 vs AS 1530.4-2005

At the time of writing this report the New Zealand building code approved documents references AS 1530.4-2005. A review of the two versions of the test standard (2005 and 2014) with respect to control joints has been undertaken and it is considered that the supporting evidence would achieve the same fire resistance to either the 2005 or 2014 versions of AS 1530.4.

### 3.2 HB Fuller Firesound Sealant Control Joints

#### 3.2.1 General

HB Fuller have commissioned a number of fire resistance tests on control joints in fire rated plasterboard walls. The configurations tested and considered in this report are as follows:

- Within the body of a plasterboard wall where each vertical edge is framed and lined with fire rated plasterboard.
- Along the vertical edge of a plasterboard wall where the perimeter frame butts up against a concrete/masonry column/fire rated wall.
- Along the top of the plasterboard wall where the head track is secured to the underside of a concrete slab.
- Along the bottom of the plasterboard wall where the bottom track is secured to a concrete floor slab.

Each configuration will be discussed in the following sections.

#### 3.2.2 Plasterboard/Plasterboard Control Joints

The plasterboard to plasterboard control joint consists of a slot between framing which is lined with one or more layers of fire rated plasterboard. An open cell backing rod is inserted at the required depth and the joint sealed with HB Fuller Firesound Sealant. Table 5 is a summary of the tested control joints.

**Table 5: Summary of Plasterboard/Plasterboard Control Joints**

Plasterboard lining	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL*
1 x 13 mm	Backing rod	15	13	-/60/60
1 x 13 mm + stopping angle	Backing rod	20	13	-/60/60
1 x 16 mm	Backing rod	15	16	-/90/60
1 x 16 mm + stopping angle	Backing rod	20	20	-/90/60
2 x 13 mm	Backing rod	15	20	-/120/120
2 x 16 mm	Backing rod	15	20	-/180/180
2 x 13 mm + stopping angle	Backing rod	20	26	-/120/120
3 x 13 mm + stopping angle	Backing rod	20	26	-/180/180

\* FRL limited to that of the fire rated plasterboard wall or as tested. The lower performance applies to the control joint.



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In reviewing the available test data it is considered the following configurations would be expected to maintain the fire resistance of the plasterboard wall as stated:

- Wall lined with one layer of 13 mm fire rated plasterboard can be up to 20 mm wide x 13 mm deep with or without stopping angles. FRL -/60/60.
- Wall lined with one layer of 16 mm fire rated plasterboard can be up to 15 mm wide x 16 mm deep or 20 mm wide x 20 mm deep. Both with or without stopping angles. FRL -/90/60.
- Wall lined with two layers of 13 mm fire rated plasterboard can be up to 15 mm wide x 20 mm deep or 20 mm wide x 26 mm deep. Both with or without stopping angles. FRL -/120/120.
- Wall lined with two layers of 16 mm fire rated plasterboard can be up to 15 mm wide x 20 mm deep. Both with or without stopping angles. FRL -/180/180.
- Wall lined with three layers of 13 mm fire rated plasterboard can be up to 20 mm wide x 26 mm deep with or without stopping angles. FRL -/180/180.

### 3.2.3 Concrete/Masonry to Plasterboard Control Joints

The Concrete/Masonry to plasterboard control joint consists of the plasterboard perimeter framing being secured to the concrete/masonry element which might be a fire rated wall/column. When the plasterboard is installed a gap is provided between the edge of the board and concrete/masonry element. The gap is either filled to the full depth of the plasterboard thickness when backed by framing, or an open cell backing rod inserted and filled to the required depth with HB Fuller Firesound Sealant. Table 6 is a summary of the tested control joints.

In the fire resistance tests summarised in Table 6 the control joints were installed against the perimeter block of the specimen frame. It is considered that this is sufficiently similar to the expected performance of a concrete element or masonry that the results can be applied to either concrete or masonry. It is expected that the concrete/masonry wall will be built in accordance with the appropriate standard which defines the FRL of the wall.

**Table 6: Summary of Vertical Concrete or Masonry/Plasterboard Control Joints**

Plasterboard lining	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL*
1 x 13 mm	Framing	13	13	-/60/60
1 x 16 mm	Framing	16	16	-/90/90
2 x 13 mm	Framing	13	26	-/120/120
2 x 16 mm	Framing	16	32	-/180/180
2 x 13 mm + stopping angle	Backing rod + Framing	20	20	-/120/120
3 x 13 mm + stopping angle	Backing rod + Framing	20	26	-/180/180

\* FRL limited to that of the fire rated plasterboard wall or as tested. The lower performance applies to the control joint.

Horizontal control joints may also be installed to the top of the plasterboard wall to the underside of a concrete slab or the bottom of the wall and floor slab. Table 7 is a summary of the tested horizontal control joints.

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**Table 7: Summary of Horizontal Concrete/Plasterboard Control Joints**

Plasterboard lining	Top/Bottom	Sealant backing	Joint Height (mm)	Sealant Depth (mm)	FRL*
1 x 13 mm	Top	Framing	20	13	-/60/60 <sup>#</sup>
1 x 13 mm	Bottom	Framing	10	13	-/60/60 <sup>#</sup>
1 x 16 mm	Top	Framing	20	16	-/90/90
1 x 16 mm	Bottom	Framing	10	16	-/90/90
2 x 13 mm	Top	Framing	20	26	-/120/120 <sup>#</sup>
2 x 13 mm	Bottom	Framing	10	26	-/120/120 <sup>#</sup>
2 x 16 mm	Top	Framing	20	32	-/180/180
2 x 16 mm	Bottom	Framing	10	32	-/180/180
2 x 13 mm + stopping angle	Top	Framing	20	20	-/120/120 <sup>#</sup>
2 x 13 mm + stopping angle	Bottom	Framing	20	20	-/120/120 <sup>#</sup>
3 x 13 mm + stopping angle	Top	Framing	20	26	-/180/180
3 x 13 mm + stopping angle	Bottom	Framing	20	26	-/180/180

\* FRL limited to that of the fire rated plasterboard wall or as tested. The lower performance applies to the control joint.

<sup>#</sup> The length of the control joint was less than that specified by the test standard.

Some of the tested control joints listed in Table 6 and Table 7 did not comply with the minimum length defined in AS 1530.4 and as such were not assigned an FRL in the test reports referenced in Section 2. In reviewing the test data and performance of the seals in the tests the fire performance is consistent with those that did comply with the length requirements. It is therefore considered that had the above seals been tested at 1,000 mm lengths the same performance would be expected and an FRL can be assigned as give in Table 6 and Table 7 above.

In reviewing the available test data it is considered the following configurations would be expected to maintain the fire resistance of the concrete or masonry/plasterboard wall as stated:

- Wall lined with one layer of 13 mm fire rated plasterboard can be up to 20 mm wide x 13 mm deep with or without stopping angles. FRL -/60/60.
- Wall lined with one layer of 16 mm fire rated plasterboard can be up to 20 mm wide x 16 mm deep with or without stopping angles. FRL -/90/90.
- Wall lined with two layers of 13 mm or 16 mm fire rated plasterboard can be up to 20 mm wide x 20 mm deep with or without stopping angles. FRL -/120/120.
- Wall lined with three layers of 13 mm fire rated plasterboard can be up to 20 mm wide x 26 mm deep with or without stopping angles. FRL -/180/180.

### 3.2.4 Control Joints with P35 Stopping Bead

The Rondo P35 stopping bead consists of 0.4 mm BMT mild steel angles with a PVC connector which can be positioned over a control joint.

In fire resistance test No. 56967300.1 a control joint with a P35 stopping bead was tested in a steel framed wall lined with two layers of 13 mm Firestop plasterboard. The control joint was 19 mm wide with 20 mm depth of Fulaflex FR sealant. In fire resistance test No. 56967400.1 a similar wall was tested with a control joint 22 mm wide with 25 mm deep Fulaflex FR sealant. The control joint with the P35 stopping bead was reported to exceed the insulation performance earlier than the control joint with the stopping bead. In reviewing the test data it is considered the initial insulation failure may be attributed to the thermocouple being placed in close proximity to a screw fixing. Reviewing the temperature data between the two seals suggest the performance is otherwise similar with the P35 stopping bead joint as tested achieving a slightly lower performance.

In fire resistance test No. FRT210008 a similar control joint was tested but with Firesound Sealant. The performance between the Firesound Sealant and Fulaflex FR control joints were compared and the performance between sealants in the same wall type are considered to be sufficiently similar that the comparative performance of the P35 stopping bead can be applied to Firesound Sealant control joints in the same wall type. In addition to the comparison between sealant performance the above tests were undertaken in a fire rated wall with an FRL of -/120/120 however the control joints achieved a considerable margin beyond the FRL of the wall.

Based on the above analysis it is considered that the Firesound Sealant control joint with a Rondo P35 stopping bead would not prejudice the FRL of multiple layer fire rated plasterboard walls as given in Table 8 below.

It is further considered that the Rondo P35 stopping bead can be used in fire rated steel framed walls lined with one layer of 16 mm fire rated plasterboard and achieve an FRL of at least -/90/60.

**Table 8: Summary of Plasterboard/Plasterboard Control Joints with P35**

Plasterboard lining	Sealant backing	Joint Width (mm)	Sealant Depth (mm)	FRL*
1 x 16 mm + P35	Backing rod	20	26	-/90/60
2 x 13 mm + P35	Backing rod	20	26	-/120/120
2 x 16 mm + P35	Backing rod	20	26	-/180/180
3 x 13 mm + P35	Backing rod	20	26	-/180/180

\* FRL limited to that of the fire rated plasterboard wall or as tested. The lower performance applies to the control joint.

### 3.3 Wall Construction Variations

#### 3.3.1 Concrete or Masonry wall Control Joints

The control joints referenced in Section 2 were tested in a plasterboard wall or the junction between plasterboard/block. In AS 1530.4:2014 section 10.12 permissible variations, 10.12.2 Separating elements it states the following:

*(c) Results obtained from framed wall systems may be applied to the performance of a system in concrete, masonry or solid gypsum blocks of greater or equal thickness to that of the tested prototype.*

Therefore the control joints discussed in this report may be installed in concrete or masonry walls of the same thickness as tested and be expected to achieve the same FRL in accordance with AS 1530.4:2014. Based on the tested walls the minimum concrete/masonry wall thickness is:

- 60 minute walls not less than 90 mm
- 90 minute walls not less than 96 mm
- 120 minute walls not less than 116 mm
- 180 minute walls not less than 142 mm

It is expected that the concrete/masonry walls will comply with the appropriate standard which defines the FRL of the wall and may have additional requirements and increased wall thickness to that given above.

#### 3.3.2 Plasterboard Framed Wall Variations

Section 10.12.2 of AS 1530.4-2005/2014 states the following permissible variations for penetrations tested in framed walls.

*(d) Results obtained from framed wall systems may be applied to similar walls having studs of the same material with sizes greater than the tested prototype.*

*(e) Results obtained from a prototype test may be applied to framed wall systems of similar construction but having thicker facings of the same material applied to the studs.*

In summary the control joints discussed in this report may be installed into steel framed plasterboard walls with deeper studs and/or thicker fire rated plasterboard facings and be expected to achieve the same FRL in accordance with AS 1530.4-2005/2014.

The fire testing referenced in Section 2 was undertaken with Knauf Gypsum fire rated plasterboard and system specifications. It is considered the HB Fuller control joints discussed in this report would be expected to achieve the same FRL if installed in other brands (for example, but not limited to CSR, Siniat, or BGC) of fire rated plasterboard walls with the following conditions:

- The fire rated plasterboard lining must be the same thickness or thicker than tested.
- The minimum steel framing shall not be less than nominally 64 mm deep and the overall wall thickness not less than that described in this report.
- The fire rated plasterboard wall shall have an established fire resistance rating by test or assessment in accordance with AS 1530.4-2005/2014.



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## 4. CONCLUSION

It is considered that the HB Fuller Firesound Sealant fire rated control joints would be expected to achieve the stated FRL if tested in accordance with AS 1530.4-2005/2014 with reference to AS 4072.1-2005 (including Amendment No. 1) with reference to Section 4, as stated in Table 9 below.

**Table 9: Summary of Firesound Sealant Control Joints**

Control Joint Configuration (Sealant backing)	Minimum Wall Thickness	Maximum Joint Width (mm)	Minimum Sealant Depth (mm)	FRL
<b>Vertical Plasterboard Control Joints (with backing rod)</b>				
1 x 13 mm/ 1 x 13 mm	90 mm	20	13	-/60/60
1 x 13 mm/ 1 x 13 mm +stopping angle (13 mm x 28 mm x 0.4 mm)	90 mm	20	13	-/60/60
1 x 16 mm/ 1 x 16 mm	96 mm	15	16	-/90/60
1 x 16 mm/ 1 x 16 mm +stopping angle (16 mm x 28 mm x 0.4 mm)	96 mm	15	16	-/90/60
1 x 16 mm/ 1 x 16 mm	96 mm	20	20	-/90/60
1 x 16 mm/ 1 x 16 mm +stopping angle (16 mm x 28 mm x 0.4 mm)	96 mm	20	20	-/90/60
1 x 16 mm/ 1 x 16 mm +P35	96 mm	20	20	-/90/60
2 x 13 mm/ 2 x 13 mm	116 mm	15	20	-/120/120
2 x 13 mm/ 2 x 13 mm +stopping angle (13 mm x 28 mm x 0.4 mm)	116 mm	20	20	-/120/120
2 x 13 mm/ 2 x 13 mm + P35	116 mm	20	26	-/120/120
2 x 16 mm/ 2 x 16 mm	128 mm	15	20	-/180/180
2 x 16 mm/ 2 x 16 mm +stopping angle (16 mm x 28 mm x 0.4 mm)	128 mm	15	20	-/180/180
2 x 16 mm/ 2 x 16 mm + P35	128 mm	20	26	-/180/180
3 x 13 mm/ 3 x 13 mm	142 mm	20	26	-/180/180
3 x 13 mm/ 3 x 13 mm +stopping angle (13 mm x 28 mm x 0.4 mm)	142 mm	20	26	-/180/180
3 x 13 mm/ 3 x 13 mm +P35	142 mm	20	26	-/180/180
<b>Vertical (perimeter) or Horizontal (top or bottom) Plasterboard to Concrete/Masonry</b>				
1 x 13 mm/ Concrete/Masonry (framing)	90 mm	20	13	-/60/60
1 x 16 mm/ Concrete/Masonry (framing)	96 mm	20	16	-/90/90
2 x 13 mm/ Concrete/Masonry (framing)	116 mm	20	26	-/120/120
2 x 13 mm/ Concrete/Masonry (framing+ backing rod)	116 mm	20	20	-/120/120
2 x 16 mm/ Concrete/Masonry (framing)	128 mm	20	32	-/180/180
2 x 16 mm/ Concrete/Masonry (framing+ backing rod)	128 mm	20	20	-/180/180
3 x 13 mm/ Concrete/Masonry (framing+ backing rod)	142 mm	20	26	-/180/180



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It is considered the control joints may be installed with the following variations:

- The fire rated wall steel framing may be increased in depth.
- The fire rated plasterboard facings may be increased in thickness.
- Equivalent alternative fire rated plasterboard walls (including, but not limited to Knauf Gypsum, CSR, Siniat or BGC) which have an established fire resistance rating by test or assessment in accordance with AS 1530.4-2005/2014.
- In concrete or masonry walls of the same minimum wall thickness as stated above. The walls shall be built to comply with the concrete or masonry standard as appropriate.



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