REGULATORY INFORMATION REPORT

The fire resistance performance of 3M Fire Barrier 3000 WT Water Tight Sealant protecting PE-X pipes in plasterboard lined walls and solid walls if tested in accordance with AS1530.4-2014 and assessed in accordance with AS4072.1-2005

EWFA Report No:

RIR 48815900.1

Report Sponsor:

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Testing. Advising. Assuring.

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1 INTRODUCTION

This report contains the minimum information required for regulatory compliance for the Assessment report EWFA 48815900.1.

The referenced report presents an assessment of the fire resistance performance of 3M Fire Barrier 3000 WT Water Tight Sealant protecting PE-X pipes in plasterboard lined walls and solid walls if tested in accordance with AS1530.4-2014 and assessed in accordance with AS4072.1-2005.

The tested prototypes described in Section 2 of the referenced report, when subject to the proposed variations described in Section 3 and tested in accordance with the referenced test method described in Section 4. The conclusions of the report are summarised in Section 5.

The validity of the referenced assessment is conditional on compliance with Sections 7, 8 and 9 of the referenced report.

Summaries of the test data on which the referenced assessment is based are provided in Appendix A together with a summary of the critical issues leading to the assessment conclusions including the main points of argument.

2 TESTED PROTOTYPES

The referenced assessment is based on referenced test EWFA 45239800.1 describing test of PE-X pipes protected with 3M Fire Barrier 3000 WT Water Tight Sealant penetrating plasterboard lined wall construction and tested in accordance with AS1530.4-2014. The test was sponsored by 3M Australia and was conducted by Exova Warringtonfire Aus Pty Ltd.

Refer to Appendix A in the assessment report for a full summary of the test data.

3 VARIATION TO TESTED PROTOTYPES

The proposed construction is for PE-X pipes penetrations protected with 3M Fire Barrier 3000 WT Water Tight Sealant in walls shall be as tested in test EWFA 45239800.1 subject to the following variations:

- The PE-X pipes shall have the outside diameters of Ø16mm, Ø20mm or Ø26mm.
- For pipe and aperture sizes listed in Table 1, the gap between the pipe and plasterboard shall be filled with 3M Fire Barrier 3000 WT Water Tight Sealant on each side.
- The wall construction may optionally be concrete, AAC, solid or hollow masonry walls, or plasterboard lined walls that has been tested or otherwise assessed to achieve an FRL of -/120/120.
- For 60-minute applications, the wall shall be of minimum thickness of 77mm that has been tested or otherwise assessed to achieve an FRL of -/60/60 with one layer of 13mm thick fire grade plasterboard each side, with minimum 13mm or 16mm thick fire rated plasterboard build at least 100mm wide around the penetration,
- For 90-minute applications, the wall shall be of minimum wall thickness 83mm that has been tested or otherwise assessed to achieve an FRL of -/90/90 with one layer of 16mm thick fire grade plasterboard each side, with a minimum 13mm or 16mm thick fire rated plasterboard build at least 100mm wide around the penetration,
- For 120-minute applications, the wall shall be constructed from minimum two layers of 13mm or 16mm thick fire grade plasterboard each side with a minimum wall thickness of 103mm that has been tested or otherwise assessed to achieve an FRL of -/120/120 or 120/120/120.
- Optional backing material used to control sealant depth if there is not wall cavity insulation. Backing material options: Mineral wool, 19m Armaflex FR or Polyethylene Backing Rod.
- The assessed construction is summarised in sections 3.1, 3.2 and 3.3.

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3.1 SEPARATION REQUIREMENTS

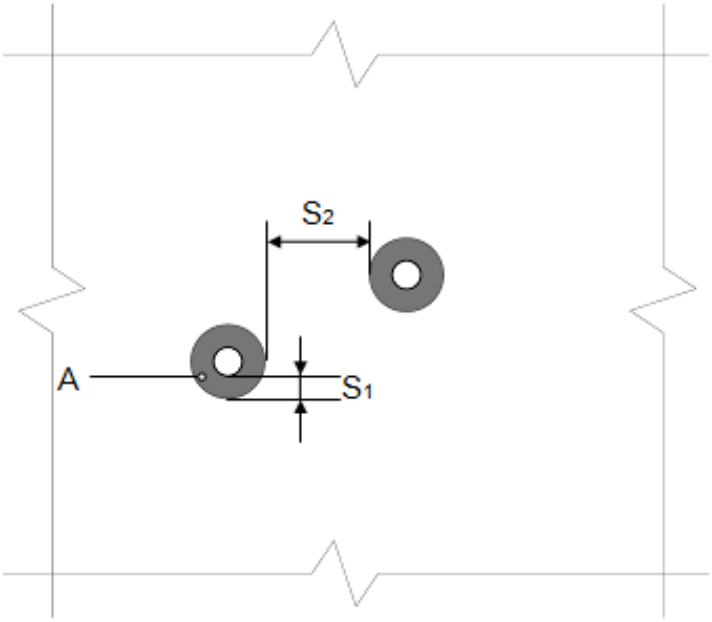

Figure 1 – Separation Requirements of Penetrations

Separation Requirements in Walls

Minimum distance valid for installations of services	Wall (mm)
Distance between pipe and seal edge	$S_1 = 0$
Distance between penetrations	$S_2 = 40$

Table 1 – Aperture Sizes for 3M Fire Barrier 3000 WT Water Tight Sealant

Pipe Outside Diameter	Min. Aperture Diameter	Max. Aperture Diameter	Annular Gap
Ø16mm	Ø25mm	Ø35mm	Maximum 10mm
Ø20mm	Ø30mm	Ø40mm	
Ø26mm	Ø35mm	Ø45mm	

Table 2 – PEX Pipes wall thicknesses

Pipe Outside Diameter	Pipe Wall thickness (mm)
Ø16mm	1.2-2.4mm
Ø20mm	2.3-3.4mm
Ø26mm	2.8-3.9mm

Aperture Beading Details for walls

For walls with a wall thickness of less than that stated in Section 3.2, a build up shall be used.

Build up

13mm or 16mm fire rated plasterboard strips at least 100mm wide x 100mm high are installed around the opening with the necessary number of layers to form frames (or a frame if only on one side) .

Penetration Seal

For aperture hole sizes listed in Table 1, 3M Fire Barrier 3000 WT Water Tight Sealant shall be installed on each side to minimum depth of 26mm.

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3.2 PENETRATIONS IN FLEXIBLE AND RIGID WALLS

Flexible Wall

The wall shall have a minimum thickness of 77mm and comprise of steel or timber studs lined on both faces with a minimum of one layer of 13mm or 16mm thick fire grade plasterboard and has been tested or otherwise assessed by others to achieve an FRL of -/60/60,or, -/90/90 for walls lined with 1x16mm thick fire rated plasterboard. Walls may be with or without cavity insulation.

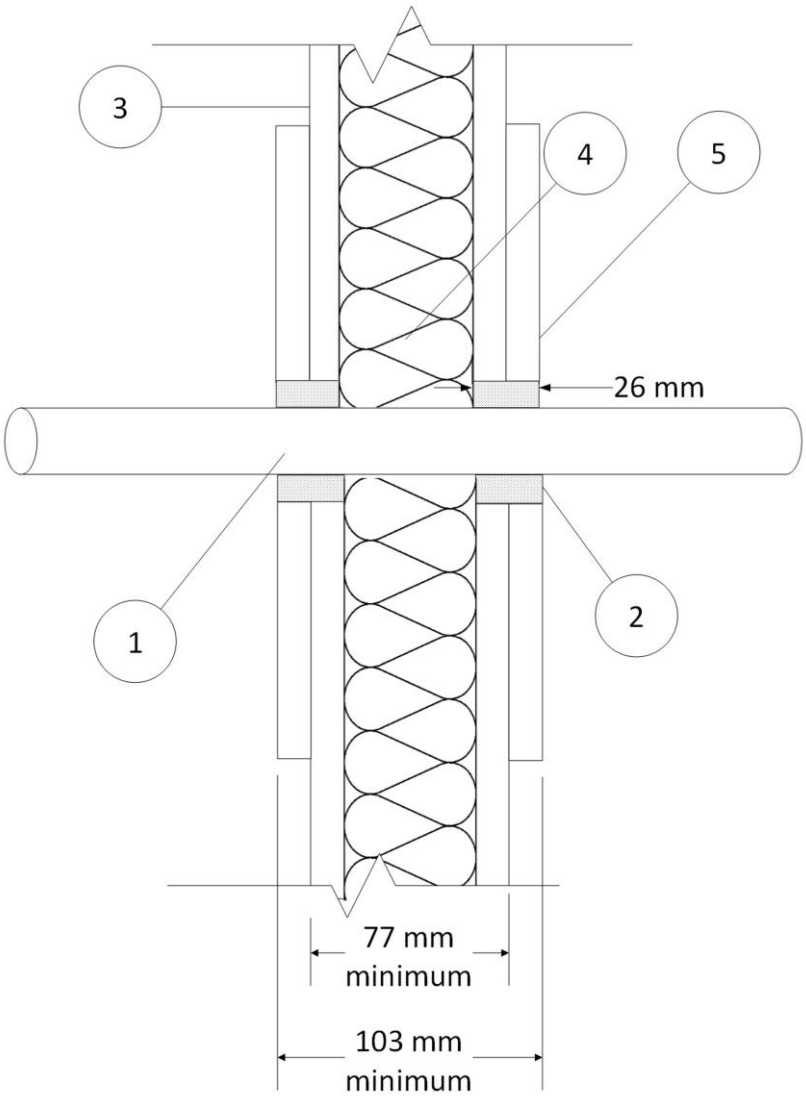

Figure 2: Flush Sealant on both sides of the wall, in minimum 77 mm flexible wall with build up to minimum 103 mm thick.

① PEX Pipe as per Table 1
② 3M™3000WT, minimum depth of 26 mm
③ Single layer of 13 mm or 16 mm fire grade plasterboard
④ Wall cavity insulation (optional)
⑤ 13 mm or 16 mm thick fire grade plasterboard build up, minimum 100 mm width, and fixed using 25 mm plasterboard screws.

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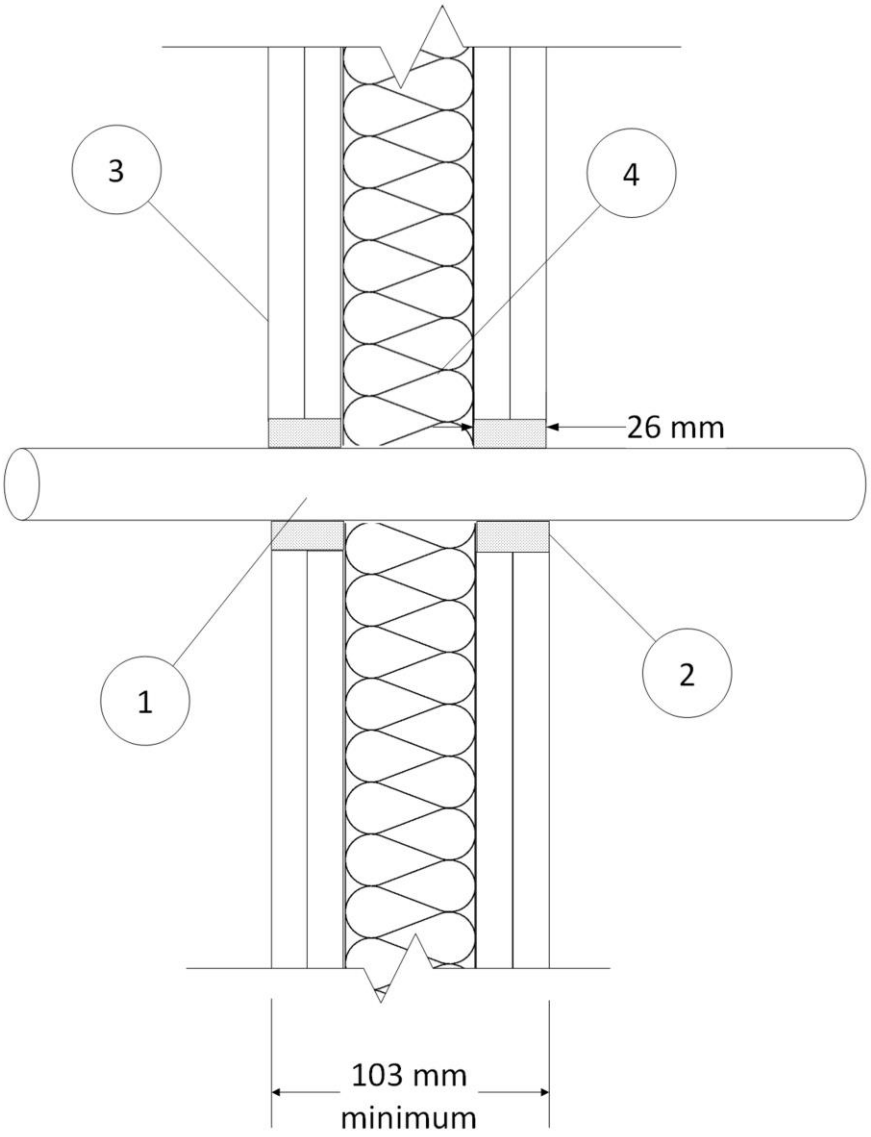

Figure 3: Flush Sealant on both sides of the wall, in minimum 103 mm flexible wall.

① PEX Pipe as per Table 1
② 3M™3000WT, minimum depth of 26 mm
③ 2 layers of 13 mm or 16 mm fire grade plasterboard
④ Wall cavity insulation (optional)

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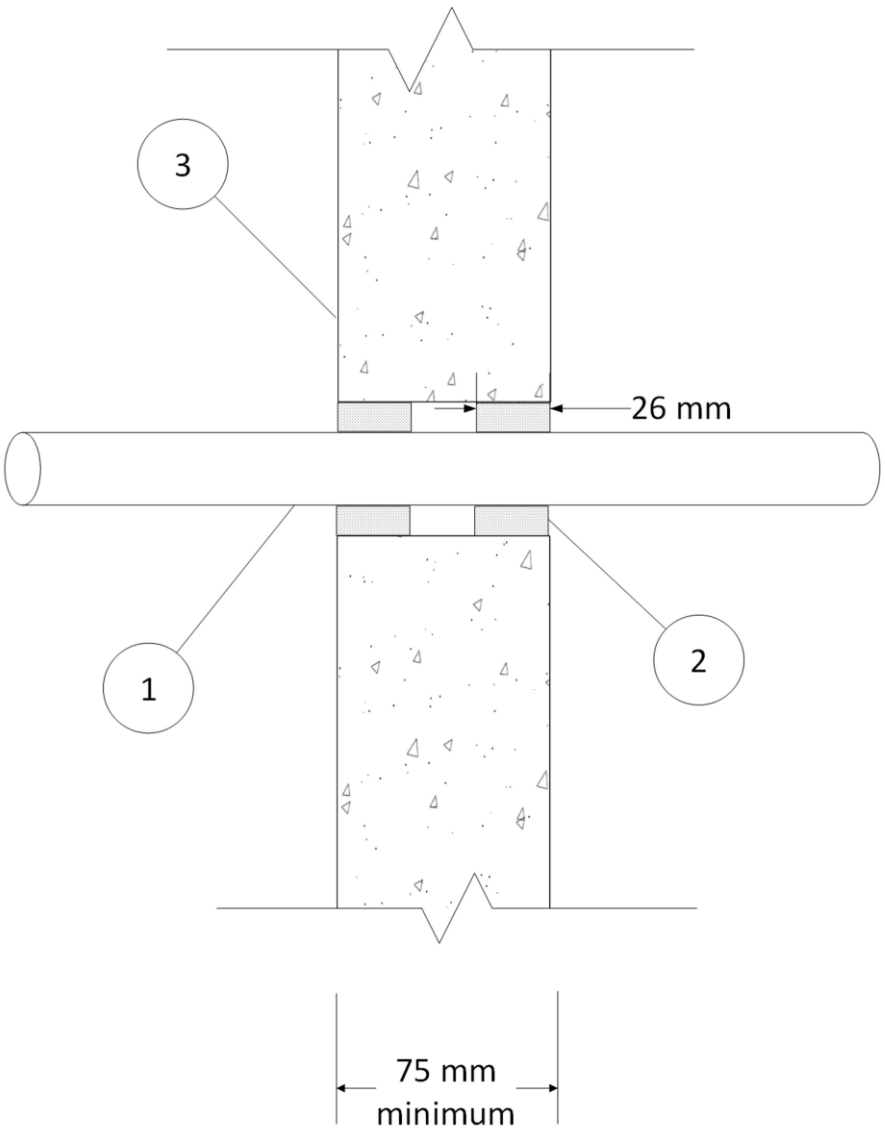

Figure 4: 75 mm or thicker Rigid Walls protected with sealant flush to the face of the wall on both sides.

① PEX Pipe as per Table 1
② 3M™3000WT, minimum depth of 26 mm
③ Solid wall constructed of concrete, AAC, solid or hollow masonry or Hebel

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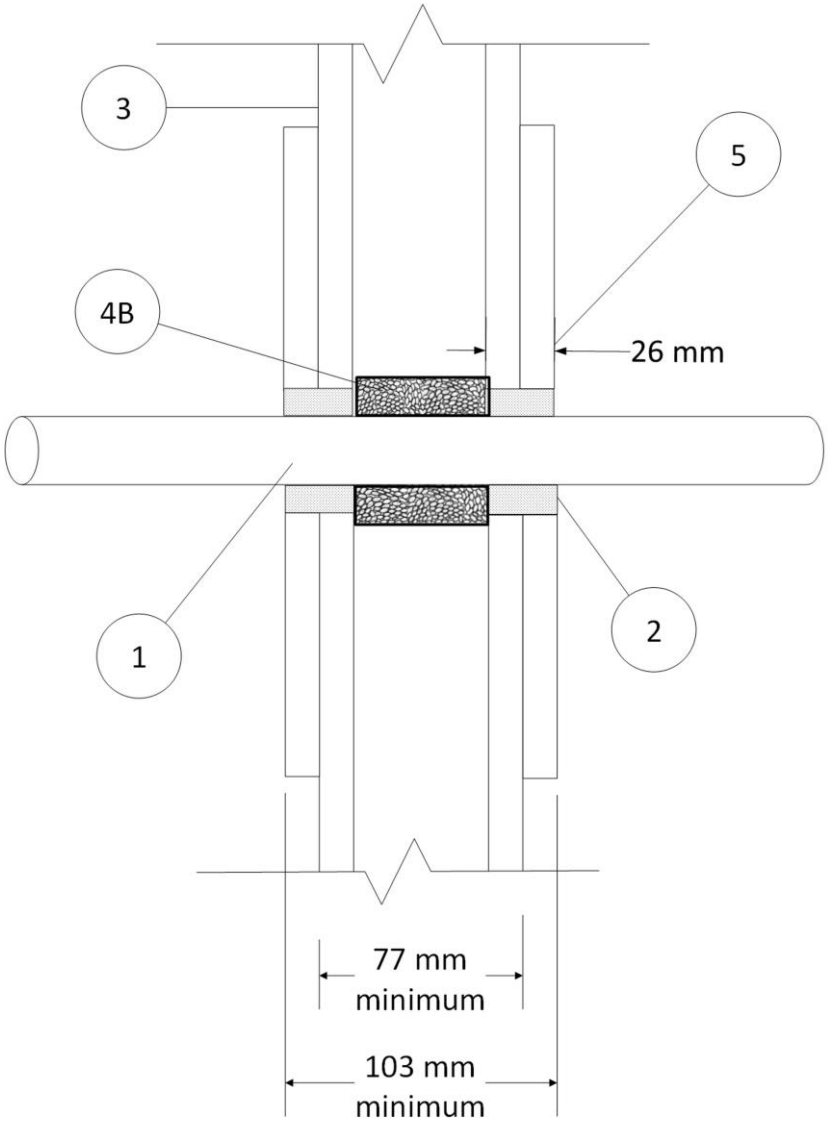

Figure 5: Flush Sealant on both sides of the wall, in minimum 77 mm flexible wall with buildup to minimum 103 mm thick.

① PEX Pipe as per Table 1
② 3M™3000WT, minimum depth of 26 mm
③ 2 layers of 13 mm or 16 mm fire grade plasterboard
④B Backing Material to assist correct sealant depth (where no cavity insulation is available):
- FR Pipe insulation such as Armaflex FR
- 100 kgm3 Mineral Wool.
- 3M PM4

⑤ 13 mm or 16 mm thick fire grade plasterboard build up, minimum 100 mm width, and fixed using 25 mm plasterboard screws.

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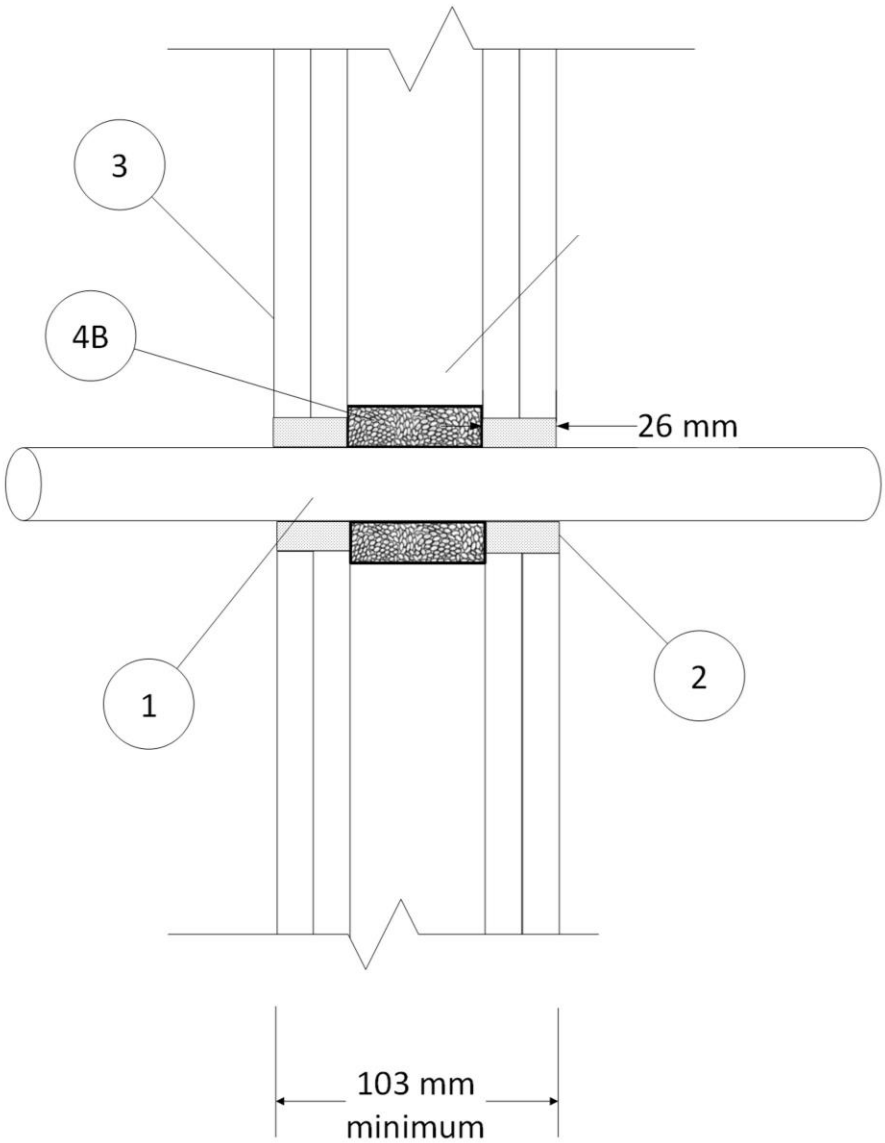

Figure 6: Flush Sealant on both sides of the wall, in minimum 103 mm flexible wall.

① PEX Pipe as per Table 1
② 3M™3000WT, minimum depth of 26 mm
③ 2 layers of 13 mm or 16 mm fire grade plasterboard
④B Backing Material to assist correct sealant depth (where no cavity insulation is available):

- FR Pipe insulation such as Armaflex FR
- 100 kgm3 Mineral Wool.
- 3M PM4

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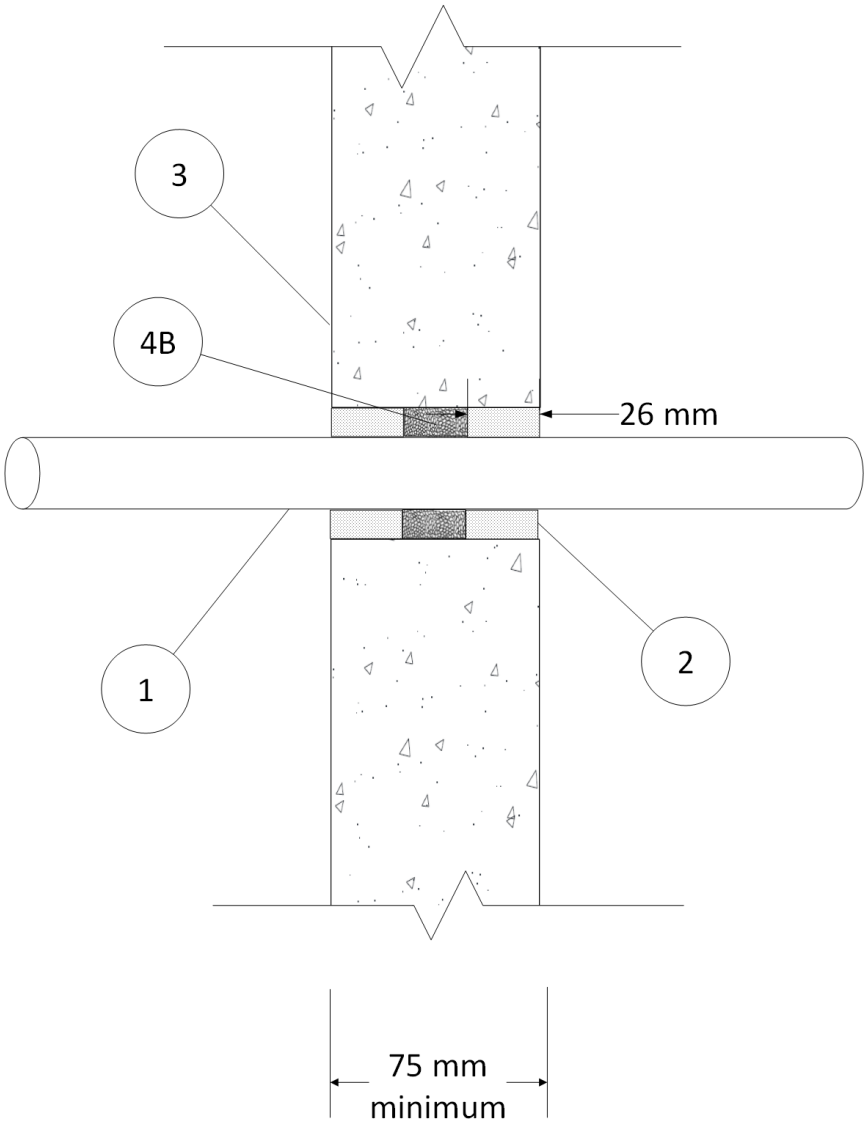

Figure 7: 75 mm or thicker Rigid Walls protected with sealant flush to the face of the wall on both sides.

① PEX Pipe as per Table 1
② 3M™3000WT, Sealant Depth minimum 26 mm
③ Solid wall constructed of concrete, AAC, solid or hollow masonry or Hebel
④B Backing Material to assist correct sealant depth (where no insulation is available):
- FR Pipe insulation such as Armaflex FR
- 100 kgm3 Mineral Wool.
- 3M PM4

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4 REFERENCED TEST PROCEDURES

the referenced report is prepared with reference to the requirements of AS1530.4-2014 and AS4072.1-2005.

5 FORMAL ASSESSMENT SUMMARY

Based on the discussion presented in the referenced report, it is the opinion of this testing authority that if the specimen described in section 1 had been modified within the scope of section 3, it will achieve the performance as stated below if tested in accordance with the test method referenced in Section 4 and subject to the requirements of Section 7:

Table 3 –PE-X Pipe in 2hr Flexible Walls

Pipe OD	Pipe Wall Thick-ness	Sealant in Annular Gap	Lining Thickness	Min. Sealant Depth (both sides)	Refer Figure/ Table	FRL
Ø16mm	1.2-2.4mm	3M Fire Barrier 3000 WT Water Tight Sealant	1 × 13mm + plasterboard build up on both sides	26mm	Figures 2 ,3 ,4 & Table 1	-/60/60
Ø20mm	2.3-3.4mm					
Ø26mm	2.8-3.9mm		1 × 16mm + plasterboard build up on both sides			-/90/90
			2 × 13mm on both sides			-/120/120
			2 × 16mm on both sides			-/120/120

Table 4 –PE-X Pipe in 2hr Rigid Walls

Pipe OD	Pipe Wall Thick-ness	Sealant in Annular Gap	Wall Thickness	Min. Sealant Depth (both sides)	Refer Figure/ Table	FRL
Ø16mm	1.2-2.4mm	3M Fire Barrier 3000 WT Water Tight Sealant	Minimum 75mm	26mm	Figure 5 & Table 1	-/120/120
Ø20mm	2.3-3.4mm					
Ø26mm	2.8-3.9mm					

6 DIRECT FIELD OF APPLICATION

the referenced assessment applies to penetrations in walls exposed to fire from either side.

The results of the assessment report are based on actual test data and the scope is necessarily limited to the specifications indicated Section 3 and discussed in the Appendices of the assessment.

7 REQUIREMENTS

the referenced report details the methods of construction, test conditions and assessed results that would have been expected had the specific elements of construction described herein been tested in accordance with AS1530.4-2014.

Any further variations with respect to size, constructional details, loads, stresses, edge or end conditions, other than those identified in this report, may invalidate the conclusions drawn in the referenced report.

It is required that the supporting construction be otherwise tested or assessed to achieve the required FRL of the penetration seal in accordance with AS1530.4-2014.

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8 VALIDITY

This assessment report does not provide an endorsement by Exova Warringtonfire Aus Pty Ltd of the actual products supplied.

The conclusions of this assessment may be used to directly assess the fire resistance performance under such conditions, but it should be recognised that a single test method will not provide a full assessment of the fire hazard under all fire conditions.

Because of the nature of fire resistance testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

The assessment can therefore only relate only to the actual prototype test specimens, testing conditions and methodology described in the supporting data, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report be reviewed on or, before, the stated expiry date.

The information contained in this report shall not be used for the assessment of variations other than those stated in the conclusions above. The assessment is valid provided no modifications are made to the systems detailed in this report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.

9 AUTHORITY

9.1 APPLICANT UNDERTAKINGS AND CONDITIONS OF USE

By using this report as evidence of compliance or performance, the applicant(s) confirms that:

- to their knowledge the component or element of structure, which is the subject of this assessment, has not been subjected to a fire test to the Standard against which this assessment is being made, and
- they agree to withdraw this assessment from circulation should the component or element of structure be the subject of a fire test by a test authority in accordance with the Standard against which this assessment is being made and the results are not in agreement with this assessment, and
- they are not aware of any information that could adversely affect the conclusions of this assessment and if they subsequently become aware of any such information, agree to ask the assessing authority to withdraw the assessment.

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9.3 AUTHORISATION ON BEHALF OF EXOVA WARRINGTONFIRE AUS PTY LTD

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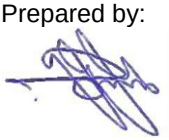

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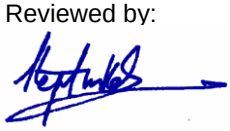

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9.5 EXPIRY DATE

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