JENSEN HUGHES

Regulatory information report

Fire resistance performance of uPVC and HDPE pipes protected with Promaseal FCW fire collars

Sponsor: Promat Australia Pty Ltd

Report number: FAS190366 Revision: RIR5.1

Issued date: 7 March 2025 Expiry date: 28 February 2030

Quality management

Version	Date	Information about the report		
RIR5.1*	Issue: 07 Mar 2025	Reason for issue	Report issued to Promat Australia Pty Ltd in conjunction with assessment report	
		Name	**Prepared by**	**Reviewed by**
	Expiry: 28 Feb 2030		Zak Awad	Alim Rasel
*The previous numbering has been skipped to maintain consistency with the report number				

Jensen Hughes Fire Testing Pty Ltd
ABN 81 050 241 524

Formerly Warringtonfire Australia Pty Ltd[1]

[1] *Warringtonfire Australia Pty Ltd was acquired by Jensen Hughes in December 2023. Jensen Hughes Fire Testing Pty Ltd is not affiliated, associated, authorised, or endorsed by Warringtonfire Australia Pty Ltd, Warringtonfire Testing and Certification Limited or its "Warringtonfire" or "Certifire" brands.*

Executive summary

This report contains the minimum information required for regulatory compliance and refers to the referenced assessment report FAS190366 R5.1.

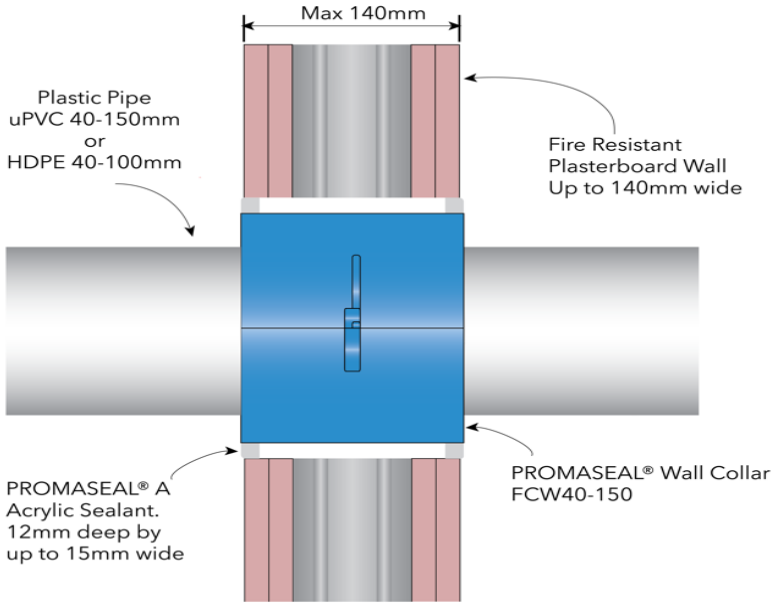
This report documents the findings of the assessment undertaken to determine the fire resistance level (FRL) of services protected with Promaseal FCW wall collars – in accordance with AS 1530.4:2014 and AS 4072.1:2005 (R2016).

The analysis in sections 5 to 7 of the referenced report found that the proposed systems, together with the described variations, will achieve the FRLs listed in Table 1 and Table 2 - in accordance with AS 1530.4:2014 and AS 4072.1:2005 (R2016).

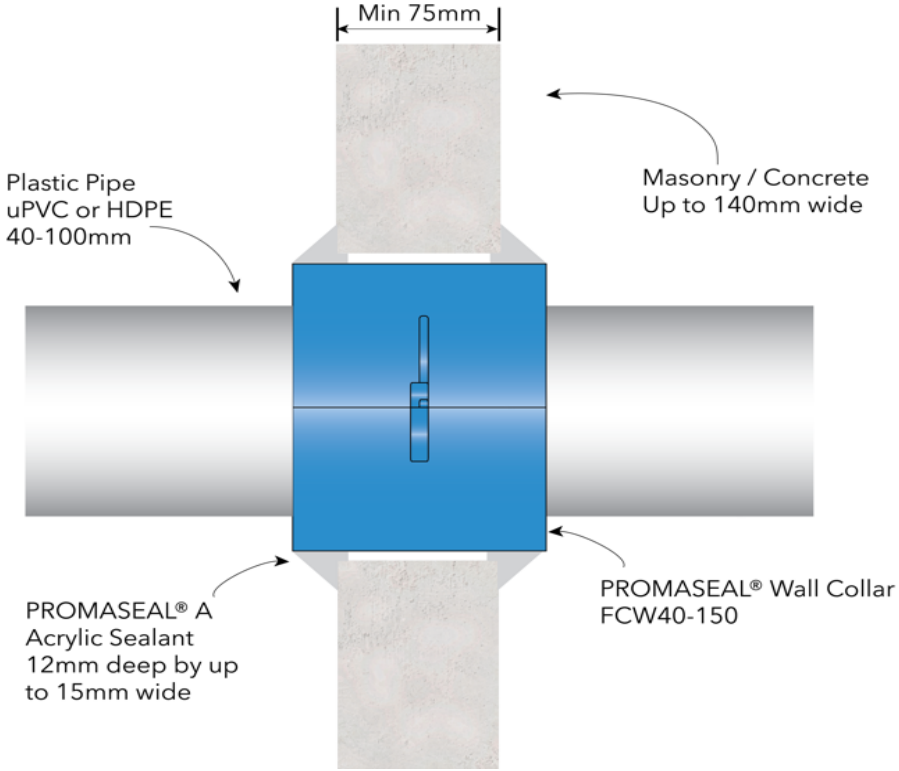
The variations and outcome of this assessment are subject to the limitations and requirements described in sections 2, 3 and 6. The results of the report are valid until 28 February 2030.

Table 1 Overview of variations and assessment outcome of uPVC pipes protected with FCW wall collars

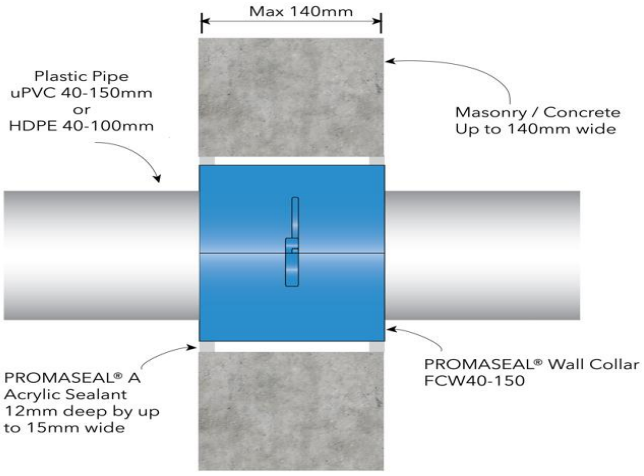
Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
40	2.6	2 × 13 mm[a] or 2 × 16 mm layers of plasterboard faced to both sides of a 64 mm steel / timber stud.	116 or 128	FCW collar must be installed centrally	WFRA F91622, WFRA F91633, WFRA F91731.3 and FSRG A-13-819	FCW 40	-/120/120
50	2.2-3.0					FCW 50	
65	2.9					FCW 65	
80	3.4					FCW 80 – omission of internal springs permitted	
100	3.4					FCW 100	
150	5.0					FCW 150**	



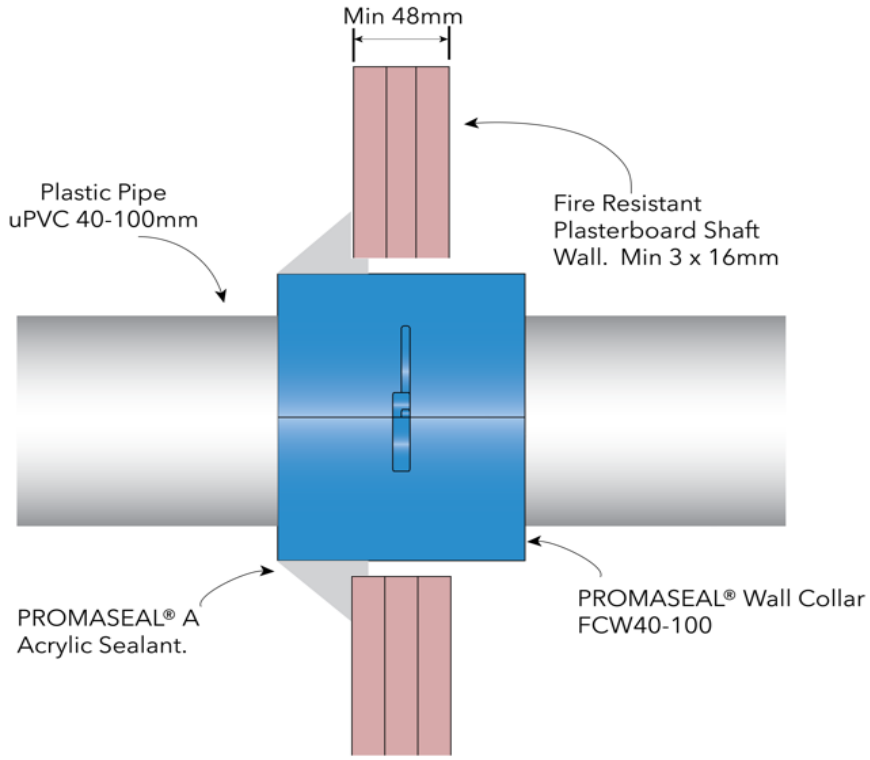
Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *	
40	2	AAC Hebel PowerPanels glued together with CSR Hebel adhesive using a 6 mm deep notched trowel.	75	FCW collar must be installed centrally.	FSRG A-13-816, FSRG A-14-879A, FSRG A-15-1011	FCW 40	-/120/90 with Promaseal A Acrylic sealant on unexposed side	-/120/120 with Promaseal A Acrylic sealant on unexposed side and Promaseal IBS strips.
50	2.6					FCW 50		
65	3.7					FCW 65		
80	3.4					FCW 80		
100	3.4-4					FCW 100		



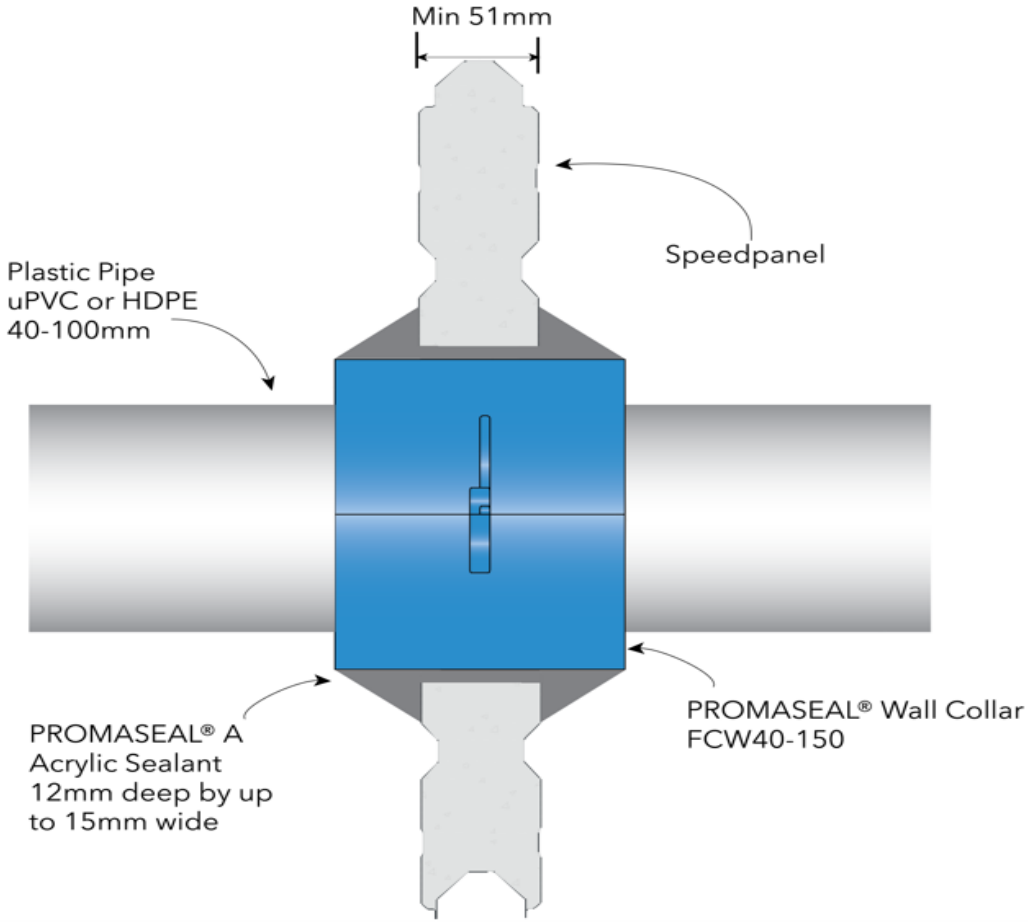
Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
40	2	Masonry and concrete with a density of at least 550 kg/m^3 (as per AS 3600 and AS 3700)	In accordance with AS 3600 or AS 3700 as appropriate.	Fire Collars must be installed centrally. Promaseal A acrylic sealant and Promaseal IBS strips are required.	FSRG A-13-816, FSRG A-14-879A, FSRG A-15-1011	FCW 40	• 175 mm thick separating element: -/180/180 • 150 mm thick separating element: -/180/180 • 120 mm thick separating element: -/120/120
50	2.6					FCW 50	
65	3.7					FCW 65	
80	3.4					FCW 80	• 175 mm thick separating element: -/180/120 • 150 mm thick separating element: -/180/120 • 120 mm thick separating element: -/120/120
100	3.4-4					FCW 100	



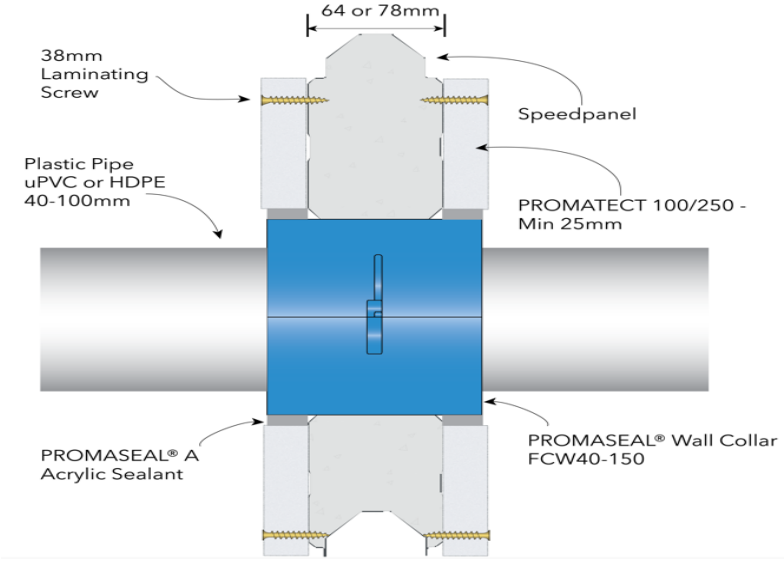
Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
40	3	Vertically oriented separating element with 3 × 16 mm layers of Fyrechek fire rated plasterboard (1800 mm × 1200 mm) installed vertically into a metal frame.	48	Fire Collars must be installed centrally with Promaseal A Acrylic installed in the annular gap on the unexposed side with a 20 mm fillet.	FSRG A-13-823A	FCW 40	-/120/90
50	2.6					FCW 50	
65	3.7					FCW 65	
80	3.4					FCW 80	
100	3.6					FCW 100	



Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
40	3	1 × 25 mm thick Shaftliner with unexposed side fitted with 2 × 13 or 2 × 16 mm fire rated plasterboard	90 or 96	Fire collar must be installed flush with the separating element on the exposed side. The annular gap must be sealed with Promaseal A Acrylic sealant on both sides as per the tested system.	FSRG A-13-819	FCW 40	-/120/120
50	2.6					FCW 50	
65	3.7					FCW 65	
80	3.4					FCW 80	
100	3.6					FCW 100	
40	3	Speedpanel wall[b]	51	Fire collars must be installed centrally. sealant must be applied in the annular gap between the collar and aperture to the full depth of the wall. The sealant must also cover the full collar and then finished off with a 20 mm fillet.	EWFA 2798800.1	FCW 40	-/60/60
50	2.6					FCW 50	
65	3.7					FCW 65	
80	3.4					FCW 80	
100	3.6					FCW 100	

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
							

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
40	3	Speedpanel wall	64	Fire collar must be installed centrally. A piece of 25 mm thick Promatect 100, 100 mm greater than the penetration is fixed around the pipe with the annular gap must be sealed with Promaseal SupaMastic on both sides of the wall and to the depth of the 25 mm thick Promatect 100.	A-12-775a	FCW 40	-/90/90
50	2.6					FCW 50	
65	3.7					FCW 65	
80	3.4					FCW 80	
100	3.6					FCW 100	
40	3		78	Fire collar must be installed centrally. A piece of 25 mm thick Promatect 100, 100 mm greater than the penetration is fixed around the pipe with the annular gap must be sealed with Promaseal SupaMastic on both sides of the wall and to the depth of the 25 mm thick Promatect 100.	A-12-775a	FCW 40	-/120/120
50	2.6					FCW 50	
65	3.7					FCW 65	
80	3.4					FCW 80	
100	3.6					FCW 100	

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation and fire protection	Reference tests	Promaseal fire collar type	FRL *
							

[a]The cavity in the 2 × 13 mm plasterboard system must be insulated using 75 mm thick R1.5 glasswool insulation batts

[b]The Speedpanel wall must be installed in accordance with procedures listed in their test or assessment reports to achieve the desired fire resistance levels. Please contact Speedpanel to obtain the correct and latest version of the evidence. Refer to the prerequisites summarised in Section 5.3.1 of referenced report and Figure 14 (Service A and C) and Figure 15 for further details on the installation of local fire-stopping systems.

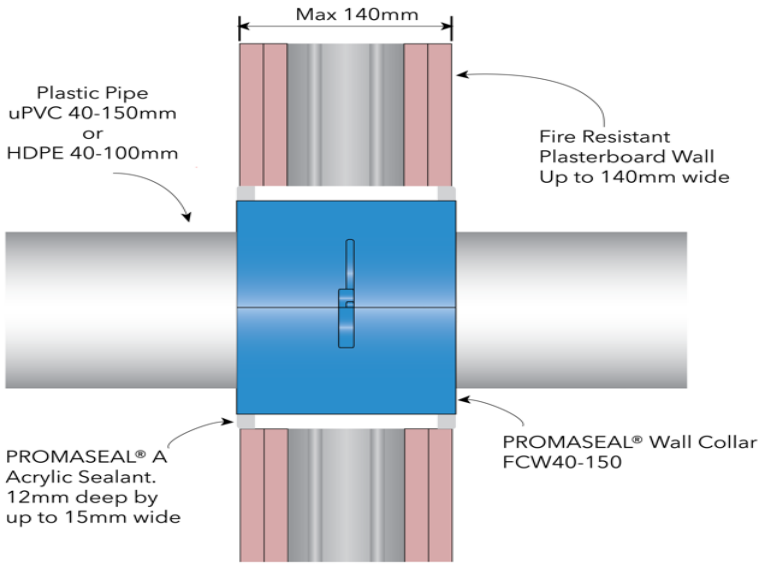
*The FRL of the system is limited by the FRL of the separating element. The FRL of the separating element must be established by either testing or assessment conducted by an accredited testing laboratory (ATL).

** If there are penetrations within 400 mm of the 150 mm pipe, the cavity must be either back blocked with plasterboard for 200 mm around the opening or steel noggins must be provided for the facings to be fixed onto them if the system is to achieve an FRL of -/120/120.

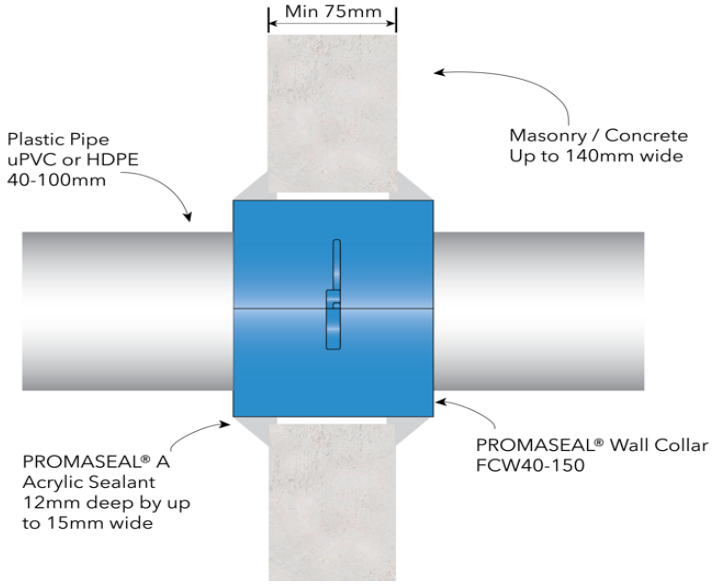
Evidence of suitability: A5G3(1)(d)

Governing requirements: S1C2(b) and S1C2(c)

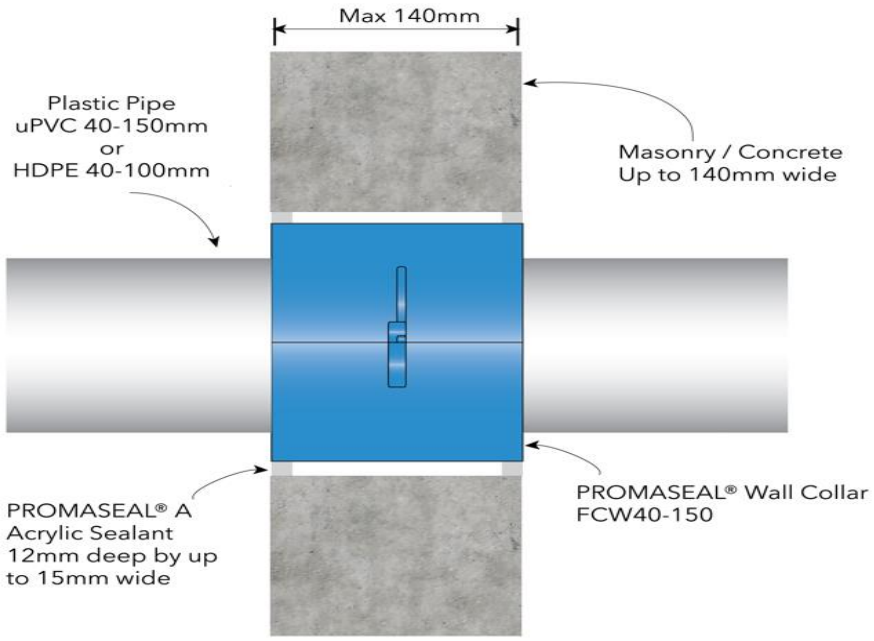
Table 2 Overview of variations and assessment outcome of HDPE pipes protected with FCW wall collars

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*
40	3	2 × 13 mm[g] or 2 × 16 mm layers of plasterboard faced to both sides of a 64 mm steel / timber stud.	116 or 128	Fire collars must be installed centrally.	WFRA F91622, WFRA F91633	A5G3(1)(d)	S1C2(b) and S1C2(c)	FCW Wall Collars. Diameters to be adjusted to suit the pipe outside diameters and intumescent thickness to be 12 mm. Omission of internal springs is permitted.	-/120/120
50	3.2								
63	3.2								
75	3.2								
90	3.8								
110	4.3								
									

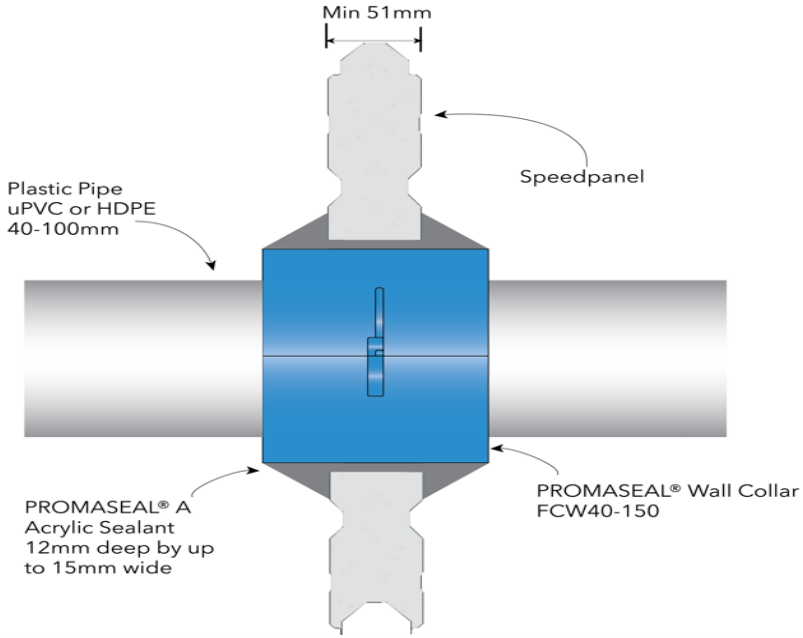
Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*	
40	As manufactured	AAC Hebel PowerPanels glued together with CSR Hebel adhesive using a 6 mm deep notched trowel.	75	FCW collar must be installed centrally.	FSRG A-15-1011, FSRG A-15-1038			FCW 40	-/120/90 with Promaseal A Acrylic sealant on unexposed side	-/120/120 with Promaseal A Acrylic sealant on unexposed side and Promaseal IBS strips.
50	3.2							FCW 50		
65	As manufactured							FCW 65		
80	As manufactured							FCW 80		
100	3.9							FCW 100		



Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*
40	As manufactured	Masonry and concrete with a density of at least 550 kg/m^3	In accordance with AS 3600:2018 or AS 3700:2018 as appropriate.	FCW collar must be installed centrally with Promaseal IBS strips and Promaseal A Acrylic sealant.	FSRG A-15-1011, FSRG A-15-1038			FCW 40	• 175 mm thick separating element: -/240/120 • 150 mm thick separating element: -/180/120 • 120 mm thick separating element: -/120/120
50	3.2							FCW 50	
65	As manufactured							FCW 65	
80	As manufactured							FCW 80	
100	3.9							FCW 100	

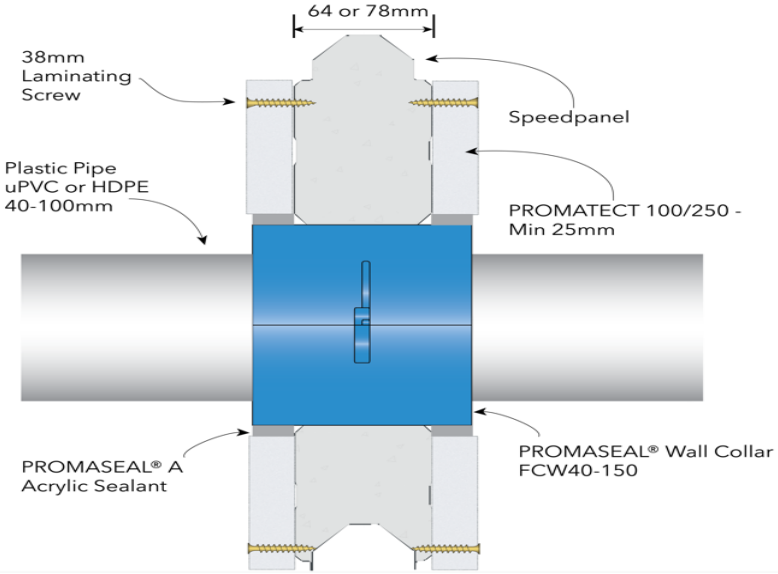


Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*
40	As manufactured	Speedpanel[d] wall	51	Fire collars must be installed centrally. sealant must be applied in the annular gap between the collar and aperture to the full depth of the wall. The sealant must also cover the full collar and then finished off with a 20 mm fillet.	A-12-777			FCW 40	-/60/60
50	3.2							FCW 50	
65	As manufactured							FCW 65	
80	As manufactured							FCW 80	
100	3.9							FCW 100	

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*
									
40	As manufactured	Speedpanel wall	64	Fire collar must be installed centrally. A piece of 25 mm thick Promatect 100, 100 mm greater than the penetration	A-12-777			FCW 40	-/90/90
50	3.2							FCW 50	
65	As manufactured							FCW 65	
80	As manufactured							FCW 80	
100	3.9							FCW 100	

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*
				is fixed around the pipe with the annular gap must be sealed with Promaseal SupaMastic on both sides of the wall and to the depth of the 25 mm thick Promatect 100.					
40	As manufactured		78	Fire collar must be installed centrally. A piece of 25 mm thick Promatect 100, 100 mm greater than the penetration is fixed around the pipe with the annular gap must be sealed with Promaseal SupaMastic	A-12-777			FCW 40	-/120/120
50	3.2							FCW 50	
65	As manufactured							FCW 65	
80	As manufactured							FCW 80	
100	3.9							FCW 100	

Nominal pipe diameter (mm)	Nominal Pipe wall thickness (mm)	Wall system description	Separating element thickness (mm)	FCW collar installation	Reference tests	Evidence of suitability	Governing requirements	Promaseal fire collar type	FRL (min)*
				on both sides of the wall and to the depth of the 25 mm thick Promatect 100.					



[c]The cavity in the 2 × 13 mm plasterboard system must be insulated using 75 mm thick R1.5 glasswool insulation batts

[d]The Speedpanel wall must be installed in accordance with procedures listed in their test or assessment reports to achieve the desired fire resistance levels. Please contact Speedpanel to obtain the correct and latest version of the evidence. Refer to the prerequisites summarised in Section 5.3.1 of referenced report and Figure 14 (Service A and C) and Figure 15 for further details on the installation of local fire-stopping systems.

*The FRL of the system is limited by the FRL of the separating element. The FRL of the separating element must be established by either testing or assessment conducted by an accredited testing laboratory (ATL).

Contents

1. Introduction

This report contains the minimum information sufficient for regulatory compliance and refers to the assessment report FAS190366 R5.1.

This report documents the findings of the assessment undertaken to determine the fire resistance level (FRL) of uPVC and HDPE pipes protected with Promaseal FCW wall collars in accordance with AS 1530.4:2014[2] and AS 4072.1:2005 (R2016)[3].

This report may be used as evidence of suitability in accordance with the requirements of the relevant National Construction Code (NCC) to support the use of the material, product, form of construction or design as given within the scope of the referenced assessment report. It also references test evidence for meeting deemed-to-satisfy (DTS) provisions of the NCC that apply to the assessed systems.

This report was prepared at the request of Promat Australia Pty Ltd. The sponsor details are included in Table 3.

Table 3 Sponsor details

Sponsor	Address
Promat Australia Pty Ltd	1 Scotland Rd Mile End SA, 5031 Australia

2. Framework for the assessment

2.1 Assessment approach

An assessment is a professional opinion about the expected performance of a component or element of structure subjected to a fire test.

No specific framework, methodology, standard or guidance documents exists in Australia for undertaking these assessments. We have therefore followed the ‘Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence’ prepared by the Passive Fire Protection Forum (PFPF) in the UK in 2021[4].

This guide provides a framework for undertaking assessments in the absence of specific fire test results. Some areas where assessments may be offered are:

- Where a modification is made to a construction which has already been tested
- The interpolation or extrapolation of results of a series of fire resistance tests, or utilisation of a series of fire test results to evaluate a range of variables in a construction design or a product
- Where, for various reasons – eg size or configuration – it is not possible to subject a construction or a product to a fire test.

Assessments can vary from relatively simple judgements on small changes to a product or construction through to detailed and often complex engineering assessments of large or sophisticated constructions.

[2] Standards Australia, 2014, Methods for fire tests on building materials, components and structures – Part 4: Fire-resistance tests for elements of construction, AS 1530.4:2014, Standards Australia, NSW.
[3] Standards Australia, 2005, Components for the protection of openings in fire-resistant separating elements: Service penetrations and control joints, AS 4072.1:2005, Standards Australia, NSW.
[4] Passive Fire Protection Forum (PFPF), 2021, Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence, Passive Fire Protection Forum (PFPF), UK.

This report uses established empirical methods and our experience of fire testing similar products to extend the scope of application by determining the limits for the design and performance based on the tested constructions and performances obtained. The assessment is an evaluation of the potential fire resistance performance of the elements in accordance with AS 1530.4:2014.

This report has been written in accordance with the general principles outlined in EN 15725:2023[5] for extended application on the fire performance of construction products and building elements: Principle of EXAP standards and EXAP reports.

The performance of the systems with the variations has been determined by assessing the performance of tested systems against the impact of each variation. The systems tested in accordance with AS 1530.4:2014, and detailed within Appendix B of the referenced report, are generally considered to be more onerous than the listed system variations which are generally expected to yield a performance equivalent to the tested systems.

2.2 Compliance with the National Construction Code

This report has been prepared to meet the evidence of suitability requirements of the NCC 2022[6] under A5G3(1)(d). It references test evidence for meeting deemed-to-satisfy (DTS) provisions of the NCC under A5G5 for FRLs that apply to the assessed systems; the FRL was determined in accordance with Specifications 1 and 2 for fire resistance for building elements.

For the purposes of assessing the proposed systems (the building elements) in the report, they are confirmed to be:

- Assessed on the basis that the tests referenced are equivalent or more severe without the assistance of an active fire suppression system than the standard fire test AS 1530.4:2014 referenced in 4.4, in accordance with NCC 2022 S1C2(b) and
- The differences in the proposed systems and details compared to the tested prototypes are considered minor in accordance with NCC 2022 S1C2(c).

This report may also be used to demonstrate compliance with the requirements for evidence of suitability under the relevant sections of previous versions of the NCC.

2.3 Declaration

The ‘Guide to undertaking technical assessments of the fire performance of construction products based on fire test evidence’ prepared by the PFPF in the UK requires a declaration from the client. By accepting our fee proposal on 2 December 2024, Promat Australia Pty Ltd confirmed that:

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

[5] European Committee for Standardization, 2023, Extended application on the fire performance of construction products and building elements: Principle of EXAP standards and EXAP reports, EN 15725:2023, European Committee for Standardization, Brussels, Belgium
[6] National Construction Code Volumes One and Two - Building Code of Australia 2022, Australian Building Codes Board, Australia

3. Requirements and limitations of the referenced assessment

- The scope of this report is limited to an assessment of the variations to the tested systems described in section 4.3.
- This report details the methods of construction, test conditions and assessed results in accordance with AS 1530.4:2014.
- This report applies to wall systems exposed to fire from each side in accordance with the requirements of AS 1530.4:2014, where vertical elements must be exposed to heat from the direction required to resist fire exposure.
- This report has been prepared based on the fire resistance performance and condition of the systems at the time they were tested. Any deterioration of fire resistance performance due to external factors including but not limited to passage of time and exposure to elements – is not considered in the referenced assessment report.
- Jensen Hughes has provided this report on the fire performance of building elements in a controlled laboratory setting, strictly within the parameters allowed by the test standards and building regulations. The outcomes of this report are intended to assist in verifying the suitability of the product or system for practical use in specific applications.
- This report is only valid for the assessed systems and must not be used for any other purpose. Any changes with respect to size, construction details, loads, stresses, edge or end conditions – other than those identified in the referenced assessment report – may invalidate the findings of this report. If there are changes to the system, a reassessment will need to be done by an Accredited Testing Laboratory (ATL) that is accredited to the same nominated standards of the referenced assessment report.
- This report has been prepared using information provided by others. Jensen Hughes has not verified the accuracy and/or completeness of that information and will not be responsible for any errors or omissions that may have been incorporated into the referenced assessment report as a result.
- This report is based on the proposed systems being constructed under comprehensive quality control practices and following appropriate industry regulations and Australian Standards on quality of materials, design of structures, guidance on workmanship and expert handling, placing and finishing of the products on site. These variables are beyond the control and consideration of the referenced assessment report.
- If there are penetrations within 400 mm of the 150 mm uPVC pipe, the cavity must be either back blocked with plasterboard for 200 mm around the opening or steel noggins must be provided for the facings to be fixed onto them if the system is to achieve an FRL of -/120/120.

4. Description of the specimen and variations

4.1 Description of assessed systems

The tested and assessed systems consist of Promaseal FCW wall collars protecting uPVC and HDPE service penetrations in rigid and flexible wall systems.

4.2 Referenced test data

The assessment of the variations to the tested systems and the determination of the performance are based on the results of the fire tests documented in the reports summarised in Table 4. Further details of the tested systems are included in Appendix B of the referenced report.

Table 4 Referenced test data

Report number	Test sponsor	Test date	Testing authority
WFRA F91622	*Fyreguard Pty Ltd	18 October 1995	Warrington Fire Research
WFRA F91633		4 December 1995	
FSP 0814		19 December 2001	CSIRO
WFRA F91731.3		30 June 1998	Warrington Fire Research
FSRG A-13-816	Promat Australia Pty Ltd	21 March 2013	Fire Science Research Group (FSRG)
FSRG A-13-819		28 February 2013	
FSRG A-13-823A		15 May 2013	
FSRG A-14-879A		12 June 2014	
FSRG A-15-1011A		21 September 2015	
FSRG A-15-1038		21 January 2015	
FSRG A-12-775a		16 August 2012	
FSRG A-12-777		30 August 2012	
EWFA 2798800.1	Speedpanel (VIC) Pty Ltd	29 January 2013	Exova Warringtonfire
* The original sponsor of the test, Fyreguard Pty Ltd, is now named Promat Australia Pty Ltd.			

4.3 Variations to the tested systems

The tested systems and variations to those tested systems – together with the referenced standard fire tests – are described in Table 5.

Table 5 Variations to tested systems

No	Variation (or proposed detail)	Test standard	Reference test	Evidence of suitability	Governing requirements	Assessment classification (eg FRL, group number etc)
1	Assessment of the applicability of the results in accordance with AS 1530.4:2014 and AS 4072.1:2005. Assessment of the expected performance of Promaseal FCW fire collars protecting uPVC pipe penetrations in below separating elements: • Plasterboard partition wall with nominal thickness of 116 mm or 128 mm. The fire collars are to be identical to those described in tests WFRA F91622 and WFRA F91633, except the internal spring, are to be removed from the 80 mm size fire collar. • AAC with a nominal thickness of 75 mm as tested in FSRG A-13-816, FSRG A-14-879A and FSRG A-15-1011. • Solid plasterboard partition wall with nominal thickness of 48 mm (including 3×16 mm layers) as tested in FSRG A-13-823A. • Shaftliner with overall thickness of 90 mm (3×1800×600 mm sheets of Shaftliner 25 mm thick each with 2×13 mm fire rated plasterboard on unexposed side) as tested in FSRG A-13-819 and 96 mm (proposed). Masonry and concrete with a thickness not less than 128mm.	Test is to older revisions of AS 1530.4 and there are variations to the tested system components/details	WFRA F91731.3 (AS 1530.4:1997), WFRA F91622 and WFRA F91633 (in accordance with AS 1530.4:1990) FSRG A-13-819, FSRG A-13-816, FSRG A-14-879A, FSRG A-15-1011 and FSRG A-15-1038, FSRG A-13-823A (in accordance with AS 1530.4:2005)	A5G3(1)(d)	S1C2(b) and S1C2(c)	FRL

No	Variation (or proposed detail)	Test standard	Reference test	Evidence of suitability	Governing requirements	Assessment classification (eg FRL, group number etc)
2	Assessment of the applicability of the results in accordance with AS 1530.4:2014 and AS 4072.1-2005. Assessment of the expected performance of Promaseal FCW fire collars protecting HDPE pipe penetrations in below separating elements: • Plasterboard partition wall with nominal thickness of 128 mm. The fire collars are to be similar to those described in tests WFRA F91622 and WFRA F91633 except the collar diameters are adjusted to suit the pipe outside diameters, the internal springs are not fitted on any collar sizes and the intumescent thickness shall be 12 mm. • AAC with a nominal thickness of 75 mm as tested in FSRG A-15-1038 and FSRG A-15-1011. Masonry and concrete with a thickness not less than 128mm.	Test is to older revisions of AS 1530.4 and there are variations to the tested system components/details	F91622 and F91633 (in accordance with AS 1530.4:1990) FSP 0814 (in accordance with AS 1530.4:1997) FSRG A-13-816, FSRG A-14-879A, FSRG A-15-1011 and FSRG A-15-1038 (in accordance with AS 1530.4:2005)	A5G3(1)(d)	S1C2(b) and S1C2(c)	FRL
3	Assessment of the applicability of the results in accordance with AS 1530.4:2014 and AS 4072.1-2005. Assessment of the expected performance of Promaseal FCW fire collars protecting 40-100 mm uPVC and HDPE pipe penetrations using construction methods in EWFA2798800.1, FSRG A-12-775a and FSRG A-12-777.	Test is to older revisions of AS 1530.4 and there are variations to the tested system components/details	EWFA 2798800.1, FSRG A-12-775a, FSRG A-12-777	A5G3(1)(d)	S1C2(b) and S1C2(c)	FRL

4.4 Test standard and assessment standards

AS 1530.4:2014 sets out procedures and methods for fire tests on building materials, components, structures, and fire-resistance tests for elements of construction. Section 10 discusses the procedures and methods for service penetrations and control joints.

AS 4072.1:2005 sets out the minimum requirements for the construction, installation and application of fire resistance tests to sealing systems around penetrations through separating building elements that are required to have an FRL.

4.5 Schedule of components

Table 6 outlines the schedule of components for the assessed systems. We have based this schedule of components from the reference test reports shown in Table 4.

Table 6 Schedule of components of assessed systems

Item	Description	
Partition wall / separating element		
1	Item	Steel Stud Promina plasterboard partition wall
	Description	1 × 9 mm layer of Promina plasterboard faced to both sides of a 50 mm steel stud. Each stud was faced over with a 100 mm wide strip of 9 mm Promina plasterboard – Refer to Figure 1 and Figure 2 for details.
	Size	3200 mm wide × 3200 mm long × 86 mm thick
	Orientation	Vertical
2	Item	Steel / timber stud plasterboard partition wall
	Description	2 × 13 mm or 2 × 16 mm layers of plasterboard faced to both sides of a 64 mm steel / timber stud tested or assessed to -/120/120 in accordance with AS 1530.4:2014 – Refer to Figure 3 and Figure 4 for details.
	Size	1100 mm wide × 1100 mm long × 128 mm thick
	Orientation	Vertical
3	Item	Steel Stud plasterboard partition wall
	Description	3 × 16 mm layers of fire rated plasterboard faced to both sides of a metal frame – Refer to Figure 5 for details.
	Size	1800 mm × 1200 mm – 48 mm thick
	Orientation	Vertical
4	Item	Hebel power panel separating element
	Description	2 × 1800 × 600 and 3 × 1800 × 600 Hebel power panel blocks of 75 mm thickness glued together with CSR Hebel adhesive using a 6 mm deep notched trowel – refer Figure 6 to Figure 10 for details.
	Size	600 mm wide × 1800 mm long × 75 mm (overall thickness)
	Orientation	Vertical
5	Item	Shaftliner separating element
	Description	3 × 1800 × 600 sheets of Shaftliner 25 mm thick each fitted within a metal frame – Refer to Figure 11 for details. The unexposed side of the system was fitted with two layers of 13 mm fire rated plasterboard Overall thickness of specimen is 90 mm (tested) and 96 mm (proposed).
	Size	600 mm wide × 1800 mm long × 75 mm thick
	Orientation	Vertical

Item	Description	
6	Item	Speedpanel wall
	Description	Aerated concrete core encased in a galvanised steel skin
	Orientation	Vertical
	Thickness	51 mm, 64 mm and 78 mm
Fire-stopping protections		
Sealants		
7	Product name	Promaseal mastic
	Density	NA
	Installation	As tested
8	Product name	Non-fire rated silicon sealant
	Density	NA
	Installation	As tested
9	Product name	Promaseal® -AG acrylic intumescent sealant
	Density	NA
	Installation	As tested
10	Product name	Fyreseal Mastic sealant
	Density	NA
	Installation	As tested
11	Product name	Promaseal A Acrylic sealant
	Density	NA
	Installation	As tested
12	Product name	Promaseal -A Acrylic sealant
	Density	NA
	Installation	As tested
13	Product name	Hilti CP 606 Mastic
	Installation	As tested
14	Product name	Promatect 100
	Thickness	25 mm
	Installation	As tested
Backing Rod		
14	Item name	IBS backing rod
	Product name	Promaseal IBS
	Size	100 mm wide × 10 mm thick
	Density	Nominal 306 kg/m^3
	Installation	As tested
Fire collars		
15	Item name	Promaseal fire collar
	Product name	Promaseal FCW Wall Collar

<table>
<tr><th>Item</th><th>Description</th><th></th></tr>
<tr><td></td><td>Intumescent details</td><td>Grafitex cut out 9 × 9 mm to accommodate springs – refer to Figure 12 for details.</td></tr>
<tr><td></td><td>Collar details</td><td>Outer casing of 1 mm Zinc steel. Springs are fitted to collar sizes of 150 mm, 100 mm and 80 mm.
Springs on 80 mm size fire collars are proposed to be removed for uPVC pipes (assessment 1). Internal springs are not to be fitted for fire collars protecting HDPE pipe penetrations through plasterboard partition walls, and the intumescent thickness is to be 12 mm for HDPE pipes (assessment 2).
<table>
<tr><th colspan="4">Canister details (all dimensions in mm)</th></tr>
<tr><td>Size</td><td>Inner diameter</td><td>Outer diameter</td><td>Grafitex</td></tr>
<tr><td>40</td><td>45</td><td>70</td><td>12</td></tr>
<tr><td>50</td><td>58</td><td>84</td><td>12</td></tr>
<tr><td>65</td><td>71</td><td>97</td><td>12</td></tr>
<tr><td>80</td><td>85</td><td>110</td><td>18</td></tr>
<tr><td>100</td><td>113</td><td>150</td><td>18</td></tr>
<tr><td>150</td><td>163</td><td>200</td><td>18</td></tr>
</table></td></tr>
<tr><td></td><td>Installation</td><td>As tested</td></tr>
<tr><td>16</td><td>Item name</td><td>Promaseal Fire collar</td></tr>
<tr><td></td><td>Product name</td><td>Promaseal FCW 50</td></tr>
<tr><td></td><td>Intumescent details</td><td>As manufactured.</td></tr>
<tr><td></td><td>Collar details</td><td>As manufactured</td></tr>
<tr><td></td><td>Density</td><td>Nominal 970 kg/m^3 as tested</td></tr>
<tr><td></td><td>Installation</td><td>Inserted centrally within the Hebel wall panel, protruding 22 mm out of the wall on both sides. Annular gap sealed with Promaseal A Acrylic sealant (item 11).</td></tr>
<tr><td>17</td><td>Item name</td><td>Promaseal Fire collar</td></tr>
<tr><td></td><td>Product name</td><td>Promaseal FCW 100</td></tr>
<tr><td></td><td>Intumescent details</td><td>As manufactured.</td></tr>
<tr><td></td><td>Collar details</td><td>As manufactured</td></tr>
<tr><td></td><td>Density</td><td>Nominal 1015 kg/m^3 as tested</td></tr>
<tr><td></td><td>Installation</td><td>Inserted centrally within the Hebel wall panel protruding 22 mm out of the wall on both sides. Annular gap sealed with Promaseal A Acrylic sealant (item 11).</td></tr>
<tr><td>18</td><td>Item name</td><td>Promaseal Fire collar</td></tr>
<tr><td></td><td>Product name</td><td>Promaseal FCW 100</td></tr>
<tr><td></td><td>Intumescent details</td><td>As manufactured</td></tr>
<tr><td></td><td>Collar details</td><td>As manufactured</td></tr>
<tr><td></td><td>Density</td><td>Nominal 990 kg/m^3 as tested</td></tr>
<tr><td></td><td>Installation</td><td>Inserted within the Hebel wall panel wall protruding 30 mm from unexposed side and flush with the exposed side. Annular gap was sealed with Promaseal A Acrylic sealant (item 11). Sealant was also applied 30 mm on the collar and the wall.</td></tr>
</table>

Item	Description	
19	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 40
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted within the Hebel wall panel wall protruding 30 mm from unexposed side and flush with the exposed side. Annular gap was sealed with Promaseal A Acrylic sealant (item 11). Sealant was also applied 30 mm on the collar and the wall.
20	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 100
	Intumescent details	As manufactured.
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted centrally within the Hebel wall panel wall protruding 22 on both sides of the wall. Promaseal IBS (item 12) was used to wrap the protruding ends of the collar on both sides, with Promaseal A Acrylic sealant (item 11) used to seal the gaps.
21	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 65
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted centrally within the Hebel wall panel wall protruding 22 on both sides of the wall. Promaseal IBS (item 12) was used to wrap the protruding ends of the collar on both sides, with Promaseal A Acrylic sealant (item 11) used to seal the gaps.
22	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 50
	Intumescent details	As manufactured.
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted centrally within the Hebel wall panel wall protruding 22 on both sides of the wall. Promaseal IBS (item 12) was used to wrap the protruding ends of the collar on both sides, with Promaseal A Acrylic sealant (item 11) used to seal the gaps.
23	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 100
	Intumescent details	As manufactured

Item	Description	
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted centrally within the separating element, protruding 20 mm on both sides of the wall. Promaseal -A Acrylic sealant (item 11) used to seal the gaps.
24	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 40
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 1015 kg/m^3 as tested
	Installation	Inserted centrally within the separating element protruding 36 mm on both sides of the wall. Promaseal A Acrylic sealant (item 11) used to seal the gaps.
25	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 100
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted within the separating element flush with the unexposed side and protruding 72 mm on exposed side of the wall. Promaseal A Acrylic sealant (item 11) used to seal the gaps.
26	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 40
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 990 kg/m^3 as tested
	Installation	Inserted within the separating element flush with the unexposed side and protruding 72 mm on exposed side of the wall. Promaseal A Acrylic sealant (item 11) used to seal the gaps.
27	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 100
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 970 kg/m^3 as tested
	Installation	Inserted within the separating element flush with the exposed side and protruding 30 mm on exposed side of the wall. Promaseal A Acrylic sealant (item 11) used to seal the annular gap.
28	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 40

Item	Description	
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 970 kg/m^3 as tested
	Installation	Inserted within the separating element flush with the exposed side and protruding 30 mm on exposed side of the wall. Promaseal A Acrylic sealant (item 11) used to seal the annular gap.
29	Item name	Promaseal Fire collar
	Product name	Promaseal FCW 100
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 970 kg/m^3 as tested
	Installation	Inserted flush with the unexposed side and thickened around the penetration by 4 layers of 20 mm thick VERMICULUX. Promaseal A Acrylic sealant (item 11) used to seal the annular gap.
30	Item name	Promaseal Fire collar
	Product name	Promaseal UniCollar
	Intumescent details	As manufactured
	Collar details	As manufactured
	Density	Nominal 870 kg/m^3 as tested
	Installation	Inserted within the separating element as tested.
Wrap		
31	Product name	Promaseal Wall Wrap
	Size	11 mm thick
	Material density	NA
	Installation	3 layers of 40 mm wide strips wrapped around pipe and configured in series as tested – Refer to Figure 2 for details.
Service penetrations		
32	Item type	uPVC pipes with below nominal outer diameters: Ø40 mm Ø50 mm Ø65 mm Ø80 mm Ø100 mm Ø150 mm
	Product name	As manufactured/tested.
33	Item type	HDPE pipes with below nominal outer diameters: Ø40 mm Ø50 mm Ø65 mm

Item	Description	
		Ø80 mm Ø100 mm
	Product name	As manufactured/tested.

Figure 1 to Figure 15 show the assessed systems.

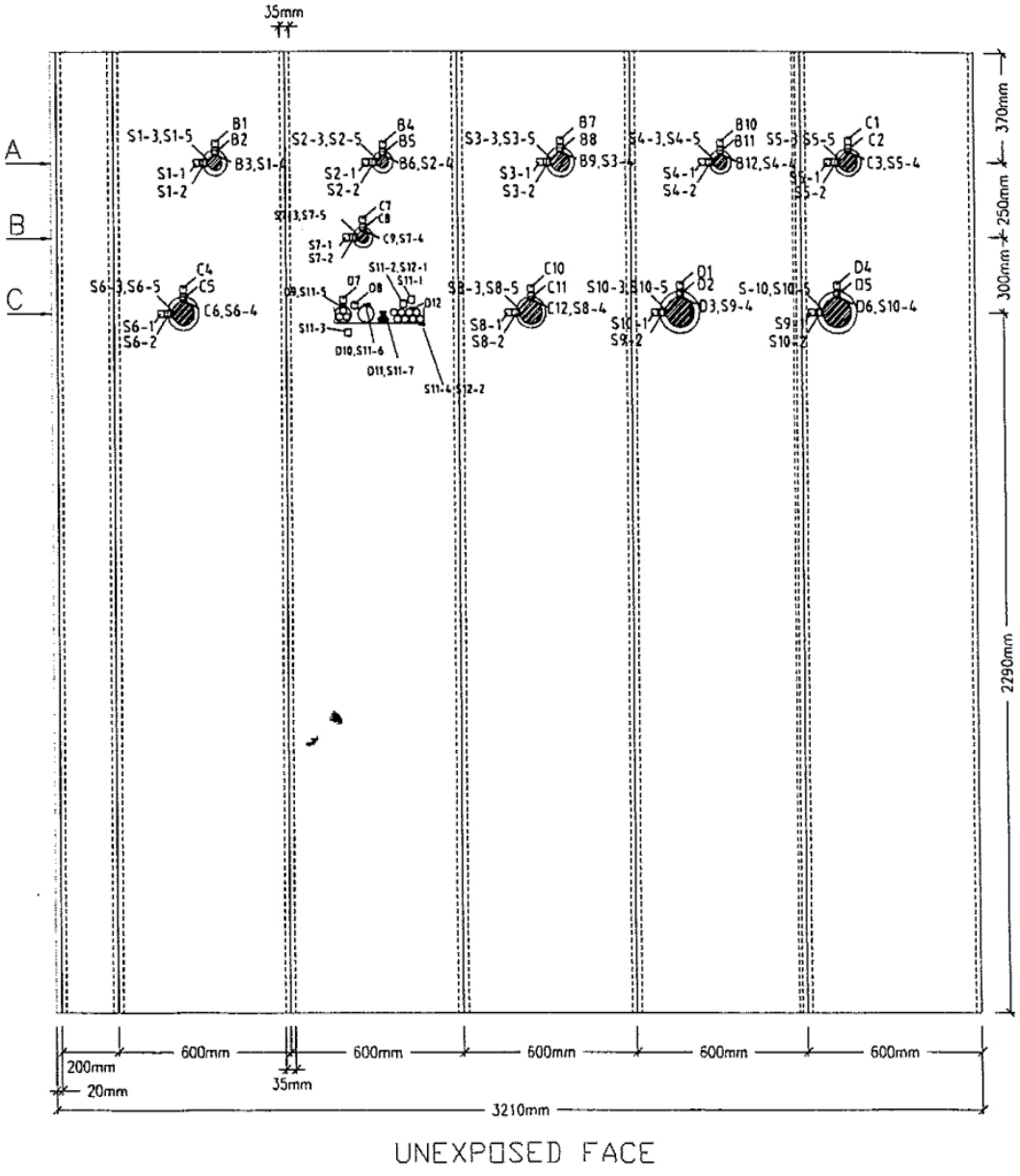


Figure 1 Test specimen (unexposed side) and cut hole locations as shown in WFRA F91731.1 – dimensions in mm

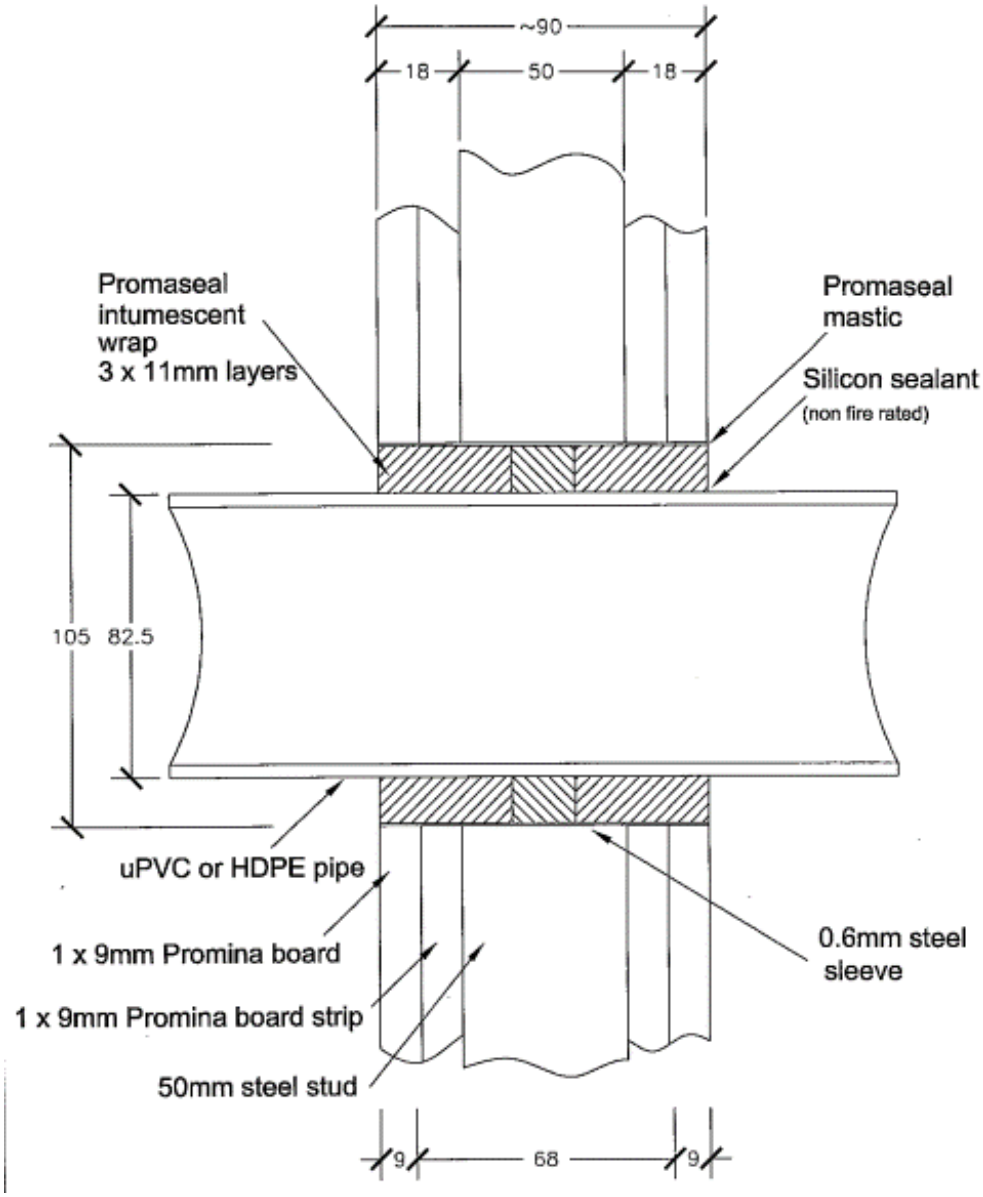
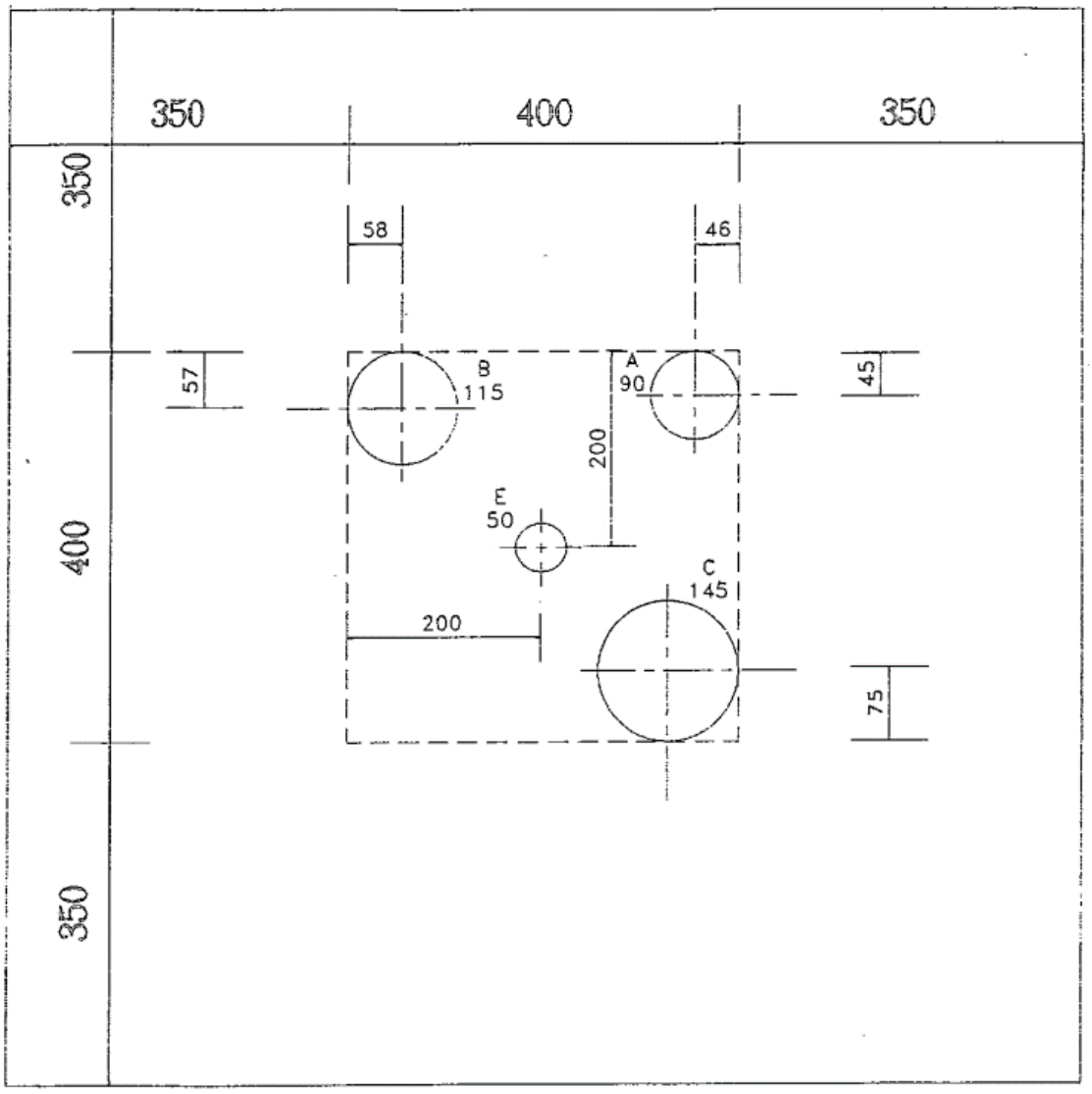


Figure 2 Cross section of partition wall and pipe penetration as shown in WFRA F91731.3 – dimensions in mm

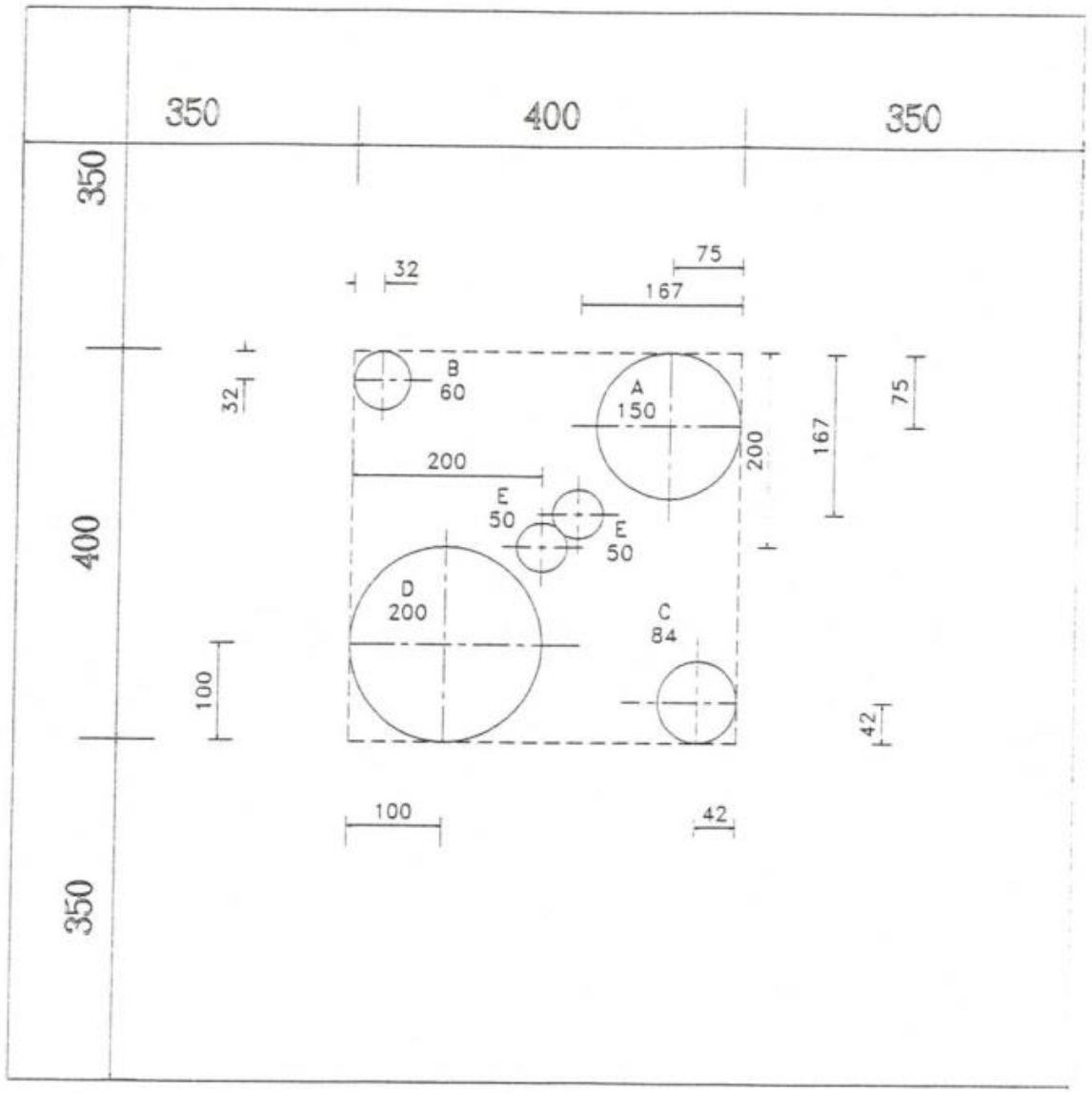


Description

Two 16 mm "Fyrchek" boards each side of 64 mm steel stud.

A 40 mm I.D. uPVC pipe "Wall Collar" no spring
B 65 mm I.D. uPVC pipe "Wall Collar" no spring
C 80 mm I.D. uPVC pipe "Wall Collar" with spring
E 25 mm conduit "Grafitex" to depth of 2 x 16 mm "Fyrchek" boards on both faces

Figure 3 Plan view of test specimen and cut hole locations as shown in WFRA F91622 – dimensions in mm



Description

Two 16 mm "Fyrchek" boards each side of 64 mm steel stud.

A 100 mm I.D. uPVC pipe "Wall Collar" with spring
B 19 mm O.D. copper pipe with 9.5 Aeroflex
C 50 mm I.D. uPVC pipe "Wall Collar" no spring
D 150 mm I.D. uPVC pipe "Wall Collar" with spring
E 32 mm O.D. XLPE pipe and 19 mm copper pipe with "Kemlag" green rubber insulation

Figure 4 Plan view of test specimen and cut hole locations as shown in WFRA F91633 – dimensions in mm

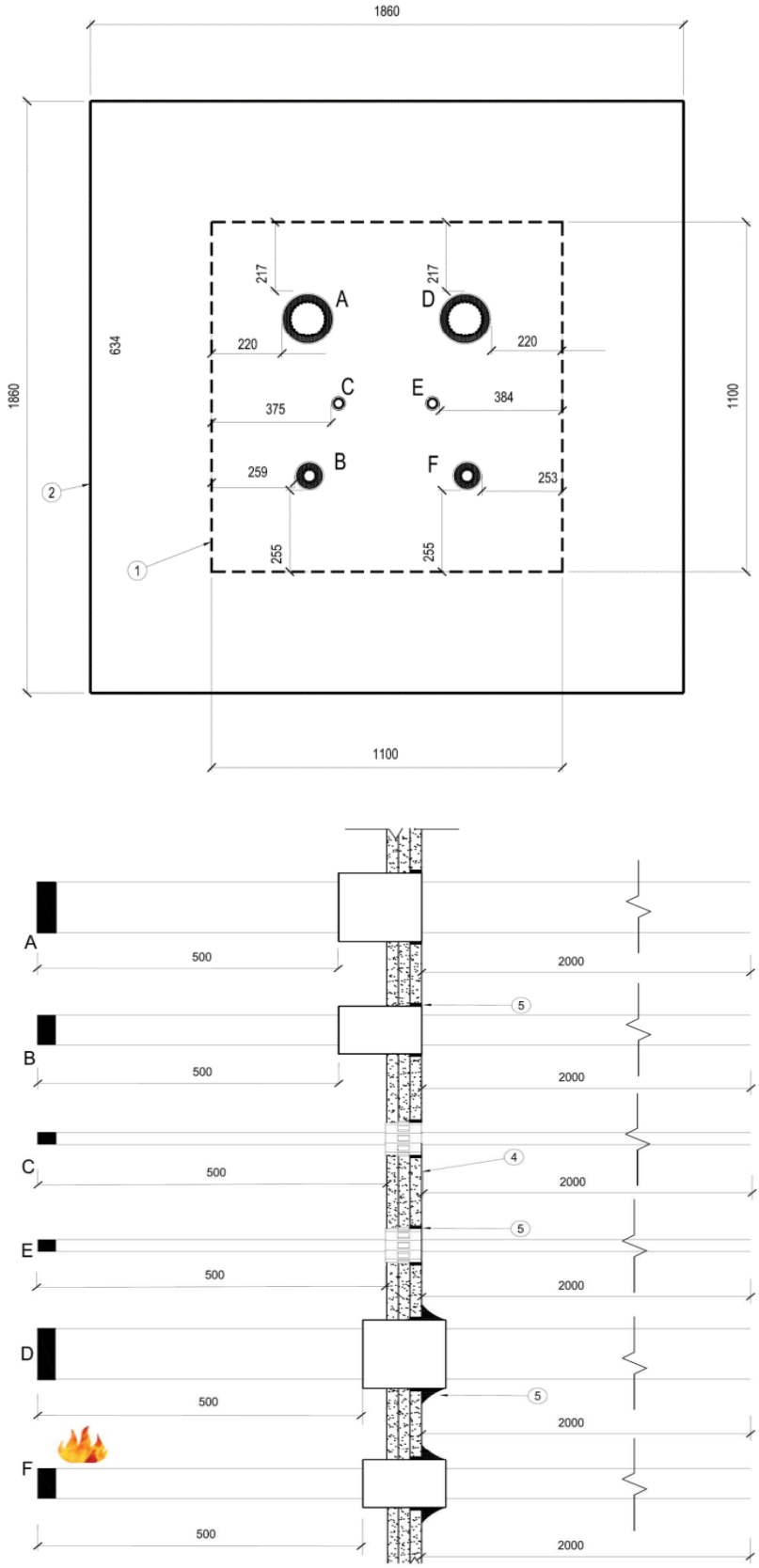


Figure 5 Plan view and cross section of test specimen and cut hole locations as shown in FSRG A-13-823A – dimensions in mm

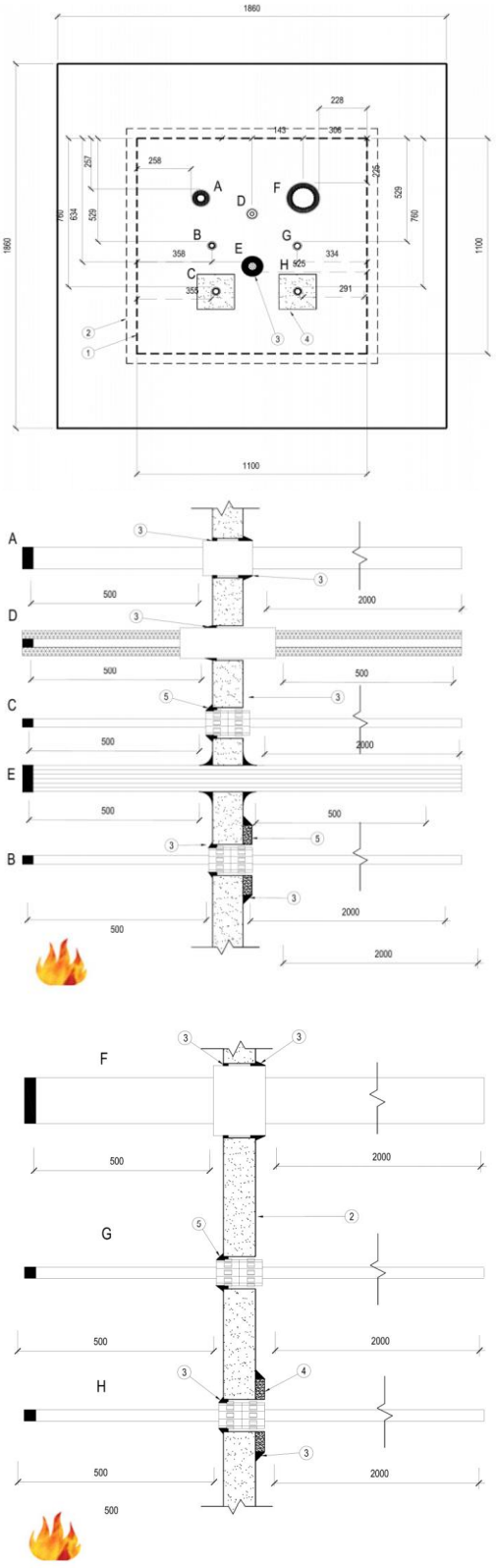


Figure 6 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-13-816 – dimensions in mm

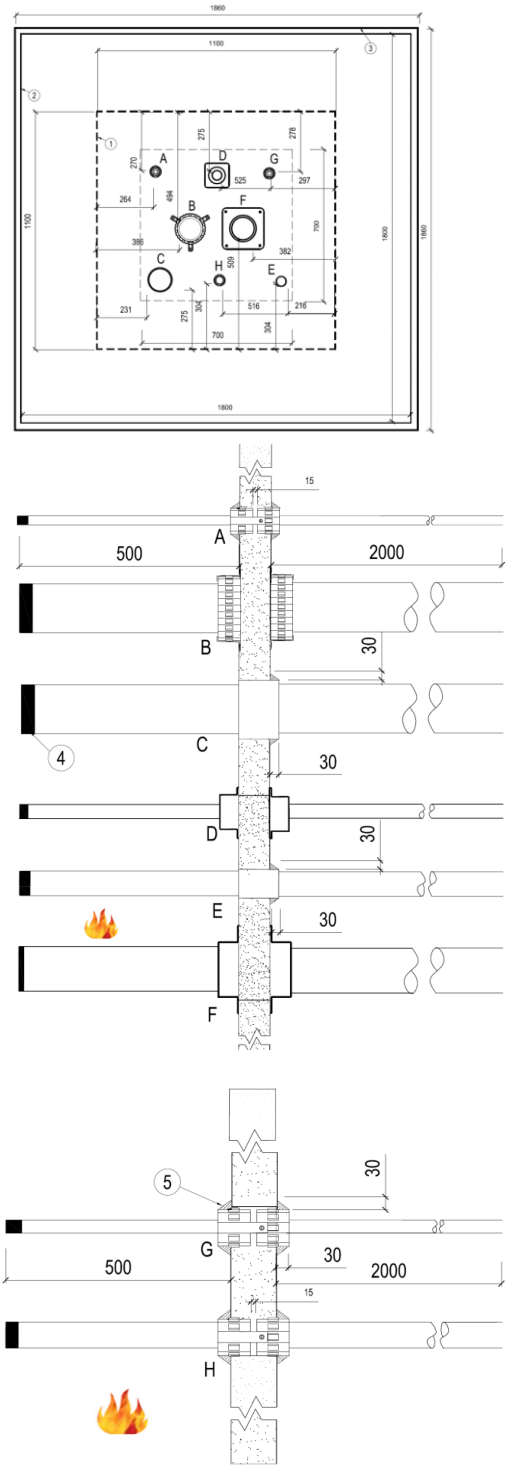


Figure 7 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-14-879A – dimensions in mm

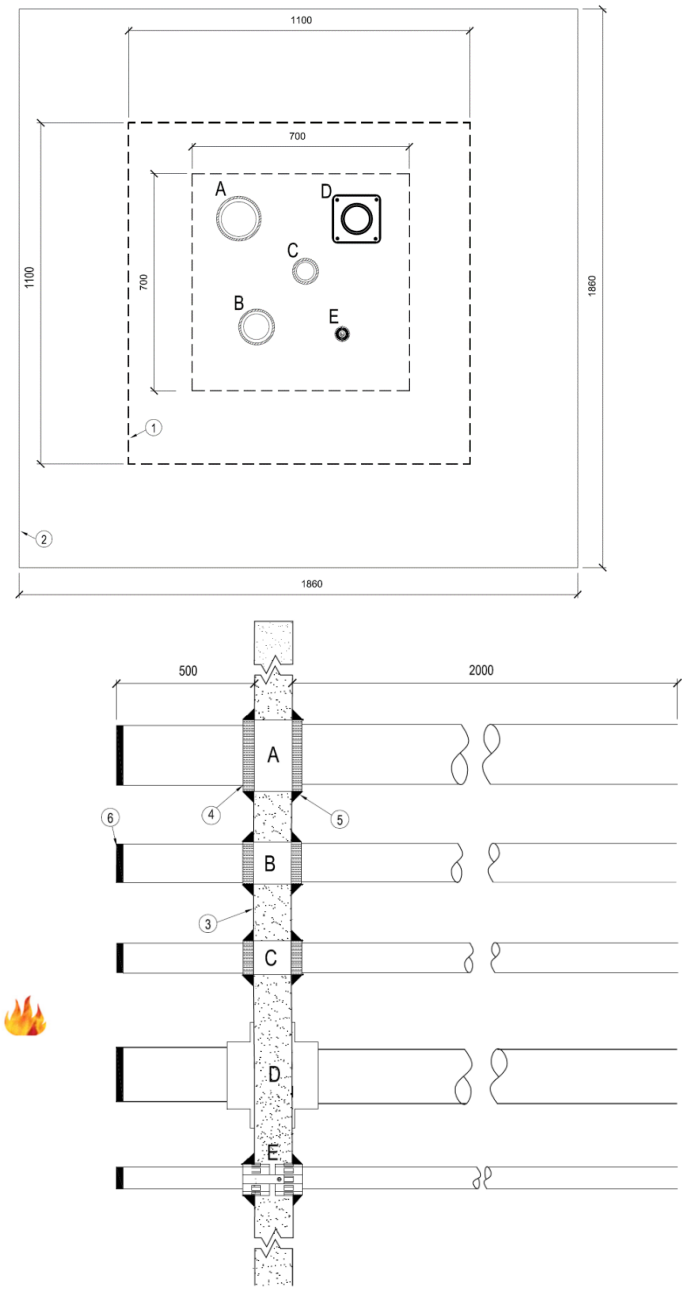


Figure 8 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-15-1011A – dimensions in mm

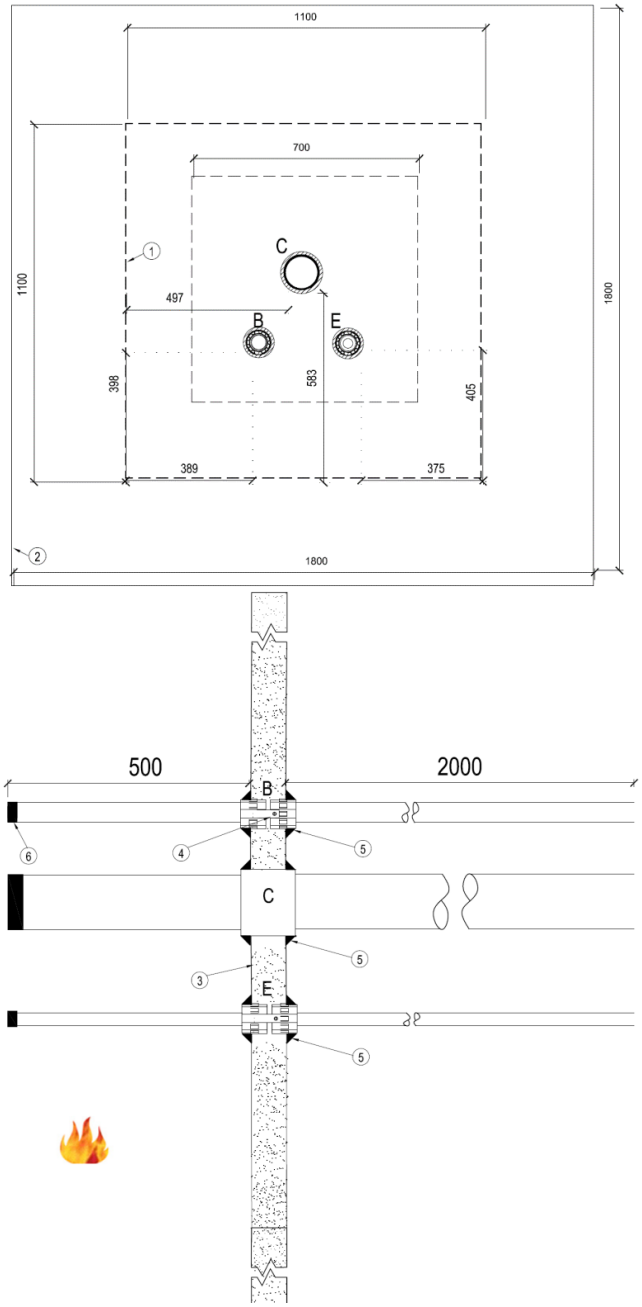


Figure 9 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-15-1038 – dimensions in mm

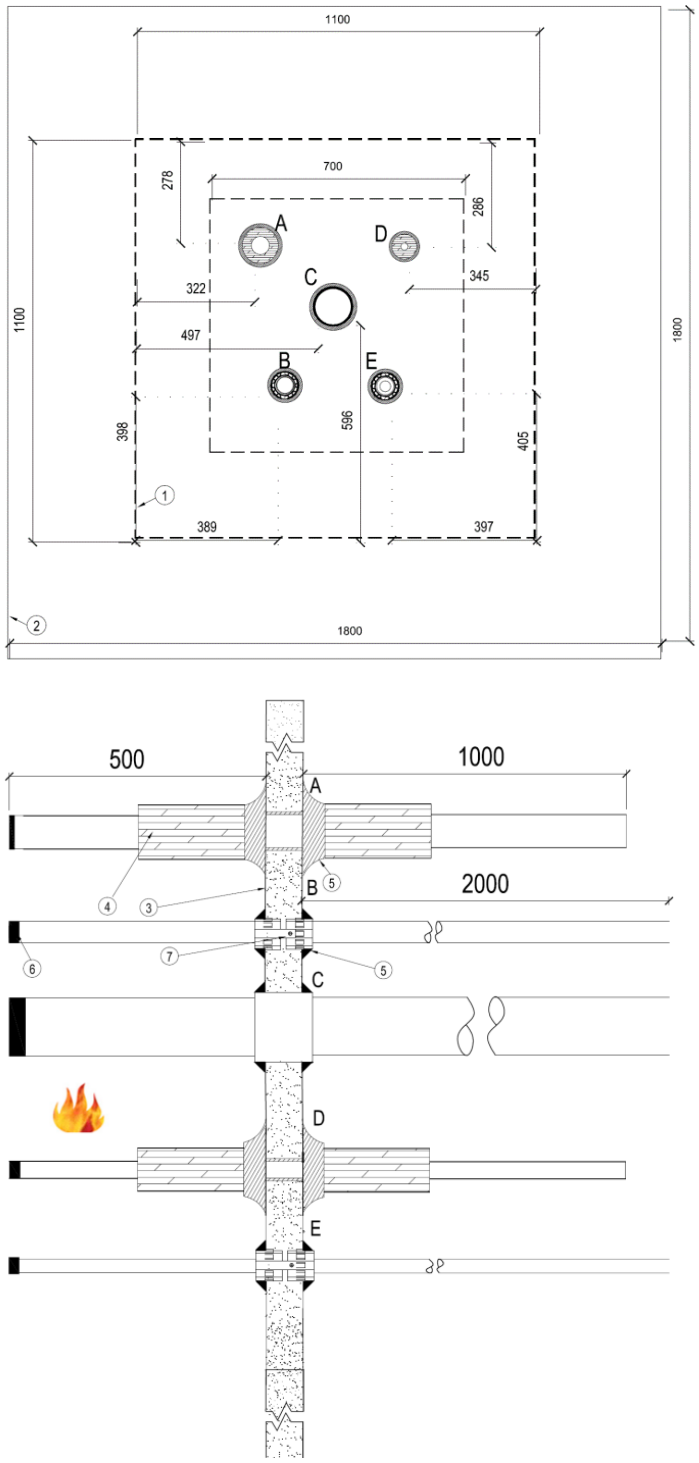


Figure 10 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-15-951A – dimensions in mm

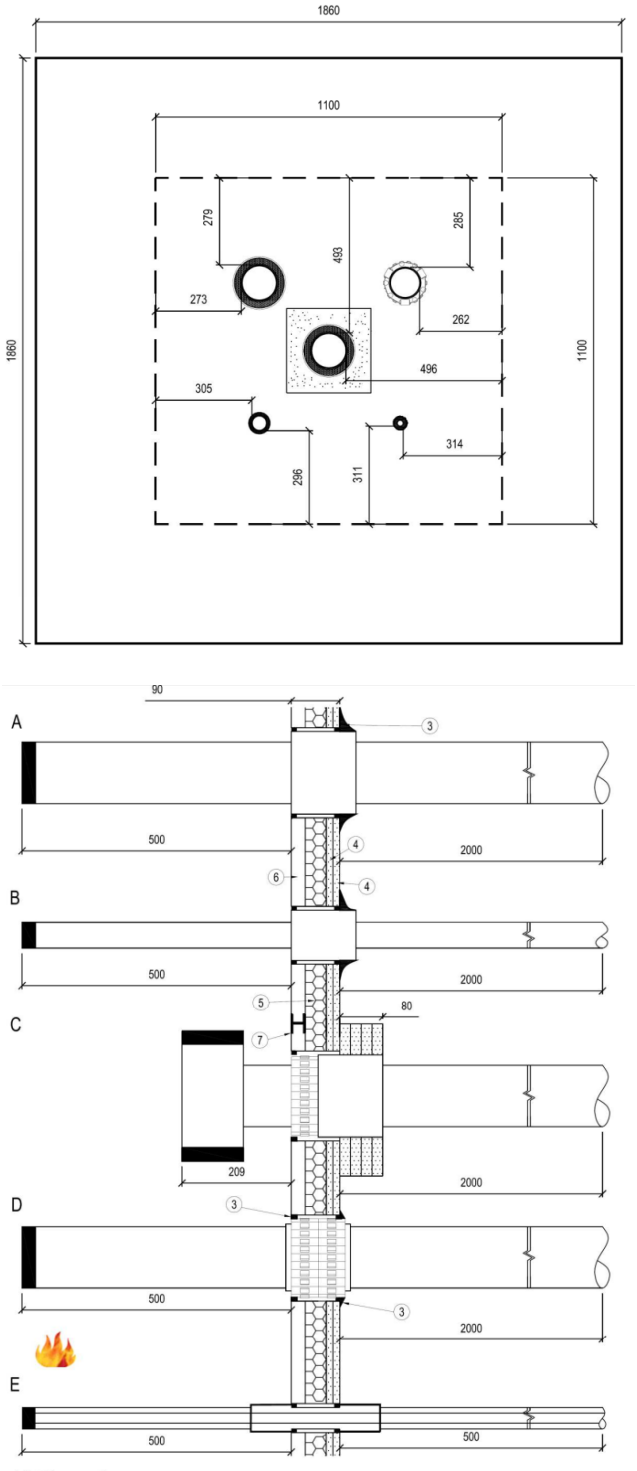
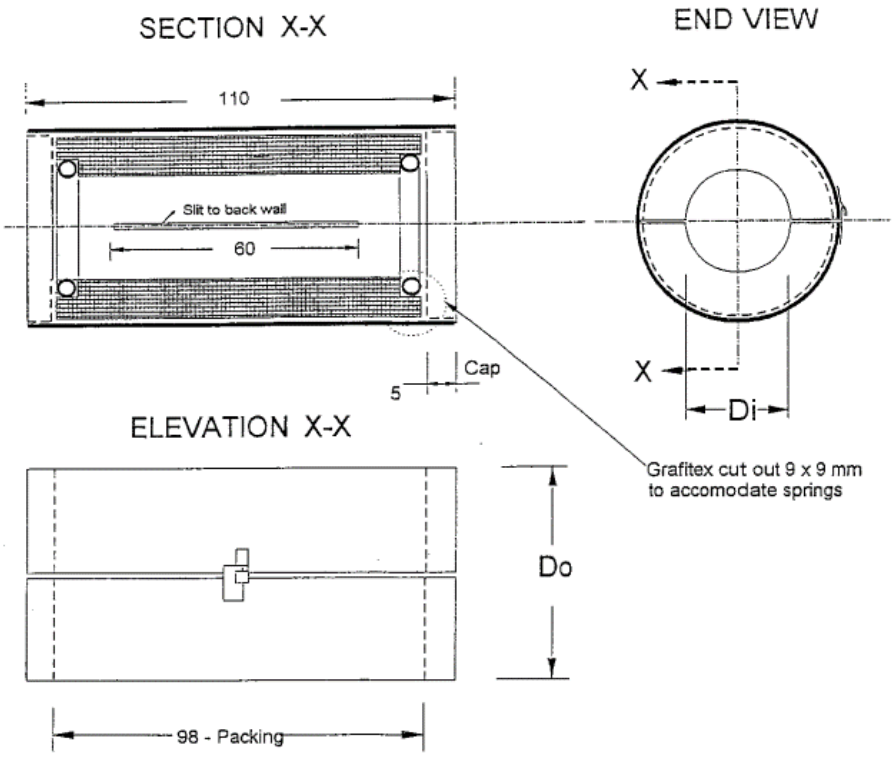


Figure 11 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-15-951A – dimensions in mm



MATERIAL:

Body 0.8 mm Zincseal
End Caps 0.8 mm do. Perf Lockers No. P181

Springs fitted to sizes 150, 100 and 80 only

Springs from 0.036" (0.91mm) SS wire, Coil O.D 6.5 mm.
End loops full turn bent out 90 deg. parallel to body
Stretch formers from 3.2 mm dia PVC welding rod

Pipe Size	Body Length	Stretched length
150	270	540
100	190	380
80	145	290

CANISTER DIMENSIONS

Size	Di	Do	Graf
40	45	70	12
50	58	84	12
65	71	97	12
80	85	110	18
100	113	150	18
150	163	200	18

Figure 12 Internally mounted Fyreguard wall collar details as shown in WFRA 91622 and WFRA 91633 – dimensions in mm

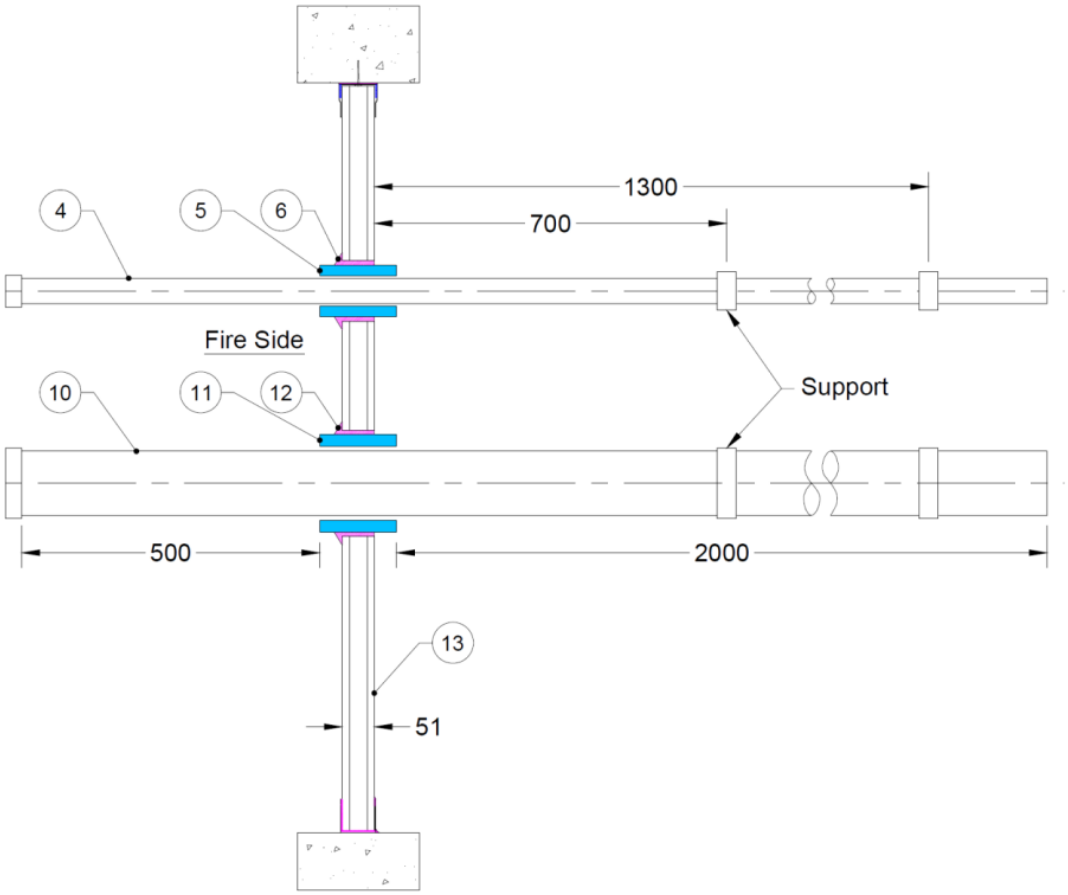


Figure 13 Plan view and cross sections of test specimen and cut hole locations as shown in EWFA2798800.1 – dimensions in mm

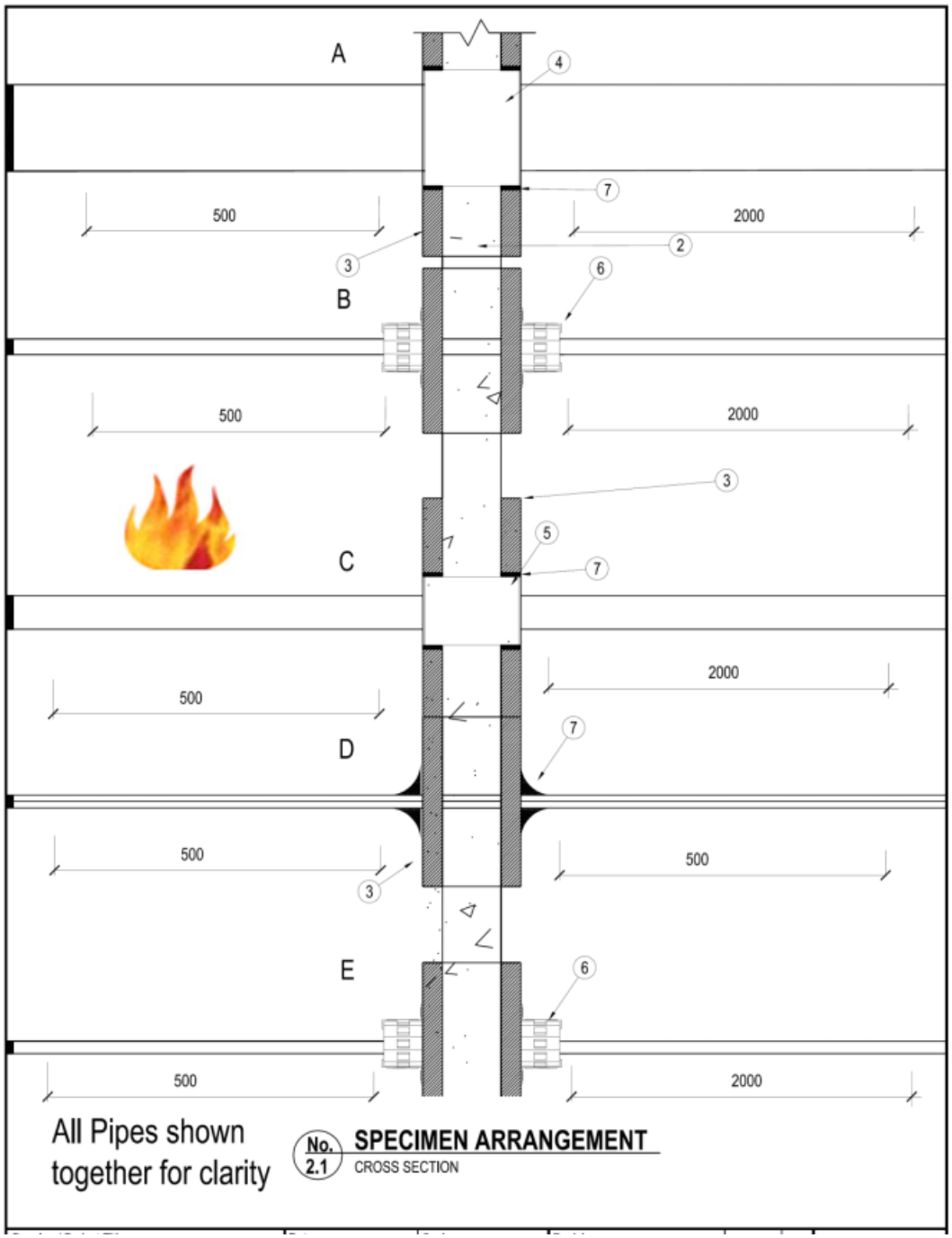


Figure 14 Plan view and cross sections of test specimen and cut hole locations as shown in FSRG A-12-775a – dimensions in mm

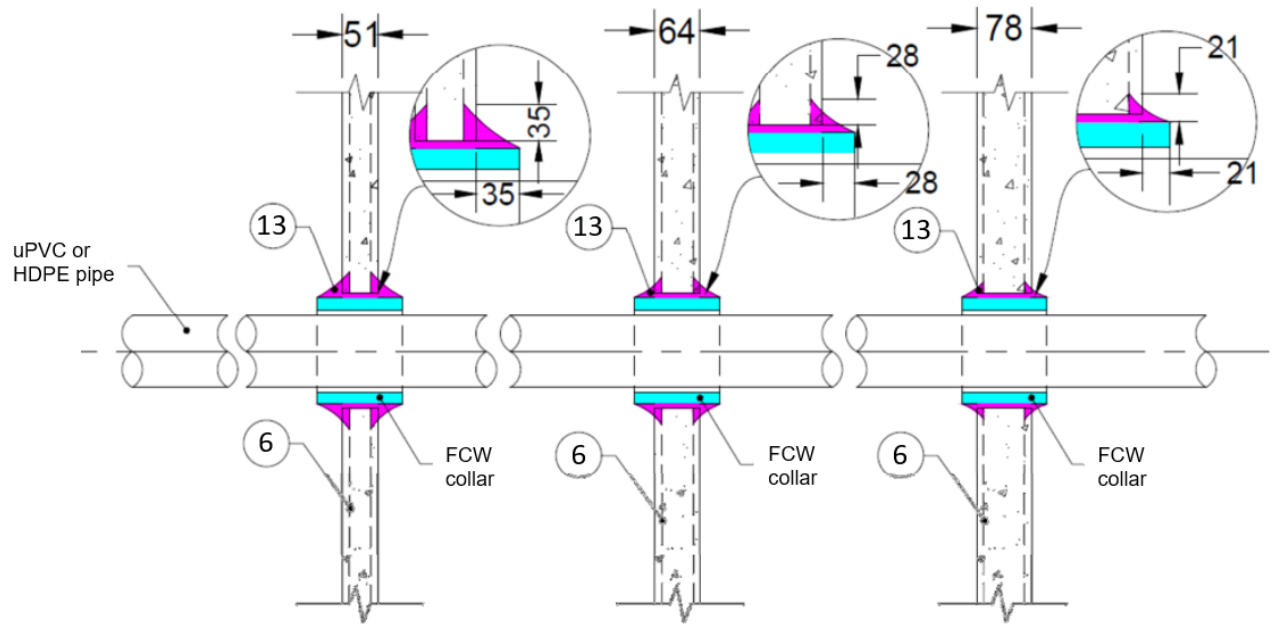


Figure 15 Proposed construction of uPVC and HDPE pipe protected with FCW collar in Speedpanel wall.

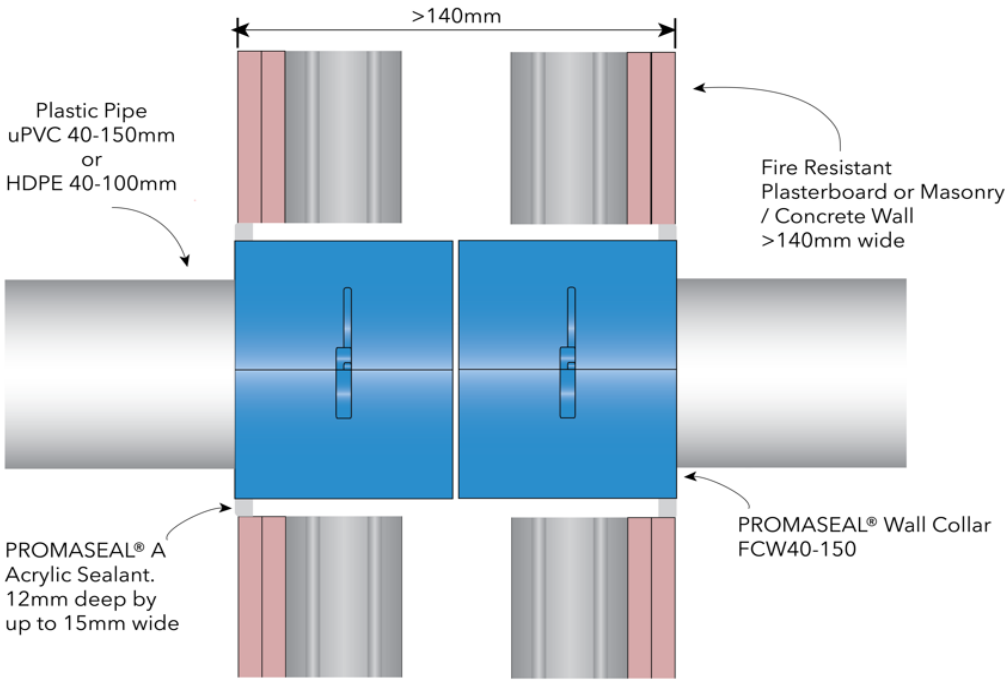


Figure 16 Proposed construction of FCW collars in walls thicker than 140 mm

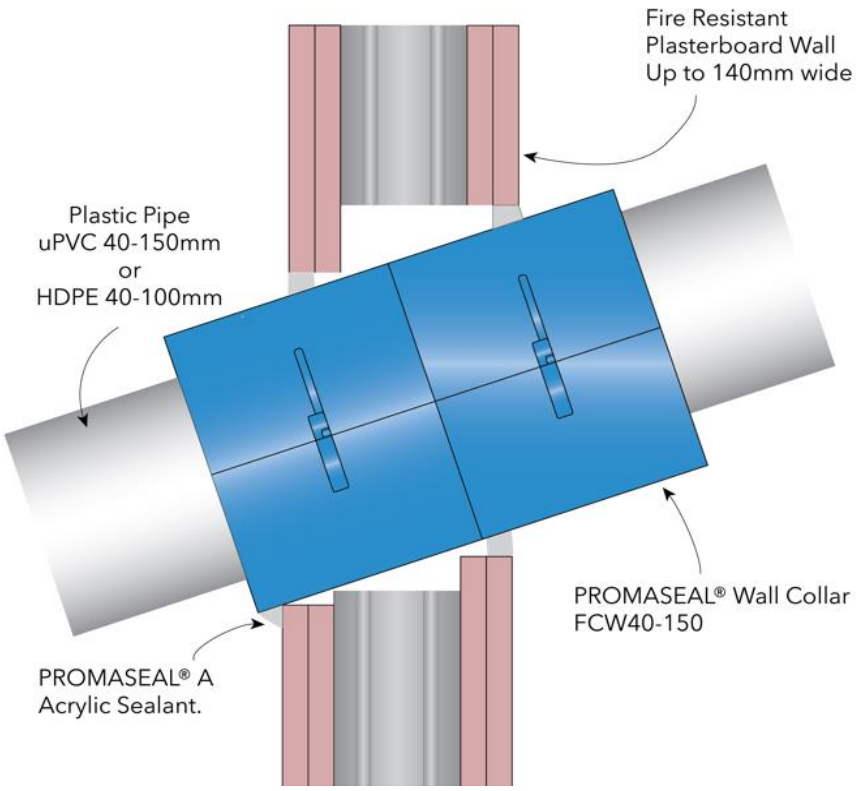


Figure 17 Proposed construction of angled FCW collars in plasterboard walls

5. Conclusion

Details of the assessment and discussion are only available in the referenced main assessment report. It has been concluded that FCW wall collars protecting uPVC and HDPE pipes in various separating elements will perform as per the FRLs listed in

Table 1 and Table 2 and Figure 1 to Figure 17.

6. Validity

Jensen Hughes does not endorse the tested or assessed products and systems in any way. The conclusions of the referenced assessment may be used to directly assess fire resistance, but it should be recognised that a single test method will not provide a full assessment of fire resistance under all conditions.

Due to the nature of fire 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.

This report is based on test data, information and experience available at the time of preparation. If contradictory evidence becomes available to the assessing authority, the assessment will be unconditionally withdrawn and the report sponsor will be notified in writing. Similarly, the assessment should be re-evaluated, if the assessed construction is subsequently tested since actual test data is deemed to take precedence.

The sponsor is responsible for formally notifying Jensen Hughes of any additional testing performed on their product/system. This obligation applies regardless of where the test was conducted, the results of the test, or whether it was initially considered part of Jensen Hughes' ongoing assessment. The primary goal of this notification is to allow Jensen Hughes to review the changes and determine whether they require re-evaluation or re-testing to determine whether the changes have affected the product's performance. It is important that the client promptly notify Jensen Hughes if any such changes are implemented.

The procedures for the conduct of tests and the assessment of test results are subject to constant review and improvement. The sponsor is therefore recommended that the referenced assessment report be reviewed on, or before, the stated expiry date.

This report represents our opinion about the performance of the proposed systems that is expected to be demonstrated when subjected to test conditions in accordance with AS 1530.4:2014, based on the evidence referred to in the referenced assessment report.

This report is provided to Promat Australia Pty Ltd for their own specific purposes. This report may be used as evidence of suitability in accordance with the requirements of the relevant National Construction Code. Building certifiers and other third parties must determine the suitability of the systems described in the referenced assessment report for a specific installation.