AGNITEK PTY LTD

REGULATORY INFORMATION REPORT

Test standard: Sections 2 and 10 of AS 1530.4:2014
Reference Standard: AS 4072.1-2005 AMDT 1 (Rec:2016)
Test sponsor: Agnitek Pty Ltd
Products: AGNI-Cast In collars on uPVC pipes with sockets and AGNI-Collar on HDPE pipe with electrofusion coupling
Job number: FRT251100
Revision: RIR1.0
Test date: 30 June 2025

JENSEN HUGHES

Accredited for compliance with ISO/IEC 17025 – Testing

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved. T1124 PAC

Quality management

Revision	Date	Revision description		
RIR1.0	24 July 2025	Initial issue.		
		Prepared	**Reviewed**	**Authorised**
		Jaxsen Lee	Anthony Rosamilia	Mandeep Kamal
				

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.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Executive summary

This report documents the findings of the fire resistance test of penetration systems in accordance with sections 2 and 10 of AS 1530.4:2014 with reference to AS 4072.1–2005 AMDT 1 (Rec:2016). The testing was done on 30 June 2025.

Jensen Hughes performed the test at the request of Agnitek Pty Ltd.

Table 1 provides details of the test assembly, and Table 2 provides a summary of the test specimen. A summary of the results is provided in Table 3.

Table 1 Test assembly

Item	Detail	
Separating element	150 mm thick concrete slab	
Nominal separating element size	Width	1900 mm
	Height	1900 mm
	Thickness	150 mm
Number of penetration systems	Seven	
Restraint conditions	Simply supported on all edges	

Table 2 Test specimen

Penetration system	Service	Fire-stopping protection	Aperture size (mm)
A	DN40 DWV uPVC Pipe with socket	AGNI-Cast In 40-50	Ø175 mm backfilled to install the cast in collar in the slab
B	DN50 DWV uPVC Pipe with socket	AGNI-Cast In 40-50	Ø175 mm backfilled to install the cast in collar in the slab
C	DN65 DWV uPVC Pipe with socket	AGNI-Cast In 65-80	Ø200 mm backfilled to install the cast in collar in the slab
D	DN80 DWV uPVC Pipe with socket	AGNI-Cast In 65-80	Ø200 mm backfilled to install the cast in collar in the slab
E	DN100 DWV uPVC Pipe with socket	AGNI-Cast In 100	Ø225 mm backfilled to install the cast in collar in the slab
F	DN150 DWV uPVC Pipe with socket	AGNI-Cast In 150	Ø300 mm backfilled to install the cast in collar in the slab
G	DN40 HDPE Pipe with electrofusion coupling	AGNI-Collar40	Ø48 mm

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Table 3 Test results

Penetration system	Criteria	Results	Fire resistance level (FRL)
A	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
B	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
C	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
D	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
E	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
F	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
G	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	

NOTE: The FRLs for the specimens only apply to the tested orientation. As the FRL was only determined for one direction, an FRL cannot be assigned for the other direction.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Table of contents

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

1.0 Introduction

This report documents the findings of the fire resistance test of penetration systems in accordance with sections 2 and 10 of AS 1530.4:2014 with reference to AS 4072.1–2005 AMDT 1 (Rec:2016). The testing was done on 30 June 2025.

Jensen Hughes performed the test at the request of the test sponsor listed in Table 4.

Table 4 Test sponsor details

Test sponsor	Address
Agnitek Pty Ltd	8 Clare Street Bayswater VIC 3153 Australia

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

2.0 Test specimen

2.1 Schedule of components

Table 5 describes the test specimen and lists the schedule of components. These were provided by the test sponsor and surveyed by Jensen Hughes.

All measurements were done by Jensen Hughes – unless indicated otherwise.

Detailed drawings of the test specimen are provided in Appendix A.

Table 5 Schedule of components

Item	Description		
Separating element (SE)			
SE	Item name	150 mm thick reinforced concrete floor slab	
	Supplier	Hendrikx concrete	
	Compressive strength	40 MPa (nominal)	
	Mesh details	SL 81 (nominal)	
	Aggregate size	14 mm (nominal)	
	Density	2420 kg/m^3 (nominal)	
	Overall size	1900 mm wide × 1900 mm long × 150 mm thick	
	Restraint conditions	Simply supported along all four edges	
	Installation	The slab was allowed to cure for a minimum of 120 days.	
Fire-stopping protections			
Fire collar			
1.	Item name	40 - 50 mm fire collar	
	Product name	AGNI-Cast In 40-50	
	Manufacturer	Agnitek Pty Ltd	
	Collar details	Outer diameter (of steel disc)	84 mm
		Inner diameter (of steel disc)	65 mm
		Outer diameter (of flange)	118 mm
		Height (uncut)	135 mm or 254 mm
		Number of fixing tabs	4
		Outer casing material	3D printed PP (polypropylene)
		Outer casing thickness	2 mm

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description		
	Intumescent details	Number of layers	2
		Width	53 mm
		Thickness	3.5 mm
		Density	1410 kg/m^3
	Installation	The cast in collar was installed at the centre of the core hole and back filled with concrete, which was then allowed to cure for seven days before the services were installed through the cast in collar. The protruding plastic section at the top of the cast in collar was cut flush with the separating element before the services were installed.	
2.	Item name	65 - 80 mm fire collar	
	Product name	AGNI-Cast In 65-80	
	Manufacturer	Agnitek Pty Ltd	
	Collar details	Outer diameter (of steel disc)	115 mm
		Inner diameter (of steel disc)	96 mm
		Outer diameter (of flange)	151 mm
		Height (uncut)	160 mm
		Number of fixing tabs	4
		Outer casing material	3D printed PP (polypropylene)
		Outer casing thickness	2 mm
	Intumescent details	Number of layers	2
		Width	53 mm
		Thickness	3.5 mm
		Density	1410 kg/m^3
	Installation	The cast in collar was installed at the centre of the core hole and back filled with concrete, which was then allowed to cure for seven days before the services were installed through the cast in collar. The protruding plastic section at the top of the cast in collar was cut flush with the separating element before the services were installed.	
3.	Item name	100 mm fire collar	
	Product name	AGNI-Cast In 100	
	Manufacturer	Agnitek Pty Ltd	
	Collar details	Outer diameter (of steel disc)	140 mm
		Inner diameter (of steel disc)	121 mm
		Outer diameter (of flange)	173 mm
		Height (uncut)	254 mm

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description		
		Number of fixing tabs	4
		Outer casing material	3D printed PP (polypropylene)
		Outer casing thickness	2 mm
		A rubber gasket was present inside the casing, above the intumescent.	
	Intumescent details	Number of layers	2
		Width	53 mm
		Thickness	3.5 mm
		Density	1410 kg/m^3
	Installation	The cast in collar was installed at the centre of the core hole and back filled with concrete, which was then allowed to cure for seven days before the services were installed through the cast in collar. The protruding plastic section at the top of the cast in collar was cut flush with the separating element before the services were installed.	
4.	Item name	150 mm fire collar	
	Product name	AGNI-Cast In 150	
	Manufacturer	Agnitek Pty Ltd	
	Collar details	Outer diameter (of steel disc)	211 mm
		Inner diameter (of steel disc)	182 mm
		Outer diameter (of flange)	246 mm
		Height (uncut)	254 mm
		Number of fixing tabs	6
		Outer casing material	3D printed PP (polypropylene)
		Outer casing thickness	2 mm
		A rubber gasket was present inside the casing, above the intumescent.	
	Intumescent details	Number of layers	4
		Width	53 mm
		Thickness	3.5 mm
		Density	1410 kg/m^3
	Installation	The cast in collar was installed at the centre of the core hole and back filled with concrete, which was then allowed to cure for seven days before the services were installed through the cast in collar. The protruding plastic section at the top of the cast in collar was cut flush with the separating element before the services were installed.	
6.	Item name	40 mm fire collar	
	Product name	AGNI-Collar40	

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description		
	Manufacturer	Agnitek Pty Ltd	
	Collar details	Outer diameter	63 mm
		Inner diameter	52 mm
		Depth	49 mm
		Number of fixing tabs	2
		Outer shell material	Powder coated mild steel
		Outer shell thickness	0.8 mm BMT
	Intumescent details	Number of layers	1
		Width	47 mm
		Thickness	3.5 mm
		Density	1410 kg/m^3
	Batch number	Not present	
Sealant			
8.	Item name	Fire rated acrylic sealant	
	Product name	AGNI-Seal	
	Manufacturer	Agnitek Pty Ltd	
	Density	1510 kg/m^3	
	Batch number	SEGR600310124	
Services			
9.	Item name	DN40 DWV uPVC Pipe	
	Product name	20230 Vinidex Quality BEP PVC Phone 131169 DWV 40 PVCU	
	Manufacturer	Vinidex	
	Material	uPVC	
	Size	Outer diameter	43 mm
		Wall thickness	2.4 mm
10.	Item name	DN40 straight coupling (socket)	
	Product name	Unknown	
	Manufacturer	Unknown	
	Material	uPVC	
	Size	Outer diameter	48 mm
		Length	57 mm

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description		
		Wall thickness	2.0 mm
11.	Item name	DN50 DWV uPVC Pipe	
	Product name	PIPE KING BEP PVC 50 DWV PVCU 25/04/14	
	Manufacturer	Pipe King	
	Material	uPVC	
	Size	Outer diameter	56 mm
		Wall thickness	2.5 mm
12.	Item name	DN50 straight coupling (socket)	
	Product name	55270 LIC 1246	
	Batch date	24 September 2024	
	Material	uPVC	
	Size	Outer diameter	61 mm
		Length	63 mm
		Wall thickness	2.5 mm
13.	Item name	DN65 DWV uPVC Pipe	
	Product name	PIPE KING BEP PVC 65 DWV PVCU 25/04/11	
	Manufacturer	Pipe King	
	Material	uPVC	
	Size	Outer diameter	68 mm
		Wall thickness	2.8 mm
14.	Item name	DN65 straight coupling (socket)	
	Product name	55280 LIC 1246	
	Batch date	4 December 2024	
	Material	uPVC	
	Size	Outer diameter	74 mm
		Length	79 mm
		Wall thickness	2.5 mm
15.	Item name	DN80 DWV uPVC Pipe	
	Product name	20310 Vinidex Quality BEP PVC Phone 131169 DWV 80 PVCU	
	Manufacturer	Vinidex	
	Material	uPVC	
	Overall size	Outer diameter	82 mm

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description		
		Wall thickness	3.4 mm
16.	Item name	DN80 straight coupling (socket)	
	Product name	55290 LIC 1246	
	Batch date	27 September 2024	
	Material	uPVC	
	Size	Outer diameter	87 mm
		Length	94 mm
		Wall thickness	2.5 mm
17.	Item name	DN100 DWV uPVC Pipe	
	Product name	18000 Vinidex BEP PVC Phone 131169 DWV 100 PVCU	
	Manufacturer	Vinidex	
	Material	uPVC	
	Size	Outer diameter	110 mm
		Wall thickness	4.0 mm
18.	Item name	DN100 straight coupling (socket)	
	Product name	Unknown	
	Manufacturer	Unknown	
	Material	uPVC	
	Size	Outer diameter	117 mm
		Length	125 mm
		Wall thickness	3.0 mm
19.	Item name	DN150 DWV uPVC Pipe	
	Product name	PIPE KING BEP PVC 150 DWV PVCU SN4SC 24/12/08	
	Manufacturer	Pipe King	
	Material	uPVC	
	Size	Outer diameter	160 mm
		Wall thickness	5.0 mm
20.	Item name	DN150 straight coupling (socket)	
	Product name	SCT150 PVC Stormwater Coupling (Socket) 150mm	
	Manufacturer	Pipe king	
	Material	uPVC	
	Size	Outer diameter	168 mm

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description		
		Length	157 mm
		Wall thickness	3.6 mm
21.	Item name	DN40 HDPE Pipe	
	Product name	Geberit Ø40 × 3.0 PE S12.5 SN4 B EN 1519	
	Manufacturer	Geberit	
	Material	HDPE	
	Size	Outer diameter	41 mm
		Wall thickness	3.1 mm
22.	Item name	DN40 HDPE electrofusion coupling	
	Product code	360.771.16.1	
	Manufacturer	Geberit	
	Material	HDPE	
	Size	Outer diameter	52 mm
		Length	59 mm
		Wall thickness	5 - 6 mm
Fixings			
28.	Item name	Masonry screw	
	Product description	Ø6.5 mm × 50 mm galvanised masonry hex screw – BTG6550	
	Manufacturer	Powers Fasteners	
Penetration system A			
A	Service	1 × DN40 DWV uPVC Pipe (item 9) with socket (item 10)	
	Service detail	The pipe was installed through the aperture in the separating element. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The centre of the pipe coupling was in line with the underside of the slab. The exposed side of the pipe was capped using a PVC pipe cap.	
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.	
	Aperture size	Ø175 mm backfilled to install the cast in collar in the slab	

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description	
	Annulus size	N/A
	Local fire-stopping protection	
	Protection	A 40 - 50 mm fire collar (item 1) was cast inside the separating element. Fire rated acrylic sealant (item 8) was installed around the pipe to a nominal depth of 10 mm, on the unexposed side. See Appendix A for more details.
Penetration system B		
B	Service	1 × DN50 DWV uPVC Pipe (item 11) with socket (item 12)
	Service detail	The pipe was installed through the aperture in the separating element. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The centre of the pipe coupling was in line with the underside of the slab. The exposed side of the pipe was capped using a PVC pipe cap.
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.
	Aperture size	Ø175 mm backfilled to install the cast in collar in the slab
	Annulus size	N/A
	Local fire-stopping protection	
	Protection	A 40 - 50 mm fire collar (item 1) was cast inside the separating element. Fire rated acrylic sealant (item 8) was installed around the pipe to a nominal depth of 10 mm, on the unexposed side. See Appendix A for more details.
Penetration system C		
C	Service	1 × DN65 DWV uPVC Pipe (item 13) with socket (item 14)
	Service detail	The pipe was installed through the aperture in the separating element. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The centre of the pipe coupling was in line with the underside of the slab. The exposed side of the pipe was capped using a PVC pipe cap.
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.
	Aperture size	Ø200 mm backfilled to install the cast in collar in the slab
	Annulus size	N/A
	Local fire-stopping protection	

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description	
	Protection	A 65 - 80 mm fire collar (item 2) was cast inside the separating element. Fire rated acrylic sealant (item 8) was installed around the pipe to a nominal depth of 10 mm, on the unexposed side. See Appendix A for more details.
Penetration system D		
D	Service	1 × DN80 DWV uPVC Pipe (item 15) with socket (item 16)
	Service detail	The pipe was installed through the aperture in the separating element. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The centre of the pipe coupling was in line with the underside of the slab. The exposed side of the pipe was capped using a PVC pipe cap.
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.
	Aperture size	Ø200 mm backfilled to install the cast in collar in the slab
	Annulus size	N/A
	Local fire-stopping protection	
	Protection	A 65 - 80 mm fire collar (item 2) was cast inside the separating element. Fire rated acrylic sealant (item 8) was installed around the pipe to a nominal depth of 10 mm, on the unexposed side. See Appendix A for more details.
Penetration system E		
E	Service	1 × DN100 DWV uPVC Pipe (item 17) with socket (item 18)
	Service detail	The pipe was installed through the aperture in the separating element. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The pipe coupling was installed as high as possible inside the cast in collar. The exposed side of the pipe was capped using a PVC pipe cap.
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.
	Aperture size	Ø225 mm backfilled to install the cast in collar in the slab
	Annulus size	N/A
	Local fire-stopping protection	
	Protection	A 100 mm fire collar (item 3) was cast inside the separating element.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description	
		Fire rated acrylic sealant (item 8) was installed around the pipe to a nominal depth of 10 mm, on the unexposed side. See Appendix A for more details.
Penetration system F		
F	Service	1 × DN150 DWV uPVC Pipe (item 19) with socket (item 20)
	Service detail	The pipe was installed through the aperture in the separating element, with the pipe coupling installed against the underside of the slab. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The exposed side of the pipe was capped using a PVC pipe cap.
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.
	Aperture size	Ø300 mm backfilled to install the cast in collar in the slab
	Annulus size	N/A
	Local fire-stopping protection	
	Protection	A 150 mm fire collar (item 4) was cast inside the separating element. Fire rated acrylic sealant (item 8) was installed around the pipe to a nominal depth of 10 mm, on the unexposed side. See Appendix A for more details.
Penetration system G		
G	Service	1 × DN40 HDPE Pipe (item 21) with socket (item 22)
	Service detail	The pipe was installed through the aperture in the separating element, with the pipe coupling installed against the underside of the slab. The pipe protruded nominally 550 mm on the exposed side and 2000 mm on the unexposed side. The exposed side of the pipe was capped using ceramic fibre wool and fire rated sealant.
	Service support	The service was supported on the unexposed side of the separating element using channel struts and pipe clamps located nominally 480 mm and 1480 mm from the separating element to the centre of the channel strut.
	Aperture size	Ø48 mm
	Annulus size	3.5 mm
	Local fire-stopping protection	
	Protection	Fire rated acrylic sealant (item 8) was installed in the annulus to a nominal depth of 10 mm, on both sides.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Item	Description	
		A 40 mm fire collar (item 6) was installed around the socket portion of the service on the exposed side and fixed to the separating element using masonry screws (item 28). Because of the size of the electrofusion port of the socket, the fire collar was not able to fit concentric to the service. See Appendix A for more details.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

2.2 Installation details

Table 6 lists the installation details for the test specimen.

Table 6 Installation details

Item	Detail
Start date for coring of separating element	28 May 2025
Start date for installation of fire-stopping protection for the penetration systems	30 May 2025
Completion date for constructing and installing the test specimen	12 June 2025
Separating element and services prepared by	Representatives of Jensen Hughes
Fire-stopping protection for penetration systems installed by	Representatives of the test sponsor
Symmetry	Asymmetrical because: + The cast-in collars were asymmetrical. + The retrofit fire collar was installed on the exposed side of the specimen only. + The sockets were installed closer to the exposed side of the separating element. + Sealant was not applied to the exposed side of the cast in collar service.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

3.0 Test procedure

Table 7 details the test procedure for this fire resistance test.

Table 7 Test procedure

Item	Detail	
Statement of compliance	The test was performed in accordance with the requirements of sections 2 and 10 of AS 1530.4:2014 appropriate for penetration systems.	
Variations	The pressure was up to 6 Pa above the limits prescribed in the standard during the 5–10 minute period. The pressure and temperature were within the limits for the rest of the test. Due to the nature of the specimen and the fact that no significant events occurred during this time period, this over pressure is unlikely to have invalidated the test result.	
Pre-test conditioning	The assembly of the test specimen was completed on 12 June 2025. The test specimen was subjected to normal laboratory temperatures and conditions between the completion of assembly of the test specimen and the start of the test.	
Sampling / specimen selection	The laboratory was not involved in sampling or selecting the test specimen for the fire resistance test. The results obtained during the test only apply to the test samples as received and tested by Jensen Hughes.	
Ambient laboratory temperature	Start of the test	14 °C
	Minimum temperature	14 °C
	Maximum temperature	16 °C
Test duration	181 minutes	
Instrumentation and equipment	The instrumentation was provided in accordance with AS 1530.4:2014 as follows: + The furnace temperature was measured by four mineral insulated metal sheathed (MIMS) Type K thermocouples – with wire diameters not greater than 1 mm, an overall diameter of 3 mm, and the measuring junction insulated from the sheath. The thermocouples protruded a minimum of 25 mm from steel supporting tubes. + The unexposed side specimen temperatures were measured by Type K thermocouples with wire diameters less than 0.5 mm soldered to 12 mm diameter × 0.2 mm thick copper discs covered by 30 mm × 30 mm × 2.0 mm thick inorganic insulating pads. + A roving thermocouple was available to measure temperatures at positions that appeared hotter than the positions monitored by the fixed thermocouples. + Cotton pads were available during the test to assess the performance of the specimen under the criteria of integrity. + The furnace pressure was measured 235 mm below the underside of the floor system. It was monitored using a differential pressure transmitter. + All electronic data was sampled at 1 second intervals.	

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

4.0 Test measurements and results

Table 8 summarises the results the specimen achieved against the performance criteria listed in sections 2 and 10 of AS 1530.4:2014.

Table 9 in Appendix B includes observations of any significant behaviour of the specimen and details of the occurrence of the various performance criteria specified in AS 1530.4:2014.

Table 8 Test results

Penetration system	Criteria	Results	Fire resistance level (FRL)
A	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
B	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
C	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
D	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
E	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
F	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	
G	Structural adequacy	Not applicable	**-/180/180**
	Integrity	No failure at 181 minutes	
	Insulation	No failure at 181 minutes	

NOTE: The FRLs for the specimens only apply to the tested orientation. As the FRL was only determined for one direction, an FRL cannot be assigned for the other direction.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

5.0 Application of test results

5.1 Test limitations

The results of these fire tests may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

These results only relate to the behaviour of the specimen of the element of construction under the particular conditions of the test. They are not intended to be the sole criteria for assessing the potential fire performance of the element in use, and they do not necessarily reflect the actual behaviour in fires.

5.2 Variations from the tested specimen

This report details the methods of construction, test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in AS 1530.4. Any significant variation with respect to size, constructional details, loads, stresses, edge or end conditions, other than that allowed under the field of direct application in the relevant test method, is not covered by this report.

It is recommended that any proposed variation to the tested configuration – other than as permitted under the field of direct application specified in Appendix C – should be referred to the test sponsor. They should then obtain appropriate documentary evidence of compliance from Jensen Hughes Fire Testing or another accredited testing authority.

5.3 Uncertainty of measurements

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Appendix A Drawings of test assembly

The leaders in the drawings represent the items listed in section 2.1. All measurements – unless indicated – are in millimetres.

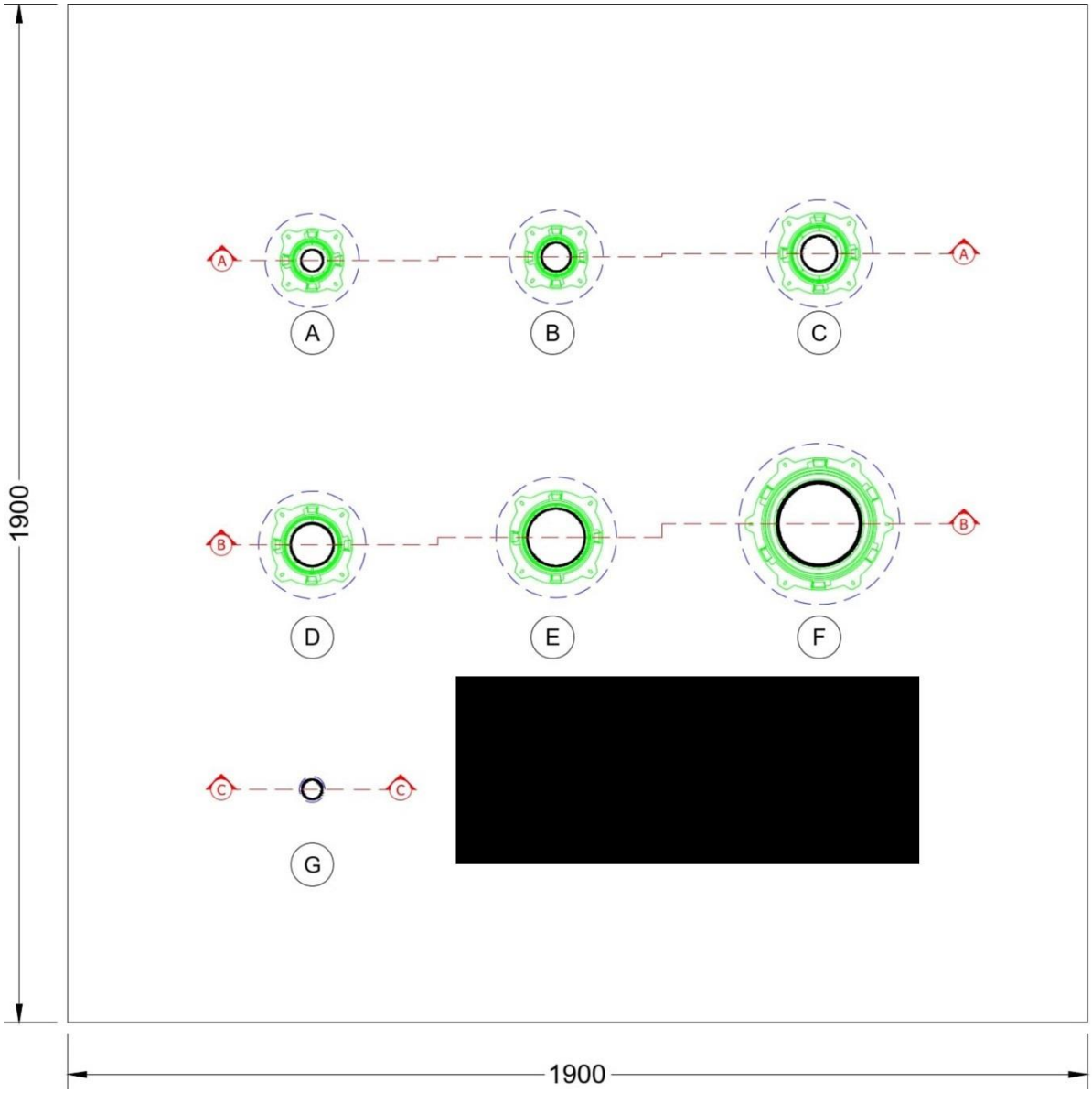

Figure 1 Plan view of test specimen (unexposed side)

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

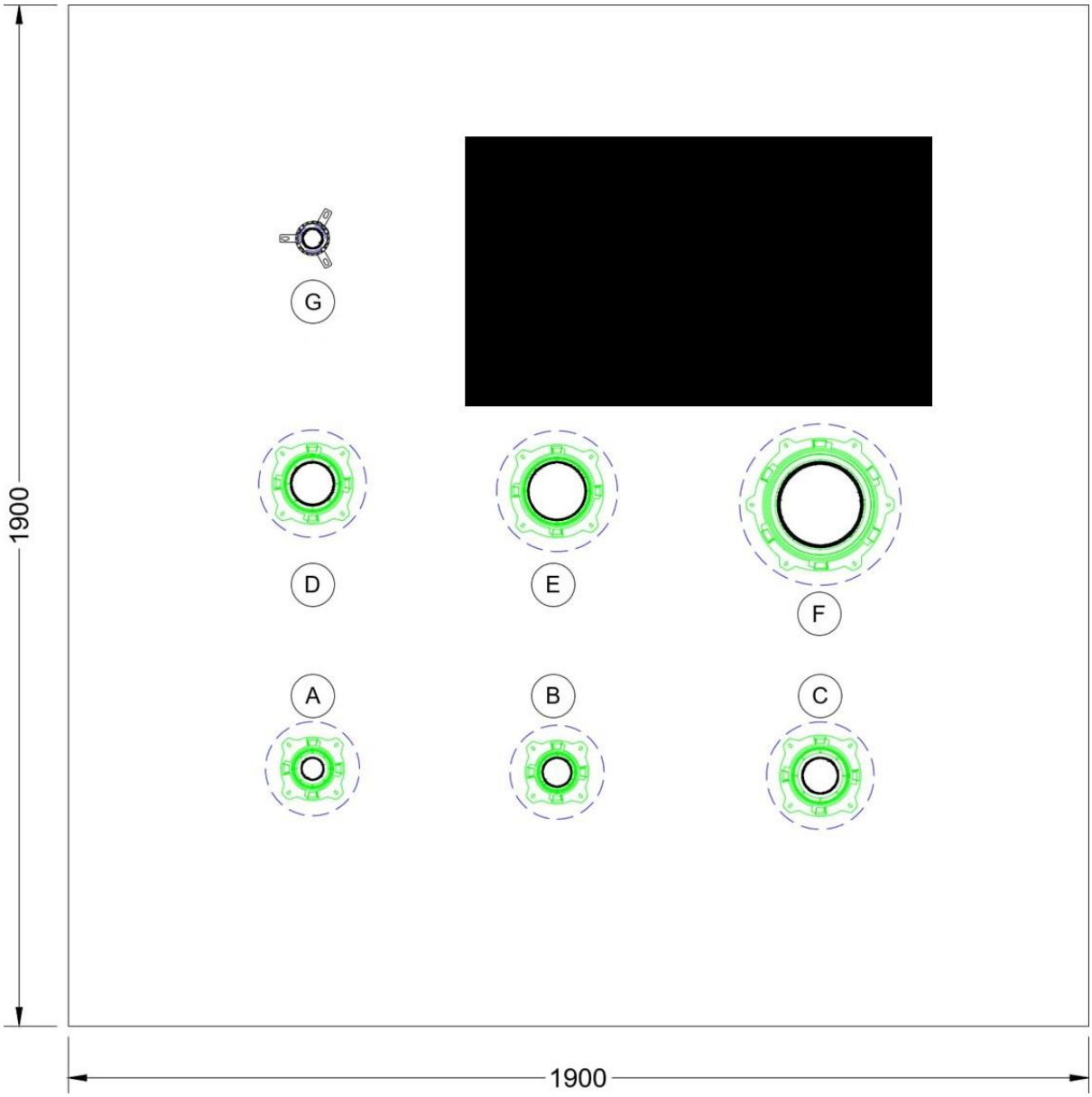

Figure 2 Plan view of test specimen (exposed side)

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

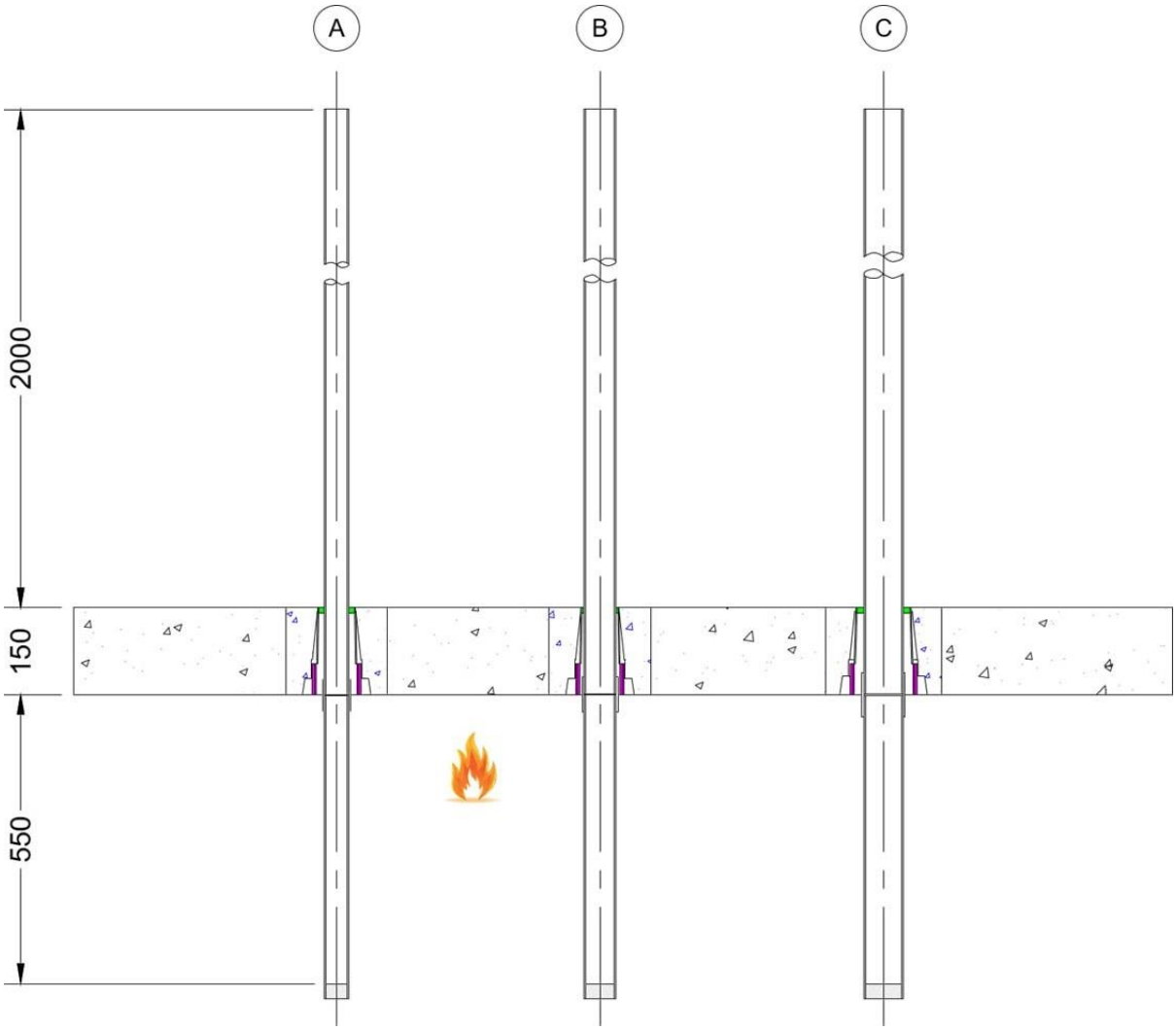

Figure 3 Cross-section A-A

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

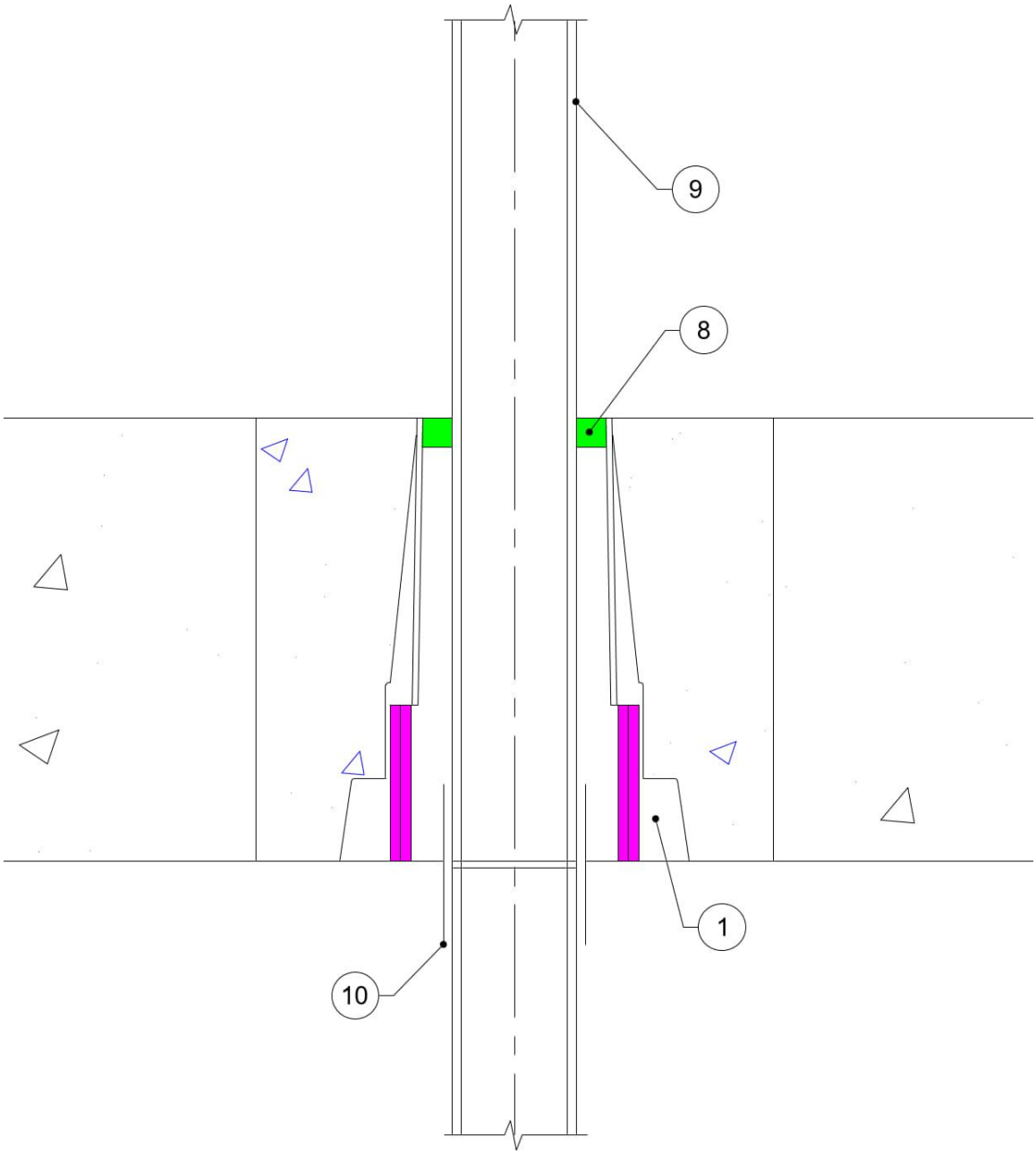

Figure 4 Penetration system A

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

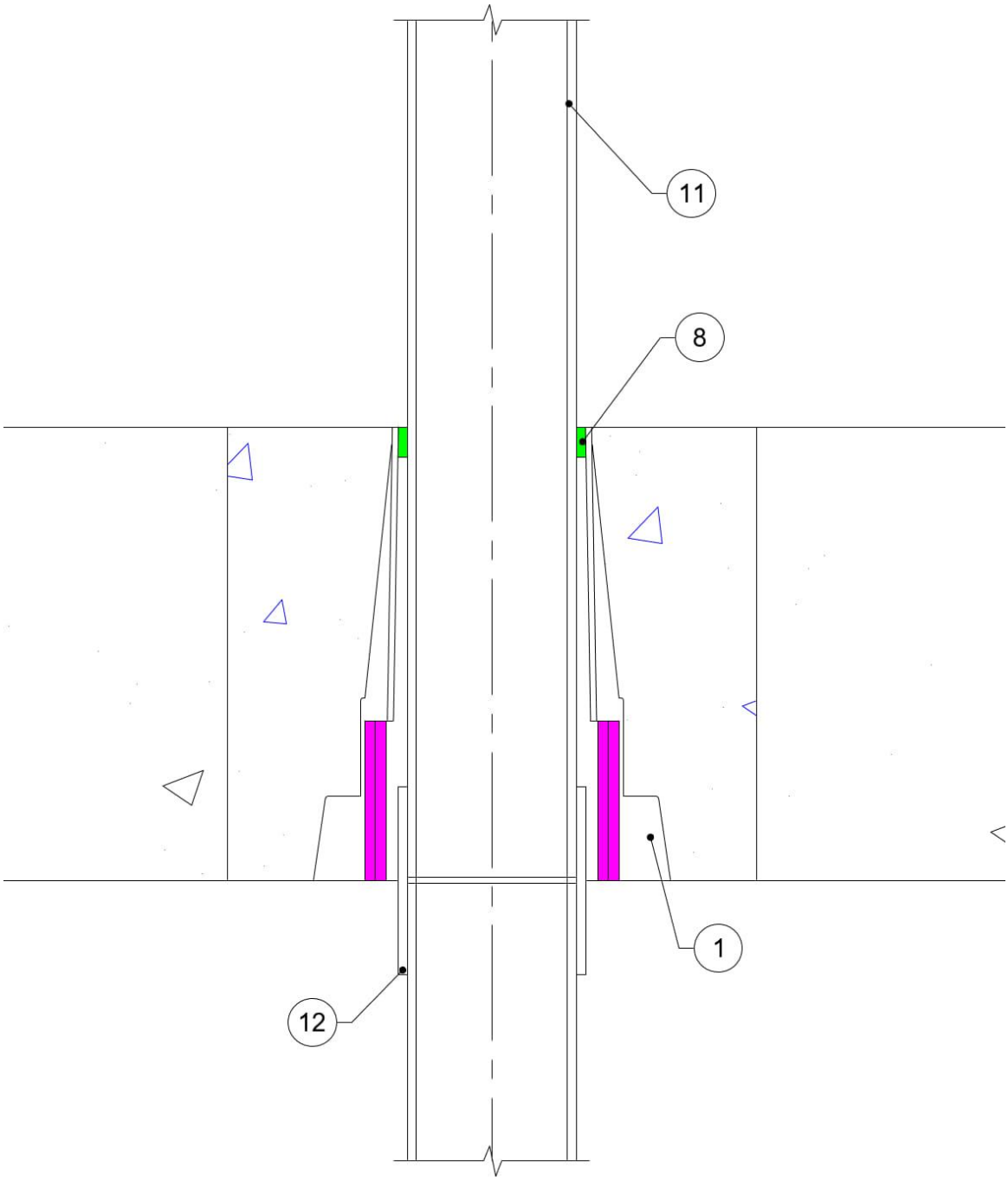

Figure 5 Penetration system B

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

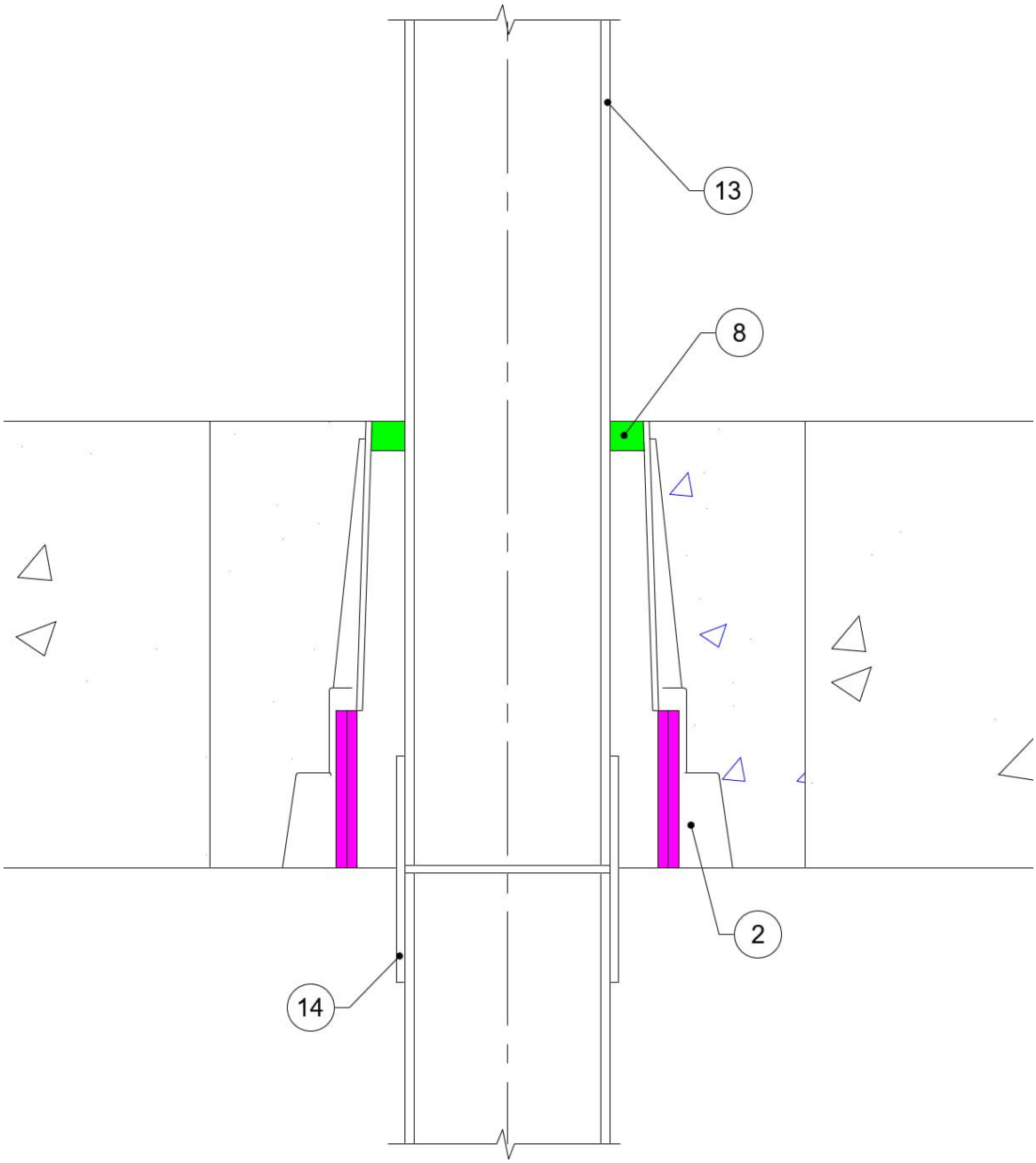

Figure 6 Penetration system C

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

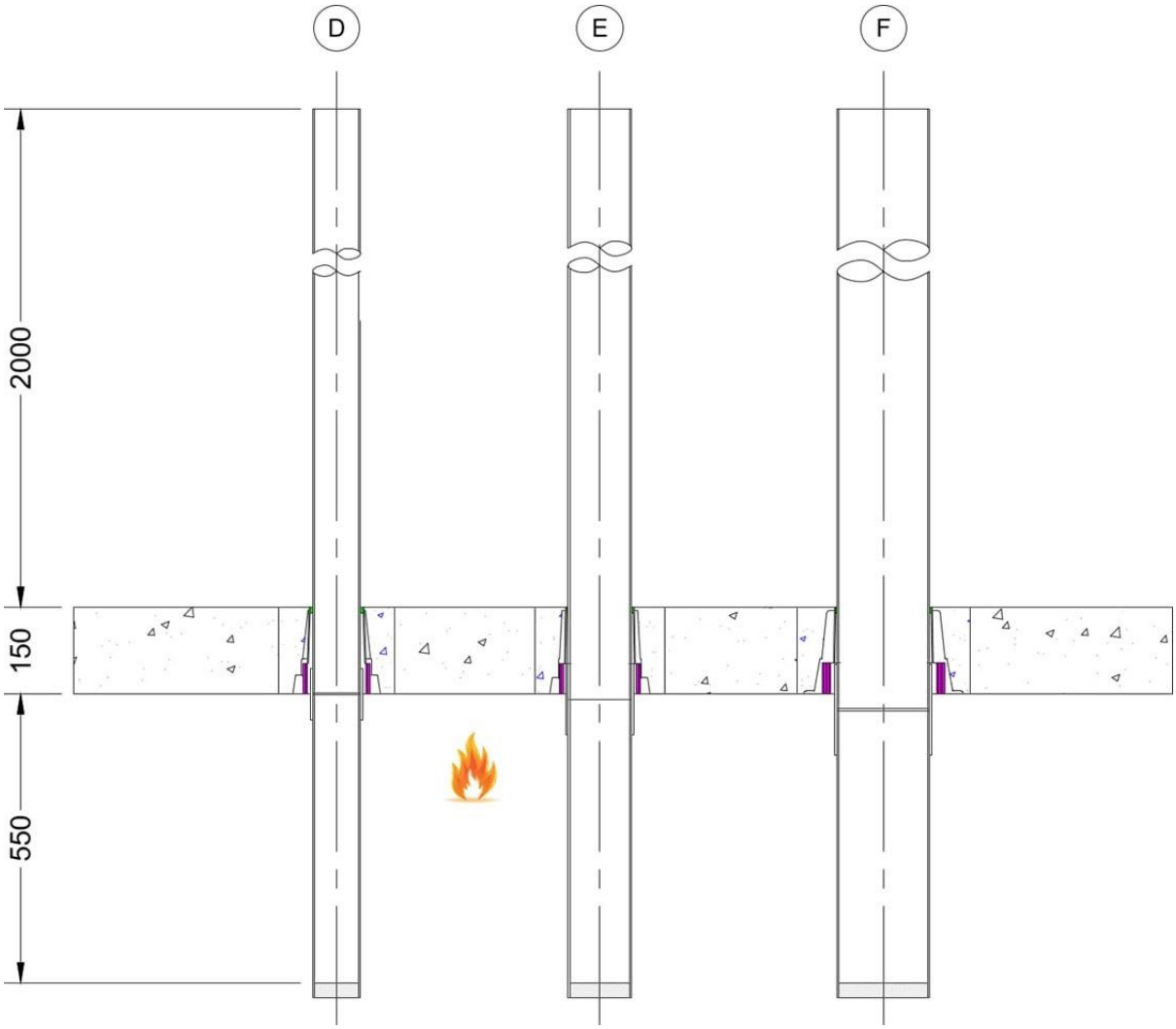

Figure 7 Cross-section B-B

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

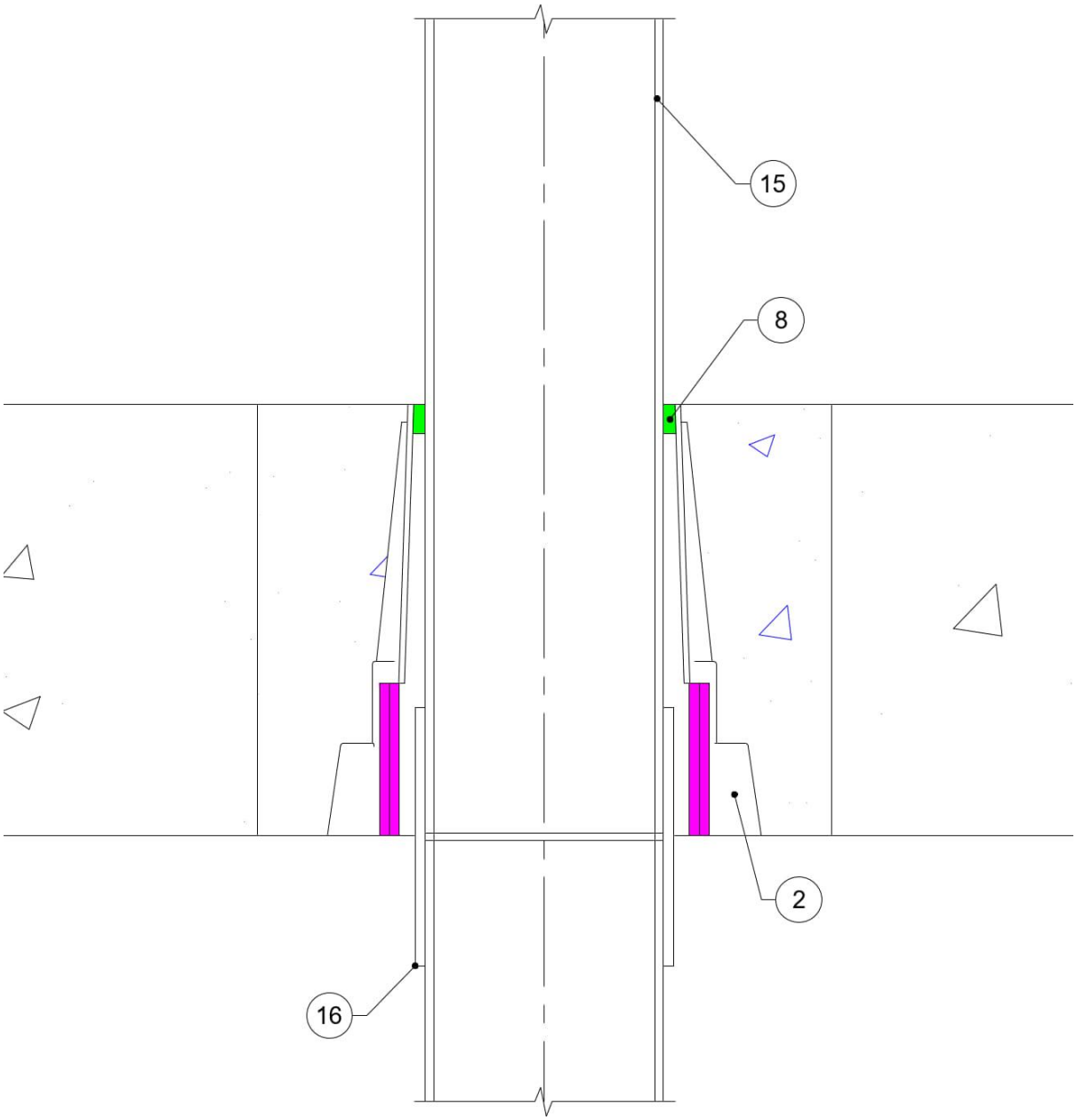

Figure 8 Penetration system D

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

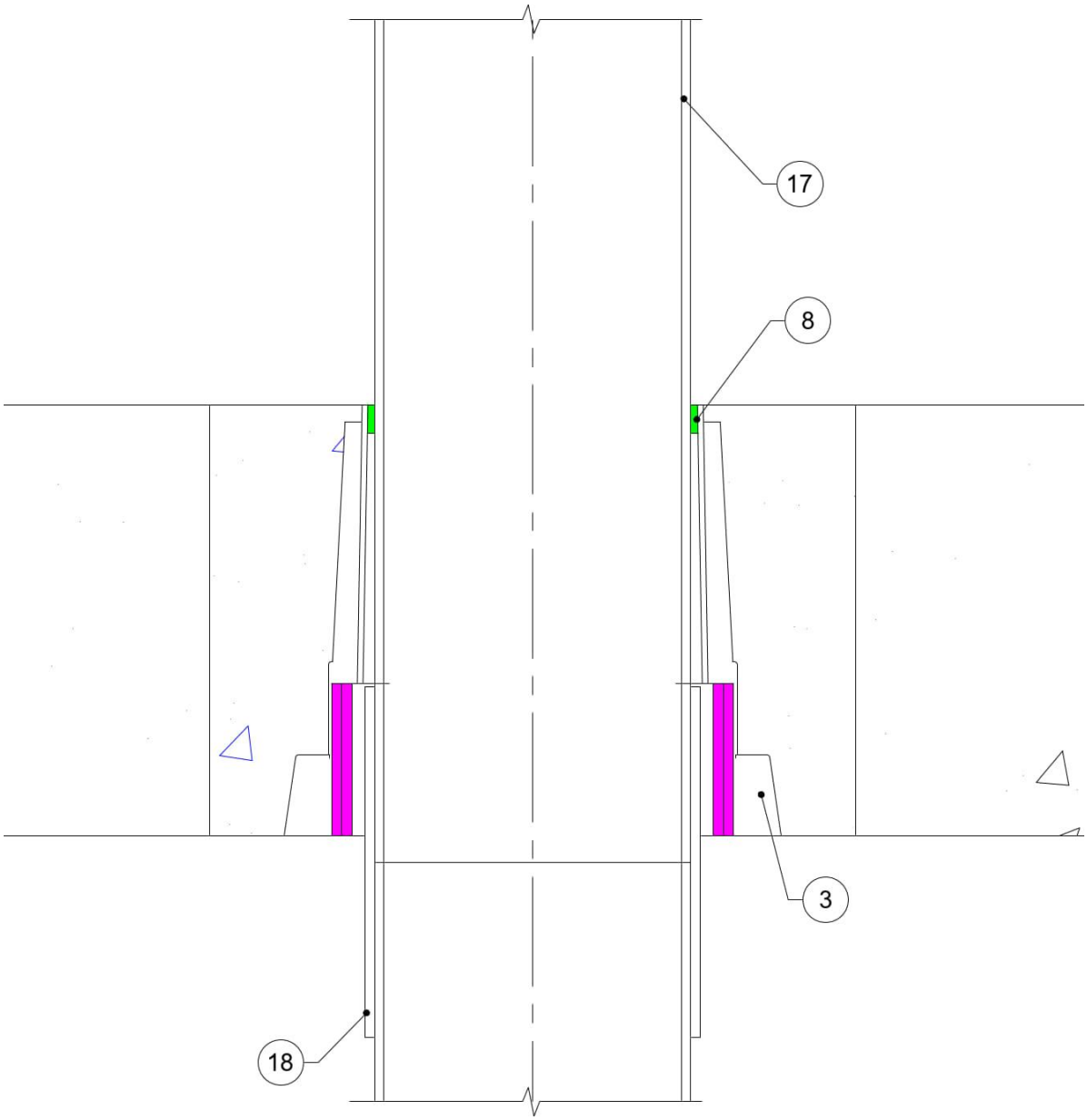

Figure 9 Penetration system E

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

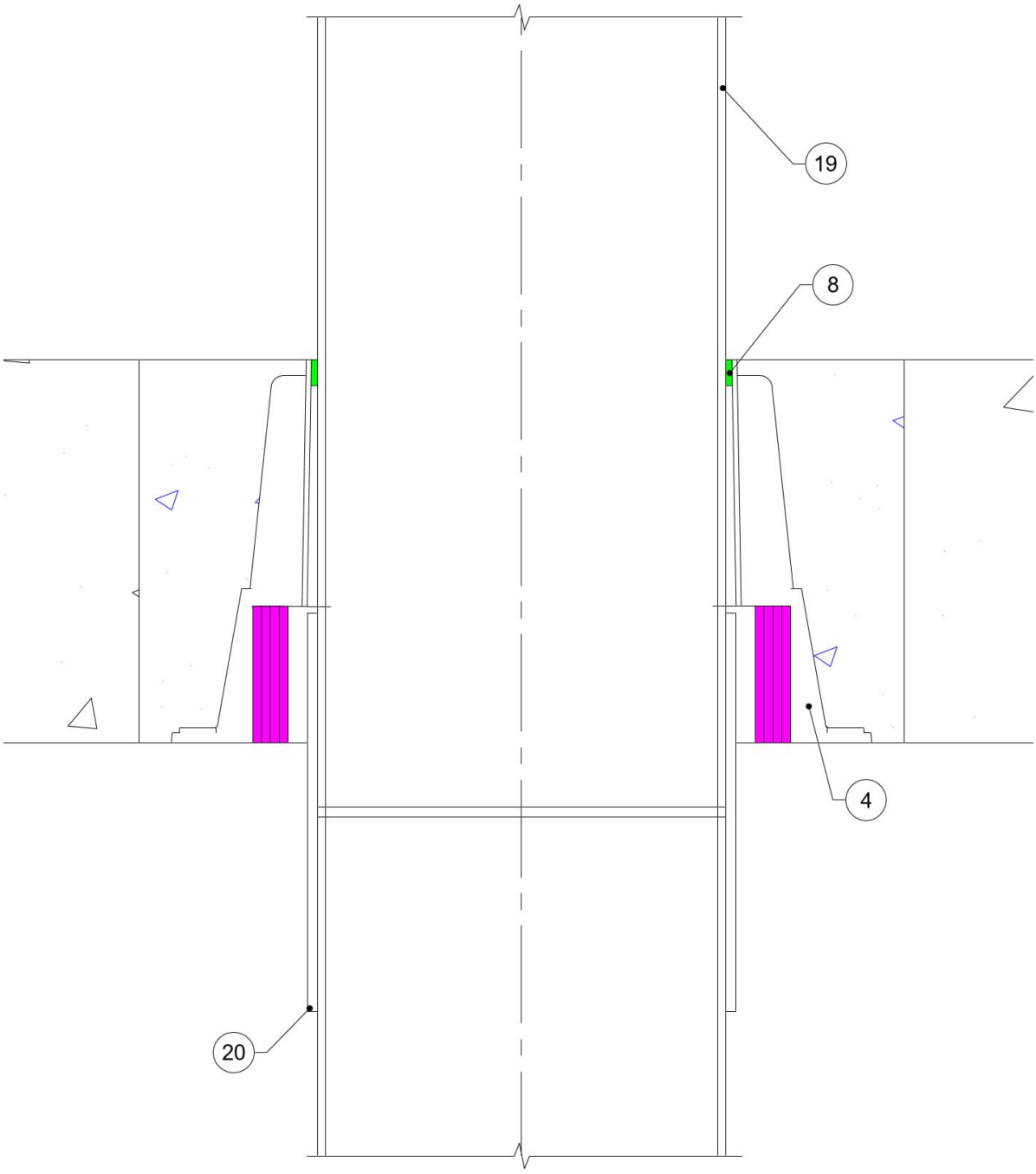

Figure 10 Penetration system F

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

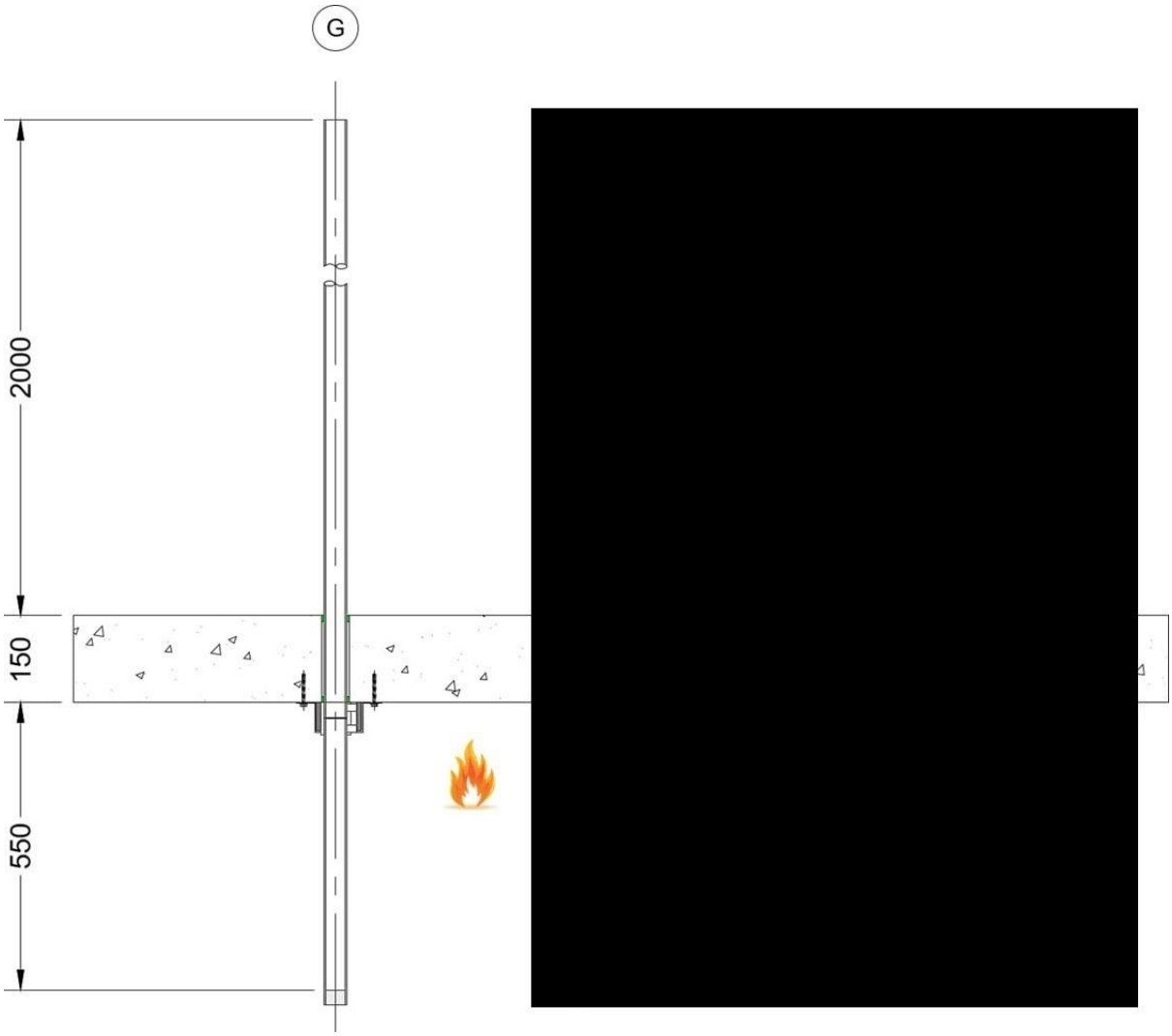

Figure 11 Cross-section C-C

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

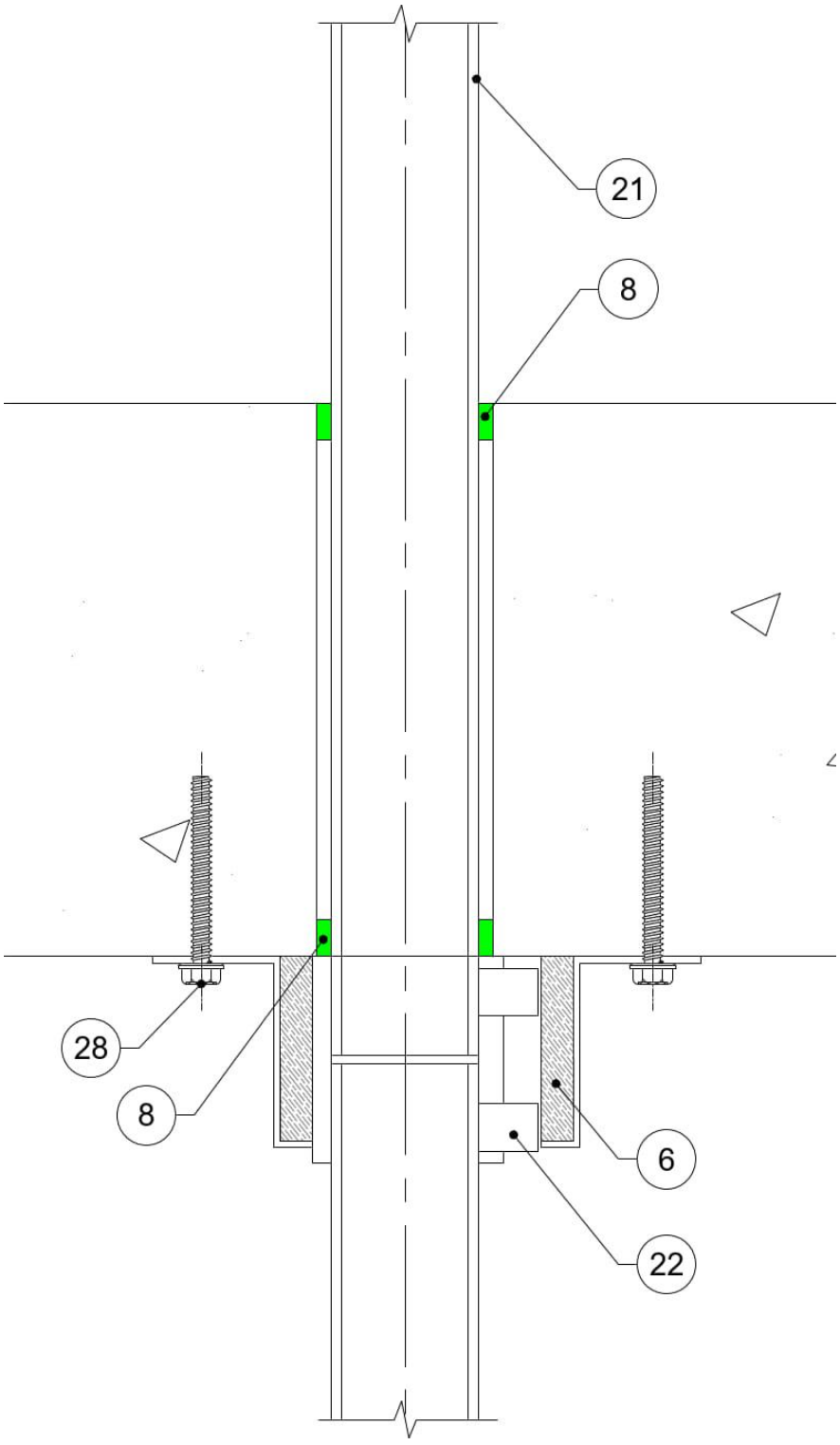

Figure 12 Penetration system G

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Appendix B Test observations

Table 9 shows the observations of any significant behaviour of the specimen during the test.

Table 9 Test observations

Time		Observation
Min	Sec	
Penetration system A		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 12 °C.
6	41	Smoke was emitting from the end of the service.
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
18	00	Water was present on the separating element at the base of the service.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
89	00	The base of the service had deformed.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.
Penetration system B		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 12 °C.
2	42	A small volume of smoke was emitting from the end of the service.
13	40	Water was present on the separating element at the base of the service.
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
89	00	The base of the service had deformed.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.
Penetration system C		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 12 °C.
4	57	Smoke was emitting from the end of the service.
14	30	The lower section of the service had melted and detached from the upper section, at approximately 200 mm above the separating element.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Time		Observation
Min	Sec	
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
25	00	Water was present on the separating element at the base of the service.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.
Penetration system D		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 12 °C.
0	30	Smoke was emitting from the end of the service.
8	10	The base of the service had deformed.
11	33	Water was present on the separating element at the base of the service.
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.
Penetration system E		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 13 °C.
0	44	Smoke was emitting from the end of the service.
5	00	The top and base of the service had deformed.
7	58	Smoke was emitting from the base of the service.
11	33	Water was present on the separating element at the base of the service.
13	18	A hole had formed near the base of the service.
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Time		Observation
Min	Sec	
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.
Penetration system F		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 13 °C.
3	45	Smoke was emitting from the end of the service.
6	57	The base of the service had deformed.
13	18	A hole had formed near the base of the service.
13	30	Water was present on the separating element at the base of the service.
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.
Penetration system G		
0	00	The fire resistance test started. The initial temperature of the test specimen was approximately 12 °C.
15	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
23	00	Water was present on the separating element at the base of the service.
30	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
45	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
60	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
90	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
120	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
180	00	The test specimen continued to maintain integrity and insulation in accordance with AS 1530.4:2014.
181	00	Test stopped.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Appendix C Direct field of application

The text, figures and tables in this appendix have been taken from section 10 of AS 1530.4:2014.

C.1 General

The results of the fire test contained in the test report are directly applicable without reference to the testing authority to similar constructions where one or more of the changes set out in clauses 10.12.2 to 10.12.5 of AS 1530.4:2014 have been made.

C.2 Separating elements

Results obtained for sealing systems in various types of masonry and concrete construction may be applied as follows:

- For elements manufactured from similar types of concrete or masonry, the results of the prototype test may be applied to materials of density within ±15% of the tested specimen. For greater variations, the opinion of a registered testing authority shall be obtained.
- Test results obtained in conjunction with hollow concrete blocks may be used in a solid concrete element of the same overall thickness. The reverse does not apply.
- 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. The reverse does not apply.
- 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.
- 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.

C.3 Plastic pipes

C.3.1 General

In addition to the requirements of clause 10.12.2 of AS 1530.4:2014, test results may be directly applied to masonry and concrete elements thicker than the tested prototype when installed in accordance with figure 10.12.5.1 of AS 1530.4:2014.

Results obtained from a particular test shall not be applied to plastics pipes of different diameters, wall thicknesses or material types.

Results obtained from tests on penetrations through vertical separating elements shall not be used to assess performance in horizontal elements, and vice versa.

As penetration seals for plastic pipes are dependent for activation upon exposure to fire conditions, they shall always be installed with the same orientation and fire exposure as was established in the fire resistance test.

C.3.2 Services not perpendicular to the fire separation

Penetrations not perpendicular to the plane of the element are acceptable, provided the fire-stopping system has similar exposure and dimensions to the tested prototype.

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

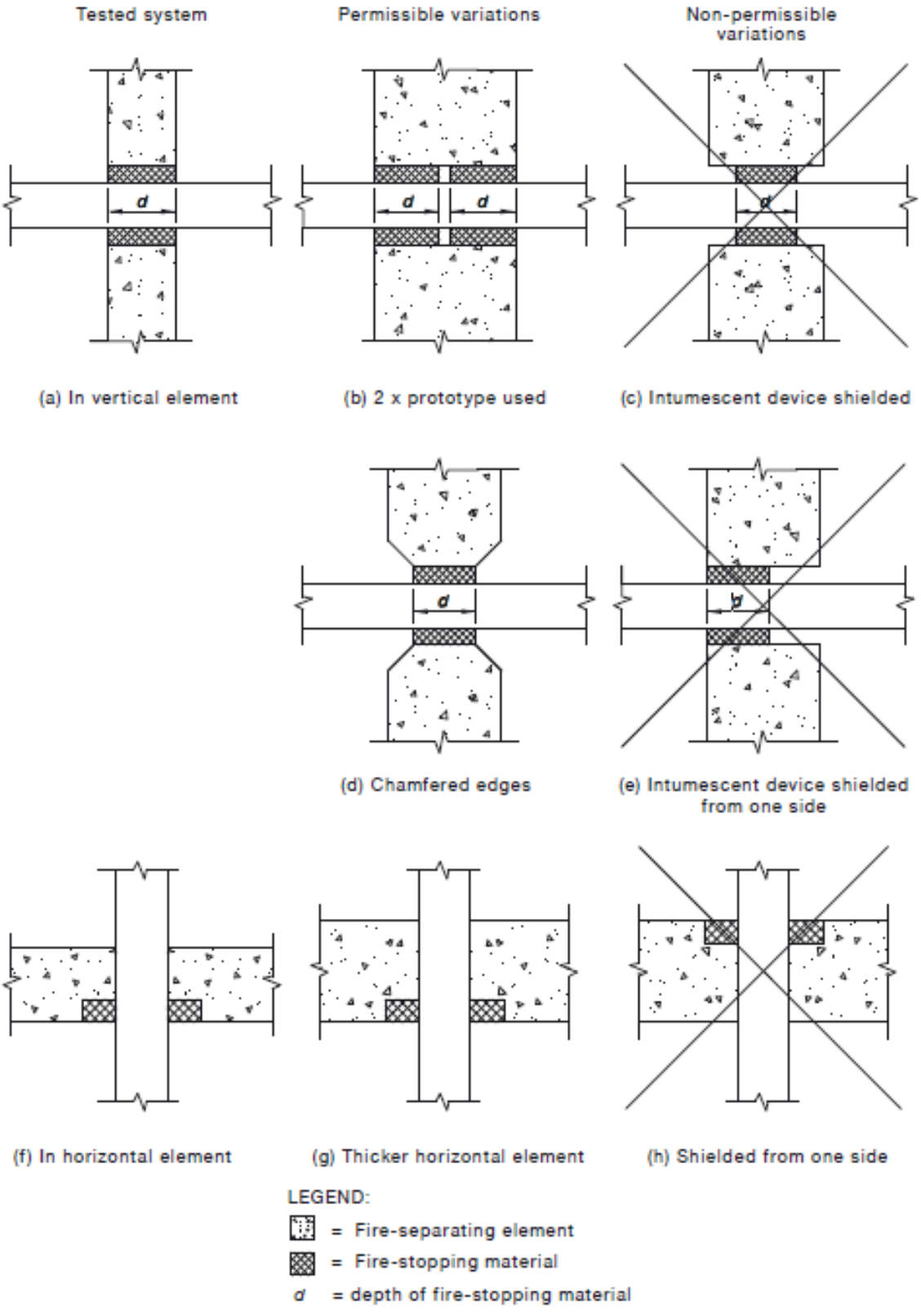

FIGURE 10.12.5.1 EQUIVALENT EXPOSURE OF UPVC PIPE FIRE-STOPPING SYSTEMS

Copyright ©2025 Jensen Hughes, Inc.
All Rights Reserved.T1124 PAC

Jensen Hughes Fire Testing Pty Ltd
ABN 81 050 241 524

Melbourne – NATA accredited laboratory

409-411 Hammond Road
Dandenong South Vic 3175
Australia
T: +61 3 9767 1000

General conditions of use

The data, methodologies, calculations and results documented in this report specifically relate to the tested specimen/s and must not be used for any other purpose. This report may only be reproduced in full. Extracts or abridgements must not be published without permission from Jensen Hughes Fire Testing.

All work and services carried out by Jensen Hughes Fire Testing Pty Ltd are subject to, and conducted in accordance with our standard terms and conditions.