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Approved body No.:
0843

Product Name:
FirePro® CB50

Project No.:
4791365447.1

Report No.:
4791365447.1

Issue number:
01

Date of Issue:
2025-09-30

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This classification report consists of 56 pages and 2 Annexes and may only be used or reproduced in its entirety.

TABLE OF CONTENTS

1. Introduction

This classification report defines the classification assigned to the element FirePro® CB50, in accordance with the procedures given in EN 13501-2: 2023.

2. Details of classification product

2.1 General

The system is comprised of a 50mm thick stone wool base batt that is coated on both sides with an ablative coating. The FirePro® CB50 is installed as a single layer or double layer depending upon the required Fire Resistance performance.

2.2 Product description

The element, FirePro® CB50, is fully described in the test reports provided in support of Classification, detailed in clause 3.1.

3. Test reports in support of classification

3.1 Summary of test reports

Name of laboratory	Name of sponsor	Test reference	Test date	Test method
FPA Accredited Body no. 10536	ROCKWOOL Limited	FPA 106784 r0	29/10/2024	BS EN 1366-3: 2021
		FPA 106884 r1	19/11/2024	
Warringtonfire Approved Body no. 0833	ROCKWOOL Limited	411460/R Iss1	30/08/2019	BS EN 1366-3: 2009
		411467/R Iss2	25/10/2019	
		411468/R Iss2	25/11/2019	
		541986/R Iss 1	09/08/2024	BS EN 1366-3: 2021
		546853/R Iss 1	17/11/2024	
		549189/R Iss 1	10/01/2025	BS EN 1366-3: 2021+A1:2024
		549190/R Iss 1	13/01/2025	
		549191/R Iss 2	14/01/2025	
		549192/R Iss 1	15/01/2025	
		549193/R Iss 2	17/01/2025	
		549194/R Iss 1	20/01/2025	
		549195/R Iss 1	22/01/2025	
		549196/R Iss 1	21/01/2025	
		549200/R Iss 2	03/02/2025	
		549201/R Iss 2	13/02/2025	
		549202/R Iss 1	14/02/2025	
		550006A/R Iss1	24/02/2025	
		550561/R Iss 2	11/03/2025	

		550560/R Iss 1	05/03/2025	
		551825C/R Iss 1	28/04/2025	
		551829/R Iss 1	20/05/2025	

3.2 Results

Summary of report No.: FPA 106784 r0

A fire resistance test conducted in accordance with BS EN 1366-3: 2021 on two Rockwool FirePro® CB50 coated batt blank penetration sealing system, mounted within 75mm thick flexible wall constructions. Specimen A consisted of 2 x 50 mm layers that were pattress fixed either side of the wall to seal a 1100 x 1100mm aperture. Specimen F consisted of a single layer of CB50, that was used to seal a 1200 x 1200 mm aperture.

The blank penetration sealing systems were mounted into 75 mm thick flexible supporting walls, comprising of 50 mm steel studs, a single layer of 12.5 mm thick plasterboard to each face of the frame, and a 50 mm thick mineral wool insulation layer with a density of 100 kg/m^3, cut back 100 mm from the edge of the apertures.

Specimen	Service type	Integrity (minutes)			Insulation (minutes)
		Cotton Pad	Sustained Flaming	Gap Gauge	
A	2 x CB50 Pattress install. Blank Seal 1100 x 1100mm	78	78	78	78
F	1 X CB50 Blank Seal 1200 x 1200mm	78	78	78	73

Summary of report No.: FPA 106884 r1

A fire resistance test conducted in accordance with BS EN 1366-3: 2021 on a double layered (2 x 50 mm) Rockwool FirePro® CB50 blank penetration sealing system, mounted within a 100mm thick flexible wall construction.

Specimen A consisted of 2 x 50 mm layers that were pattress fixed either side of the wall to seal a 2000 x 1100mm aperture

Specimen	Service type	Integrity (minutes)			Insulation (minutes)
		Cotton Pad	Sustained Flaming	Gap Gauge	
A	Blank Seal 2000 x 1100mm	142	142	142	134

Summary of report No.: WF 541986

A fire resistance test conducted in accordance with BS EN 1366-3: 2021 on a double layered (2 x 50 mm) Rockwool FirePro® CB50 coated batt penetration sealing system mounted within a 100mm thick flexible wall construction.

The FirePro® CB50 penetration sealing system was mounted into a standard EN 1366-3 EI90 flexible supporting wall. The aperture into which the FirePro® CB50 was installed was 2600mm x 2600mm.

Specimen	Seal	Aperture / Services	Specimen	Integrity	Insulation
Seal		2600 mm high x 2600 mm wide	**Seal**	140	139
A	2.No. 50mm layers of ROCKWOOL® FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® AIS around edges of aperture and services. **A –** 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable ladder and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire. **B –** 25 mm thick RockLap H&V Pipe Section fitted around service centrally in a local sustained configuration. **C -** 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable tray and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	2600 mm high x 2600 mm wide aperture 2. No. 345 mm wide x 120 mm high ladder	**A1** – 1.No. C1, 1.No.C3, 1.No. E	140	140
			A2 – 2.No. G2	140	140
			A3 –1.No. D3	140	140
			A4 – 100mm Type F cable	140	140
			A Overall	140	139
B		2600 mm high x 2600 mm wide aperture	219 mm Ø by 5 mm wall thickness Steel pipe. C/U	140	132
C		2600 mm high x 2600 mm wide aperture 1. No. 345 mm wide x 120 mm high tray	**C1** – 1.No. D1, 1.No.D3	140	140
			C2 – 100mm Type F	140	140
			C3 –2.No. G2	140	140
			C4 – 1.No. E cable	140	140
			C Overall	140	140

*Test was discontinued after a period of 140 minutes

Summary of report No.: WF 546853

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick flexible partition assembly comprising 48mm wide galvanized steel studs, a single layer of 12.5 mm thick plasterboard to each face of the frame, and a 50 mm thick mineral wool insulation layer with a density of 100 kg/m^3.

Seal A

Seal	Service	Integrity (minutes)			Insulation (minutes)
		Cotton Pad	Sustained flaming	Gap Gauge	
50mm thick layer of ROCKWOOL® FIREPRO® CB50 friction fitted into an aperture 600mm high x 900mm wide . All butt joints were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services.	A Seal	72	72	72	72
	A1 Tray	72	72	72	48
	E Cable	72	72	72	57
	F Bunch	72	72	72	40
	D3 Cable	72	72	72	72
	D1 Cable	72	72	72	72
	A2 Ladder	72	72	72	72
	D3 Cable	72	72	72	72
	G2 Cable	72	72	72	45
	A3 Ladder	72	72	72	58
	A1 Cables	72	72	72	54
	B Cables	72	72	72	67
	A3 Cables	72	72	72	71
	B Cables	72	72	72	56
	C3 Cable	72	72	72	67
	E Cable	72	72	72	55
	C1 Cable	72	72	72	56
	A Overall	**72**	**72**	**72**	**40**

Summary of report No.: WF 549189

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick standard 30-minute flexible partition assembly.

Specimen A	Seal	Aperture / Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
50mm thick layer of ROCKWOOL® FIREPRO® CB50 pattress fitted over the aperture, to both faces with a 50 mm overlap on all edges. All butt joints were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services. 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable trays, ladders and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	1100mm high x 1110 mm wide Aperture **A1** – 450 mm wide x 50 mm high perforated steel tray supporting 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable **A2** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. D3 Cable. **A3** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. E Cable, 1. No. C1 Cable. 1. No. C3 Cable. **A4** – 300 mm wide x 100 mm high galvanized steel ladder supporting 2. No. B Cables, 3. No. A1 Cables, 3. No. A2 Cables. **A5** – 450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	Seal	A Seal	102	102	102	95
		A1	A1 Tray	102	102	102	102
		A1	E Cable	102	102	102	102
		A1	D3 Cable	102	102	102	102
		A1	D1 Cable	102	102	102	102
		A2	A2 Ladder	102	102	102	102
		A2	D3 Cable	102	102	102	102
		A3	A3 Ladder	102	102	102	102
		A3	C3 Cable	102	102	102	102
		A3	E Cable	102	102	102	102
		A3	C1 Cable	102	102	102	0
		A4	A4 Ladder	102	102	102	102
		A4	B Cable	102	102	102	102
		A4	A2 Cables	102	102	102	102
		A4	B Cable	102	102	102	102
		A4	A1 Cables	102	102	102	0
		A5	A5 Tray	102	102	102	102
		A5	F Cables	102	102	102	102
		A5	G2 Cables	102	102	102	102
			A Overall	**102**	**102**	**102**	**0**

Specimen B	Seal	Aperture / Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
50mm thick layer of ROCKWOOL® FIREPRO® CB50 friction fitted into the aperture. All butt joints were sealed with FIREPRO® Acoustic Intumescent	700 mm high x 800 mm wide Aperture **B1** – 450 mm wide x 50 mm high perforated steel tray supporting 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable. **B2** – 300 mm wide x 100 mm high galvanized steel	Seal	B Seal	102	102	102	93
		B1	B1 Tray	102	102	102	56
		B1	E Cable	102	102	102	56
		B1	D3 Cable	102	102	102	82
		B1	D1 Cable	102	102	102	77
		B2	B2 Ladder	102	102	102	102
		B2	D3 Cable	102	102	102	69

Sealant around edges of aperture and services.	ladder supporting 1. No. D3 Cable. **B3** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. E Cable, 1. No. C1 Cable. 1. No. C3 Cable. **B4** – 300 mm wide x 100 mm high galvanized steel ladder supporting 2. No. B Cables, 3. No. A1 Cables, 3. No. A2 Cables. **B5** – 450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	B3	B3 Ladder	102	102	102	58
		B3	C3 Cable	102	102	102	58
		B3	E Cable	102	102	102	53
		B3	C1 Cable	102	102	102	47
		B4	B4 Ladder	102	102	102	91
		B4	B Cable	102	102	102	0
		B4	A2 Cables	102	102	102	50
		B4	B Cable	102	102	102	55
		B4	A1 Cables	102	102	102	59
		B5	B5 Tray	102	102	102	52
		B5	F Cables	102	102	102	52
		B5	G2 Cables	102	102	102	33
			B Overall	**102**	**102**	**102**	**0**

Specimen C	Seal	Aperture / Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
50mm thick layer of ROCKWOOL® FIREPRO® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. All butt joints were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services. 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable trays, ladders and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	600 mm high x 900 mm wide Aperture **C1** – 450 mm wide x 50 mm high perforated steel tray supporting 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable, 100 mm Ø bunch F Cables. **C2** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. E Cable, 1. No. C1 Cable. 1. No. C3 Cable, 2. No. B Cables, 3. No. A1 Cables, 3. No. A2 Cables. **C3** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. D3 Cable, 2. No. G2 Cables.	Seal	C Seal	102	102	102	102
		C1	C1 Tray	102	102	102	102
		C1	D1 Cable	102	102	102	102
		C1	D3 Cable	102	102	102	102
		C1	F Bunch	102	102	102	102
		C1	E Cable	102	102	102	86
		C2	C2 Ladder	102	102	102	102
		C2	C1 Cable	102	102	102	102
		C2	E Cable	102	102	102	102
		C2	C3 Cable	102	102	102	102
		C2	A1 Cables	102	102	102	102
		C2	B Cable	102	102	102	102
		C2	A2 Cables	102	102	102	102
		C2	B Cable	102	102	102	102
		C3	C3 Ladder	102	102	102	102
		C3	D3 Cable	102	102	102	102
		C3	G2 Cables	102	102	102	102
			C Overall	**102**	**102**	**102**	**86**

Summary of report No.: WF 549190

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick standard 30-minute flexible partition assembly.

		Specimen	Integrity (minutes)			Insulation (minutes)
Specimen A	**Aperture / Services**		**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	
1.No. 50mm layers of ROCKWOOL® FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services. 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable ladder and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	1200 mm high x 1200 mm wide Aperture **A1** – 450 mm wide x 50 mm high perforated steel tray supporting 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable **A2** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. D3 Cable. **A3** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. E Cable, 1. No. C1 Cable. 1. No. C3 Cable. **A4** – 300 mm wide x 100 mm high galvanized steel ladder supporting 2. No. B Cables, 3. No. A1 Cable. 3. No. A3 Cable. **A5** – 450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø F Bunch Cables, 2. No. G2 Cables.	A Seal	72	72	72	59
		A1 Tray	72	72	72	72
		E Cable	72	72	72	72
		D3 Cable	72	72	72	72
		D1 Cable	72	72	72	72
		A2 Ladder	72	72	72	72
		D3 Cable	72	72	72	72
		A3 Ladder	72	72	72	72
		C3 Cable	72	72	72	72
		E Cable	72	72	72	72
		C1 Cable	72	72	72	72
		A4 Ladder	72	72	72	72
		B Cable	72	72	72	72
		A2 Cables	72	72	72	72
		B Cable	72	72	72	72
		A1 Cables	72	72	72	72
		A5 Tray	72	72	72	63
		F Cables	72	72	72	72
		G2 Cables	72	72	72	72
		A Overall	**72**	**72**	**72**	**59**

Specimen B	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
1.No. 50mm layers of ROCKWOOL® FIREPRO® CB50 pattress fitted to both faces of the aperture overlapping 50 mm to all edges. All butt joints and bonded faces were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services.	700 mm high x 800 mm wide Aperture **B1** – 450 mm wide x 50 mm high perforated steel tray supporting 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable. **B2** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. D3 Cable. **B3** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. E Cable, 1. No. C1 Cable. 1. No. C3 Cable. **B4** – 300 mm wide x 100 mm high galvanized steel ladder supporting 2. No. B Cables, 3. No. A1 Cables 3. No. A2 Cables. **B5** – 450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø F Bunch Cables, 2. No. G2 Cables.	B Seal	72	72	72	72
		B1 Tray	72	72	72	72
		E Cable	72	72	72	72
		D3 Cable	72	72	72	72
		D1 Cable	72	72	72	72
		B2 Ladder	72	72	72	72
		D3 Cable	72	72	72	72
		B3 Ladder	72	72	72	72
		C3 Cable	72	72	72	72
		E Cable	72	72	72	72
		C1 Cable	72	72	72	72
		B4 Ladder	72	72	72	72
		B Cable	72	72	72	72
		A2 Cables	72	72	72	72
		B Cable	72	72	72	72
		A1 Cables	72	72	72	72
		B5 Tray	72	72	72	64
		F Cables	72	72	72	72
		G2 Cables	72	72	72	56
		B Overall	**72**	**72**	**72**	**56**

Specimen C	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
1.No. 50mm layers of ROCKWOOL® FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services. 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable ladder and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	600 mm high x 800 mm wide Aperture **C1** – 450 mm wide x 50 mm high perforated steel tray supporting 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable, 100 mm Ø F Bunch Cables. **C2** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. E Cable, 1. No. C1 Cable, 1. No. C3 Cable, 2. No. B Cables, 3. No. A1 Cables, 3. No. A3 Cables. **C3** – 300 mm wide x 100 mm high galvanized steel ladder supporting 1. No. D3 Cable, 2. No. G2 Cables.	C Seal	67	67	67	67
		C1 Tray	67	67	67	53
		D1 Cable	67	67	67	67
		D3 Cable	67	67	67	67
		F Bunch	67	67	67	67
		E Cable	67	67	67	67
		C2 Ladder	72	72	72	61
		C1 Cable	72	72	72	62
		E Cable	72	72	72	69
		C3 Cable	72	72	72	69
		A1 Cables	72	72	72	66
		B Cable	72	72	72	72
		A2 Cables	72	72	72	65
		B Cable	72	72	72	71
		C3 Ladder	72	72	72	69
		D3 Cable	72	72	72	66
		G2 Cables	72	72	72	64
		C Overall	**67**	**67**	**67**	**53**

Summary of report No.: WF 549191

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 90-minute flexible partition assembly.

				Integrity (minutes)			
Specimen	**Aperture / Services**		**Specimen**	**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	**Insulation (minutes)**
A	2000 mm high x 1100 mm wide Aperture. CB50 Patress	Seal	A Seal	144	144	144	144
A1	450 mm wide x 50 mm high perforated steel tray 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable	A1	A1 Tray	144	144	144	144
		A1	E Cable	144	144	144	144
		A1	D3 Cable	144	144	144	144
		A1	D1 Cable	144	144	144	144
A2	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable	A2	A2 Ladder	144	144	144	144
		A2	D3 Cable	144	144	144	144
A3	300 mm wide x 100 mm high galvanized steel ladder 1. No. E Cable, 1. No. C1 Cable. 1. No.C3 Cable.	A3	A3 Ladder	144	144	144	144
		A3	C3 Cable	144	144	144	144
		A3	E Cable	144	144	144	144
		A3	C1 Cable	144	144	144	144
A4	300 mm wide x 100 mm high galvanized steel ladder 2. No. B Cables, 3. No. A1 Cables, 3. No. A3 Cables	A4	A4 Ladder	144	144	144	144
		A4	B Cable	144	144	144	144
		A4	A3 Cables	144	144	144	0
		A4	B Cable	144	144	144	144
		A4	A1 Cables	144	144	144	144
A5	450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	A5	A5 Tray	144	144	144	144
		A5	F Cables	144	144	144	144
		A5	G2 Cables	144	144	144	144
			A Overall	**144**	**144**	**144**	**0**

				Integrity (minutes)			
	Aperture / Services		**Specimen**	**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	**Insulation (minutes)**
B	700 mm high x 800 mm wide Aperture. CB50 Double batt	Seal	B Seal	144	144	144	144
B1	450 mm wide x 50 mm high perforated steel tray 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable.	B1	B1 Tray	144	144	144	78
		B1	D1 Cable	144	144	144	81
		B1	D3 Cable	144	144	144	117
		B1	E Cable	144	144	144	85
B2	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable.	B2	B2 Ladder	144	144	144	144
		B2	D3 Cable	144	144	144	74
B3	300 mm wide x 100 mm high galvanized steel ladder 1 x E Cable, 1 x C1 Cable. 1 x C3 Cable.	B3	B3 ladder	144	144	144	74
		B3	C1 Cable	144	144	144	78
		B3	E cable	144	144	144	98
		B3	C3 Cable	144	144	144	88
B4	300 mm wide x 100 mm high galvanized steel ladder 2 x B Cables, 3 x A1 Cables, 3 x A3 Cables.	B4	B4 Ladder	144	144	144	68
		B4	A1 Cables	144	144	144	0
		B4	B Cable	144	144	144	82
		B4	A3 Cables	144	144	144	0
		B4	B Cable	144	144	144	44
B5	450 mm wide x 50 mm high galvanized steel tray 100 mm Ø bunch F Cables, 2. No. G2 Cables.	B5	B5 Tray	144	144	144	58
		B5	G2 Cables	144	144	144	51
		B5	F Cables	142	142	143	79
			B Overall	142	142	**143**	0

Summary of report No.: WF 549192

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 90-minute flexible partition assembly.

Seal	Specimen	Aperture / Services		Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
2.No. 50mm layers of ROCKWOOL® FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services . 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable ladder and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	A	2000 mm high x 1100 mm wide Aperture	Seal	A Seal	144	144	144	144
	A1	450 mm wide x 50 mm high perforated steel tray 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable	A1	A1 Tray	144	144	144	144
			A1	E Cable	144	144	144	144
			A1	D3 Cable	144	144	144	144
			A1	D1 Cable	144	144	144	144
	A2	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable	A2	A2 Ladder	144	144	144	144
			A2	D3 Cable	144	144	144	144
	A3	300 mm wide x 100 mm high galvanized steel ladder 1. No. E Cable, 1. No. C1 Cable. 1. No.C3 Cable.	A3	A3 Ladder	144	144	144	144
			A3	C3 Cable	144	144	144	144
			A3	E Cable	144	144	144	144
			A3	C1 Cable	144	144	144	144
	A4	300 mm wide x 100 mm high galvanized steel ladder 2. No. B Cables, 3. No. A1 Cables, 3. No. A3 Cables	A4	A4 Ladder	144	144	144	144
			A4	B Cable	144	144	144	144
			A4	A3 Cables	144	144	144	144
			A4	B Cable	144	144	144	144
			A4	A1 Cables	144	144	144	144
	A5	450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	A5	A5 Tray	144	144	144	144
			A5	F Cables	144	144	144	144
			A5	G2 Cables	144	144	144	144
				A Overall	**144**	**144**	**144**	**144**

					Integrity (minutes)			
Seal		**Aperture / Services**		**Specimen**	**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	**Insulation (minutes)**
2.No. 50mm layers of FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® AIS around edges of aperture and services. 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable ladder and cables in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	B	700 mm high x 800 mm wide Aperture	Seal	B Seal	144	144	144	144
	B1	450 mm wide x 50 mm high perforated steel tray supporting 1. No. D1 Cable, 1. No. D3 Cable, 1. No. 100 mm Ø F Bunch Cables, 1. No. E Cable	B1	B1 Tray	144	144	144	144
			B1	D1 Cable	144	144	144	144
			B1	D3 Cable	144	144	144	144
			B1	F Cables	144	144	144	144
			B1	E Cable	144	144	144	144
	B2	300 mm wide x 100 mm high galvanized steel ladder 1 x E Cable, 1 x C1 Cable. 1 x C3 Cable, 1x A1 cable, 2x B cables & 1x A3 cable	B2	B2 Ladder	144	144	144	144
			B2	C1 Cable	144	144	144	144
			B2	E Cable	144	144	144	144
			B2	C3 Cable	144	144	144	144
			B2	A1 Cables	144	144	144	144
			B2	B Cable	144	144	144	144
			B2	A3 Cables	144	144	144	144
			B2	B Cable	144	144	144	144
	B3	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable, 2x G2 cables	B3	B3 Ladder	144	144	144	144
			B3	D3 Cable	144	144	144	144
			B3	G2 Cables	144	144	144	144
				B Overall	**144**	**144**	**144**	**144**

Specimen	Seal	Aperture	Material	Pipe Dia	Wall	Integrity (minutes)			Insulation (minutes)
						Cotton Pad	Sustained flaming	Gap Gauge	
C1	2.No. 50mm layers of FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® AIS around edges of aperture and services. 20 mm wide by 25 mm deep annular gap sealed with FIREPRO® HES to both faces.	900 x 600	PP	110	2.7	89	89	92	83
C2			PVC	110	4.2	144	144	144	72
C3			PVC	110	6.6	122	122	124	67
Seal						89	89	92	67

Specimen	Seal	Aperture	Material	Pipe Dia	Wall	Integrity (minutes)			Insulation (minutes)
						Cotton Pad	Sustained flaming	Gap Gauge	
D1	2.No. 50mm layers of FIREPRO® CB50 friction fitted into the aperture. All butt joints and bonded faces were sealed with FIREPRO® AIS around edges of aperture and services FirePro® PWRoll wrapped around the service flush with both faces of the CB50. Nominal bead of FIREPRO® AIS cartridge gunned over the face of the wrap. D1 & D2 -3 Layers D3 - 4 Layers	800 x 600	PVC	110	4.2	144	144	144	144
D2			PVC	110	6.6	144	144	144	144
D3			PVC	160	6.2	144	144	144	144
Seal						144	144	144	144

Summary of report No.: WF 549193 Iss 2

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 90-minute flexible partition assembly.

Specimen A

				Integrity (minutes)			
Seal	**Aperture / Services**		**Specimen**	**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	**Insulation (minutes)**
50mm thick layer of FIREPRO® CB50 pattress fitted over the aperture to both faces of the wall. Overlapping 50 mm on all edges. All cuts and butt joints were sealed with FIREPRO® AIS with a nominal bead around edges and services.	700 mm high x 900 mm wide Aperture	Seal	A Seal	145	145	145	145
	450 mm wide x 50 mm high perforated steel tray 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable	A1	A1 Tray	145	145	145	116
		A1	E Cable	145	145	145	92
		A1	D3 Cable	145	145	145	145
		A1	D1 Cable	145	145	145	145
	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable	A2	A2 Ladder	145	145	145	145
		A2	D3 Cable	145	145	145	145
	300 mm wide x 100 mm high galvanized steel ladder 1. No. E Cable, 1. No. C1 Cable. 1. No.C3 Cable.	A3	A3 Ladder	145	145	145	113
		A3	C3 Cable	145	145	145	91
		A3	E Cable	145	145	145	132
		A3	C1 Cable	145	145	145	87
	300 mm wide x 100 mm high galvanized steel ladder 2. No. B Cables, 3. No. A1 Cables, 3. No. A3 Cables	A4	A4 Ladder	145	145	145	145
		A4	B Cable	145	145	145	145
		A4	A3 Cables	145	145	145	86
		A4	B Cable	145	145	145	46
		A4	A1 Cables	145	145	145	145
	450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	A5	A5 Tray	145	145	145	145
		A5	F Cables	145	145	145	145
		A5	G2 Cables	145	145	145	145
			A Overall	**145**	**145**	**145**	**46**

Specimen C

Seal	Aperture / Services		Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
Two layers of 50 mm thick FirePro® CB50 friction fit within the aperture, flush with both faces of the wall. All cuts and butt joints were sealed with FirePro® AIS with a nominal bead around edges and services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around cable trays, ladders and cables in a LI configuration 300 mm to unexposed face only. Secured to service with steel wire. **Installation was from the unexposed face only.**	700 mm high x 900 mm wide Aperture	Seal	C Seal	109	109	109	109
	450 mm wide x 50 mm high perforated steel tray supporting 1. No. D1 Cable, 1. No. D3 Cable, 1. No. 100 mm Ø F Bunch Cables, 1. No. E Cable	C1	C1 Tray	109	109	109	109
		C1	E Cable	109	109	109	109
		C1	F Cables	109	109	109	109
		C1	D3 Cable	109	109	109	109
		C1	D1 Cable	109	109	109	109
	300 mm wide x 100 mm high galvanized steel ladder 1 x E Cable, 1 x C1 Cable. 1 x C3 Cable, 3 x A1 cables, 3 x A3 cables and 2 x B cables	C2	C3 Ladder	109	109	109	109
		C2	G2 Cable	109	109	109	109
		C2	D3 Cable	109	109	109	109
		C2	C2 Ladder	109	109	109	109
		C2	B Cable	109	109	109	64
		C2	A1 Cables	109	109	109	109
		C2	B Cable	109	109	109	109
		C2	A3 Cables	109	109	109	109
	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable. 2. No G2 Cables	C3	C3 Cable	109	109	109	109
		C3	E Cable	109	109	109	109
		C3	C1 Cable	109	109	109	108
			C Overall	**109**	**109**	**109**	**64**

Specimen D

Seal	Aperture / Services		Specimen	Integrity (minutes) Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
Two layers of 50 mm thick FirePro® CB50 friction fit within the aperture, flush with both faces of the wall. All cuts and butt joints were sealed with FirePro® AIS with a nominal bead around edges and services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around cable trays, ladders and cables in a LI configuration 300 mm to exposed face only and secured to service with steel wire. **Installation was from the exposed face only.**	700 mm high x 900 mm wide Aperture	Seal	D Seal	145	145	145	106
	450 mm wide x 50 mm high perforated steel tray supporting 1. No. D1 Cable, 1. No. D3 Cable, 1. No. 100 mm Ø F Bunch Cables, 1. No. E Cable	D1	D1 Tray	145	145	145	145
		D1	D1 Cable	145	145	145	72
		D1	D3 Cable	145	145	145	100
		D1	F Cables	145	145	145	123
		D1	E Cable	145	145	145	105
	300 mm wide x 100 mm high galvanized steel ladder 1 x E Cable, 1 x C1 Cable. 1 x C3 Cable, 3 x A1 cables, 3 x A3 cables and 2 x B cables	D2	D2 Ladder	145	145	145	125
		D2	C1 Cable	145	145	145	145
		D2	E Cable	145	145	145	145
		D2	C3 Cable	145	145	145	120
		D2	A1 Cables	145	145	145	145
		D2	B Cable	145	145	145	145
		D2	A3 Cables	145	145	145	0
		D2	B Cable	145	145	145	145
	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable. 2. No G2 Cables	D3	D3 Ladder	145	145	145	145
		D3	D3 Cable	145	145	145	126
		D3	G2 Cables	145	145	145	0
			D Overall	145	145	145	0

Summary of report No.: WF 549194

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 60-minute flexible partition assembly.

Specimen A

Seal	Aperture / Services		Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
Two layers of 50mm thick layer of ROCKWOOL® FIREPRO® CB50 friction fitted into the aperture from the unexposed face. All butt joints were sealed with FIREPRO® Acoustic Intumescent Sealant around edges of aperture and services from the unexposed face. 40 mm uncompressed ROCKWOOL® DuctWrap, cut to size and wrapped around cable trays, ladders and cables in a LI configuration 300 mm to unexposed face only and secured to service with steel wire.	2000mm high x 1000mm wide Aperture	Seal	A Seal	132	132	132	132
	450 mm wide x 50 mm high perforated steel tray 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable	A1	A1 Tray	132	132	132	132
		A1	E Cable	132	132	132	92
		A1	D3 Cable	132	132	132	132
		A1	D1 Cable	132	132	132	132
	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable	A2	A2 Ladder	132	132	132	132
		A2	D3 Cable	132	132	132	132
	300 mm wide x 100 mm high galvanized steel ladder 1. No. E Cable, 1. No. C1 Cable. 1. No.C3 Cable.	A3	A3 Ladder	132	132	132	132
		A3	C3 Cable	132	132	132	122
		A3	E Cable	132	132	132	115
		A3	C1 Cable	132	132	132	106
	300 mm wide x 100 mm high galvanized steel ladder 2. No. B Cables, 3. No. A1 Cables, 3. No. A3 Cables	A4	A4 Ladder	132	132	132	132
		A4	B Cable	132	132	132	132
		A4	A3 Cables	132	132	132	132
		A4	B Cable	132	132	132	132
		A4	A1 Cables	132	132	132	132
	450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	A5	A5 Tray	132	132	132	119
		A5	F Cables	132	132	132	119
		A5	G2 Cables	132	132	132	116
			A Overall	**132**	**132**	**132**	**92**

Specimen B

				Integrity (minutes)			
Seal	**Aperture / Services**		**Specimen**	**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	**Insulation (minutes)**
Two layers of 50mm thick FirePro® CB50 friction fit into the aperture from the exposed face. All butt joints were sealed with FirePro® AIS around edges of aperture and services from the unexposed face. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around cable trays, ladders and cables in a LI configuration 300 mm to unexposed face only and secured to service with steel wire.	2000mm high x 1000mm wide	Seal	B Seal	127	127	127	127
	450 mm wide x 50 mm high perforated steel tray 1. No. E Cable, 1. No. D3 Cable, 1. No. D1 Cable	B1	B1 Tray	132	132	132	132
		B1	E Cable	132	132	132	132
		B1	D3 Cable	132	132	132	132
		B1	D1 Cable	132	132	132	132
	300 mm wide x 100 mm high galvanized steel ladder 1.No. D3 Cable	B2	B2 Ladder	132	132	132	132
		B2	C3 Cable	132	132	132	132
	300 mm wide x 100 mm high galvanized steel ladder 1. No. E Cable, 1. No. C1 Cable. 1. No.C3 Cable.	B3	E Cable	132	132	132	132
		B3	C1 Cable	132	132	132	132
		B3	B3 Ladder	132	132	132	132
		B3	D3 Cable	132	132	132	132
	300 mm wide x 100 mm high galvanized steel ladder 2. No. B Cables, 3. No. A1 Cables, 3. No. A3 Cables	B4	B4 Ladder	132	132	132	132
		B4	B Cable	132	132	132	132
		B4	A2 Cable	132	132	132	132
		B4	B Cable	132	132	132	132
		B4	A1 Cable	132	132	132	132
	450 mm wide x 50 mm high galvanized steel tray supporting 100 mm Ø bunch F Cables, 2. No. G2 Cables.	B5	B5 Tray	132	132	132	91
		B5	F Cables	132	132	132	132
		B5	G2 Cables	132	132	132	91
			B Overall	**127**	**127**	**127**	**91**

Summary of report No.: WF 549195

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick standard 30-minute flexible partition assembly.

Specimen	Seal	Aperture / Services	Material	Pipe Dia	Wall	Capping	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
A Seal	50 mm thick layer of 'ROCKWOOL® FIREPRO® CB50' was friction fitted into the aperture. 'FIREPRO® AIS' sealant was used to seal the batt to the aperture and any gaps in the batt. 20 mm wide annular gap sealed with 'ROCKWOOL® FIREPRO® HES' the full depth of the batt seal.	640 x 380					74	74	74	40
A1		640 x 380	PVC	110	6.6	U/C.	40	40	42	38
A2		640 x 380	PVC	110	4.2	U/C.	39	41	41	36
A3		640 x 380	PP	110	2.7	U/C.	35	35	37	11
A Overall		640 x 380					**35**	**35**	**37**	**11**
B Seal	50 mm thick 'ROCKWOOL® FIREPRO® CB50' was pattress fitted with a 50 mm overhang around the perimeter of the aperture on both faces of the wall. All gaps and joints sealed with 'FIREPRO® AIS' sealant. 20 mm high by 25 mm deep annular gap sealed with 'ROCKWOOL® FIREPRO® HES'.	640 x 380					74	74	74	54
B1		640 x 380	PVC	110	6.6	U/C.	56	57	57	27
B2		640 x 380	PVC	110	4.2	U/C.	44	46	46	27
B3		640 x 380	PP	110	2.7	U/C.	27	27	29	26
B Overall		640 x 380					**27**	**27**	**29**	**26**

Specimens C & D

C Seal	2 layers of 40 mm wide by 3 mm thick 'ROCKWOOL® FIREPRO® PWROLL' wrapped the pipe flush with the batt at both faces of the wall. 50 mm thick 'ROCKWOOL® FIREPRO® CB50' was pattress fitted with a 50 mm overhang around the perimeter of the aperture on both faces of the wall. 'FIREPRO® AIS' sealant used to seal any gaps.	590 x 380					74	74	74	74
C1		590 x 380	PVC	110	4.2	U/C.	74	74	74	74
C2		590 x 380	PVC	110	6.6	U/C.	74	74	74	74
C3		590 x 380	PVC	160	6.2	U/C.	74	74	74	74
C Overall		590 x 380					**74**	**74**	**74**	**74**
D Seal	2 layers of 40 mm wide by 3 mm thick 'ROCKWOOL® FIREPRO® PWROLL' installed centrally around the service. 50 mm thick layer of' ROCKWOOL® FIREPRO® CB50' was friction fitted into the aperture. 'FIREPRO® AIS' sealant was used to seal the batt to the aperture and any gaps in the batt.	590 x 380					74	74	74	49
D1		590 x 380	PVC	110	4.2	U/C.	50	50	54	35
D2		590 x 380	PVC	110	6.6	U/C.	64	64	67	49
D3		590 x 380	PVC	160	6.2	U/C.	74	74	74	44
D Overall		590 x 380					**50**	**50**	**54**	**35**

Specimen E & F

E Seal	50 mm thick layer of 'ROCKWOOL® FIREPRO® CB50' was friction fitted into the aperture. 'FIREPRO® AIS' sealant was used to seal the batt to the aperture and any gaps in the batt. 'ROCKWOOL® FIREPRO® Pipe Collar' fixed around the service on both sides of the wall.	670 x 380					74	74	74	59
E1		670 x 380	PVC	160	4	U/C.	74	74	74	74
E2		670 x 380	PVC	110	2.7	U/C.	74	74	74	74
E3		670 x 380	PVC	110	2.7	U/C.	74	74	74	74
E Overall		670 x 380					**74**	**74**	**74**	**59**
F Seal	50 mm thick 'ROCKWOOL® FIREPRO® CB50' was pattress fitted with a 50 mm overhang around the perimeter of the aperture on both faces of the wall. 'FIREPRO® AIS' sealant was used to seal the batt to the aperture and any gaps in the batt. 'ROCKWOOL® FIREPRO® Pipe Collar' fixed around the service on both sides of the wall.	670 x 380					74	74	74	74
F1		670 x 380	PP	160	4	U/C.	74	74	74	74
F2		670 x 380	HDPE	110	2.7	U/C.	74	74	74	74
F3		670 x 380	PP	110	2.7	U/C.	74	74	74	74
F Overall		670 x 380					**74**	**74**	**74**	**74**

Summary of report No.: WF 549196

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 90-minute flexible partition assembly.

Specimen	Seal	Aperture / Services	Material	Dia	Wall	Capping
B1	Two layers of 50mm thick 'FIREPRO® CB50' pattress fitted over the aperture, to both faces with a 50 mm overlap on all edges. All butt gaps and joints were sealed with 'FIREPRO® AIS'. Each Service had 20 mm wide by 25 mm deep annular gap sealed with 'FIREPRO® HES' to both faces.	380 mm high x 640 mm wide Aperture 110 mm Ø diameter by 6.6 mm wall thickness PVC pipe, U/C	PVC	110	6.6	U/C
B2		380 mm high x 640 mm wide Aperture 110 mm Ø diameter by 4.2 mm wall thickness PVC pipe, U/C	PVC	110	4.2	U/C
B3		380 mm high x 640 mm wide Aperture 110 mm Ø diameter by 2.7 mm wall thickness PP pipe, U/C	PP	110	2.7	U/C
C1	Two layers of 50 mm thick 'FirePro® CB50' friction fitted within the aperture. All butt joints were sealed with 'FIREPRO® AIS' any gaps and joints. 20 mm wide by 90 mm deep annular gap sealed with 'FirePro® HES' installed from the **unexposed face only** over a PE backing rod.	380 mm high x 640 mm wide Aperture 110 mm Ø diameter by 6.6 mm wall thickness PVC pipe, U/C	PVC	110	6.6	U/C
C2		380 mm high x 640 mm wide Aperture 110 mm Ø diameter by 4.2 mm wall thickness PVC pipe, U/C	PVC	110	4.2	U/C
C3		380 mm high x 640 mm wide Aperture 110 mm Ø diameter by 2.7 mm wall thickness PP pipe, U/C	PP	110	2.7	U/C
D1	Two layers50mm thick layer of ' FIREPRO® CB50' pattress fitted over the aperture, to both faces with a 50 mm overlap on all edges. All butt gaps and joints were sealed with 'FIREPRO® AIS'. D1 & D2 - Three layers of 40 mm wide by 2 mm thick 'FIREPRO®	380 mm high x 522 mm wide Aperture 110 mm Ø diameter by 4.2 mm wall thickness PVC pipe, U/C	PVC	110	4.2	U/C
D2		380 mm high x 522 mm wide Aperture 110 mm Ø diameter by 6.6 mm wall thickness PVC pipe, U/C	PVC	110	6.6	U/C

D3	PWROLL' D3 - 4 Layers of 40 mm wide by 2 mm thick 'FIREPRO® PWROLL' installed around the service flush with both faces.	380 mm high x 522 mm wide Aperture 160 mm Ø diameter by 6.2 mm wall thickness PVC pipe, U/C	PVC	160	6.2	U/C
E1	Two layers 50mm thick layer of 'FIREPRO® CB50' pattress fitted over the aperture, to both faces with a 50 mm overlap on all edges. All butt gaps and joints were sealed with 'FIREPRO® AIS', installed from the **exposed face only** E1 & E2 - Three layers of 40 mm wide by 2 mm thick 'FIREPRO® PWROLL' E3 - 4 Layers of 40 mm wide by 2 mm thick 'FIREPRO® PWROLL' installed around the service flush with both faces.	380 mm high x 667 mm wide Aperture 110 mm Ø diameter by 4.2 mm wall thickness PVC pipe, U/C	PVC	110	4.2	U/C
E2		380 mm high x 667 mm wide Aperture 110 mm Ø diameter by 6.6 mm wall thickness PVC pipe, U/C	PVC	110	6.6	U/C
E3		380 mm high x 667 mm wide Aperture 160 mm Ø diameter by 6.2 mm wall thickness PVC pipe, U/C	PVC	160	6.2	U/C
F1	Two layers 50mm thick layer of 'FIREPRO® CB50' pattress fitted over the aperture, to both faces with a 50 mm overlap on all edges. All butt gaps and joints were sealed with 'FIREPRO® AIS' 'FIREPRO® Pipe Collar' installed to both faces.	380 mm high x 670 mm wide Aperture 160 mm Ø diameter by 4 mm wall thickness PP pipe, U/C	PP	160	4	U/C
F2		380 mm high x 670 mm wide Aperture 110 mm Ø diameter by 2.7 mm wall thickness HDPE pipe, U/C	HDPE	110	2.7	U/C
F3		380 mm high x 670 mm wide Aperture 110 mm Ø diameter by 2.7 mm wall thickness PP pipe, U/C	PP	110	2.7	U/C
G1	Two layers 50mm thick layer of ' FIREPRO® CB50' friction fitted into the aperture, flush with both faces. All butt gaps and joints were sealed with 'FIREPRO® AIS' installed from the **unexposed face only** G1 & G2 - Three layers of 40 mm wide by 2 mm thick 'FIREPRO® PWROLL' G3 - 4 Layers of 40 mm wide by 2 mm thick 'FIREPRO® PWROLL' installed around the service flush with both faces.	380 mm high x 670 mm wide Aperture 110 mm Ø diameter by 2.7 mm wall thickness PP pipe, U/C	PP	110	2.7	U/C
G2		380 mm high x 670 mm wide Aperture 110 mm Ø diameter by 2.7 mm wall thickness HDPE pipe, U/C	HDPE	110	2.7	U/C
G3		380 mm high x 670 mm wide Aperture 160 mm Ø diameter by 4 mm wall thickness PP pipe, U/C	PP	160	4	U/C

Test results

Specimen	Integrity (minutes)			Insulation (minutes)
	Cotton Pad	Sustained flaming	Gap Gauge	
B Seal	146	146	146	146
B1	146	146	146	146
B2	146	146	146	146
B3	104	104	108	86
B Overall	**104**	**104**	**108**	**86**
C Seal	146	146	146	123
C1	139	139	143	86
C2	109	109	109	109
C3	104	104	108	97
C Overall	**104**	**104**	**108**	**86**
D Seal	146	146	146	146
D1	146	146	146	146
D2	146	146	146	146
D3	146	146	146	146
D Overall	**146**	**146**	**146**	**146**
E Seal	146	146	146	146
E1	146	146	146	146
E2	146	146	146	146
E3	146	146	146	146
E Overall	**146**	**146**	**146**	**146**
G Seal	146	146	146	146
G1	146	146	146	120
G2	146	146	146	146
G3	146	146	146	146
G Overall	**146**	**146**	**146**	**146**
F Seal	146	146	146	146
F1	146	146	146	146
F2	146	146	146	146
F3	146	146	146	146
F Overall	**146**	**146**	**146**	**146**

Summary of report No.: WF 549200 Iss 2

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 90-minute flexible partition assembly.

Specimen A

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
50mm thick layer of FIREPRO® CB50 pattress fitted over the aperture to both faces of the wall, overlapping 50 mm on all edges. 20 mm wide by 25 mm deep annular gap sealed with 'FIREPRO® HES' to both sides of the wall.	500 mm wide x 300 mm high partition Aperture / 450 mm wide x 50 mm high perforated steel tray supporting 3. No. A1 cables. 3. No. A2 cables. 2. No. B cables. 2. No. E cables. 1. No. C1 cable. 1. No. C3 cable. 100 mm Ø bundle of F cables.	A - Seal	150	150	150	150
		A – C1 Cable	150	150	150	150
		A – E Cable	150	150	150	150
		A – C3 Cable	150	150	150	27
		A – A1 Cables	150	150	150	105
		A – B Cable	150	150	150	135
		A – A2 Cables	150	150	150	150
		A – B Cable	150	150	150	117
		A – F Cables	150	150	150	150
		A – E Cable	150	150	150	137
		A - Overall	**150**	**150**	**150**	**27**

Specimen C

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
2 layers of 50mm thick FIREPRO® CB50 friction fitted into the aperture to both faces of the wall. 20 mm wide by 20 mm deep annular gap sealed with 'FIREPRO® HES' to both sides of the wall.	595 mm wide by 350 high partition Aperture / 450 mm wide x 50 mm high perforated steel tray supporting 3. No. A1 cables. 3. No. A2 cables. 2. No. B cables. 2. No. E cables. 1. No. C1 cable. 1. No. C3 Cable. 100 mm Ø bunch of F Cables.	C - Seal	150	150	150	150
		C – C1 Cable	150	150	150	107
		C – E Cable	150	150	150	150
		C – C3 Cable	150	150	150	101
		C – A1 Cables	150	150	150	115
		C – B Cable	150	150	150	150
		C – A2 Cables	150	150	150	109
		C – B Cable	150	150	150	150
		C – F Cables	150	150	150	150

		C – E Cable	150	150	150	125
		C - Overall	**150**	**150**	**150**	**101**

Specimen D

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joints in the batt. 3 layers of 2 mm FirePro® PWRoll was installed around the pipe flush with the batt on both faces of the wall. All cuts and butt joints were sealed with FirePro® AIS with a nominal bead around edges and services.	595 mm wide by 350 high partition Aperture / 3 x 63 mm Ø by 6.0 mm wall thickness PP-RT/AL/PP-RT UPONOR MLCP pipe. U/C	D - Seal	150	150	150	150
		D1	150	150	150	76
		D2	150	150	150	114
		D3	150	150	150	150
		D - Overall	**150**	**150**	**150**	**76**

Specimen E

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt. FIREPRO® Pipe Collar incorporating 4 layers of 2 mm thick intumescent strips, fixed around the service on both sides of the wall. A nominal bead of FIREPRO® AIS sealant used to seal any gaps between the service and the batt.		E - Seal	150	150	150	150
	595 mm wide by 350 high partition Aperture / 110 mm Ø by 2.7 mm wall thickness HDPE pipe. U/C.	E1	150	150	150	150
	595 mm wide by 350 high partition Aperture / 110 mm Ø by 2.7 mm wall thickness PP pipe. U/C.	E2	150	150	150	150
	595 mm wide by 350 high partition Aperture / 160 mm Ø by 4 mm wall thickness PP pipe. U/C.	E3	150	150	150	150
		E - Overall	**150**	**150**	**150**	**150**

Specimen F

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt.		F - Seal	150	150	150	150
	595 mm wide by 350 high partition Aperture / 3 x 42 mm Ø by 1.2 mm wall thickness Copper pipes with a 25 mm thick layer of Rocklap H & V Pipe Section® installed in a LS configuration, C/U.	F1	150	150	150	108
		F2	150	150	150	113
		F3	150	150	150	150
		F - Overall	**150**	**150**	**150**	**108**

Specimen G

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
		G - Seal	150	150	150	150
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt. 20 mm wide by 25 mm deep annular gap sealed with 'FIREPRO® HES' to both sides of the wall.	595 mm wide by 350 high partition Aperture / 3 x 42 mm Ø by 5 mm wall thickness Corrugated stainless steel pipe wrapped within a yellow polyethylene jacket installed in a circular cluster. U/C.	G1	150	150	150	55
	595 mm wide by 350 high partition Aperture / 20 mm Ø by 2.5 mm wall thickness CPVC pipe. U/C.	G2	150	150	150	150
	595 mm wide by 350 high partition Aperture / 80 mm Ø by 8 mm wall thickness CPVC pipe. U/C.	G3	150	150	150	0
		G - Overall	**150**	**150**	**150**	**0**

Specimen H

Seal	Aperture / Services	Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt.	595 mm wide by 350 high partition Aperture / 110 mm Ø by 10 mm wall thickness PP-RT/AL/PP-RT pipe. U/C.	H - Seal	150	150	150	150
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt. FIREPRO® Pipe Collar incorporating 4 layers of 2 mm intumescent strips, fixed around the service on both sides of the wall. A nominal bead of FIREPRO® AIS sealant used to seal any gaps between the service and the batt.	595 mm wide by 350 high partition Aperture / 110 mm Ø by 10 mm wall thickness PP-RT/AL/PP-RT Uponor MLCP pipe. U/C.	H1	150	150	150	50
2 layers of 50 mm thick FIREPRO® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt. 3 layers of 2 mm thick FIREPRO® PW ROLL was installed around the pipe flush with the batt on both faces of the wall. All cuts and butt joints were sealed with FIREPRO® AIS with a nominal bead around edges and services.	595 mm wide by 350 high partition Aperture / 110 mm Ø by 10 mm wall thickness PP-RT/AL/PP-RT Uponor MLCP pipe. U/C.	H2	150	150	150	79
		H - Overall	**150**	**150**	**150**	**50**

Specimen I

		Specimen	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained flaming	Gap Gauge	
		I - Seal	150	150	150	150
2 layers of 50 mm thick FirePro® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt. 20 mm wide by 25 mm deep annular gap sealed with 'FirePro® HES' to both sides of the wall.	595 mm wide by 350 high partition Aperture / 16 mm Ø by 2.0 mm wall thickness PP- RT/AL/PP-RT pipe with 5 mm thick PE insulation sleeve in a CS config. U/C.	I1	150	150	150	91
	595 mm wide by 350 high partition Aperture / 25 mm Ø by 2.5 mm wall thickness PP- RT/AL/PP-RT pipe with a 5 mm thick PE insulation sleeve in a CS config. U/C.	I2	150	150	150	91
	595 mm wide by 350 high partition Aperture / 25 mm Ø by 2.5 mm wall thickness PP- RT/AL/PP-RT pipe with a 5 mm thick insulation sleeve in a CS config. U/C.	I3	150	150	150	91
2 layers of 50 mm thick FirePro® CB50 friction fitted within the aperture on a bed of FirePro® AIS sealant. The sealant was used on any gaps and joins in the batt. FirePro® Pipe Collar incorporating a layer of 10 mm intumescent fixed around the service on both sides of the wall. A nominal bead of FIREPRO® AIS sealant used to seal any gaps between the service and the batt.	595 mm wide by 350 high partition Aperture / 40 mm Ø by 2.0 mm wall thickness PP- RT/AL/PP-RT pipe. U/C.	I4	150	150	150	72
2 layers of 50 mm thick FirePro® CB50 friction fitted within the aperture on a bed of FIREPRO® AIS sealant. The sealant was used on any gaps and joins in the batt. A single layer of 2 mm FirePro® PW ROLL was installed around the pipe flush with the batt on both faces of the wall. All cuts and butt joints were sealed with FirePro® AIS	595 mm wide by 350 high partition Aperture / 40 mm Ø by 2.0 mm wall thickness PP- RT/AL/PP-RT pipe. U/C.	I5	150	150	150	38
		I - Overall	**150**	**150**	**150**	**38**

Summary of report No.: WF 549201

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick standard 30-minute flexible partition assembly.

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
A	Single layer of 50mm FIREPRO® CB50 pattress fitted to the face of the partition, with 50mm overlap on all edges of the aperture on both faces. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service.	450 mm wide x 50 mm high galvanized steel tray supporting 3. No. A1 cables, 3. No. A2 cables, 2. No. B cables, 2. No. E Cables, 1. No. C1 Cable, 1. No. C3 cable and 100 mm diameter F Bunch.	A Seal	66	66	66	66
			A Tray	66	66	66	66
			C1 Cable	66	66	66	66
			E Cable	66	66	66	66
			C3 Cable	66	66	66	66
			A1 Cables	66	66	66	66
			B Cable	66	66	66	66
			A2 Cables	66	66	66	66
			B Cable	66	66	66	66
			F Cables	66	66	66	66
			E Cable	66	66	66	66
			A Overall	**66**	**66**	**66**	**66**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
B Seal	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® Acoustic intumescent sealant". **B1** - 110 mm Ø x 40 mm wide x 10 mm thick 'FIREPRO® Pipe Collar' fixed flush with both faces of the batt, fixed into place with pigtail screws. **B2** - 3. No. layers of 40 mm wide x 2 mm thick 'FirePro® PW Roll' intumescent wrapped around the pipe centrally within the batt. Nominal bead of "FIREPRO® AIS" applied to seal gaps.		B Seal	66	66	66	57
B1		**B1** - 110 mm Ø Aperture / 110 mm Ø by 10 mm wall thickness UPONOR PP- RT/AL/PP-RT pipe. U/C	B1	66	66	66	37
B2		**B2** - 122 mm Ø Aperture / 110 mm Ø by 10 mm wall thickness UPONOR PP- RT/AL/PP-RT pipe. U/C	B2	66	66	66	51
			B Overall	**66**	**66**	**66**	**37**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
C	Single layer of 50mm thick FIREPRO® CB50 batt was friction fitted centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS' 20 mm annulus of FIREPRO® HES cartridge gunned to a depth of 50 mm around the service.	450 mm wide x 50 mm high galvanized steel tray supporting 3. No. A1 cables, 3. No. A3 cables, 2. No. B cables, 2. No. E Cables, 1. No. C1 Cable, 1. No. C3 cable and 100 mm diameter F Bunch.	C Seal	66	66	66	61
			C Tray	66	66	66	63
			C1 Cable	66	66	66	66
			E Cable	66	66	66	59
			C3 Cable	66	66	66	66
			A1 Cables	66	66	66	62
			B Cable	66	66	66	59
			A2 Cables	66	66	66	66
			B Cable	66	66	66	66
			F Cables	66	66	66	57
			E Cable	66	66	66	66
			C Overall	**66**	**66**	**66**	**57**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
D			**D Seal**	**66**	**66**	**66**	**54**
	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with “FIREPRO® AIS”.	D1 – D3 - 92 mm Ø Aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe. 25 mm thick x 1000 mm long ROCKWOOL ® ‘H & V Pipe Section® sleeve insulation wrapped around the pipe in a CS config. C/U	**D1**	**66**	**66**	**66**	**64**
			D2	**66**	**66**	**66**	**55**
			D3	**66**	**66**	**66**	**66**
			D Overall	**66**	**66**	**66**	**54**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
E	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS". E1-E3 – 50 mm deep FirePro HES cartridge gunned around the services in a 20 mm annulus	595 mm long x 350 mm wide aperture	E Seal	66	66	66	66
E		**E1** - 25 mm Ø Aperture / 16 mm Ø by 2 mm wall thickness UPONOR PP-RT/AL/PP-RT Pipe. 5 mm thick polyethylene foam insulation sleeve. U/C	E1	66	66	66	12
E		**E2** - 40 mm Ø Aperture / 25 mm Ø by 2.5 mm wall thickness UPONOR PP-RT/AL/PP-RT Pipe. 10 mm thick polyethylene foam insulation sleeve. U/C	E2	66	66	66	42
E		**E3** - 50 mm Ø Aperture / 25 mm Ø by 2.5 mm wall thickness UPONOR PP-RT/AL/PP-RT Pipe. 13 mm thick polyethylene foam insulation sleeve. U/C	E3	66	66	66	66
E	**E4** - 40 mm Ø x 40 mm wide x 10 mm thick 'FIREPRO® Pipe Collar' fixed flush with both faces of the batt, fixed into place with pigtail screws.	**E4** - 40 mm Ø Aperture / 40 mm Ø by 2 mm wall thickness UPONOR PP-RT/AL/PP-RT Pipe. U/C.	E4	66	66	66	32
E	**E5** - 1. No. layer of 40 mm wide x 2 mm thick FirePro® PW Roll' intumescent wrapped around the pipe centrally within the batt. Nominal bead of "FIREPRO® AIS" applied to seal gaps.	**E5** - 44 mm Ø Aperture / 40 mm Ø by 2 mm wall thickness UPONOR PP-RT/AL/PP-RT Pipe. U/C.	E5	66	66	66	58
			E Overall	**66**	**66**	**66**	**12**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
F	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS".		F Seal	66	66	66	60
F	**F1-F3 -** 3. No. layer of 40 mm wide x 2 mm thick 'FirePro® PW Roll' intumescent wrapped around the pipe centrally within the batt. Nominal bead of "FIREPRO® AIS" applied to seal gaps.	**F1-F3 -** 75 mm Ø Aperture / 63 mm Ø by 6 mm wall thickness UPONOR PP- RT/AL/PP-RT Pipe. U/C	F1	66	66	66	66
F			F2	66	66	66	49
F			F3	66	66	66	40
			F Overall	**66**	**66**	**66**	**40**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
G Seal			G Seal	47	47	47	47
G	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS". **G1-G3** - 20 mm annulus of FIREPRO® HES cartridge gunned to a depth of 50 mm around the services.	**G1-G3 -** 102 mm Ø Aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe. 30 mm thick x 1000 mm long Kingspan Kooltherm sleeve insulation wrapped around the pipe in a continuous sustained configuration. C/U	G1	47	47	47	47
			G2	47	47	47	47
			G3	44	44	45	44
			G Overall	**44**	**44**	45	**44**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
			H Seal	33	33	33	33
H	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS". **H1-H3** - 20 mm annulus of FIREPRO® HES cartridge gunned to a depth of 50 mm around the services.	**H1-H3 -** 102 mm Ø Aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe. 32 mm thick x 1000 mm long Armaflex sleeve insulation wrapped around the pipe in a continuous sustained configuration. C/U	H1	30	30	33	30
			H2	30	30	33	30
			H3	33	33	33	33
			H Overall	**30**	**30**	**30**	**30**

Specimen	Seal	Services	Specimen	Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
I	Single layer of 50mm thick FIREPRO® CB50 batt was friction fit centrally within the aperture on a bed of sealant. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS". **I1-I6** - 20 mm annulus of FIREPRO® HES cartridge gunned to a depth of 50 mm around the services.		I Seal	66	66	66	61
		I1-I3 - 60 mm Ø Aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe. 9 mm thick x 1000 mm long Armaflex sleeve insulation wrapped around the pipe in a continuous sustained configuration. C/U	I1	57	66	66	57
			I2	57	66	66	57
			I3	57	66	66	27
		I4-I6 - 72 mm Ø Aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe. 15 mm thick x 1000 mm long Kingspan Kooltherm sleeve insulation wrapped around the pipe in a continuous sustained configuration. C/U	I4	64	64	66	59
			I5	64	64	66	52
			I6	64	64	66	64
			I Overall	**57**	**64**	**66**	**27**

Summary of report No.: WF 549202

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick standard 30-minute flexible partition assembly.

Specimen	Seal type	Aperture	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained Flaming	Gap Gauge	
A	Single layer of 50mm FIREPRO® CB50 pattress fitted to the face of the partition, up to the soffit of the restraint frame, with 50mm overlap on all edges of the aperture on both faces. The head of the pattress was secured to a steel angle on both faces which was through fixed to the restraint frame. 75 mm void was left between batts. All cuts and butt joints were sealed with FIREPRO® AIS.	1100 mm high x 1100 mm wide	107	107	107	91
B	1010 mm high double layer of 50mm thick FIREPRO® CB50 batt was friction fitted into the aperture. 200 mm high by 100 mm thick FIREPRO® Flex Seal Strip as compression fit into the top of the aperture with 10 mm compression to the width and length. All edges sealed with a nominal bead and all cuts and butt joints sealed with “FIREPRO® AIS”. Flex Seal Strip was brush coated with FIREPRO® Flex Seal Coating.	1210 mm high x 1200 mm wide aperture lined with 1 layer of 12.5 mm plasterboard. Additional 12.5 mm plasterboard was framed around the bottom and sides of the aperture.	107	107	107	107

Summary of report No.: WF 550561 Iss 2

A range of FirePro® CB50 penetration seals, penetrating a 100 mm thick standard 90-minute flexible partition assembly.

Specimen	Seal	Aperture / Services	Integrity (minutes)			
			Cotton Pad	Sustained flaming	Gap Gauge	Insulation (minutes)
A Seal	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant.	**N/A**	149	149	149	149
A2	3 layers of 2 mm thick by 40 mm long FirePro® PWRoll installed around the service flush with both faces of batt seal. 2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant.	300 mm high by 640 mm wide partition aperture / 63 mm Ø by 6 mm wall thickness UPONOR MLCP PE-RT Pipe U/C.	149	149	149	88
A3	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	300 mm high by 640 mm wide partition aperture / Cluster of 3 Polypipe PB pipes all 28 mm Ø by 2.6 mm wall thickness U/C.	149	149	149	149
A4.1	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant.	300 mm high by 640 mm wide partition aperture / 76 mm Ø by 1.5 mm wall thickness Copper Pipe C/U. 25 mm thick layer of RockLap H&V Pipe Section installed in a local sustained configuration.	148	148	149	125
A4.2			148	148	149	122
A4.3		300 mm high by 640 mm wide partition aperture / 15 mm Ø by 0.7 mm wall thickness Copper Pipe	149	149	149	147

		C/U. 20 mm thick layer of RockLap H&V Pipe Section installed in a local sustained configuration.				
B	2 layers of 50 mm thick FirePro® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. 500 mm wide by 260 mm high by 25 mm deep cut back to the faces of the batt to the exposed and unexposed faces, filled with FirePro® HES.	700 mm wide by 350 mm high partition aperture / N/A blank seal	149	149	149	149
C Seal	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant.	N/A	149	149	149	149
C2.1	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	300 mm high by 640 mm wide partition aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe C/U. 9 mm thick layer of Armaflex insulation installed in a LS configuration.	149	149	149	116
C2.2		300 mm high by 640 mm wide partition aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe C/U. 32 mm thick layer of Armaflex insulation installed in a LS configuration.	149	149	149	144
C2.3		300 mm high by 640 mm wide partition aperture / 6 mm Ø by 0.6 mm wall thickness Copper Pipe C/U. 6 mm thick layer of Armaflex insulation installed in a LS configuration.	149	149	149	146
C3.1	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant. 20 mm wide by 25 mm deep annular gap sealed with	300 mm high by 640 mm wide aperture / 25 mm Ø by 2 mm wall thickness S13 PP-RT/AL/PP- RT PLUS UPONOR MLCP Pipe U/C. 13 mm thick layer of polyethylene foam insulation installed in a CS configuration.	149	149	149	143
C3.2		300 mm high by 640 mm wide partition aperture / 25 mm Ø by 2.5 mm wall thickness S10 PP-RT/AL/PP-RT PLUS UPONOR MLCP Pipe U/C. 10 mm thick layer of	149	149	149	80

	FirePro® HES to both faces of the wall.	polyethylene foam insulation installed in a CS configuration.				
C3.3		300 mm high by 640 mm wide partition aperture / 16 mm Ø by 2 mm wall thickness S6 PP-RT/AL/PP-RT PLUS UPONOR MLCP Pipe U/C. 6 mm thick layer of polyethylene foam insulation installed in a CS configuration.	149	149	149	149
C4	2 layers of 50 mm thick FirePro® CB50 ablative batt pattress fitted with a 50 mm overlap to all edges on both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	300 mm high by 640 mm wide partition aperture / 48 mm Ø by 3.85 mm wall thickness CVPC Pipe U/C.	149	149	149	149
E Seal			149	149	149	149
E2	2 layers of 50 mm thick FirePro® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS sealant. Nominally 20 mm wide by 25 mm deep annular gap sealed with FIREPRO® HES to both faces of the wall.	300 mm high by 700 mm wide partition aperture / 88 mm Ø by 6.95 mm wall thickness CVPC Pipe U/C.	149	149	149	149
F Seal	2 layers of 50 mm thick FIREPRO® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FIREPRO® AIS sealant. Nominally 20 mm wide by 25 mm deep annular gap sealed with FIREPRO® HES to both faces of the wall.	300 mm high by 700 mm wide partition aperture / 450 mm wide by 50 mm high perforated pre-galvanised steel cable tray supporting: .	149	149	149	149
F HPE			149	149	149	149
F1 Tray			149	149	149	0
F1.1		F1.1 1 x 42 mm Ø by 1.2 mm wall thickness Copper Pipe U/C, with a 9 mm thick layer of Armaflex insulation installed in a local sustained configuration.	149	149	149	72
F1.2		F1.2 1 x 6 mm Ø by 0.6 mm wall thickness Copper Pipe U/C, with a 6 mm thick layer of Armaflex insulation installed in a local sustained configuration.	149	149	149	100

F1.3		F1.3 1 x 42 mm Ø by 1.2 mm wall thickness Copper Pipe U/C, with a 32 mm thick layer of Armaflex insulation installed in a local sustained configuration	149	149	149	143
F1.4		F1.4 1 x 15 mm Ø by 0.7 mm wall thickness Copper Pipe U/C, with a 6 mm thick layer of Armaflex insulation installed in a local sustained configuration.	149	149	149	122
F1.5		F1.5 1 x 6 mm Ø by 0.6 mm wall thickness Copper Pipe U/C, with a 6 mm thick layer of Armaflex insulation installed in a local sustained configuration.	149	149	149	109
F1.6		F1.6 1 x 15 mm Ø by 0.7 mm wall thickness Copper Pipe U/C, with a 19 mm thick layer of Armaflex insulation installed in a local sustained configuration.	149	149	149	149
F Overall			**149**	**149**	**149**	**0**
G Seal			149	149	149	149
G2	2 layers of 50 mm thick FirePro® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. 60 mm high layer of FirePro Flex Seal Coated Strip installed with 10 mm compression at the head of the aperture. All cuts, edges and joints were sealed with FIREPRO® AIS sealant. 20 mm wide by 25 mm deep annular gap sealed with FIREPRO® HES to both faces of the wall.	350 mm high by 700 mm wide partition aperture / 3 No. 28 mm Ø by 2.6 mm wall thickness PB Pipe U/C.	149	149	149	110
G3	3 layers of 2 mm thick by 40 mm long FIREPRO® PWRoll installed around the service flush with both faces of batt seal. 2 layers of 50 mm thick FIREPRO® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. 60 mm high layer of FirePro Flex Seal Coated Strip installed with 10 mm compression at the head of the aperture. All cuts, edges and joints were sealed with FirePro® AIS sealant.	350 mm high by 700 mm wide partition aperture / 63 mm Ø by 6 mm wall thickness UPONOR MLCP PE-RT Pipe U/C.	149	149	149	50

H Seal			149	149	149	149
H1	2 layers of 50 mm thick FIREPRO® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FIREPRO® AIS sealant. 40 mm thick by 450 mm long layer of DuctWrap installed around the service in a local interrupted configuration.	350 mm high by 700 mm wide partition aperture / 219 mm Ø by 5 mm wall thickness Steel Pipe U/C.	149	149	149	112
H2		350 mm high by 700 mm wide partition aperture / 108 mm Ø by 1.5 mm wall thickness Copper Pipe U/C.	149	149	149	92
H3		350 mm high by 700 mm wide partition aperture / 15 mm Ø by 0.7 mm wall thickness Copper Pipe U/C.	149	149	149	120
H Overall			**149**	**149**	**149**	**92**
I Seal	2 layers of 50 mm thick FIREPRO® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FIREPRO® AIS sealant.	2 layers of 50 mm thick FIREPRO® CB50	149	149	149	149
I2.1	2 layers of 50 mm thick FIREPRO® CB50 ablative batt friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FIREPRO® AIS sealant. 20 mm wide by 25 mm deep annular gap sealed with FIREPRO® HES to both faces of the wall.	350 mm high by 700 mm wide aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe U/C, with a 9 mm thick layer of Armaflex insulation installed in a LS config.	149	149	149	59
I2.2		350 mm high by 700 mm wide aperture / 42 mm Ø by 1.2 mm wall thickness Copper Pipe U/C, with a 32 mm thick layer of Armaflex insulation installed in a LS config.	149	149	149	76
I2.3		350 mm high by 700 mm wide aperture / 6 mm Ø by 0.6 mm wall thickness Copper Pipe U/C, with a 6 mm thick layer of Armaflex insulation installed in a LS config.	149	149	149	124
I3.1		350 mm high by 700 mm wide aperture / 16 mm Ø by 2 mm wall thickness PP- RT/AL/PP-RT Pipe U/C, with a 6 mm thick layer of PE insulation.	149	149	149	149
I3.2		350 mm high by 700 mm wide aperture / 25 mm Ø by 2.5 mm wall thickness PP- RT/AL/PP-RT Pipe U/C, with a 10 mm thick layer of PE insulation.	149	149	149	149
I3.3		350 mm high by 700 mm wide aperture / 25 mm Ø by 2 mm wall thickness PP- RT/AL/PP-RT Pipe U/C,	149	149	149	149

		with a 13 mm thick layer of PE insulation.				
I4		350 mm high by 700 mm wide aperture / 48 mm Ø by 3.85 mm wall thickness CVPC Pipe U/C.	149	149	149	149

Summary of report No.: WF 550560

A range of FirePro® CB50 penetration seals, penetrating a 75 mm thick standard 30-minute flexible partition assembly.

			Integrity (minutes)			
Specimen	**Seal**	**Aperture**	**Cotton Pad**	**Sustained flaming**	**Gap Gauge**	**Insulation (minutes)**
A	Single layer of 50mm thick FIREPRO® CB50 batt was friction fitted into the aperture, flush with the exposed face. Single layer of 50mm FIREPRO® CB50 pattress fitted to the unexposed face of the aperture, with 50mm overlap on all edges. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS". Both layers were installed from the unexposed face only.	600 mm high x 800 mm wide aperture lined with 50 mm thick FIREPRO® CB50 mineral wool.	90	90	90	90
B	Single layer of 50mm thick FIREPRO® CB50 batt was friction fitted into the aperture, flush with the unexposed face. Single layer of 50mm FIREPRO® CB50 pattress fitted to the exposed face of the aperture, with 50mm overlap on all edges. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FIREPRO® AIS". Both layers were installed from the exposed face only.	600 mm high x 800 mm wide aperture lined with 50 mm thick FIREPRO® CB50 mineral wool.	90	90	90	90
C	Single layer of 50mm FIREPRO® CB50 pattress fitted to both faces of the aperture, with 50mm overlap on the left, right and top edges, and 30 mm on the bottom edge. All edges and cuts were sealed with "FIREPRO® AIS".	600 mm high x 800 mm wide aperture	90	90	90	90
D	Single layer of 50mm thick FIREPRO® CB50 batt was friction fitted into the aperture. All edges and cuts were sealed with "FIREPRO® AIS".	1200 mm high x 1200 mm wide aperture lined with 50 mm wide galvanised steel SPT52 along the bottom edge.	82	90	90	61

Summary of report No.: WF 550006A

A fire resistance test conducted in accordance with EN 1366-3: 2021+A1:2024 on a double layered (2 x 50 mm) Rockwool FirePro® CB50 penetration seal system, mounted within a 100mm thick standard 60-minutes flexible wall construction.

Penetration Seal consisted of 2 x 50 mm layers that were friction fitted into a 1200 mm wide by 550 mm high aperture, flush with both faces of the wall. The batt seal was penetrated by 12 plastic pipe penetrations.

Specimen	Service type	Pipe types	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained Flaming	Gap Gauge	
I1	Double layer FirePro® CB50 friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	63 mm Ø by 3 mm wall thickness PVC-U. U/C	144	144	144	144
I2		63 mm Ø by 3.8 mm wall thickness HDPE. U/C	144	144	144	130
I3		63 mm Ø by 2.5 mm wall thickness PPH pipe. U/C	144	144	144	144
I4		40 mm Ø by 1.9 mm wall thickness PVC-U. U/C	144	144	144	144
I5		40 mm Ø by 2.4 mm wall thickness HDPE. U/C	144	144	144	144
I6		40 mm Ø by 1.8 mm wall thickness PPH. U/C	144	144	144	144
I7		63 mm Ø by 4.7 mm wall thickness PVC-U. U/C	144	144	144	144
I8		63 mm Ø by 5.8 mm wall thickness HDPE. U/C	144	144	144	144
I9		63 mm Ø by 5.8 mm wall thickness PPH. U/C	144	144	144	140
I10		40 mm Ø by 3 mm wall thickness PVC-U. U/C	144	144	144	144
I11		40 mm Ø by 3.7 mm wall thickness HDPE. U/C	144	144	144	144
I12		40 mm Ø by 5.5 mm wall thickness PPH. U/C	144	144	144	144

Summary of report No.: WF 551825C

A fire resistance test conducted in accordance with EN 1366-3: 2021+A1:2024 on ROCKWOOL FirePro® CB50 penetration seal systems, mounted within a 100mm thick EI 90 flexible wall construction.

Spec	Seal	Services	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained Flaming	Gap Gauge	
I	2. No. layers of 50 mm 'ROCKWOOL® FirePro® CB50 batt' friction fitted into the aperture. All cuts and butt joints were sealed with a nominal bead of 'ROCKWOOL® FirePro® AIS'. **I1/I2** – 25 mm thick 'ROCKWOOL® Rocklap H&V Pipe Section' cut to size and wrapped around the pipes in a LI configuration. **I3** – 25 mm thick 'ROCKWOOL® Rocklap H&V Pipe Section' cut to size and wrapped around the pipes in a LI configuration.	800 mm high by 370 mm wide aperture.	132	132	132	132
		I1 – 219 mm Ø by 5 mm wall thickness Steel pipe. C/U	132	132	132	132
		I2 – 108 mm Ø by 1.5 mm wall thickness Copper pipe. C/U	132	132	132	123
		I3 – 15 mm Ø by 0.7 mm wall thickness Copper pipe. C/U	132	132	132	132

Summary of report No.: WF 411460

A fire resistance test conducted in accordance with EN 1366-3: 2009 on ROCKWOOL FirePro® CB50 penetration seal systems, mounted within a 75 mm thick EI 30 flexible wall construction.

Specimen	Seal	Service type		Integrity (minutes)			Insulation (minutes)
			Specimen	Cotton Pad	Sustained Flaming	Gap Gauge	
O	Single layer of FirePro® CB50 positioned centrally within the partition aperture. All batt to batt and batt to aperture edges were coated using ROCKWOOL® FIREPRO® AIS. The overall size of the barrier was made up of cut batt sections butt jointed together which were fitted after the service penetrations were installed through the aperture in the partition. All cuts, edges and joints were sealed with FirePro® AIS. 150 mm long x 25 mm thick ROCKWOOL® FirePro® Insulated Fire Sleeve, fitted around the pipe centrally within the partition aperture, extending equally either side of the partition.	900 mm wide x 600 mm high aperture Service 1 – 160 mm Ø x 4 mm WT PP pipe. Pipes were positioned in the opening so that the separation between services after seal applied was 0 mm from other services and 0 mm from the aperture edge.	Service 1	36	36	36	31
			O Seal	36	36	36	36

Summary of report No.: WF 411467 Iss 2

A fire resistance test conducted in accordance with EN 1366-3: 2009 on ROCKWOOL FirePro® CB50 penetration seal systems, mounted within a 100 mm thick EI 90 flexible wall construction.

			Service details			
Specimen/ Service	**Seal details**	**Aperture details**	**Material**	**Dia**	**Wall**	**Capping**
A/A2	150 mm long x 25 mm thick 'ROCKWOOL® FIREPRO® Insulated Fire Sleeve, fitted centrally around the pipe within the aperture	900 mm wide x 600 mm high aperture/ 2. No. layers of 'ROCKWOOL® FIREPRO® 50 mm ablative coated batt, friction fitted back to back. Both layers were installed with a staged seal from the unexposed face only using 'ROCKWOOL® FIREPRO® AIS. Both layers of batt were fitted after the service were installed	PP	110	2.7	U/C
A/A3			PE	110	6.6	U/C
A/A4			PVC	110	4.2	U/C

Test results

Specimen	**Integrity (minutes)**			**Insulation (minutes)**
	Cotton Pad	**Sustained flaming**	**Gap Gauge**	
A2	132	132	132	132
A3	132	132	132	132
A4	132	132	132	132
A Seal	132	132	132	132

Summary of report No.: WF 411468 Iss 2

A fire resistance test conducted in accordance with EN 1366-3: 2009 on ROCKWOOL FirePro® CB50 penetration seal systems, mounted within a 100 mm thick EI 90 flexible wall construction.

				Service details			
Specimen	**Specimen**	**Aperture**	**Aperture seal**	**Material**	**Dia**	**Wall**	**Capping**
A	**A6**	1200 mm wide x 1200 mm high	2. No. layers of FIREPRO® CB50 friction fitted within the apertures to a height of 900 mm. The top 300 mm was made up from a single layer of FIREPRO® SoftSeal. Both seals were butt jointed and bedded within the partition aperture using FIREPRO® AIS. A1 to A3 & A5 were installed with 25 mm thick section of Rocklap H&V Pipe Section. A6 to A8 were installed with 30 mm FIREPRO® Insulated Fire Sleeve. A9 was installed with 3 layers of FIREPRO® Intumescent PipeWrap Roll and 32 mm thick section of Armaflex	PE	160	4.9	U/C
	A7			PVC	160	6.2	U/C
	A8			PE	160	9.5	U/C

Test results

Specimen	**Service**	**Integrity (minutes)**			**Insulation (minutes)**
		Cotton Pad	**Sustained flaming**	**Gap Gauge**	
A	A6	132	132	132	132
	A7	132	132	132	132
	A8	132	132	132	132
	Batt Seal	132	132	132	132

Summary of report No.: WF 551829

A fire resistance test conducted in accordance with BS EN 1366-3: 2021+A1:2024 on ROCKWOOL FirePro® CB50 penetration seal systems, mounted within a 100mm thick flexible wall construction.

Spec	Seal	Services	Integrity (minutes)			Insulation (minutes)
			Cotton Pad	Sustained Flaming	Gap Gauge	
A	50 mm thick ROCKWOOL® FirePro® CB50 pattress fitted oversailing the aperture by 50 mm on both faces All cuts, edges and joints were sealed with ROCKWOOL® FirePro® AIS. 300 mm long by 40 mm thick ROCKWOOL® DuctWrap cut to size and wrapped around the trunking, tied down with 0.7 mm lacing wire, 50 mm from both ends in a LI configuration to both faces.	650 mm wide by 300 mm high Aperture	144	144	144	144
		A3 – 150 mm high by 150 mm wide pre-galvanised steel trunking, supporting 60% A1 cables and 1 no. E cable, remaining void filled with ROCKWOOL® RWA45 infill	144	144	144	144
		A4 – 150 mm high by 150 mm wide pre-galvanised steel trunking, filled with ROCKWOOL® RWA45 infill	144	144	144	144

B	100mm thick (2. No. layers of 50 mm thick) ROCKWOOL® FirePro® CB50 friction fitted into the aperture. All cuts, edges and joints were sealed with ROCKWOOL® FirePro® AIS.	700 mm wide by 350 mm high Aperture	144	144	144	144
		B1 – 100 mm high by 100 mm wide pre-galvanised steel trunking, supporting 60% A1 cables and 1 no. E cable, remaining void filled with ROCKWOOL® RWA45 infill	144	144	144	139
		B2 – 100 mm high by 100 mm wide pre-galvanised steel trunking, filled with	144	144	144	144

		ROCKWOOL® RWA45 infill				
		B3 – 150 mm high by 150 mm wide pre-galvanised steel trunking, supporting 60% A1 cables and 1 no. E cable, remaining void filled with ROCKWOOL® RWA45 infill	144	144	144	96
		B4 – 150 mm high by 150 mm wide pre-galvanised steel trunking, filled with ROCKWOOL® RWA45 infill	144	144	144	116

H	100mm thick (2. No. layers of 50 mm thick) ROCKWOOL® FirePro® CB50 friction fitted into the aperture. All cuts, edges and joints were sealed with ROCKWOOL® FirePro® AIS. 300 mm long by 40 mm thick ROCKWOOL® DuctWrap cut to size and wrapped around the trunking, tied down with 0.7 mm lacing wire, 50 mm from both ends in a LI configuration to both faces.	725 mm wide by 350 mm high Aperture	144	144	144	144
		H1 – 100 mm high by 100 mm wide pre-galvanised steel trunking, supporting 60% A1 cables and 1 no. E cable, remaining void filled with ROCKWOOL® RWA45 infill	144	144	144	144
		H2 – 100 mm high by 100 mm wide pre-galvanised steel trunking, filled with ROCKWOOL® RWA45 infill	144	144	144	144

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7 of EN 13501-2:2023.

4.2 Classification

The element, ROCKWOOL FirePro® CB50 is classified according to the following combinations of performance parameters and classes as appropriate.

R	**E**	**I**	**W**		***t***	***t***	**-**	**M**	**S**	**-**	**C**	**IncSlow**	**sn**	**ef**	**r**

4.2.1 Summary of assumptions

The ROCKWOOL FirePro® CB50 shall be installed in line with the details given in the latest revision of Classification report UL 4791365447.1.

Service Supports

All service supports shall be a minimum of 450 mm from the face of the supporting construction.

Supporting substrate types

Substrate type	Minimum specification	Annex
Single skin flexible walls	The flexible wall construction must be classified in accordance with EN 13501-2 for the required fire resistance period and must have a minimum thickness of 75 mm. The walls may be insulated or uninsulated depending upon application type. See specific section within the relevant Annex The flexible wall construction comprises steel or timber studs lined on both faces with minimum 1 Layer of minimum 12,5 mm thick boards. For timber stud walls there must be a minimum distance of 100 mm from the seal to any stud. The cavity between stud and seal must be closed with an insulation of Class A1 (in accordance with EN 13501-1) for at least 100 mm distance.	A
Double skin flexible walls	The flexible wall construction must be classified in accordance with EN 13501-2 for the required fire resistance period and must have a minimum thickness of 100 mm. The walls may be insulated or uninsulated depending upon application type. See specific section within the relevant Annex. The flexible wall construction comprise steel or timber studs lined on both faces with minimum 2 Layer of minimum 12,5 mm thick boards. For timber stud walls there must be a minimum distance of 100 mm from the seal to any stud. The cavity between stud and seal must be closed with an insulation of Class A1 (in accordance with EN 13501-1) for at least 100 mm distance.	B

Rigid walls	Test results obtained with the double-sided standard flexible wall construction may be applied to rigid constructions of an overall thickness equal to or greater than that of the element used in the tests and a minimum density of 350 kg/m3.	DIAP

4.3 Field of Application – See Clause 13 and Annexes of EN 1366-3: 2021+A1:2024

5. Limitations

This classification report does not represent type approval or certification of the product.

6. Signatories

Report by:

Andres Jesus Mena Gallego
Associate Project Engineer
Built Environment

Reviewed by:

Chris Sweeney
Senior Project Engineer
Built Environment

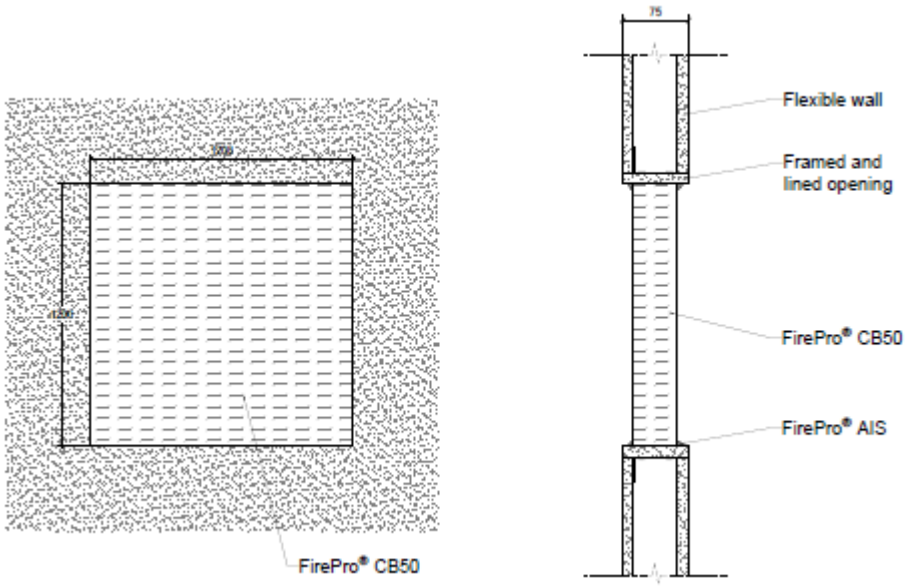
For and on behalf of UL International (UK) Ltd.

4.4 ANNEX A – Single Skin Flexible walls ≥75mm

4.4.1 Single Batt Seal Installation Methods

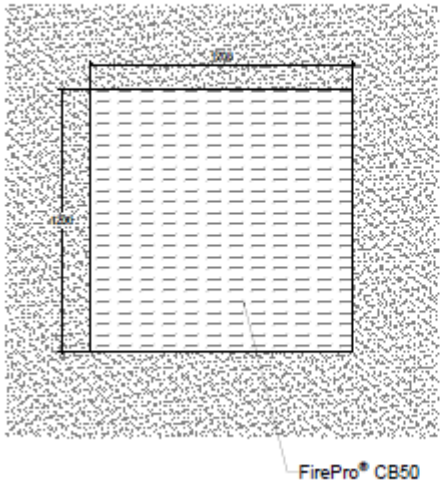
The following installation methods for FirePro® CB50 are considered as part of this classification.

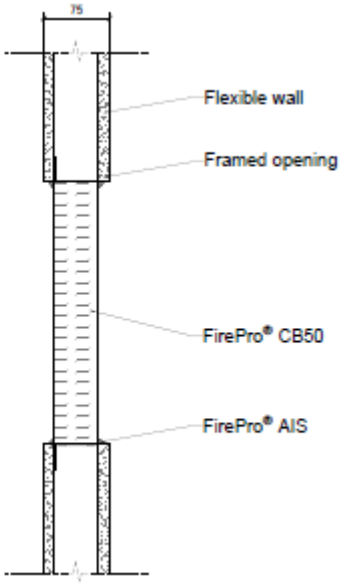
Blank Seal – framed and lined openings



Service type	Max aperture size	Service protection	Classification
Blank	1200 x 1200 mm	Single layer of 50mm thick FirePro® CB50 batt, friction fitted centrally within the aperture. All edges and butt joints sealed with FirePro ® AIS sealant.	**EI 60**

Blank Seal – framed openings





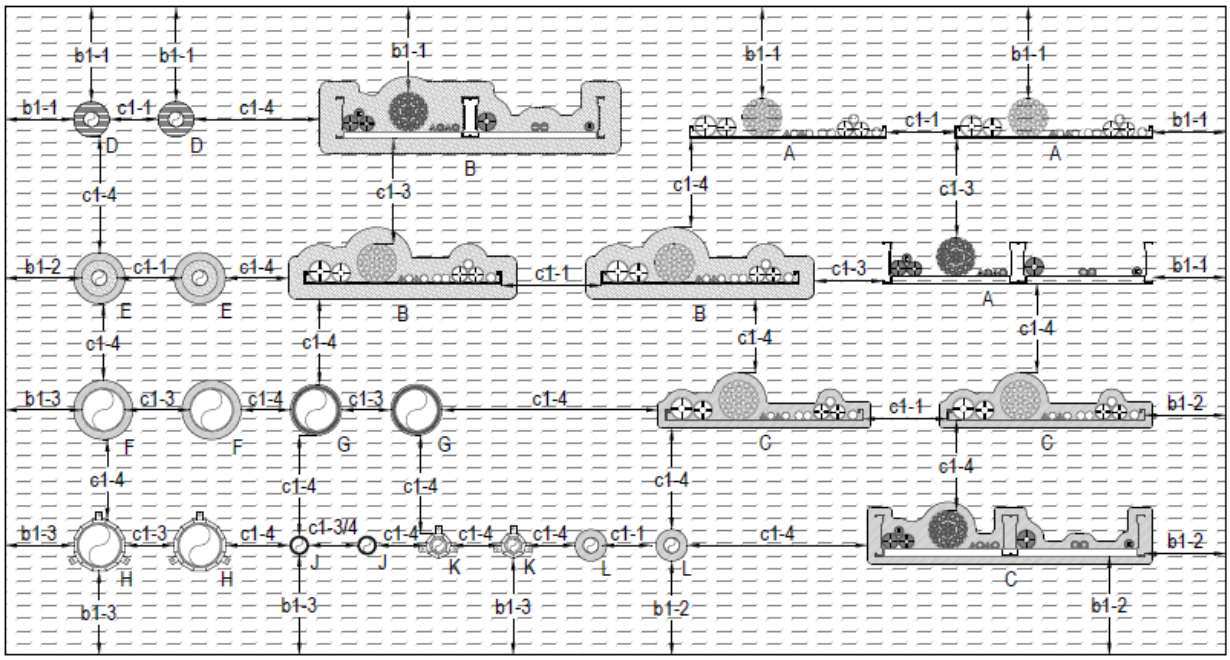
Service type	Max aperture size	Service protection	Classification
Blank	1200 x 1200 mm	Single layer of 50mm thick FirePro® CB50 batt, friction fitted centrally within the aperture. All edges and butt joints sealed with FirePro ® AIS sealant.	**EI 60**

4.4.1.1 Service Penetrations

FirePro® CB50 is approved for use with the following service items. Installation of FirePro® CB50 must be completed in accordance with one of the installation methods specified in the blank seal section and must adhere to the size limitations outlined for each methodology. Certain service items may require additional protection depending on the type of service and/or the performance requirements of the seal and service. Details of any required additional protection are provided, as appropriate, in the following performance tables.

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Single Skin Flexible walls ≥75mm - Single CB50

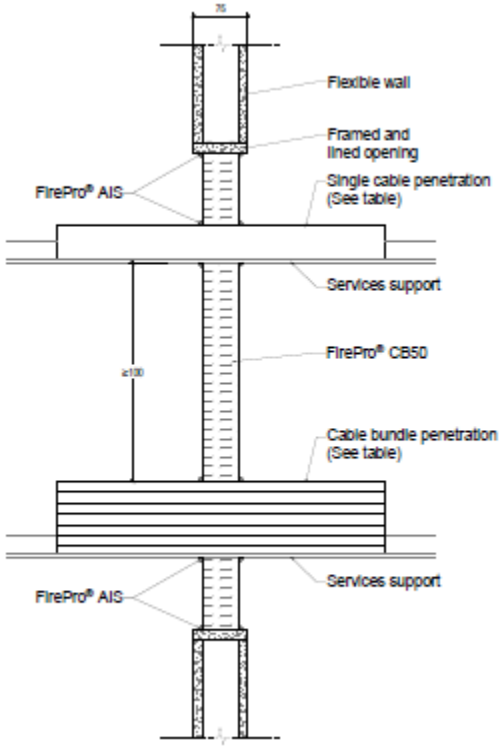


Service Type	
A	Unlagged cables & cable carriers
B	Lagged cables & cable carriers
C	HEScables & cable carriers
D	H&Vlagged metallic pipes (L/S)
E	Combustible insulation on metallic pipes - HES
F	HES- combustible pipes
G	PWRoll - combustible pipes
H	Collar - combustible pipes
J	PWRoll - MLCpipes (Uponor)
K	Collar - MLCpipes (Uponor)
L	HES- Insulated MLCpipe

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

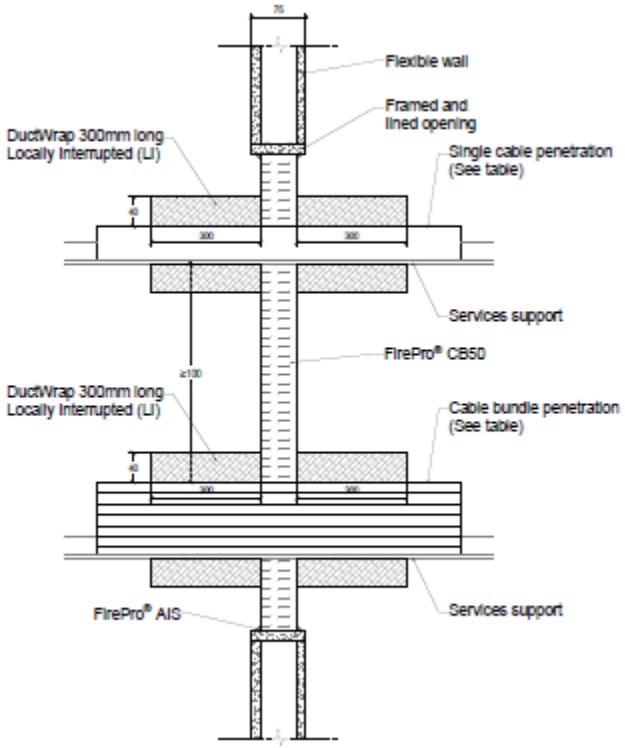
Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≥100 mm



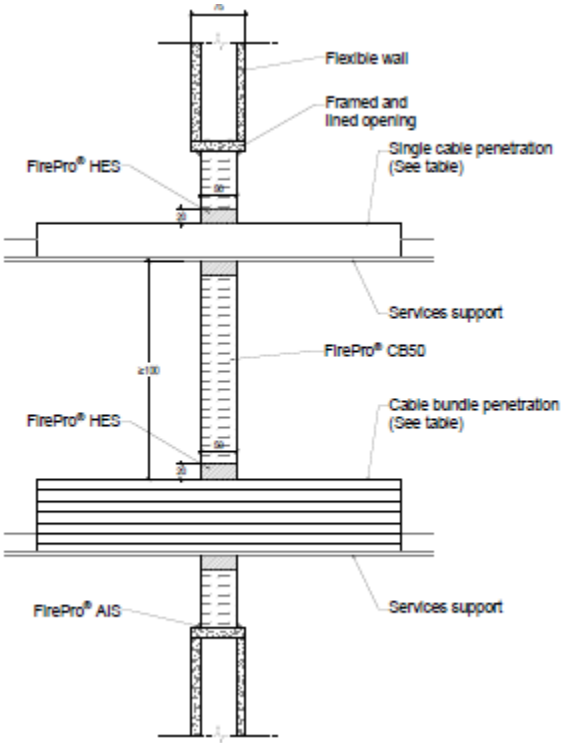
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services.	**E 60 / EI 45**
	M	≤50		**E 60 / EI 45**
	L	≤80		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 30**
Unsheathed cables		≤24		**E 60 / EI 45**
Perforated cable tray, ladder or basket		Unrestricted		**E 60 / EI 45**

Cable Penetrations with cable carrier separation ≥100 mm - Lagged



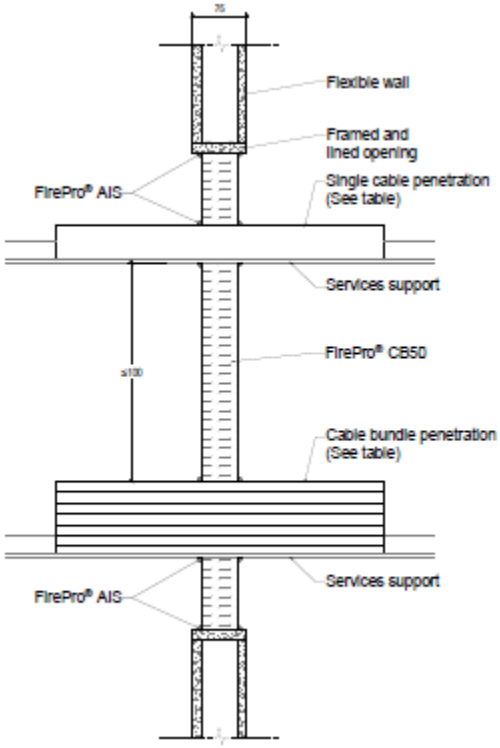
Service type		Service size (mm)	Service Protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50.FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a LI/CI configuration 300 mm to both faces and secured to service with steel wire.	**EI 60**
	M	≤50		**E 60 / EI 45**
	L	≤80		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Unsheathed cables		≤24		**EI 60**
Perforated cable steel tray, or basket		Unrestricted		**E 60 / EI 45**
Cable ladder		Unrestricted		**EI 60**

Cable Penetrations with cable carrier separation ≥100 mm – FirePro HES



Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro AIS used on all batt edges to seal joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 50 mm around the service.	**E 60 / EI 45**
	M	≤50		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Perforated cable steel tray, or basket		Unrestricted		**EI 60**

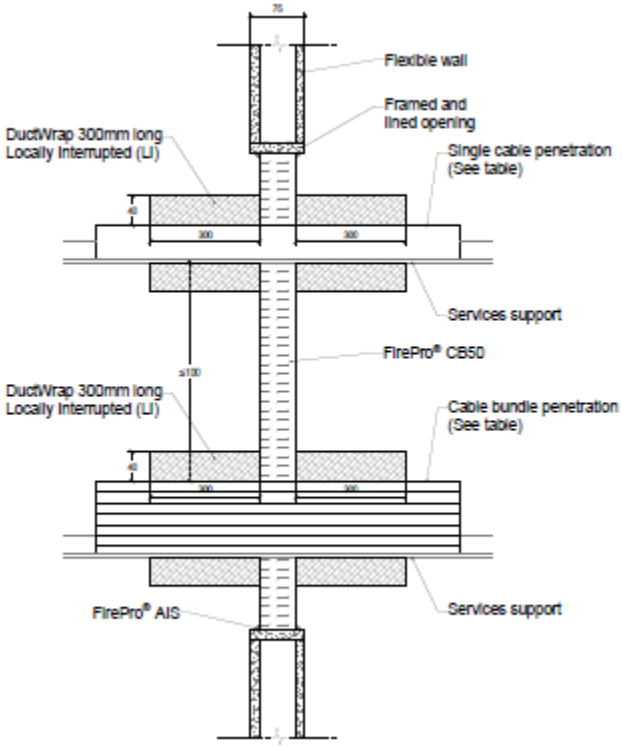
Cable Penetrations with cable carrier separation ≤100 mm*



Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used with a nominal bead around all batt edges to seal joints and services.	**E 60 / EI 45**
	M	≤50		**E 60 / EI 45**
	L	≤80		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Unsheathed cables		≤24		**E 60 / EI 30**
Steel tray, perforated cable tray, ladder or basket		Unrestricted		**E 60 / EI 45**

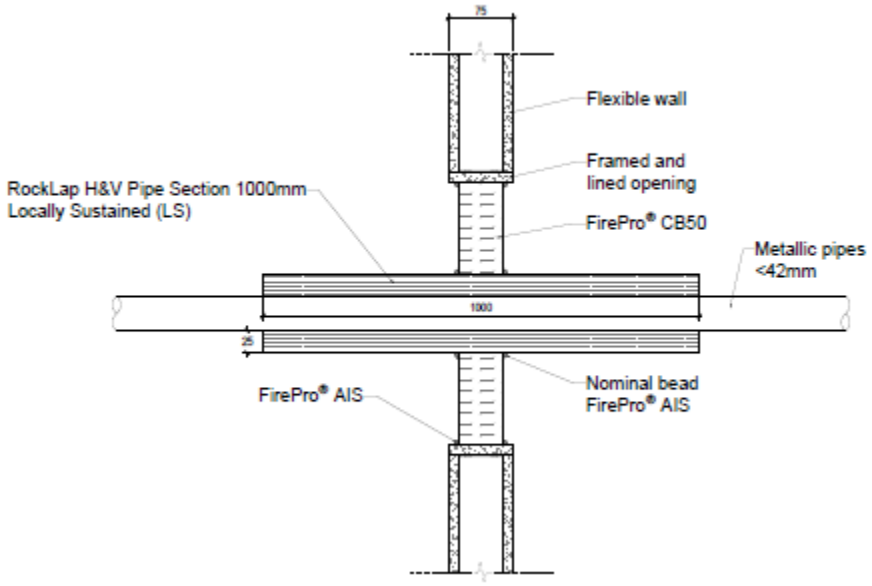
* For cable carriers spacing details, please consult 4.3.1.1 service penetrations section on page 3

Cable Penetrations with cable carrier separation ≤100 mm - Lagged*



Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used with a nominal bead around all batt edges to seal joints and services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	**E 60 / EI 45**
	M	≤50		**E 60 / EI 45**
	L	≤80		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Unsheathed cables		≤24		**E 60 / EI 45**
Steel tray, perforated tray, ladder or basket		Unrestricted		**E 60 / EI 45**

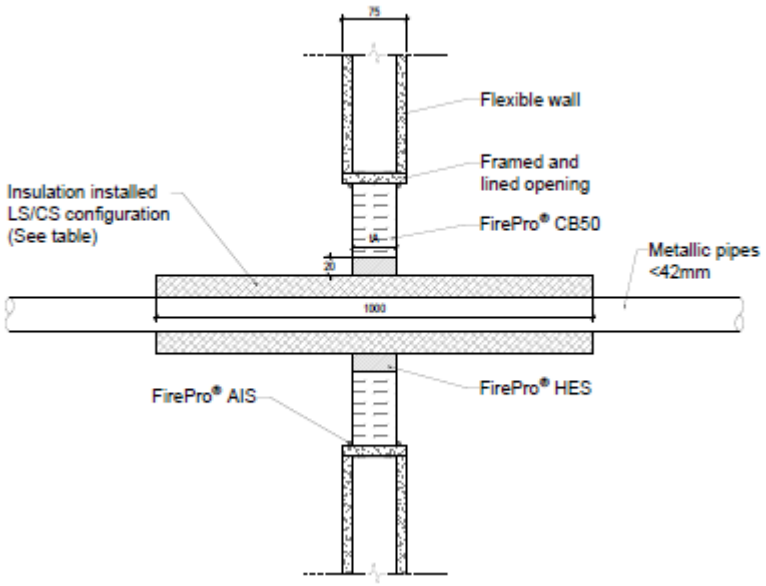
* For cable carriers spacing details, please consult 4.3.1.1 service penetrations section on page 3



Service type	Service Size (mm)	Wall thickness (mm)	Service protection	Insulation sleeve type	Insulation sleeve details	Classification
Copper and steel pipes Linear (0 mm)	≤42 Ø	≥1.2	Single layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services.	RockLap H&V Pipe Section® in an LS configuration, fixed around the metallic pipes.	1000 mm long x 25 mm thick.	**E 60 / EI 45 C/U**

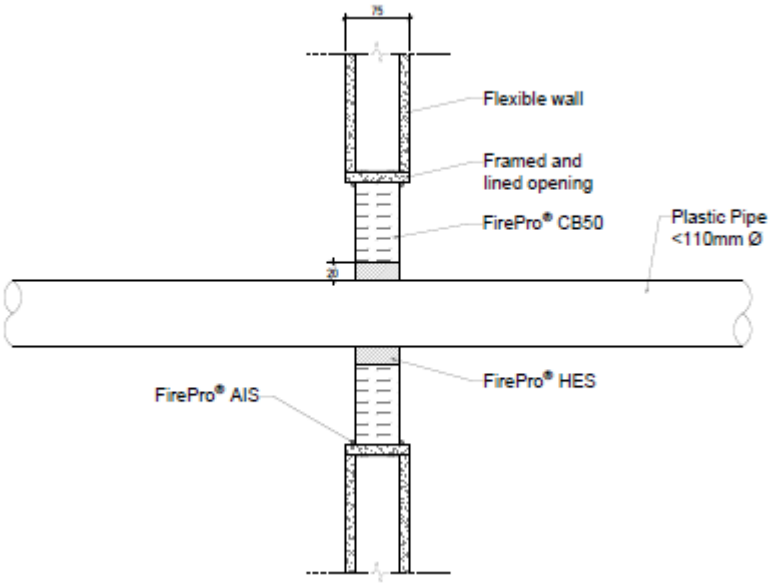
Metallic pipes: Insulated with RockLap H&V Pipe section – LS installation.

Metallic pipes: Insulated with combustible insulation – FirePro HES.

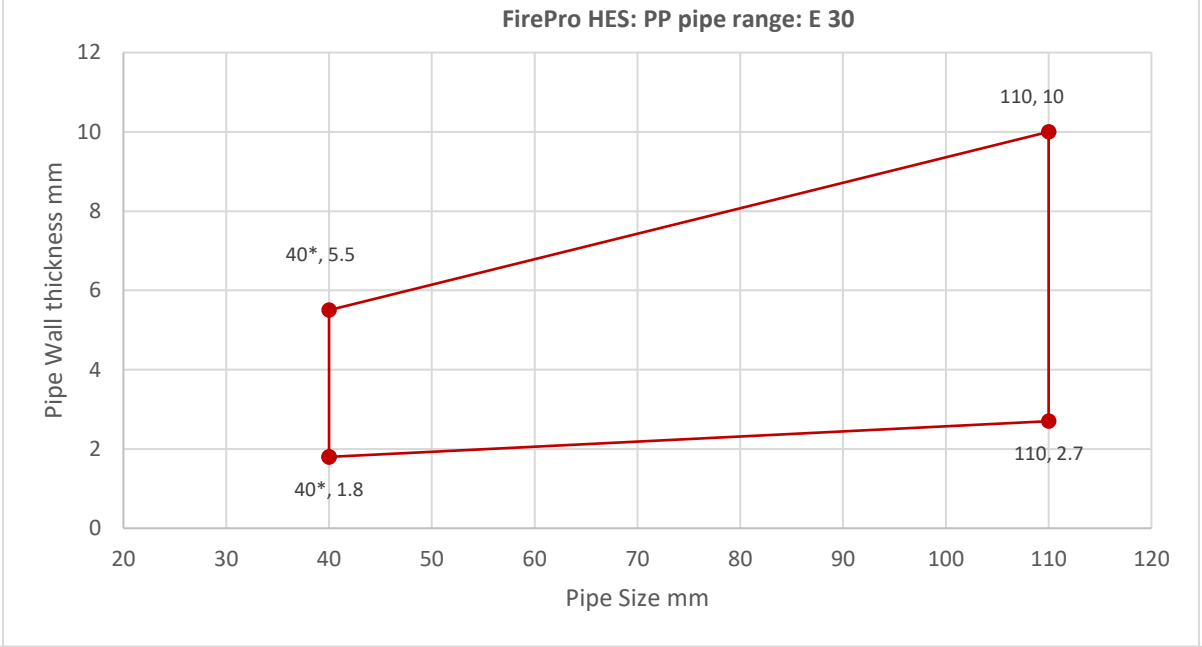


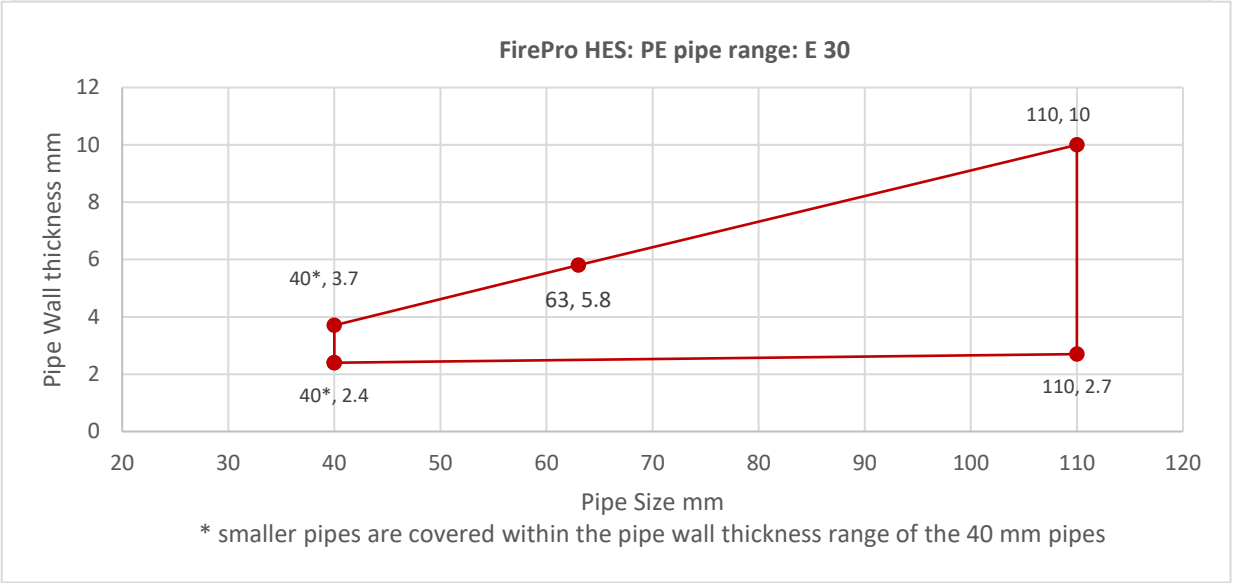
Service type	Pipe Size (mm)	Wall thickness (mm)	Seal depth tA (mm)	Annular gap (mm)	Insulation type / thickness (mm)	Service protection	Classification
Copper and steel pipes Linear (0 mm)	≤42 Ø	≥1.2	50	20	Kingspan Kooltherm installed in a CS config/ 15-30	Single layer of 50mm thick FirePro® CB50.FirePro® AIS used on all batt edges to seal all joints 20 mm annulus of FirePro® HES cartridge gunned to a depth of 50 mm around the services	**EI 30 C/U**
Copper and steel pipes Linear (0 mm)					Armacell Armaflex installed in a CS config/ 9-32		**E 30 / EI 15 C/U**

Plastic Pipe Penetrations – FirePro HES

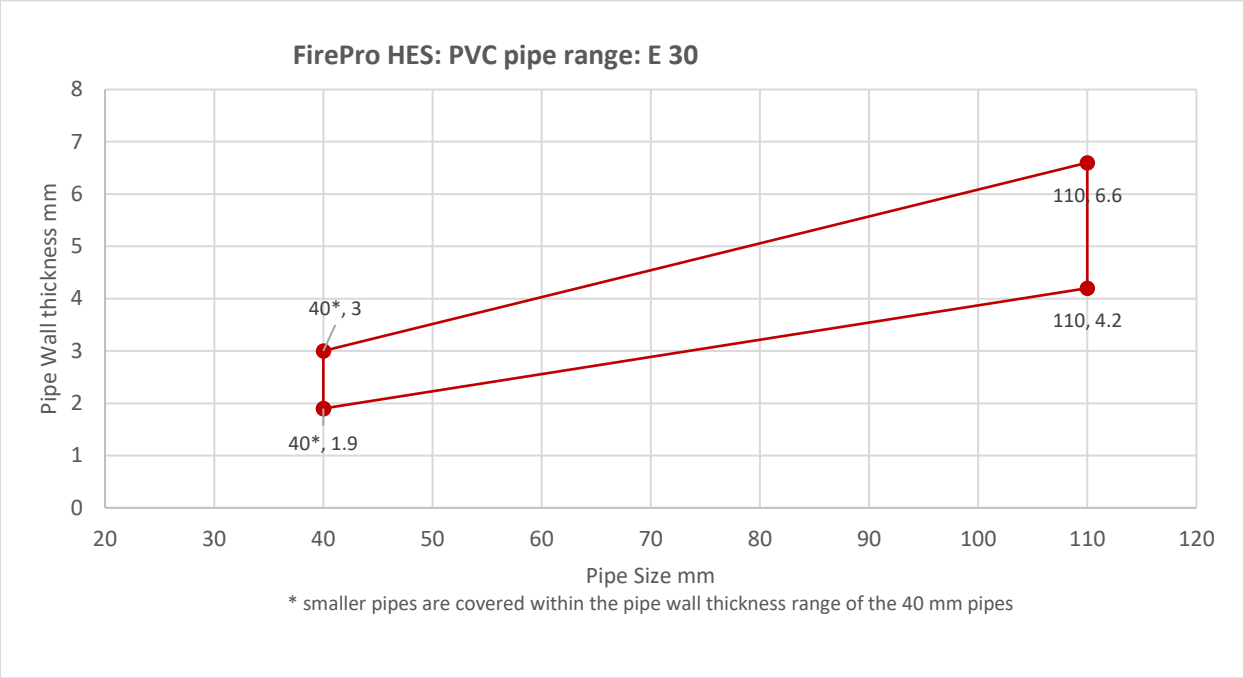


Pipe material	Pipe size (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 110	50	20	Single layer of 50mm thick FirePro® CB50.FirePro® AIS used on all batt edges to seal all joints. 20 mm annulus sealed with FirePro HES to the full depth of the batt.	**E 30 U/C**
PE	40 – 110				
PVC	40 – 110				

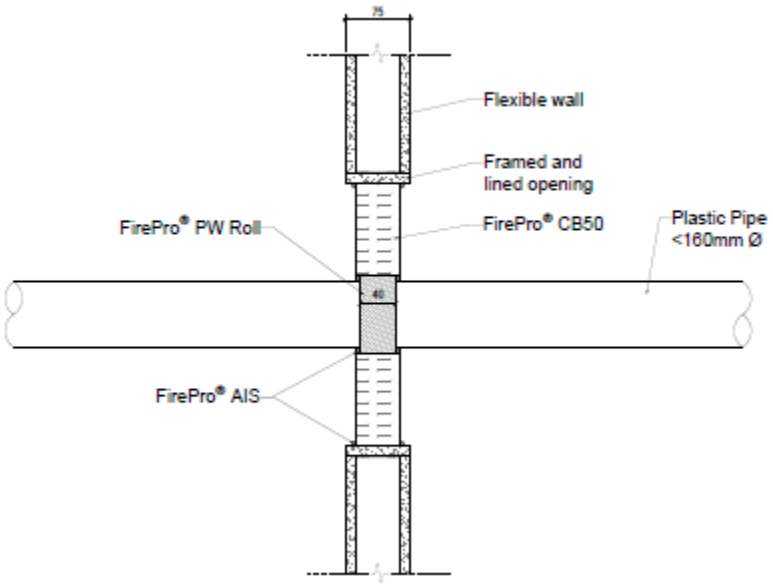




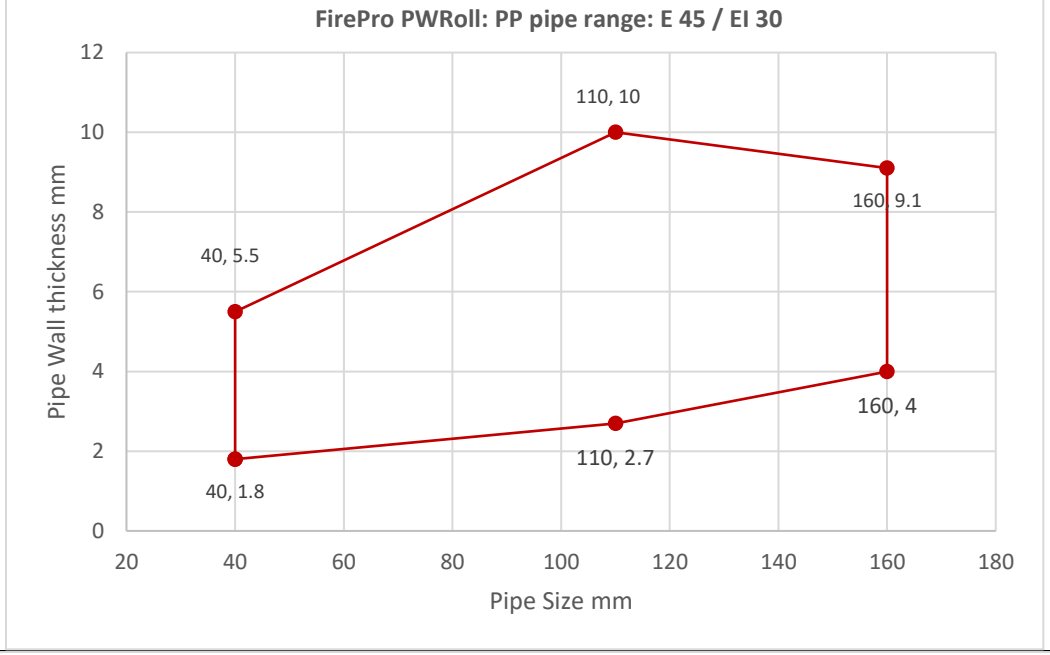
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

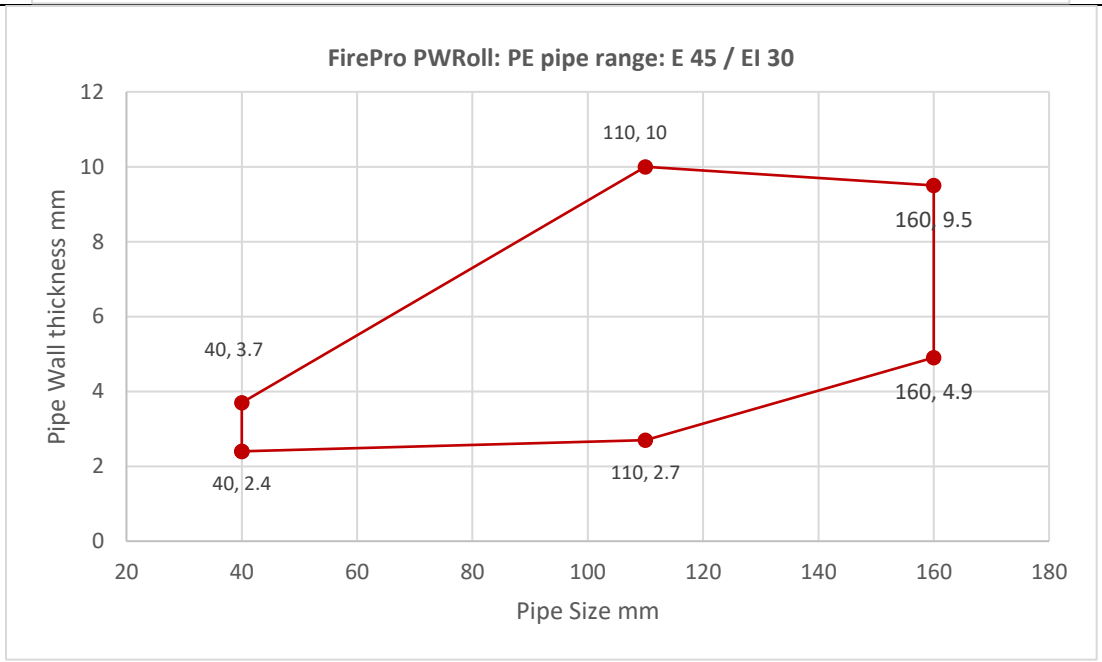

FirePro HES: PVC pipe range: E 30
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
40*, 3
40*, 1.9
110, 6.6
110, 4.2
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

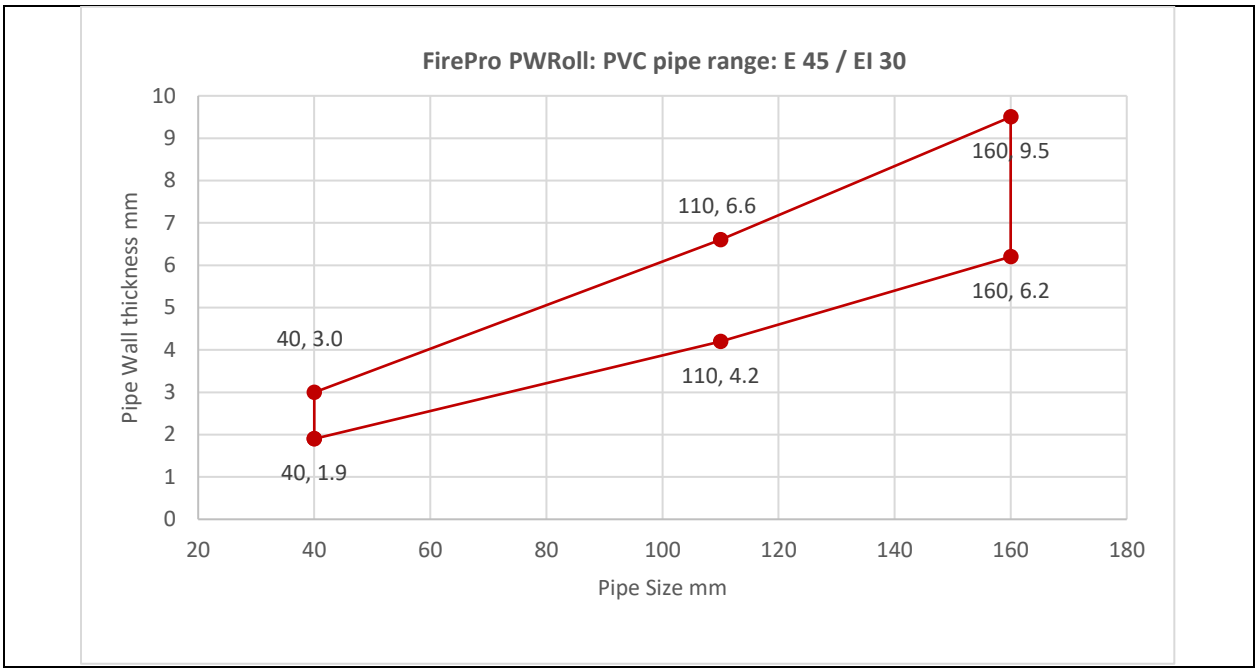
Plastic Pipe Penetrations – FirePro PWRoll



Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Annular gap (mm)	Classification
PP/PE/PVC	≤40	1	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the service.	≤10	**E 45 / EI 30 U/C**
	41-79	2			
	80-120	3			
	121-160	4			

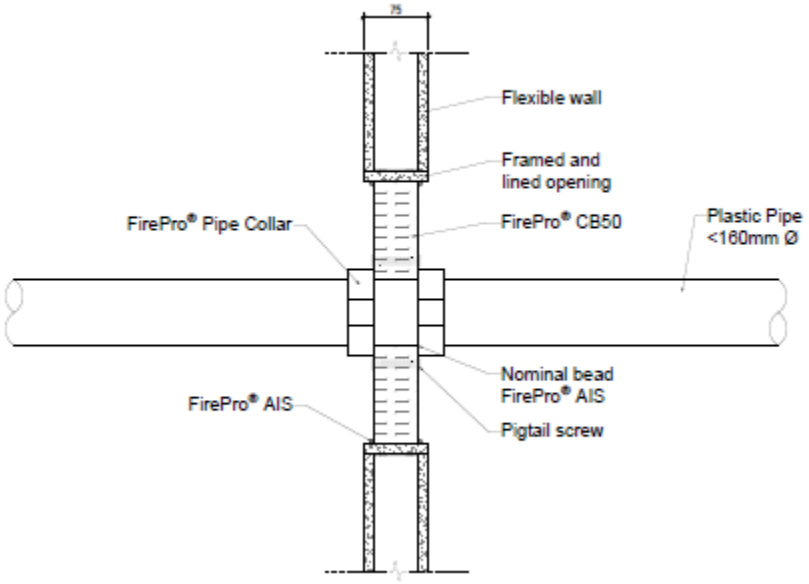

FirePro PWRoll: PP pipe range: E 45 / EI 30
Pipe Wall thickness mm
Pipe Size mm
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180


FirePro PWRoll: PE pipe range: E 45 / EI 30
Pipe Wall thickness mm
Pipe Size mm
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180


FirePro PWRoll: PVC pipe range: E 45 / EI 30
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
160, 9.5
110, 6.6
160, 6.2
40, 3.0
110, 4.2
40, 1.9

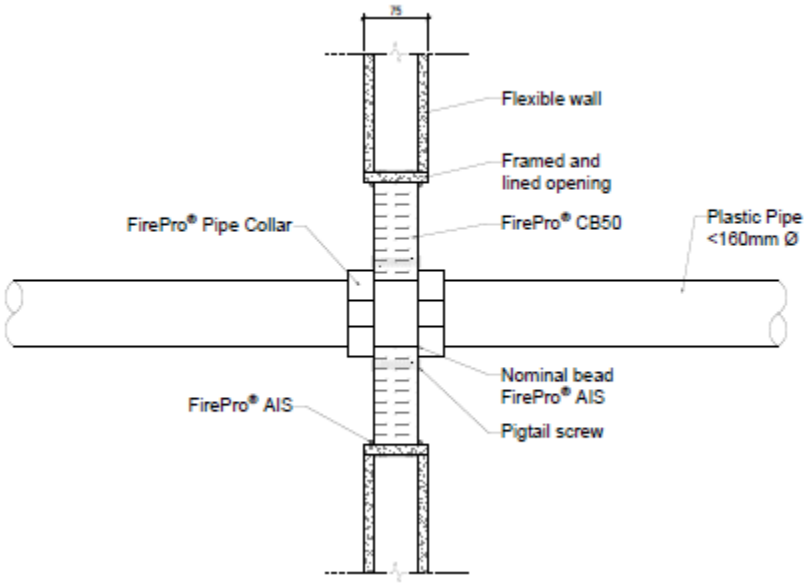
Plastic Pipe Penetrations – FirePro Pipe Collar

PP Pipes



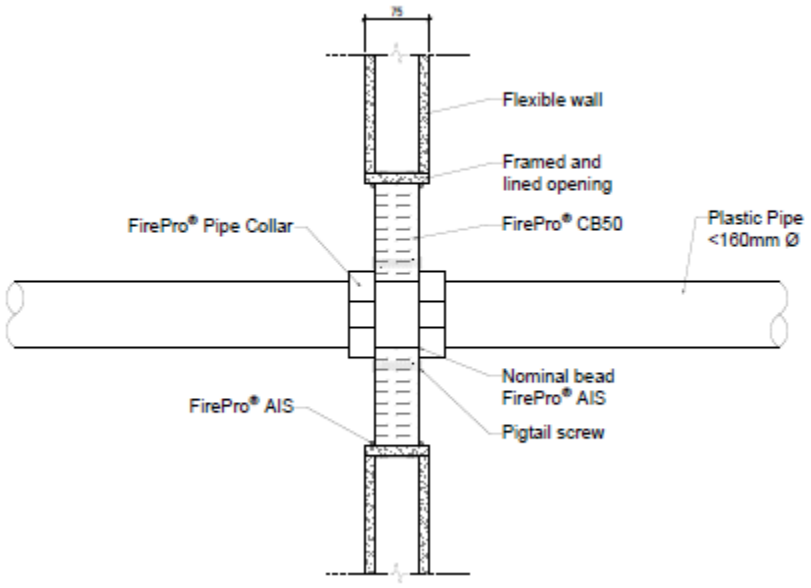
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.8 – 5.5	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service flush with both faces of the wall using pigtail screws	**EI 60 U/C**
55	55	2.0 – 5.6		
63	63	2.1 – 5.8		
75	75	2.2 – 5.9		
82	82	2.4 – 6.0		
90	90	2.6 – 6.2		
110	110	2.7 – 6.3		
125	125	3.1 – 7.2		
140	140	3.5 – 8.1		
160	160	4.0 – 9.1		

PE Pipes



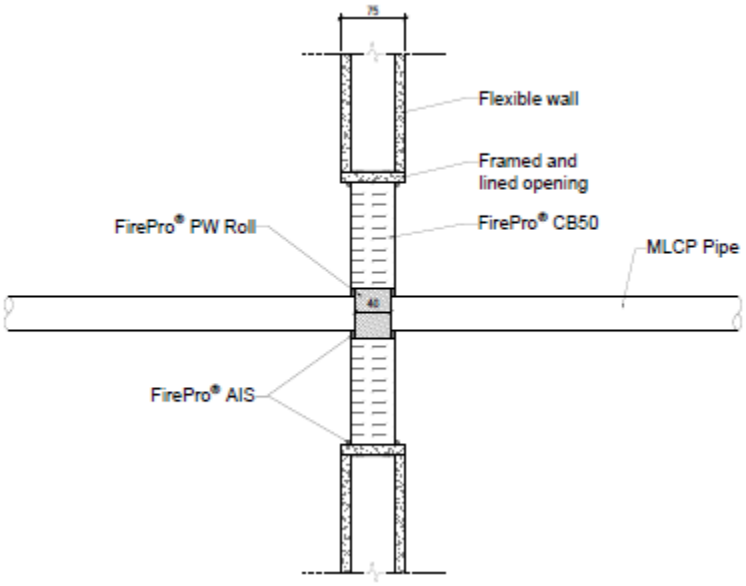
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	2.4 – 3.7	Single layer of 50mm thick FirePro® CB50.FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service flush with both faces of the wall, using pigtail screws	**EI 60 U/C**
55	55	2.5 – 5.0		
63	63	2.5 – 5.8		
75	75	2.5 – 6.9		
82	82	2.6 – 7.6		
90	90	2.6 – 8.3		
110	110	2.7 - 10		
125	125	3.4 – 9.8		
140	140	4.1 – 9.7		
160	160	4.9 – 9.5		

PVC Pipes



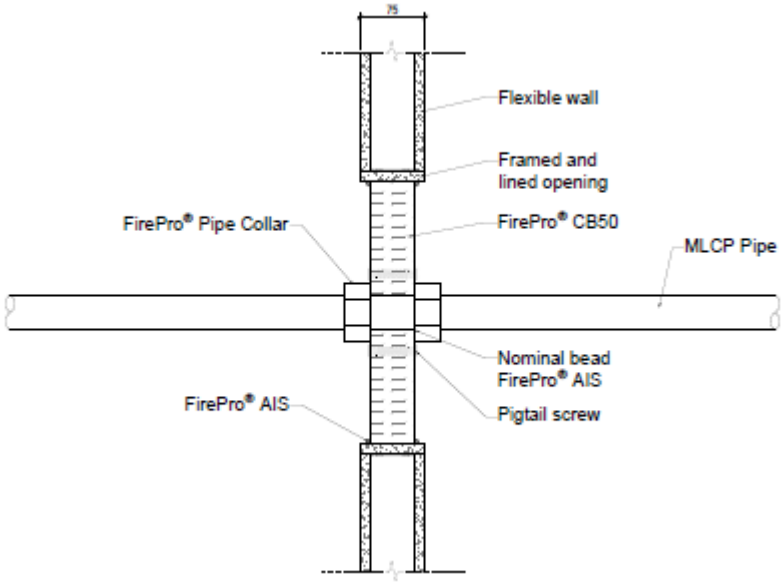
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.9 – 3.0	Single layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service flush with both faces of the wall, using pigtail screws	**EI 60 U/C**
55	55	2.4 – 3.7		
63	63	2.6 – 4.1		
75	75	3.0 – 4.8		
82	82	3.2 – 5.1		
90	90	3.5 – 5.6		
110	110	4.2 – 6.6		
125	125	4.8 – 7.6		
140	140	5.5 – 8.4		
160	160	6.2 – 9.5		

MLCP Pipes – FirePro PWRoll



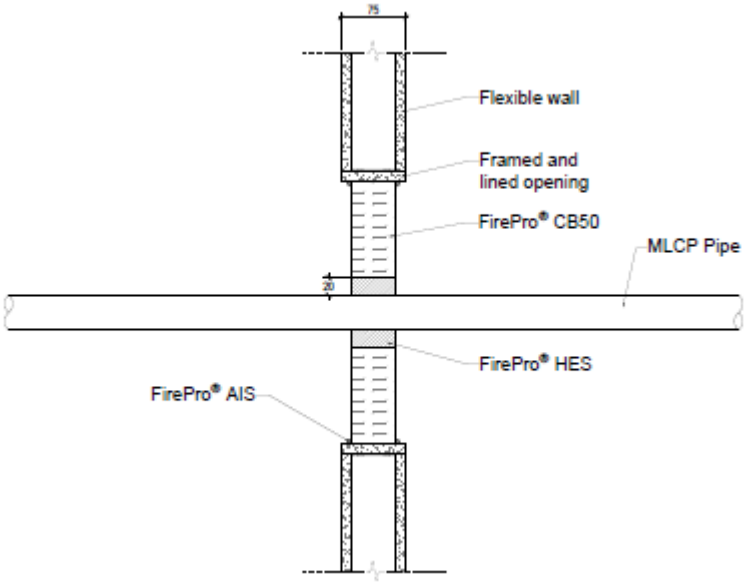
Single pipes					
Pipe material	**Pipe size (mm)**	**Pipe wall thickness (mm)**	**Pipe Wrap layers (2mm)**	**Service Protection**	**Classification**
UPONOR PP-RT / AL / PP-RT	110	10	3	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the pipe.	**E 60 / EI 45 U/C**
UPONOR PP-RT / AL / PP-RT	40	2	1		**E 60 / EI 45 U/C**
Multiple pipes – Linear Configuration					
UPONOR PP-RT / AL / PP-RT	63	6	3	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the pipe	**E 60 / EI 30 U/C**
UPONOR PP-RT / AL / PP-RT	40	2	1		**E 60 / EI 30 U/C**

MLCP Pipes – FirePro Pipe Collar



Pipe Collar Size (mm)	Pipe size (mm)	Pipe Type	Pipe wall thickness range (mm)	Service protection	Classification
110	110	UPONOR PP-RT / AL / PP-RT	10	Single layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**E 60 / EI 30 U/C**
40	40	UPONOR PP-RT / AL/ PP-RT	2		**E 60 / EI 30 U/C**

Insulated MLCP Pipes – Uponor Uni Pipe Plus – FirePro HES



Single, linear or clustered configuration

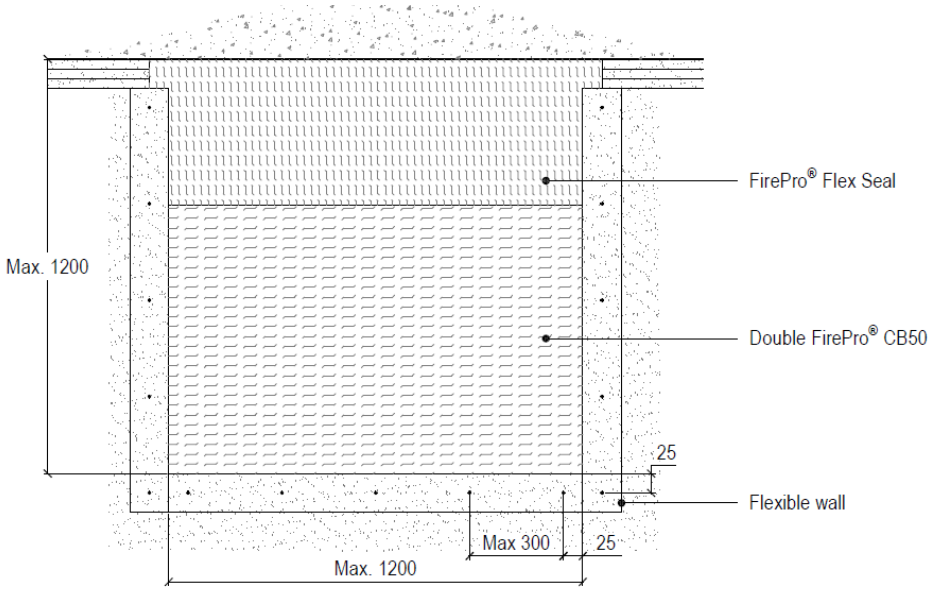
Pipe Type	Pipe size (mm)	Insulation thickness (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP-RT/AL/PP-RT with PE Insulation (clustered 0mm)	16 - 25	5 - 13	50	20	Single layer of 50mm thick FirePro® CB50 FirePro® AIS used on all batt edges to seal all joints. 20 mm annulus sealed with FirePro HES to the full depth of the batt.	**E 60 / EI 30 U/C**

4.4.2 Double Batt Seals

The following installation methods for FirePro® CB50 are considered as part of this classification.

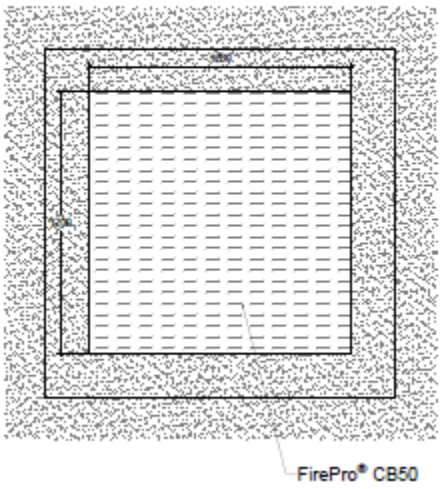
4.4.2.1 Double Batt Seal Installation Methods

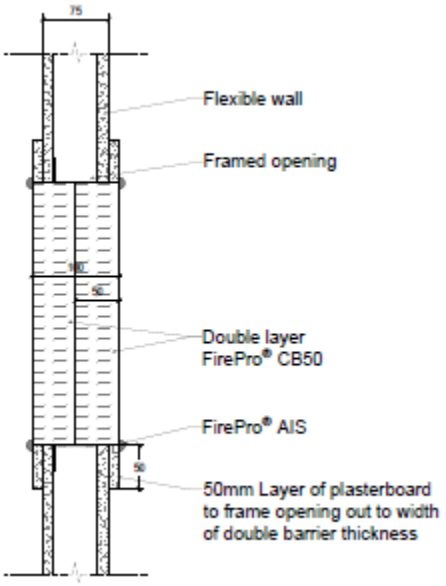
Framed and lined openings



Service type	Max aperture details	Service protection	Classification
Blank	1210 mm x 1200 mm	1010 mm high double layer of 50mm thick FIREPRO® CB50 batt was friction fitted into the aperture. 200 mm high by 100 mm thick FirePro® Flex Seal Coated Strip was compression fitted into the top of the aperture with 10 mm compression to the width and length. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FirePro® AIS". FirePro Flex Seal Coated Strip was brush coated with FirePro® Flex Seal Coating.	**EI 90**

Blank Seal – framed openings





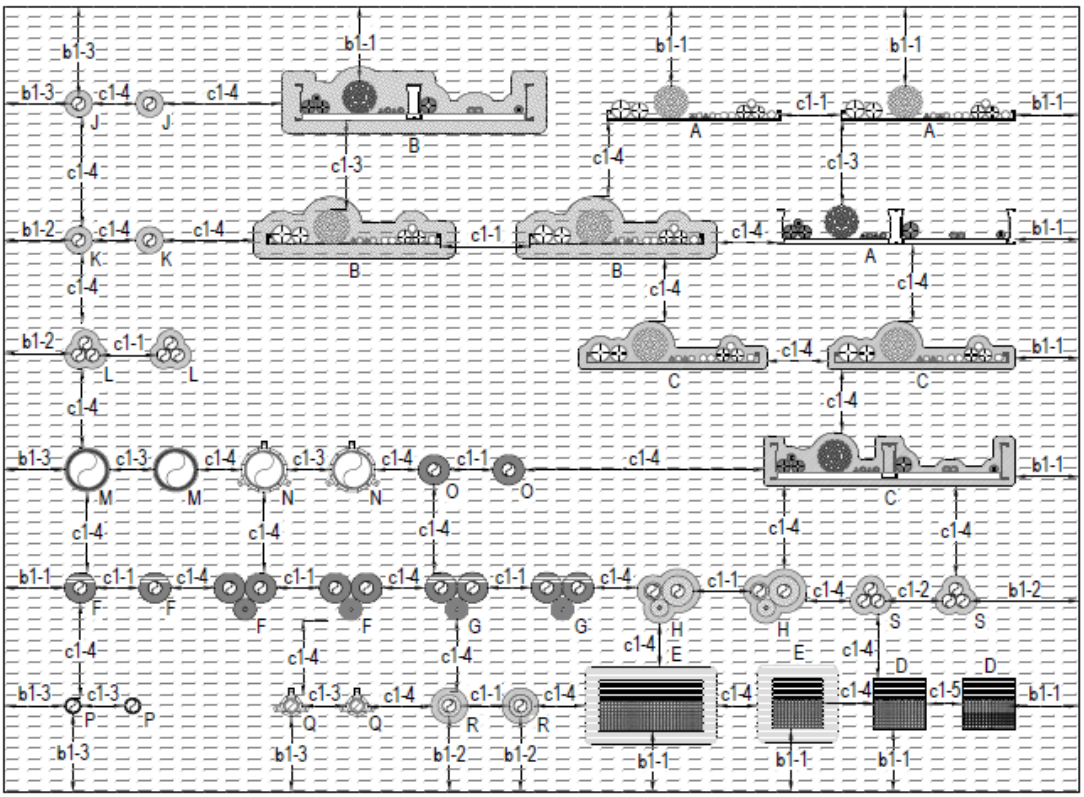
Service type	Max aperture size	Service protection	Classification
Blank	1200 x 1200 mm	Double layer of 50mm thick FirePro® CB50 batt, friction fitted within the aperture. All edges and butt joints sealed with FirePro ® AIS sealant.	**EI 60**

4.4.2.2 Service Penetrations

FirePro® CB50 is approved for use with the following service items. Installation of FirePro® CB50 must be completed in accordance with one of the installation methods specified in the blank seal section and must adhere to the size limitations outlined for each methodology. Certain service items may require additional protection depending on the type of service and/or the performance requirements of the seal and service. Details of any required additional protection are provided, as appropriate, on the following performance tables.

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Single Skin Flexible walls ≥75mm - Double CB50

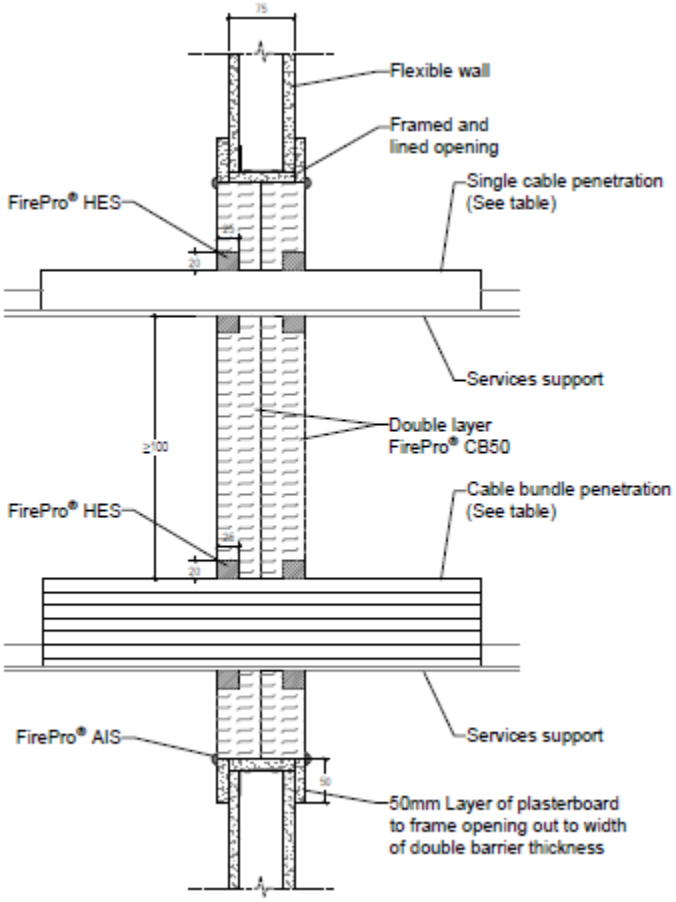


Service Type	
A	Unlagged cables & cable carriers
B	Lagged cables & cable carriers
C	HES cables & cable carriers
D	Trunking
E	Lagged trunking
F	H&V lagged metallic pipes (L/S)
G	DuctWrap lagged metallic pipes (L/I)
H	Combustible insulation on metallic pipes - HES
J	HES - combustible pipes
K	HES - CPVC
L	HES - PB
M	PWRoll - combustible pipes
N	Collar - combustible pipes
O	IFS - combustible pipes
P	PWRoll - MLC pipes (Uponor)
Q	Collar - MLC pipes (Uponor)
R	HES - Insulated MLC pipe
S	HES - TracPipe

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

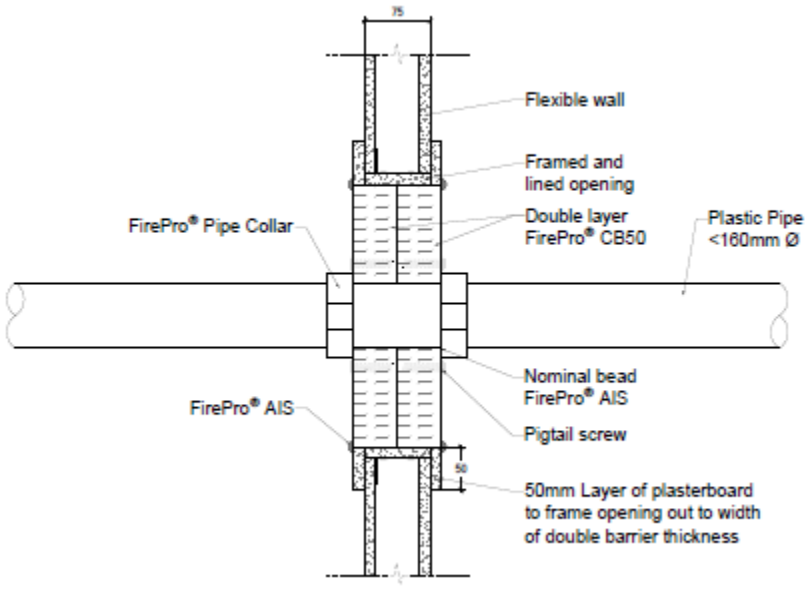
Cable Penetrations with cable carrier separation ≥100 mm – FirePro HES



Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service on each side of the seal.	**E 60 / EI 45**
	M	≤50		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Perforated steel cable tray, or basket		Unrestricted		**EI 60**

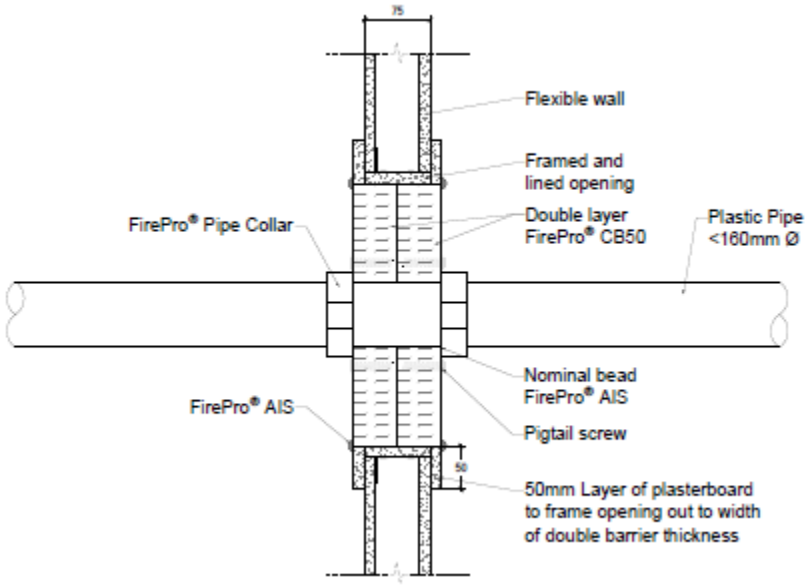
Plastic Pipe Penetrations – FirePro Pipe Collar

PP Pipes



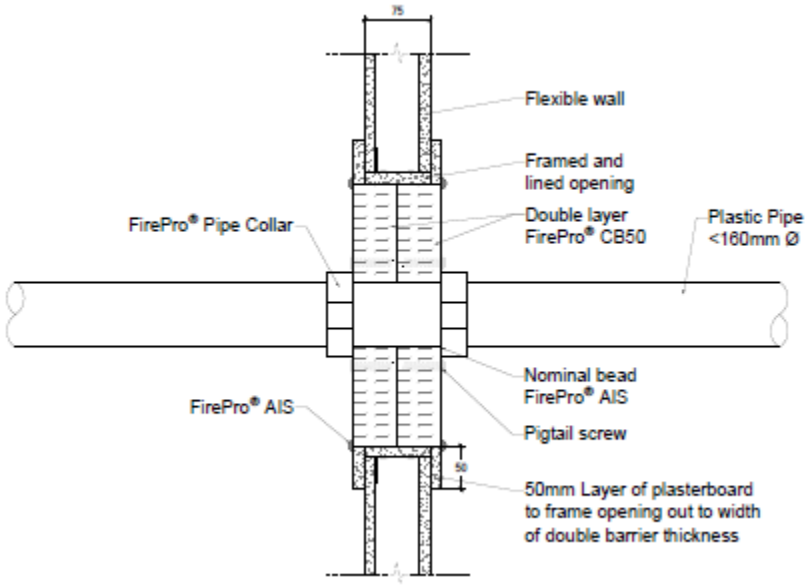
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.8 – 5.5	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**E 60 / EI 45 U/C**
55	55	2.0 – 5.6		
63	63	2.1 – 5.8		
75	75	2.2 – 5.9		
82	82	2.4 – 6.0		
90	90	2.6 – 6.2		
110	110	2.7 – 6.3		
125	125	3.1 – 7.2		
140	140	3.5 – 8.1		
160	160	4.0 – 9.1		

PE Pipes



Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	2.4 – 3.7	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**E 60 / EI 45 U/C**
55	55	2.5 – 5.0		
63	63	2.5 – 5.8		
75	75	2.5 – 6.9		
82	82	2.6 – 7.6		
90	90	2.6 – 8.3		
110	110	2.7 - 10		
125	125	3.4 – 9.8		
140	140	4.1 – 9.7		
160	160	4.9 – 9.5		

PVC Pipes

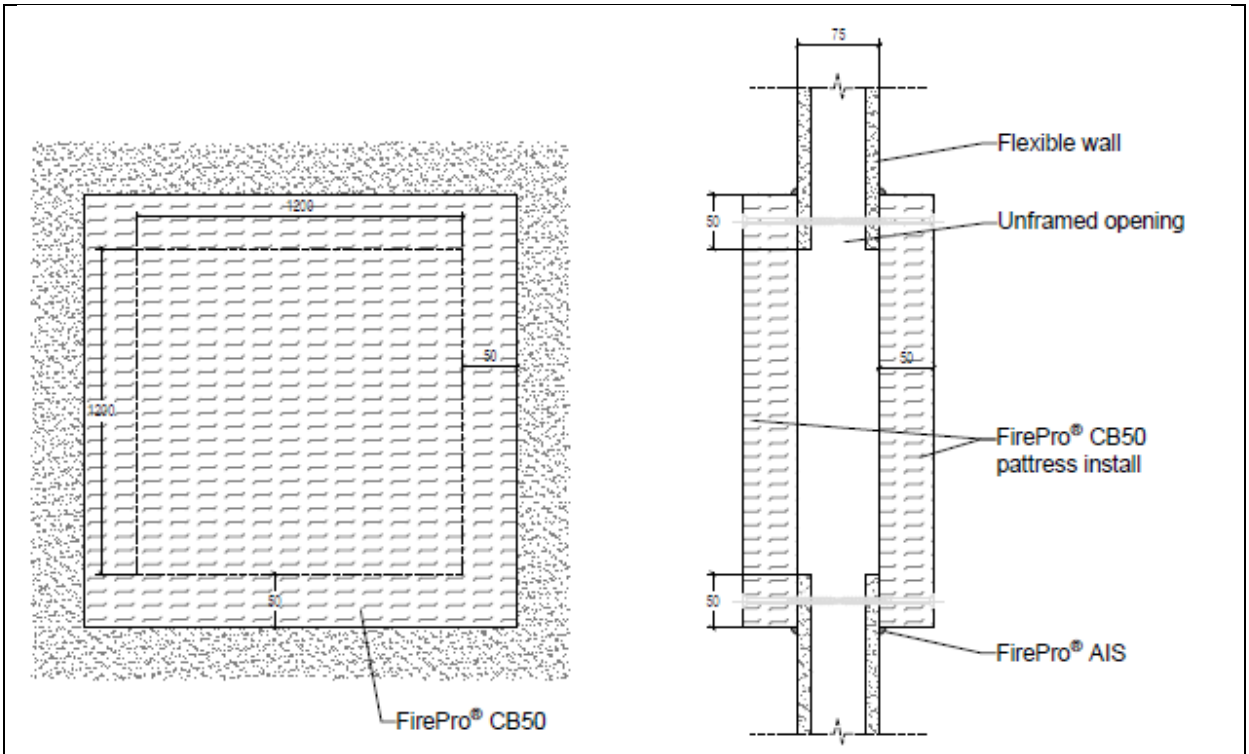


Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.9 – 3.0	Double layer of 50mm thick FirePro® CB50.FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**E 60 / EI 45 U/C**
55	55	2.4 – 3.7		
63	63	2.6 – 4.1		
75	75	3.0 – 4.8		
82	82	3.2 – 5.1		
90	90	3.5 – 5.6		
110	110	4.2 – 6.6		
125	125	4.8 – 7.6		
140	140	5.5 – 8.4		
160	160	6.2 – 9.5		

4.5. Pattress Batt Seals

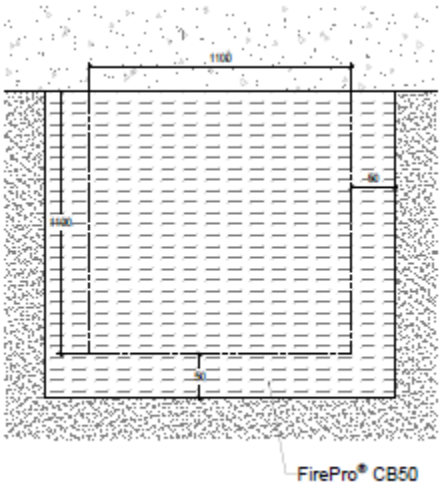
The following installation methods for FirePro® CB50 are considered as part of this classification.

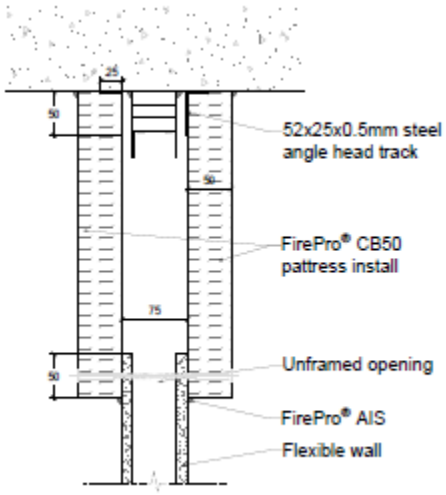
4.5.1 Blank Seal – Unframed openings



Service type	Max aperture size	Service protection	Classification
Blank	1200 x 1200 mm	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. All edges and butt joints sealed with FirePro ® AIS sealant. The batts were mechanically fixed with 90 mm long woodscrews and washers at 300 mm centres	**EI 60**
Blank	600 x 800 mm	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on the vertical and top edges. The bottom edge overlap can be reduced to 30 mm. All edges and butt joints sealed with FirePro ® AIS sealant. The batts were mechanically fixed with 90 mm woodscrews and washers at 300 mm centres.	**EI 90**

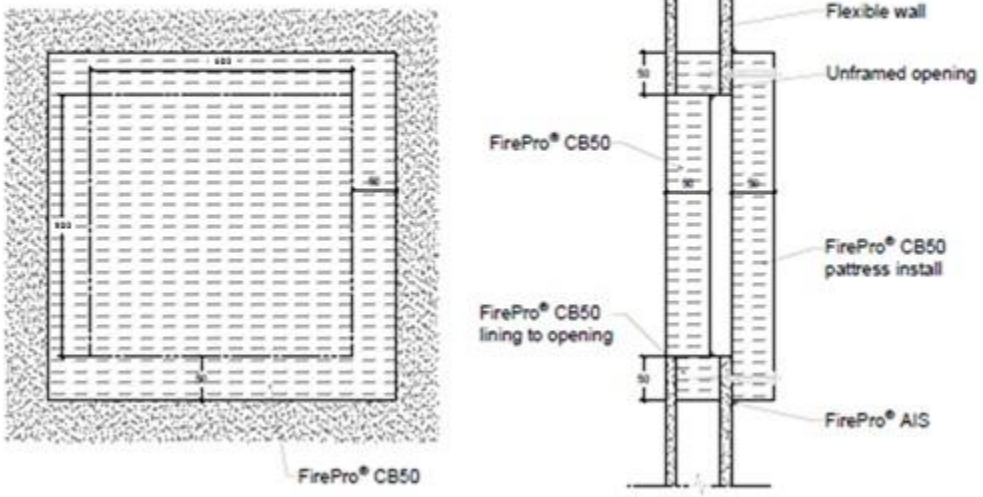
4.5.2 Blank Seal – unframed opening up to a head track detail





Service type	Max aperture size (mm)	Service protection	Classification
Blank	1100 x 1100 mm	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on vertical and bottom edges. Upper horizontal edge is fixed back to steel head track All butt joints were sealed with FirePro® AIS around edges of aperture and services. The batts were mechanically fixed with woodscrews and washers at 300 mm centres.	**EI 90**

4.5.3 Blank Seal – CB50 lined opening with in-line and pattress. Single sided installation.



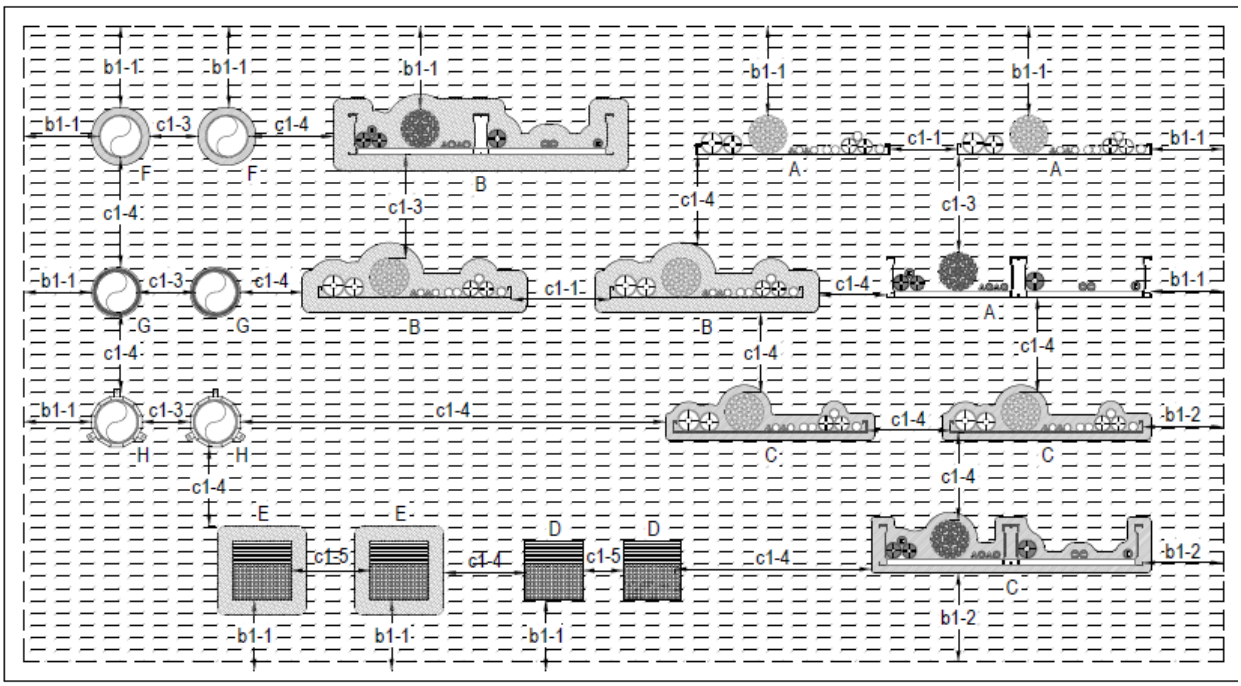
Service type	Max aperture size	Service protection	Classification
Blank	600 x 800 mm (aperture lined with FirePro® CB50)	Single layer of 50mm thick FirePro® CB50 batt was friction fitted into the aperture, flush with the face of the wall. Single layer of 50mm FirePro® CB50 pattress fitted to the unexposed face of the aperture, with 50mm overlap on all edges. Maximum 25mm void in-between batts. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FirePro® AIS". The batts were mechanically fixed with screws and washers at 300 mm centres.	**EI 90**

4.5.3.1 Service Penetrations

FirePro® CB50 is approved for use with the following service items. Installation of FirePro® CB50 must be completed in accordance with one of the installation methods specified in the blank seal section and must adhere to the size limitations outlined for each methodology. Certain service items may require additional protection depending on the type of service and/or the performance requirements of the seal and service. Details of any required additional protection are provided, as appropriate, in the following performance tables.

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Single Skin Flexible walls ≥75mm - Pattress CB50

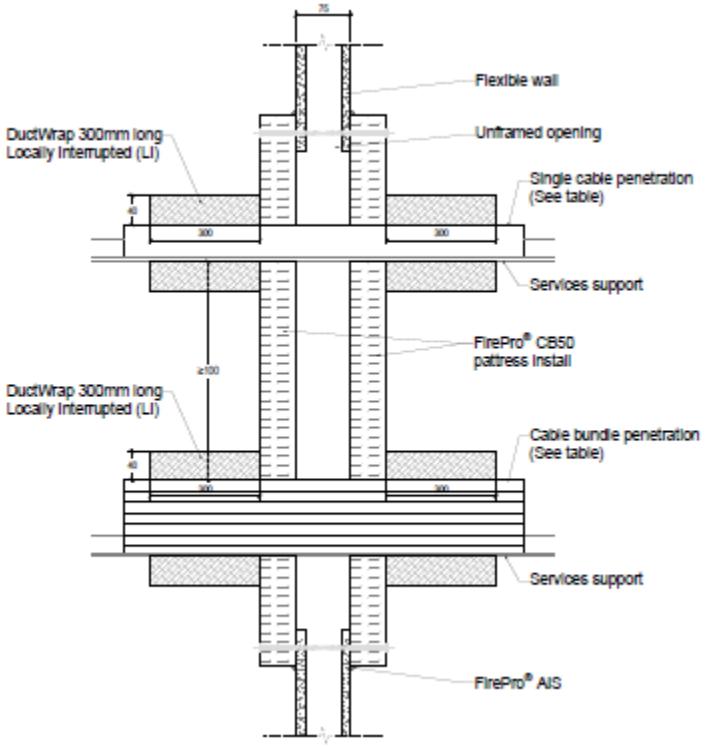


Service Type	
A	Unlagged cables & cable carriers
B	Lagged cables & cable carriers
C	HES cables & cable carriers
D	Trunking
E	Lagged trunking
F	HES - combustible pipes
G	PWRoll - combustible pipes
H	Collar - combustible pipes

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

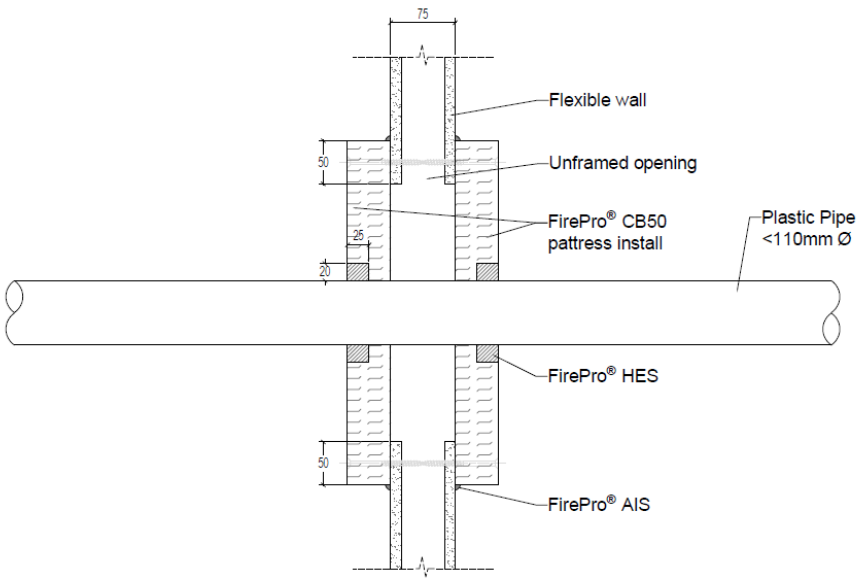
Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≥100 mm - Lagged



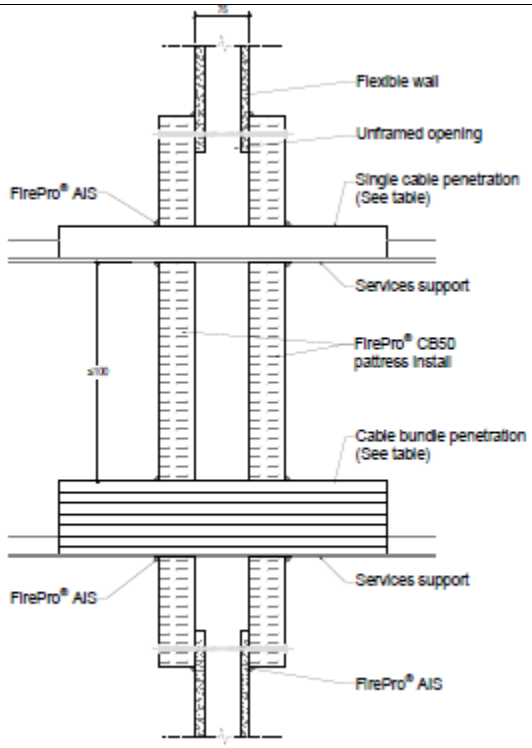
Service type		Service size (mm)	Service Protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	**EI 90**
	M	≤50		**E 90 / EI 60**
	L	≤80		**E 90 / EI 60**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 90**
Unsheathed cables		≤24 mm		**EI 90**
Perforated steel cable tray, ladder or basket		Unrestricted		**EI 90**

Cable Penetrations with cable carrier separation ≥100 mm – FirePro HES



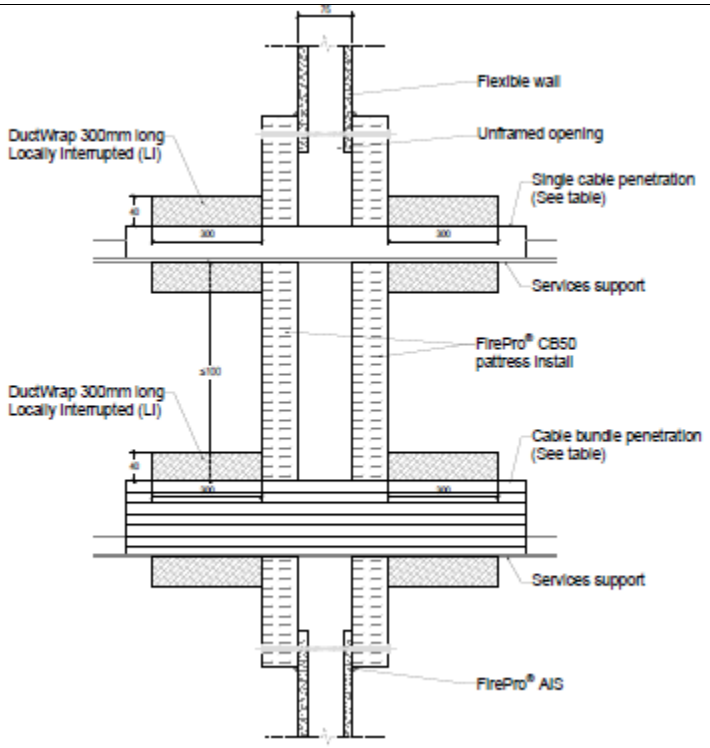
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service.	**EI 60**
	M	≤50 mm		**EI 60**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 60**
Perforated steel cable tray, or basket		Unrestricted		**EI 60**

Cable Penetrations with cable carrier separation ≤100 mm



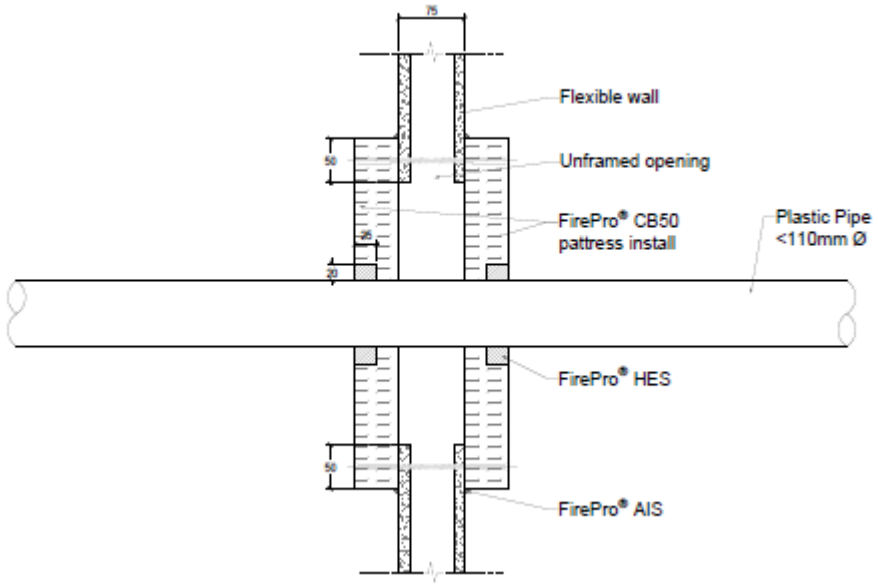
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services.	**EI 60**
	M	≤50 mm		**EI 60**
	L	≤80 mm		**EI 60**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 60**
Unsheathed cables		≤24 mm		**E 60 / EI 45**
Steel tray, perforated tray, ladder or basket		Unrestricted		**EI 60**

Cable Penetrations with cable carrier separation ≤100 mm - Lagged

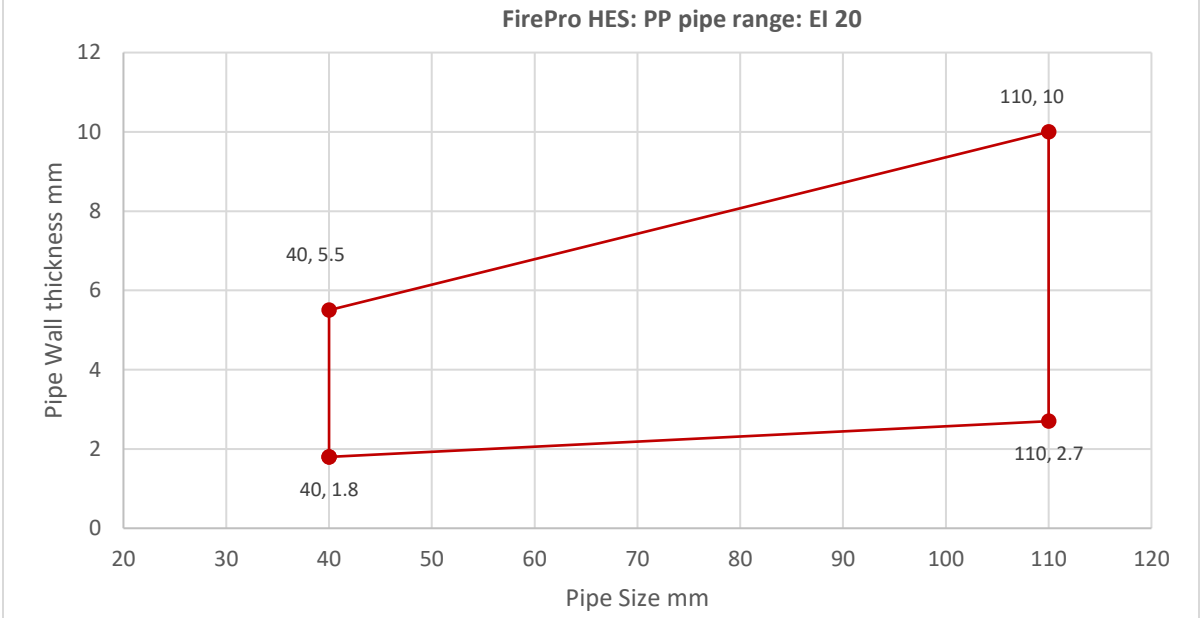


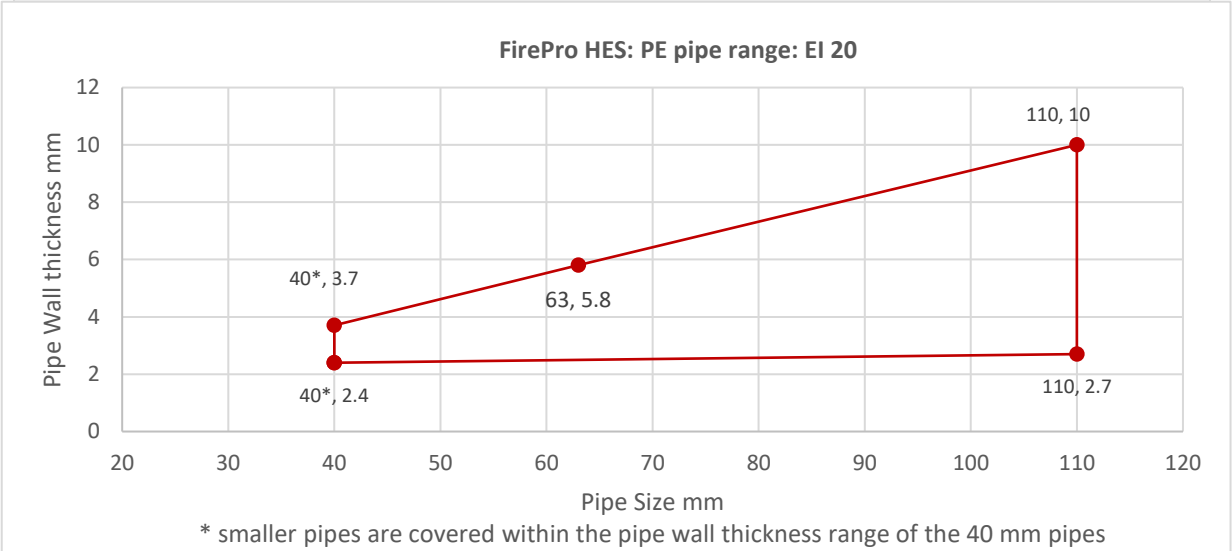
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	**EI 90**
	M	≤50		**E 90 / EI 60**
	L	≤80		**E 90 / EI 60**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 90**
Unsheathed cables		≤24 mm		**EI 90**
Steel tray, perforated steel tray, ladder or basket		Unrestricted		**EI 90**

Plastic Pipe Penetrations – FirePro HES

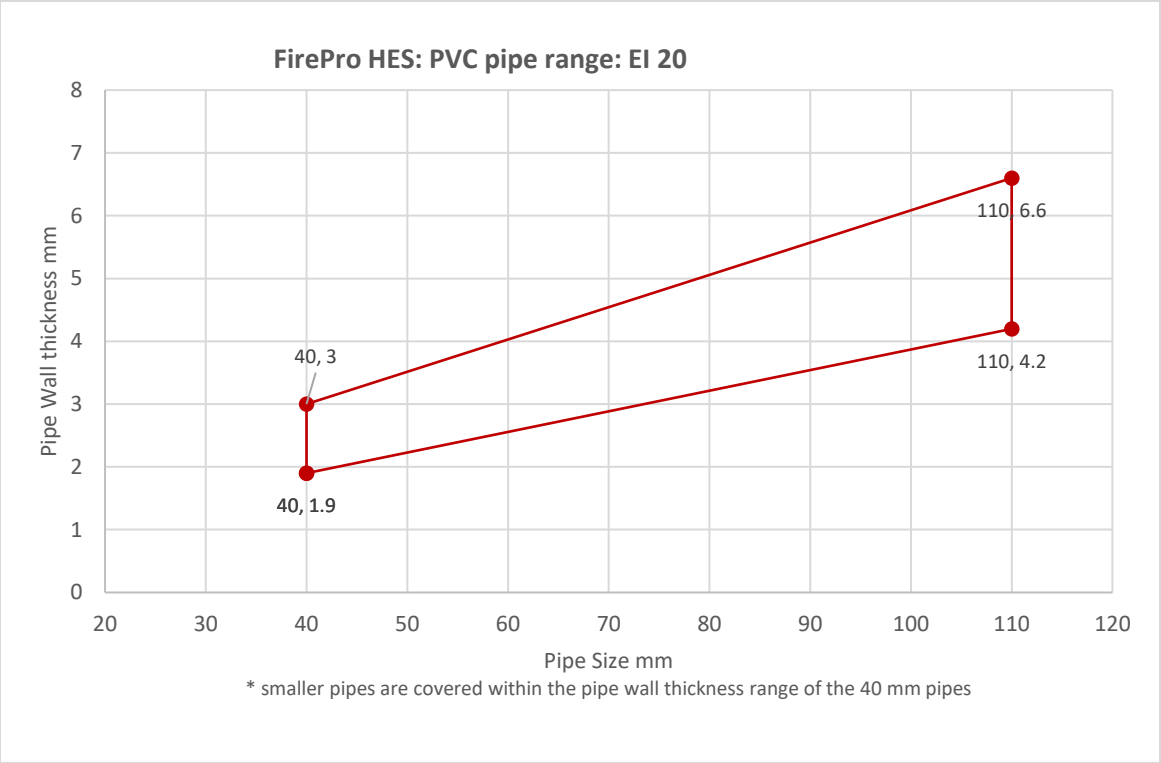


Pipe material	Pipe size (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 110	25 (each face)	20	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service, on each face of the seal.	**EI 20 U/C**
PE	40 – 110				
PVC	40 - 110				

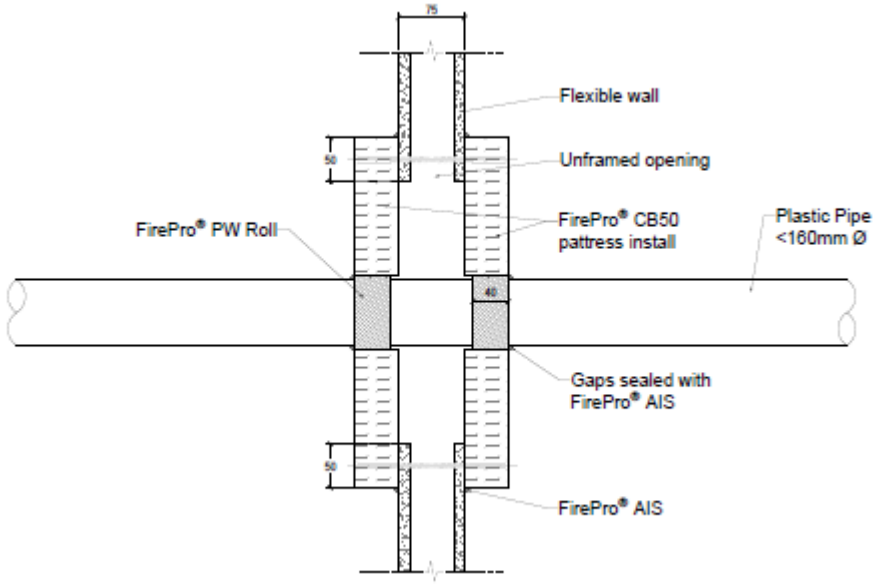




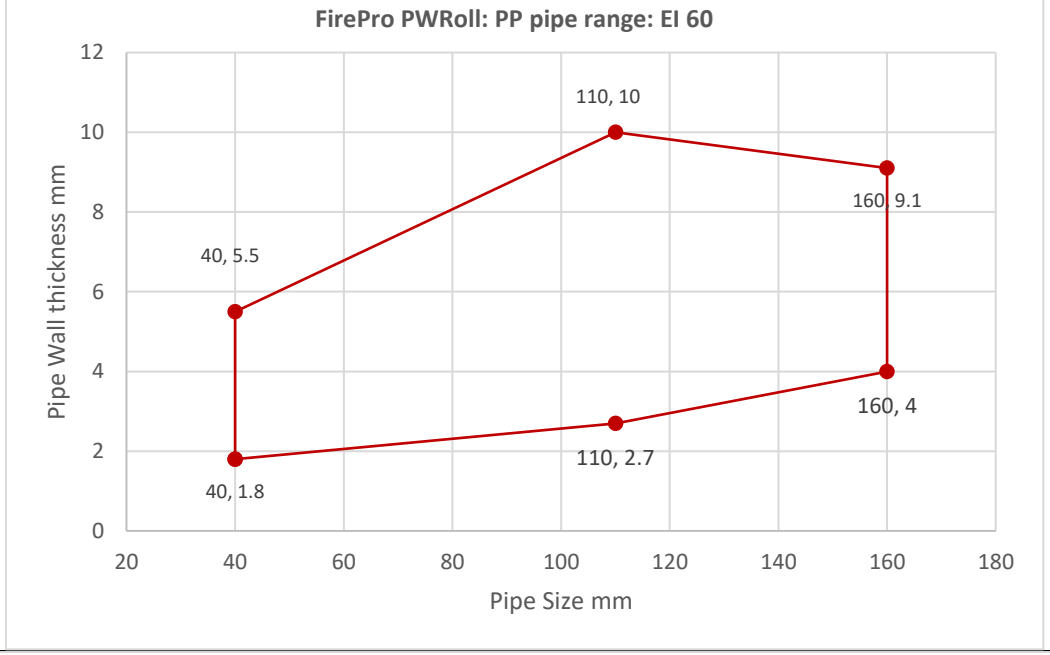
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

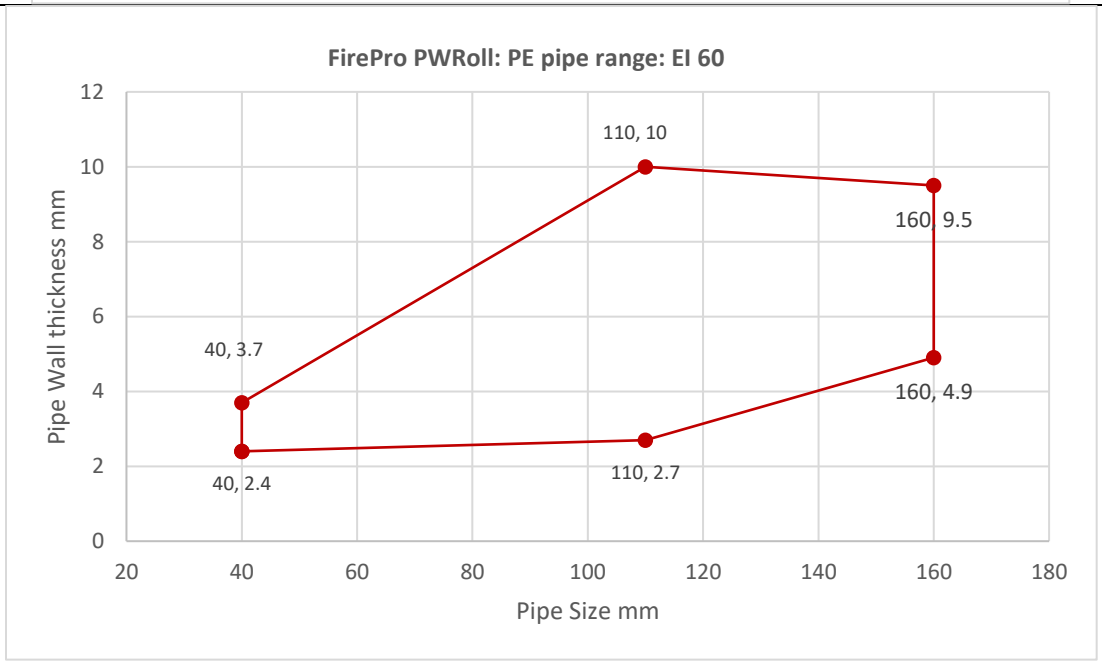

FirePro HES: PVC pipe range: EI 20
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
40, 3
40, 1.9
110, 6.6
110, 4.2
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

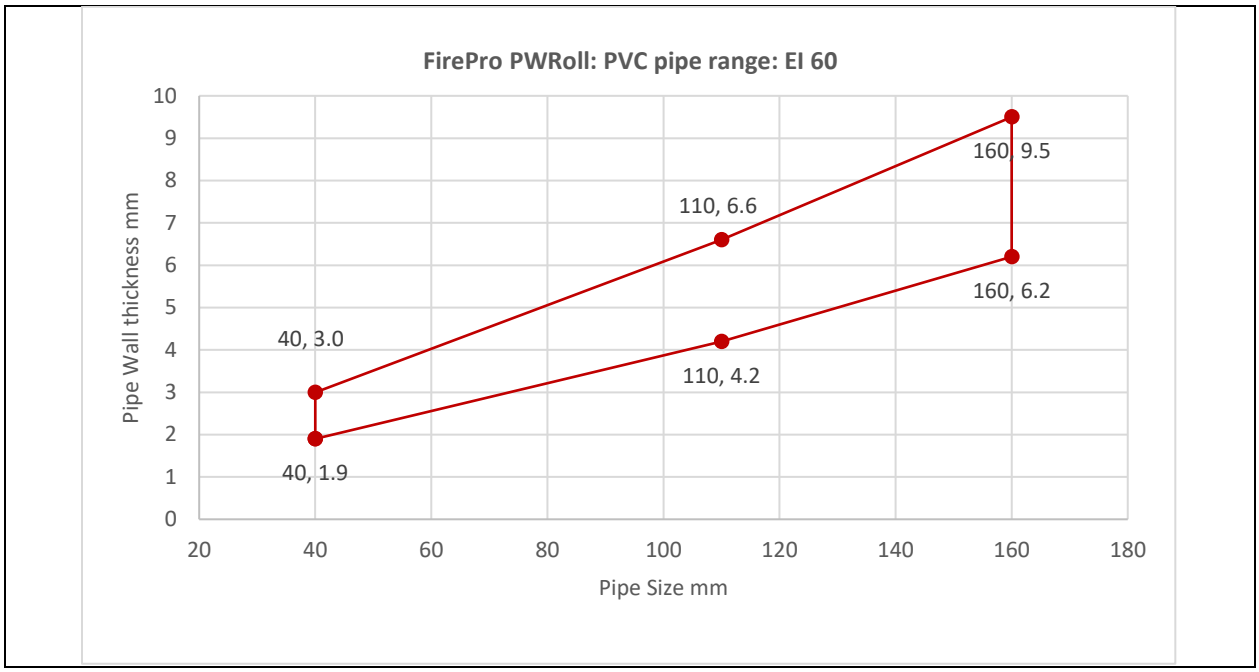
Plastic Pipe Penetrations – FirePro PWRoll



Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
PP/PE/PVC	≤40	1	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the service.	**EI 60 U/C**
	41-79	2		
	80-120	3		
	121-160	4		

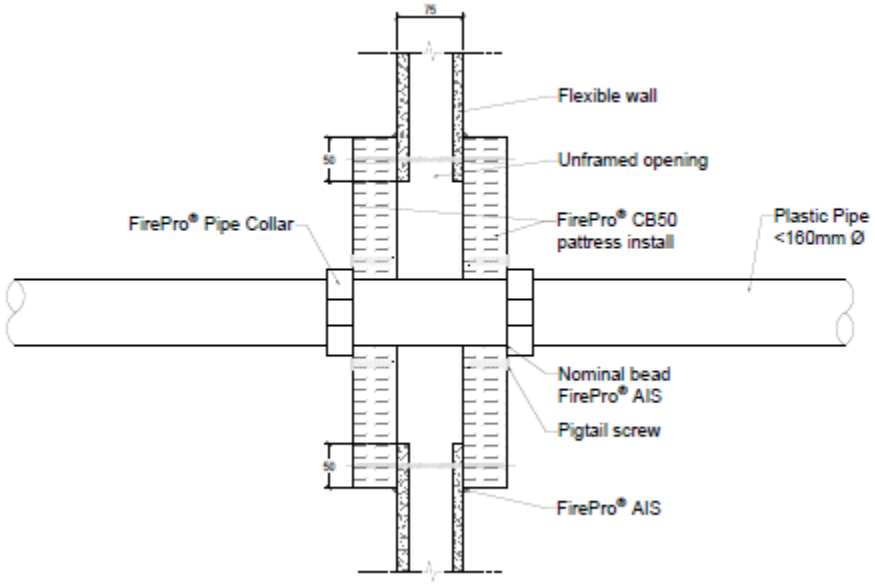

FirePro PWRoll: PP pipe range: EI 60
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8


FirePro PWRoll: PE pipe range: EI 60
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7


FirePro PWRoll: PVC pipe range: EI 60
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
160, 9.5
110, 6.6
160, 6.2
40, 3.0
110, 4.2
40, 1.9

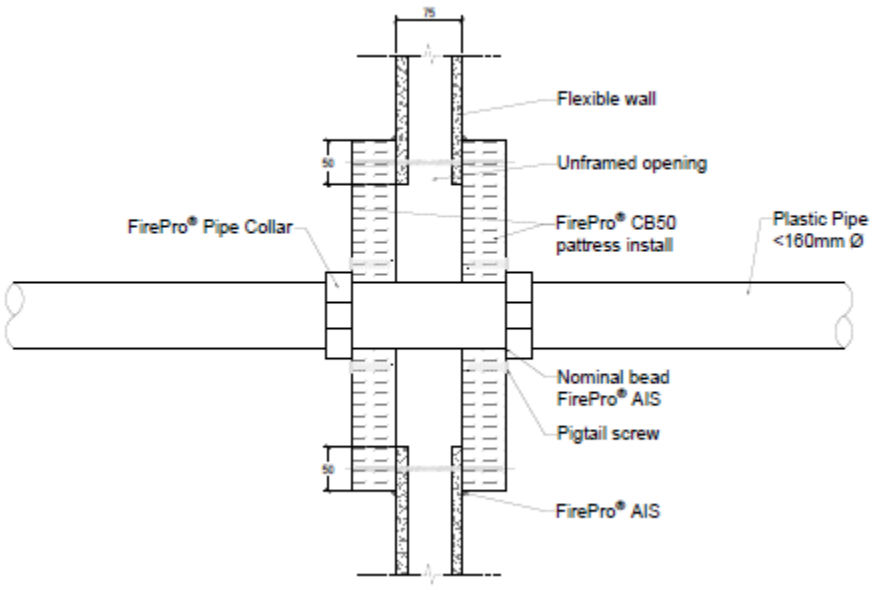
Plastic Pipe Penetrations – FirePro Pipe Collar

PP Pipes



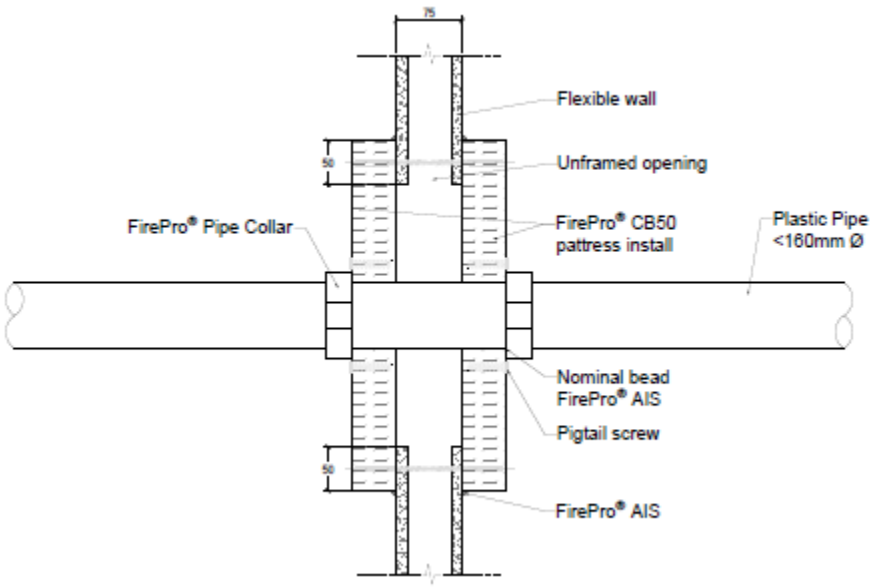
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.8 – 5.5	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edgesFirePro® AIS used on all batt edges to seal joints and around services, installed only from the unexposed only. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 60 U/C**
55	55	2.0 – 5.6		
63	63	2.1 – 5.8		
75	75	2.2 – 5.9		
82	82	2.4 – 6.0		
90	90	2.6 – 6.2		
110	110	2.7 – 6.3		
125	125	3.1 – 7.2		
140	140	3.5 – 8.1		
160	160	4.0 – 9.1		

PE Pipes



Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	2.4 – 3.7	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. FirePro® AIS used on all batt edges to seal joints and around services, installed only from the unexposed only. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 60 U/C**
55	55	2.5 – 5.0		
63	63	2.5 – 5.8		
75	75	2.5 – 6.9		
82	82	2.6 – 7.6		
90	90	2.6 – 8.3		
110	110	2.7 - 10		
125	125	3.4 – 9.8		
140	140	4.1 – 9.7		
160	160	4.9 – 9.5		

PVC Pipes

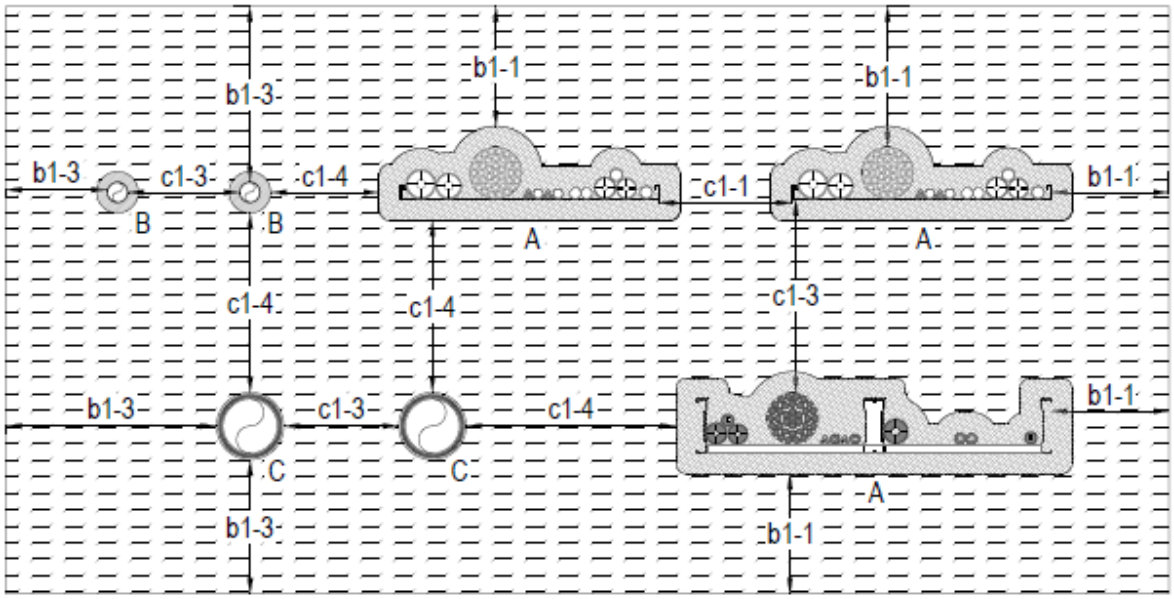


Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.9 – 3.0	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. FirePro® AIS used on all batt edges to seal joints and around services, installed only from the unexposed only. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 60 U/C**
55	55	2.4 – 3.7		
63	63	2.6 – 4.1		
75	75	3.0 – 4.8		
82	82	3.2 – 5.1		
90	90	3.5 – 5.6		
110	110	4.2 – 6.6		
125	125	4.8 – 7.6		
140	140	5.5 – 8.4		
160	160	6.2 – 9.5		

4.5.4 Single sided seals

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Single Skin Flexible walls ≥75mm - Single Sided Double CB50

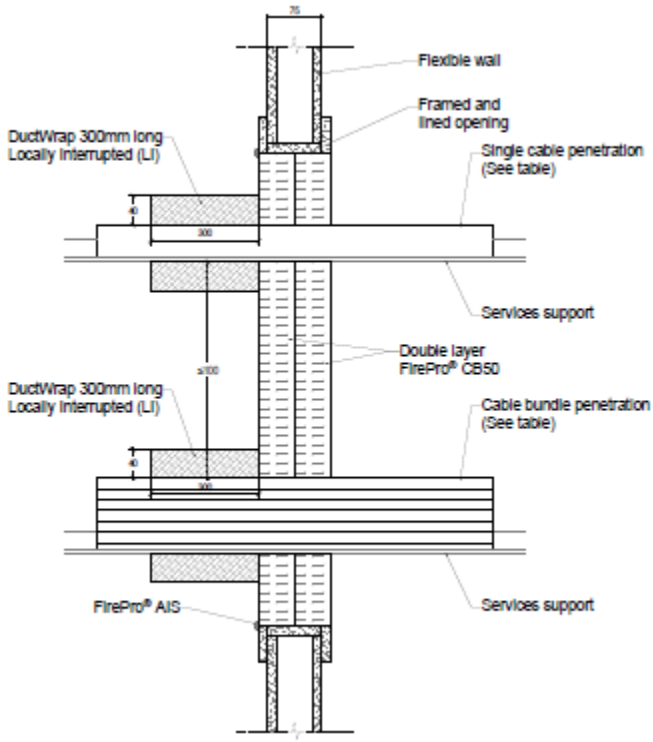


Service Type	
A	Lagged cables & cable carriers
B	HES cables & cable carriers
C	PWRoll - combustible pipes

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

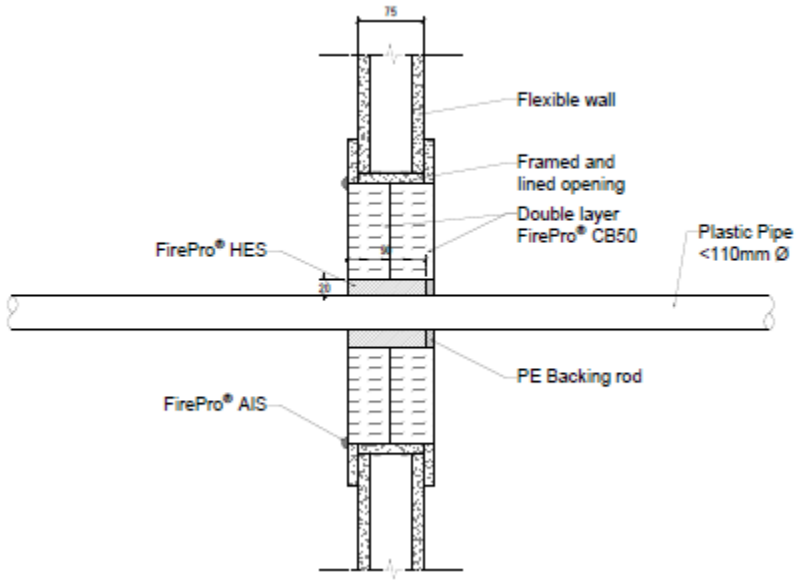
Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≤100 mm - Lagged

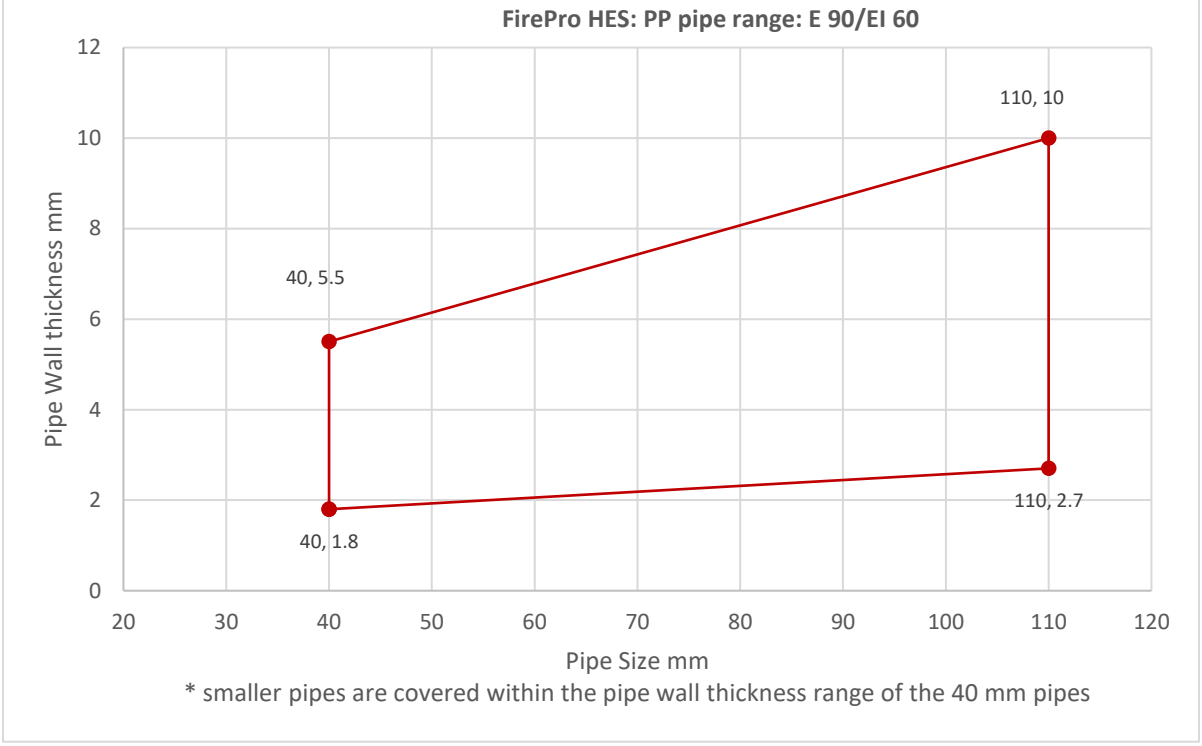


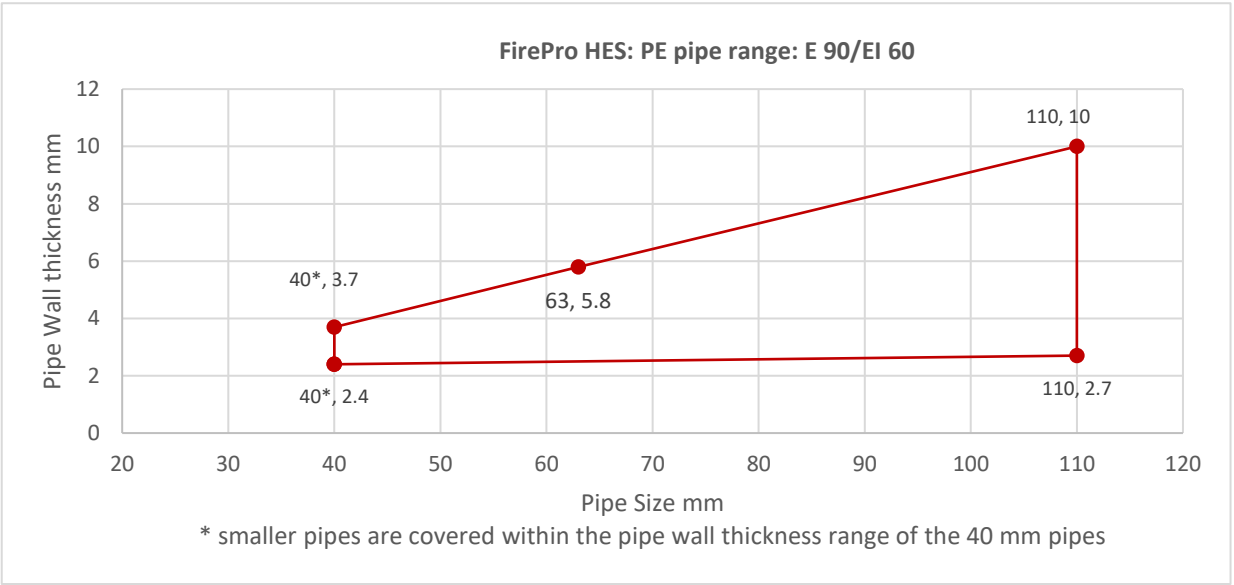
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, from a single (unexposed) side, with FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around a single side of the service item in a LI configuration, 300 mm from the face of the batt. Secured to service with steel wire.	**EI 90**
	M	≤50		**EI 90**
	L	≤80		**EI 90**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 90**
Unsheathed cables		≤24		**E 90**
Steel tray, perforated tray, ladder or basket		Unrestricted		**EI 90**

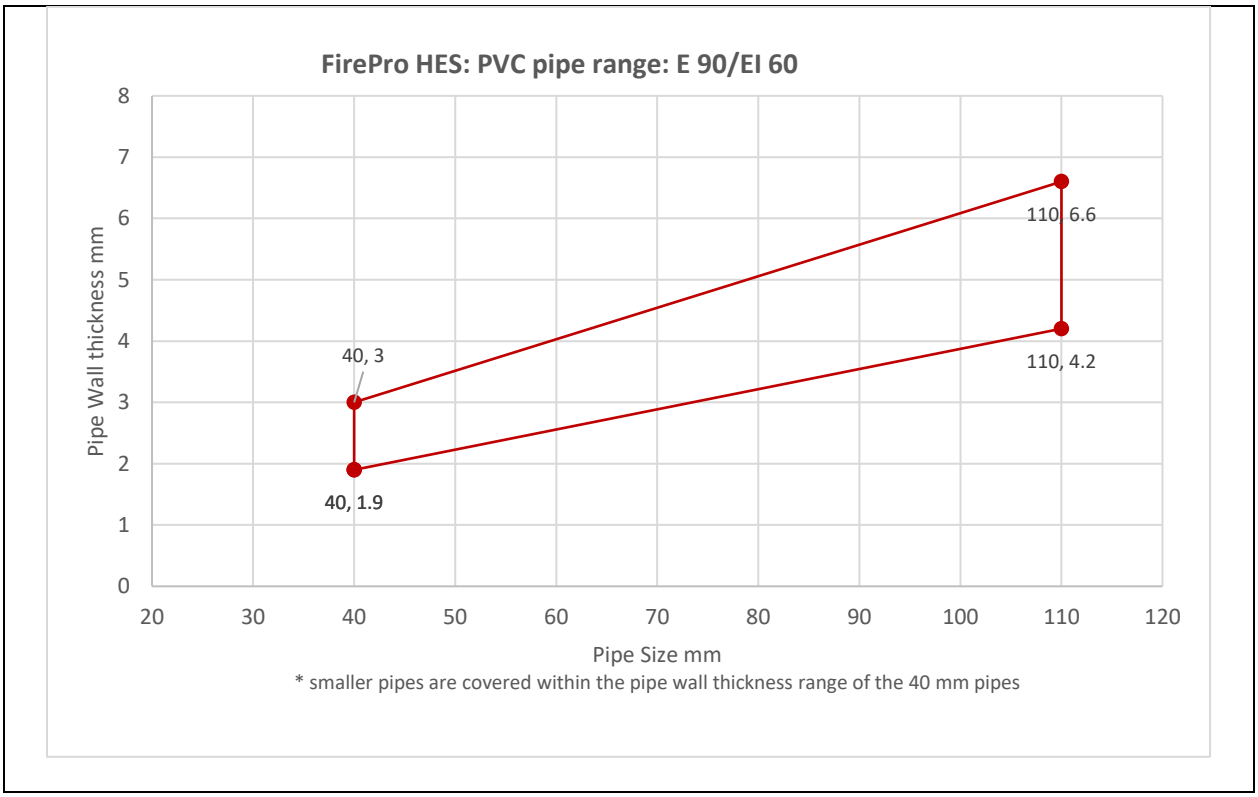
Plastic Pipe Penetrations – FirePro HES



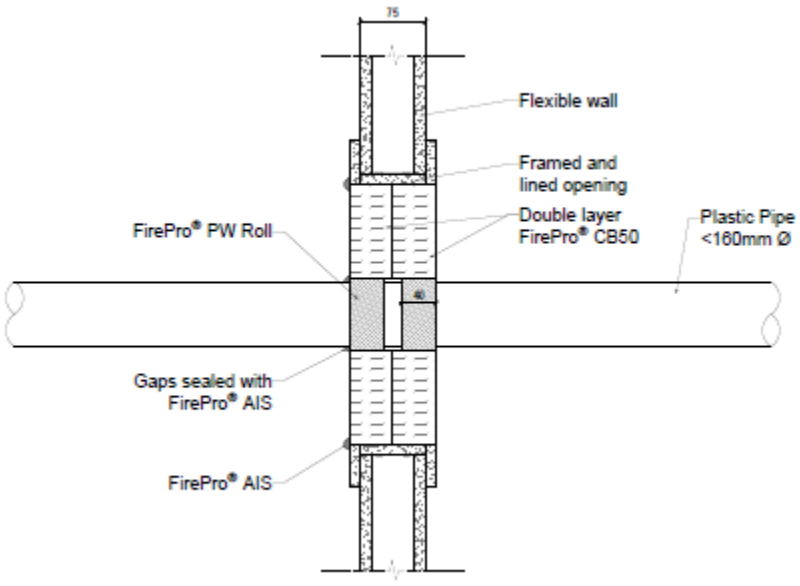
Pipe material	Pipe size (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 110	90	20	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, from a single side, with FirePro® AIS used on all batt edges to seal joints and around services. 20 mm wide by 90 mm deep annular gap sealed with FirePro® HES installed from a single face (unexposed) over a PE backing rod.	**E 90 / EI 60 U/C**
PE	40 – 110				
PVC	40 - 110				


FirePro HES: PP pipe range: E 90/EI 60
Pipe Wall thickness mm
Pipe Size mm
110, 10
40, 5.5
40, 1.8
110, 2.7
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

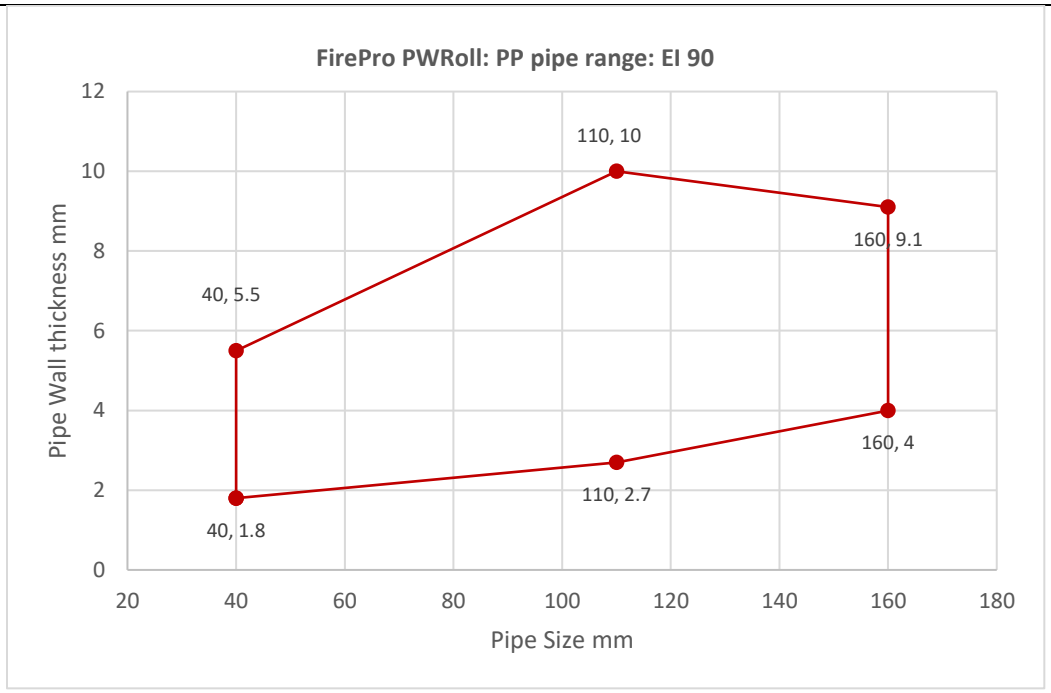

FirePro HES: PE pipe range: E 90/EI 60
Pipe Wall thickness mm
Pipe Size mm
110, 10
40*, 3.7
63, 5.8
40*, 2.4
110, 2.7
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

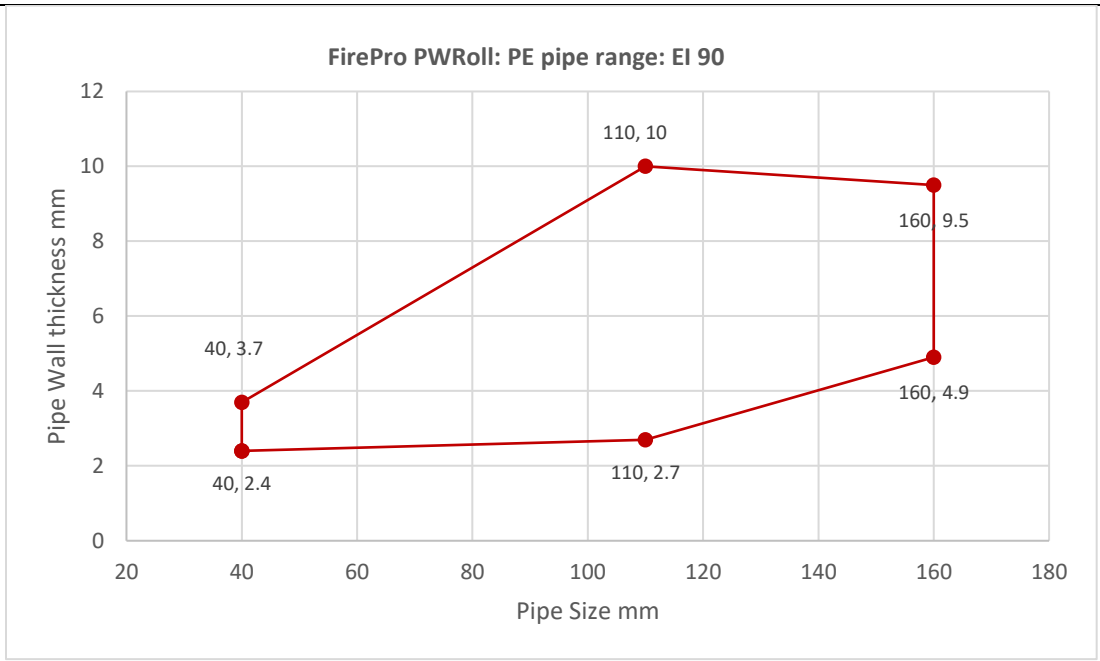

FirePro HES: PVC pipe range: E 90/EI 60
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
40, 3
40, 1.9
110, 6.6
110, 4.2
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

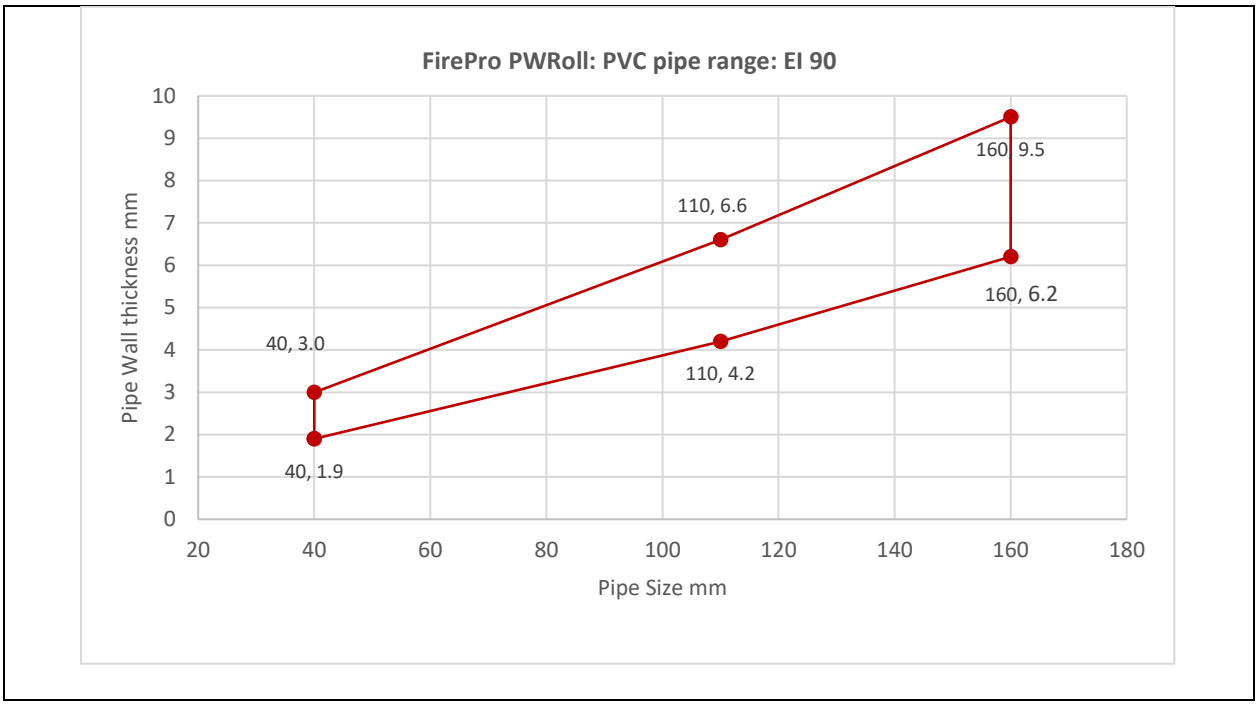
Plastic Pipe Penetrations – FirePro PWRoll



Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
PP/PE/PVC	≤40	1	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services, installed from the exposed face only FirePro® PWROLL installed flush with both faces of the batt around the service.	**EI 90 U/C**
	41-79	2		
	80-120	3		
	121-160	4		


FirePro PWRoll: PP pipe range: EI 90
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8


FirePro PWRoll: PE pipe range: EI 90
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7

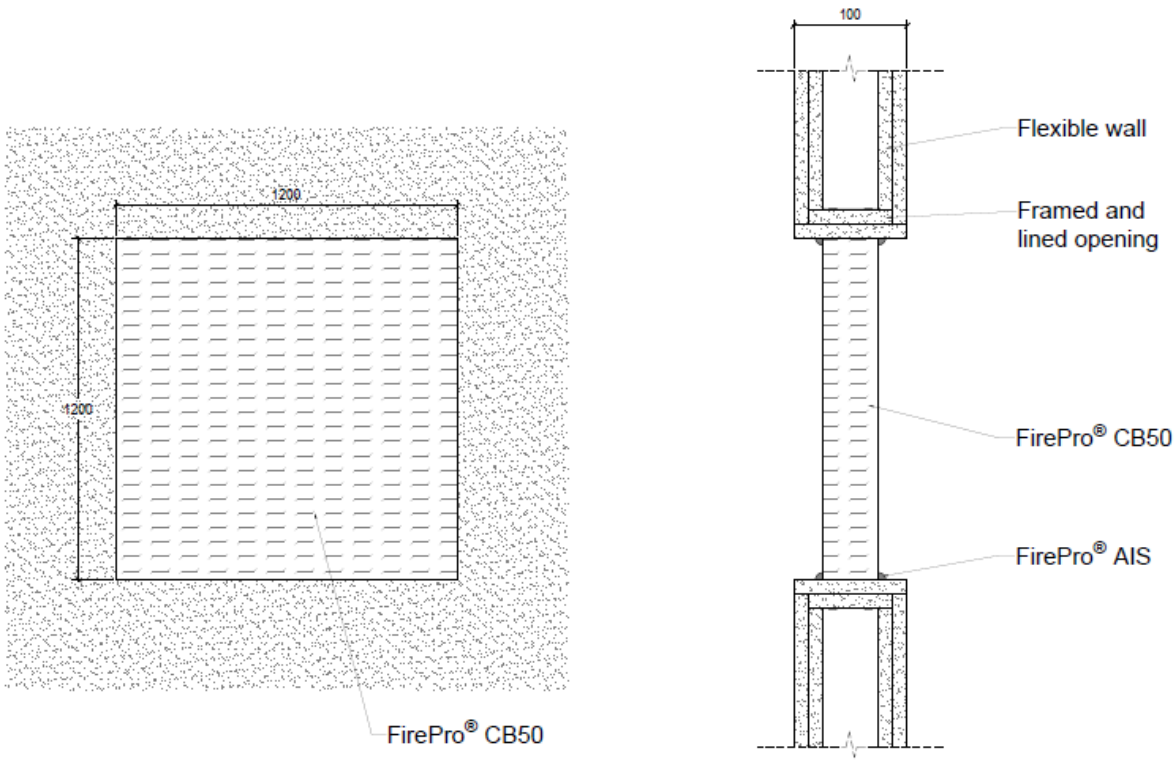

FirePro PWRoll: PVC pipe range: EI 90
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
40, 3.0
40, 1.9
110, 6.6
110, 4.2
160, 9.5
160, 6.2

4.6 ANNEX B – Double Skin Flexible walls ≥100 mm

4.6.1 Single Batt Seal Installation Methods

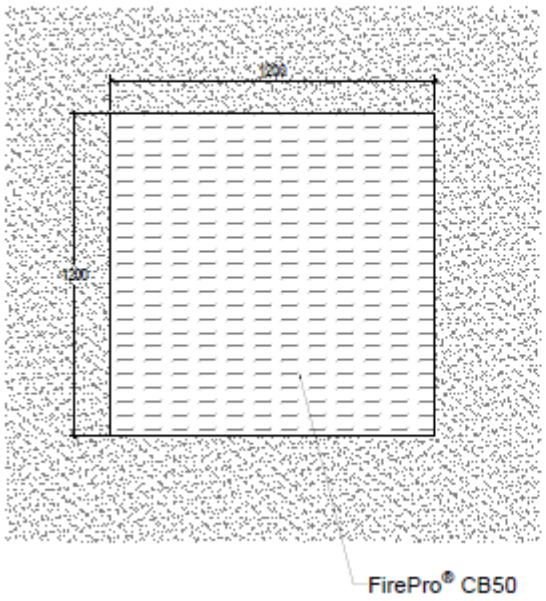
The following installation methods for FirePro® CB50 are considered as part of this classification.

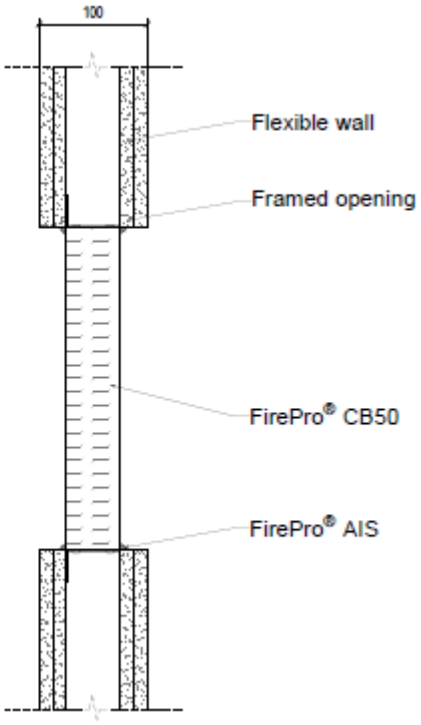
Blank Seal – framed and lined openings



Service type	Aperture size	Service protection	Classification
Blank	1200 x 1200 mm	Single layer of 50mm thick FirePro® CB50 batt, friction fitted centrally within the aperture. Perimeter of the batt/aperture interface and joints between individual batt sections (within the sections) sealed with FirePro ® AIS sealant.	**EI 60**

Blank Seal – framed openings





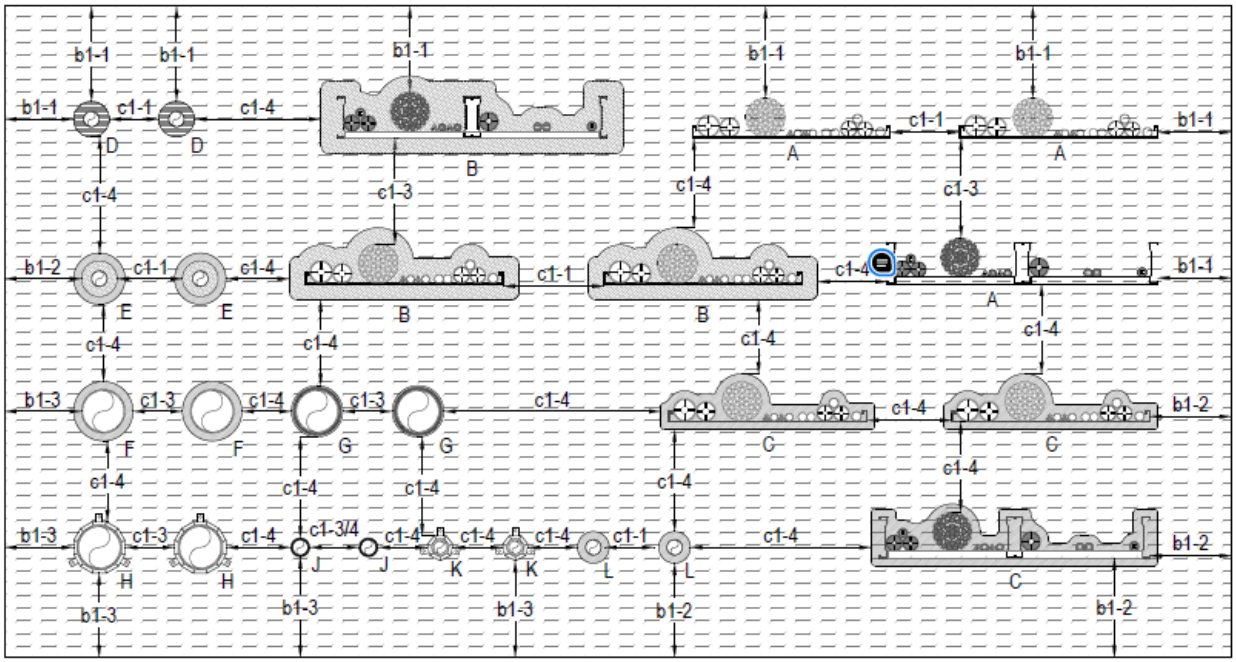
Service type	Aperture size	Service protection	Classification
Blank	1200 mm wide x 1200 mm high	Single layer of 50mm thick FirePro® CB50 batt, friction fitted centrally within the aperture. All edges and butt joints sealed with FirePro ® AIS sealant.	**EI 60**

4.6.1.1 Service Penetrations

FirePro® CB50 is approved for use with the following service items. Installation of FirePro® CB50 must be completed in accordance with one of the installation methods specified in the blank seal section and must adhere to the size limitations outlined for each methodology. Certain service items may require additional protection depending on the type of service and/or the performance requirements of the seal and service. Details of any additional protection required are provided, as appropriate, on the following performance tables.

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Double Skin Flexible walls ≥100mm - Single CB50

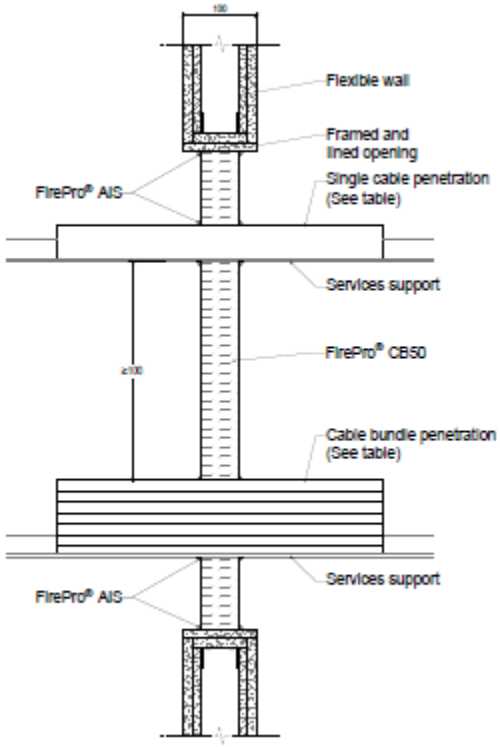


Service Type	
A	Unlagged cables & cable carriers
B	Lagged cables & cable carriers
C	HESCables & cable carriers
D	H&Vlagged metallic pipes (L/S)
E	Combustible insulation on metallic pipes - HES
F	HES- combustible pipes
G	PWRoll - combustible pipes
H	Collar - combustible pipes
J	PWRoll - MLCpipes (Uponor)
K	Collar - MLCpipes (Uponor)
L	HES- Insulated MLCpipe

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

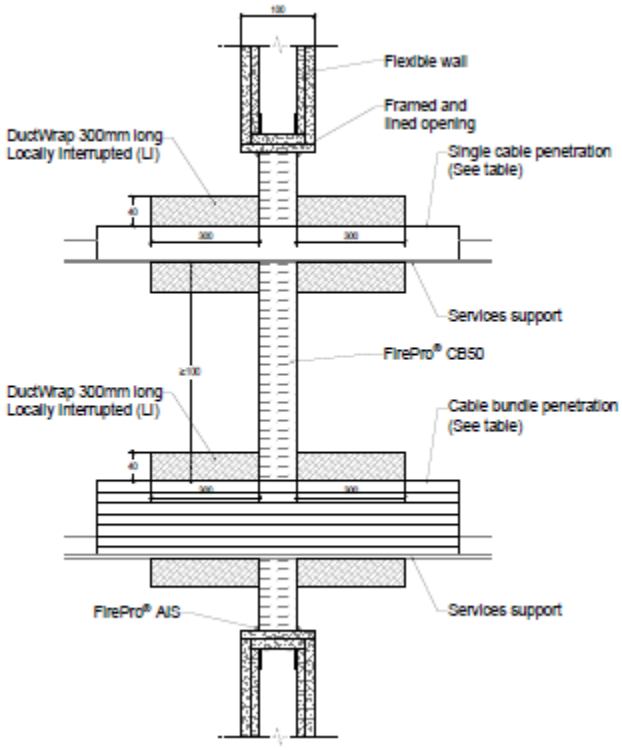
Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≥100 mm



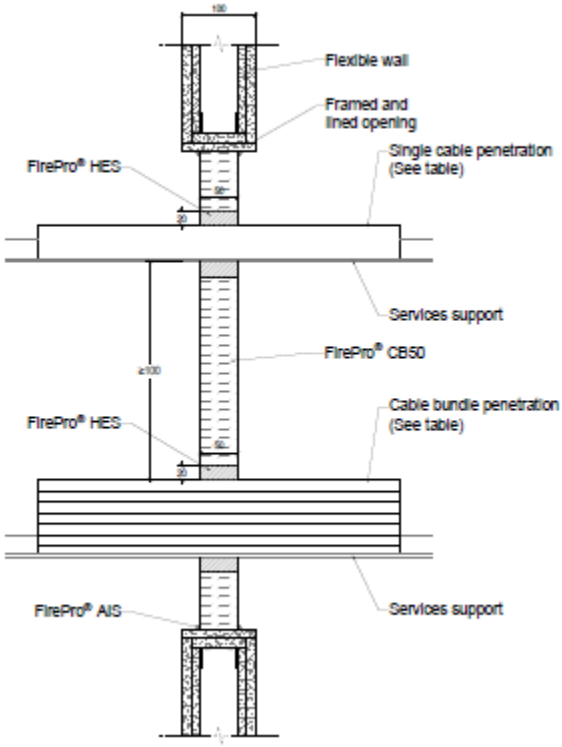
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services.	**E 60 / EI 45**
	M	≤50 mm		**E 60 / EI 45**
	L	≤80 mm		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 30**
Unsheathed cables		≤24 mm		**E 60 / EI 45**
Perforated steel cable tray		≤500 mm x ≤60 mm high x ≥1.2 mm thick		**E 60 / EI 45**

Cable Penetrations with cable carrier separation ≥100 mm - Lagged



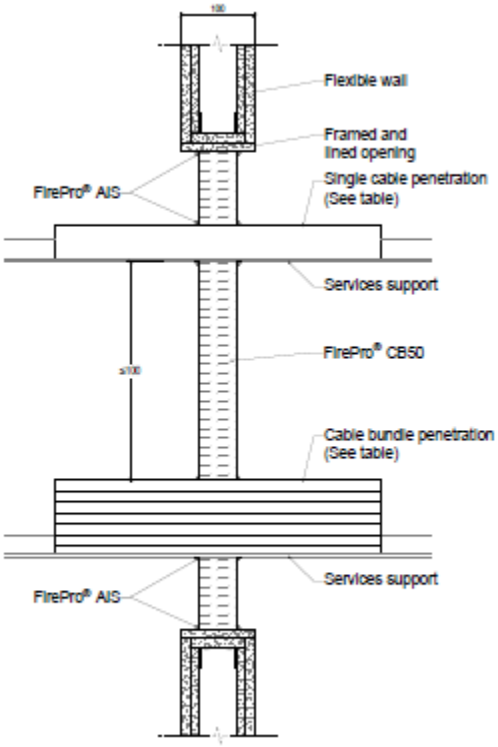
Service type		Service size (mm)	Service Protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a LI configuration 300 mm to both faces and secured to service with steel wire.	**EI 60**
	M	≤50 mm		**E 60 / EI 45**
	L	≤80 mm		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Unsheathed cables		≤24 mm		**EI 60**
Perforated steel cable tray, or basket		Unrestricted		**E 60 / EI 45**
Cable ladder		Unrestricted		**EI 60**

Cable Penetrations with cable carrier separation ≥100 mm – FirePro HES



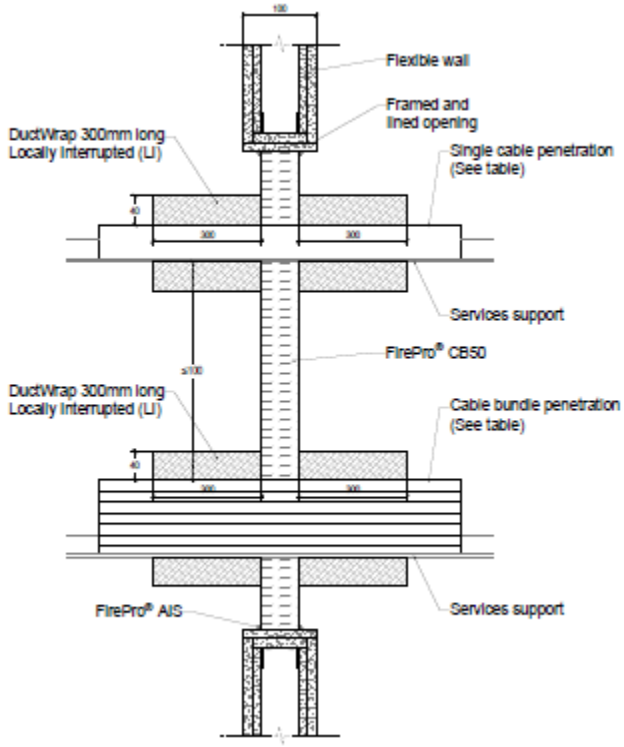
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 50 mm around the service.	**E 60 / EI 45**
	M	≤50 mm		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Perforated cable steel tray, or basket		Unrestricted		**EI 60**

Cable Penetrations with cable carrier separation ≤100 mm



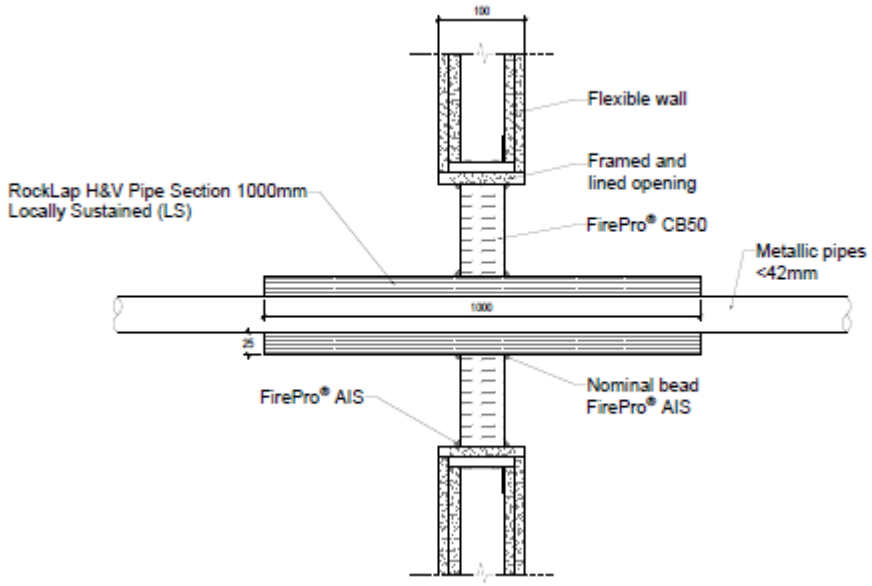
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used with a nominal bead around all batt edges to seal joints and around services.	**E 60 / EI 45**
	M	≤50 mm		**E 60 / EI 45**
	L	≤80 mm		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 45**
Unsheathed cables		≤24 mm		**E 60 / EI 30**
Steel tray, perforated tray, ladder or basket		Unrestricted		**E 60 / EI 45**

Cable Penetrations with cable carrier separation ≤100 mm - Lagged



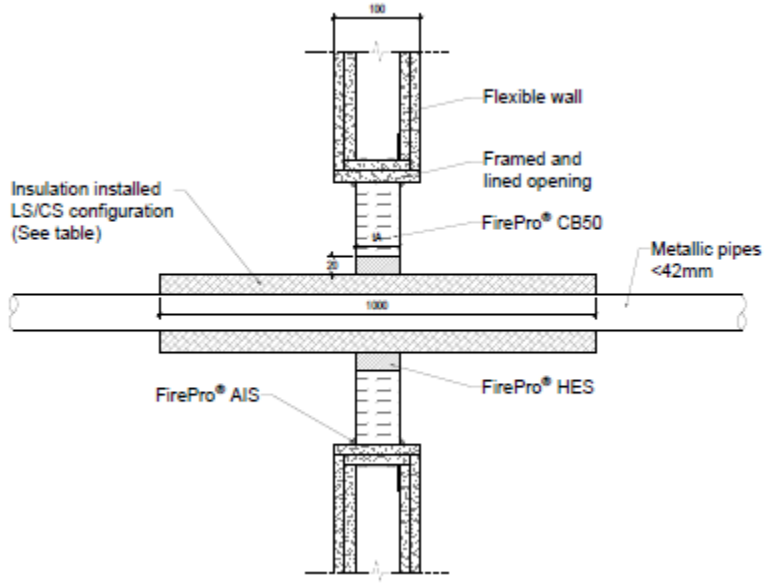
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a LI configuration 300 mm to both faces and secured to service with steel wire.	**E 60 / EI 45**
	M	≤50 mm		**E 60 / EI 45**
	L	≤80 mm		**E 60 / EI 45**
Cable bundle		≤Ø100 cable bundle		**E 60 / EI 45**
Unsheathed cables		≤24 mm		**E 60 / EI 45**
Steel tray, perforated tray, ladder or basket		Unrestricted		**E 60 / EI 45**

Metallic pipes: Insulated with RockLap H&V Pipe section – LS installation.



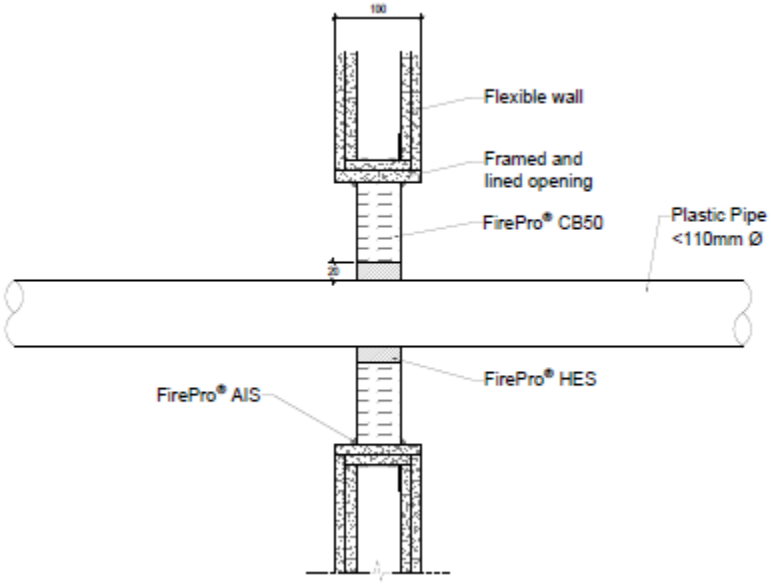
Service type	Service Size (mm)	Wall thickness (mm)	Service protection	Insulation sleeve type	Insulation sleeve details	Classification
Copper and steel pipes Linear (0 mm)	≤42 Ø	≥1.2	Single layer of 50mm thick FirePro® CB50, friction fit into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services. 1000 mm long x 25 mm thick ROCKWOOL RockLap H&V Pipe Section in a LS configuration, fixed around the metallic pipes.	RockLap H&V Pipe Section® in an LS configuration, fixed around the metallic pipes.	1000 mm long x 25 mm thick.	**E 60 / EI 45 C/U**

Metallic pipes: Insulated with combustible insulation – FirePro HES.

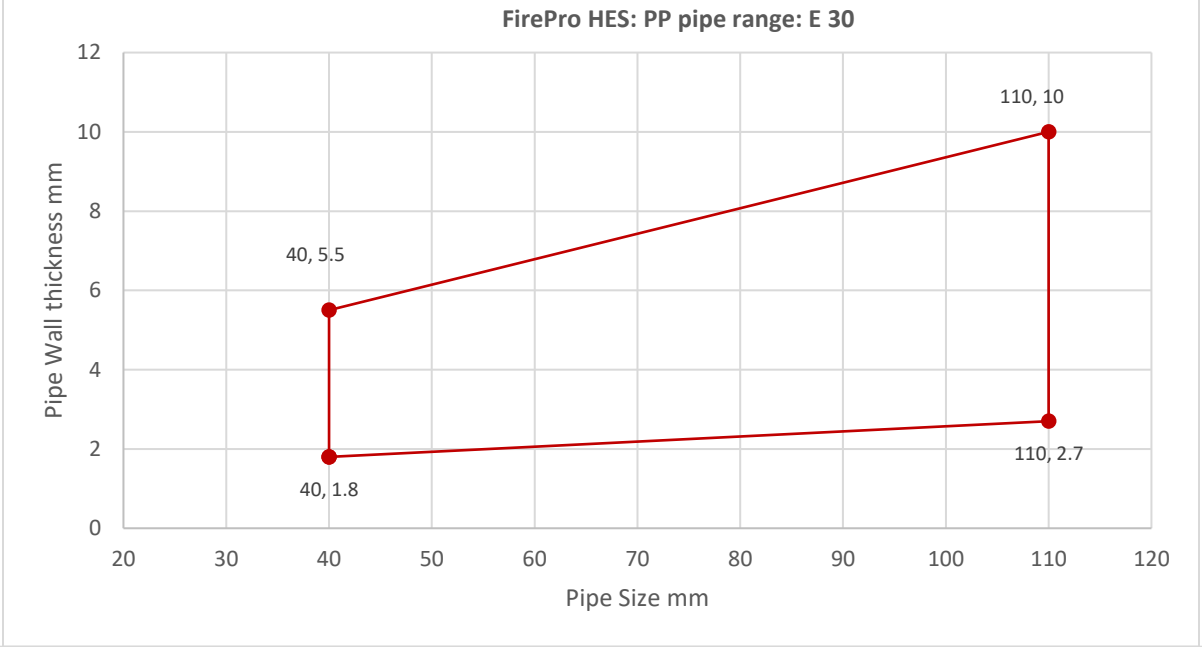


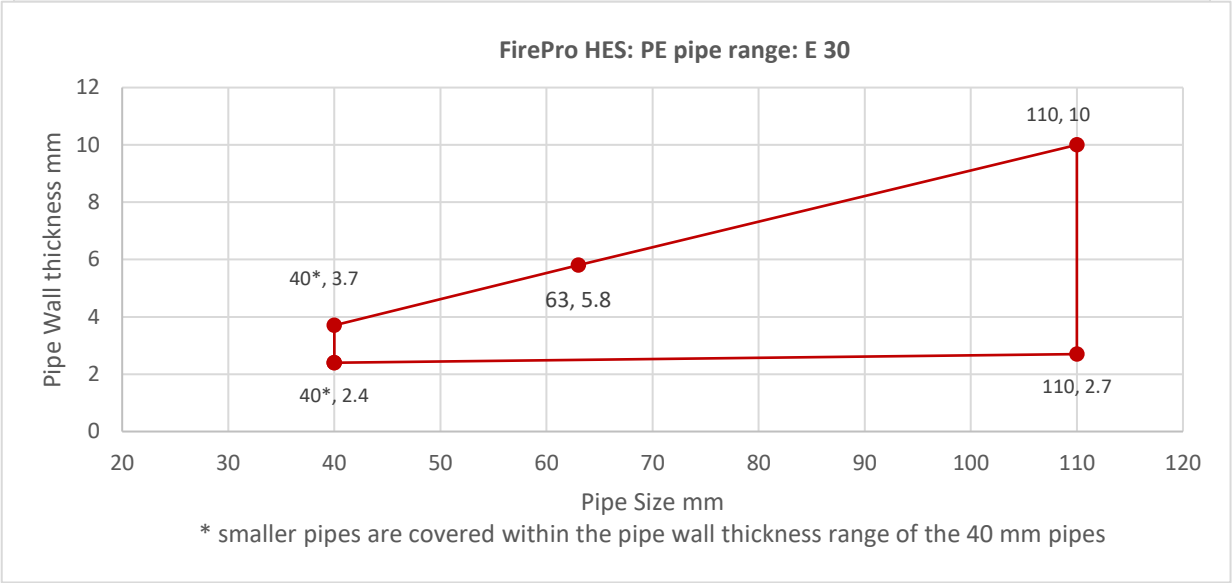
Service type	Pipe Size (mm)	Wall thickness (mm)	Seal depth tA (mm)	Annular gap (mm)	Insulation type / thickness (mm)	Service protection	Classification
Copper and steel pipes Linear (0 mm)	≤42 Ø	≥1.2	50	20	Kingspan Kooltherm installed in CS config/ 15-30	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal all joints 20 mm annulus of FirePro® HES cartridge gunned to a depth of 50 mm around the services	**EI 30 C/U**
Copper and steel pipes Linear (0 mm)					Armacell Armaflex installed in CS config/ 9-32		**E 30 / EI 15 C/U**

Plastic Pipe Penetrations – FirePro HES

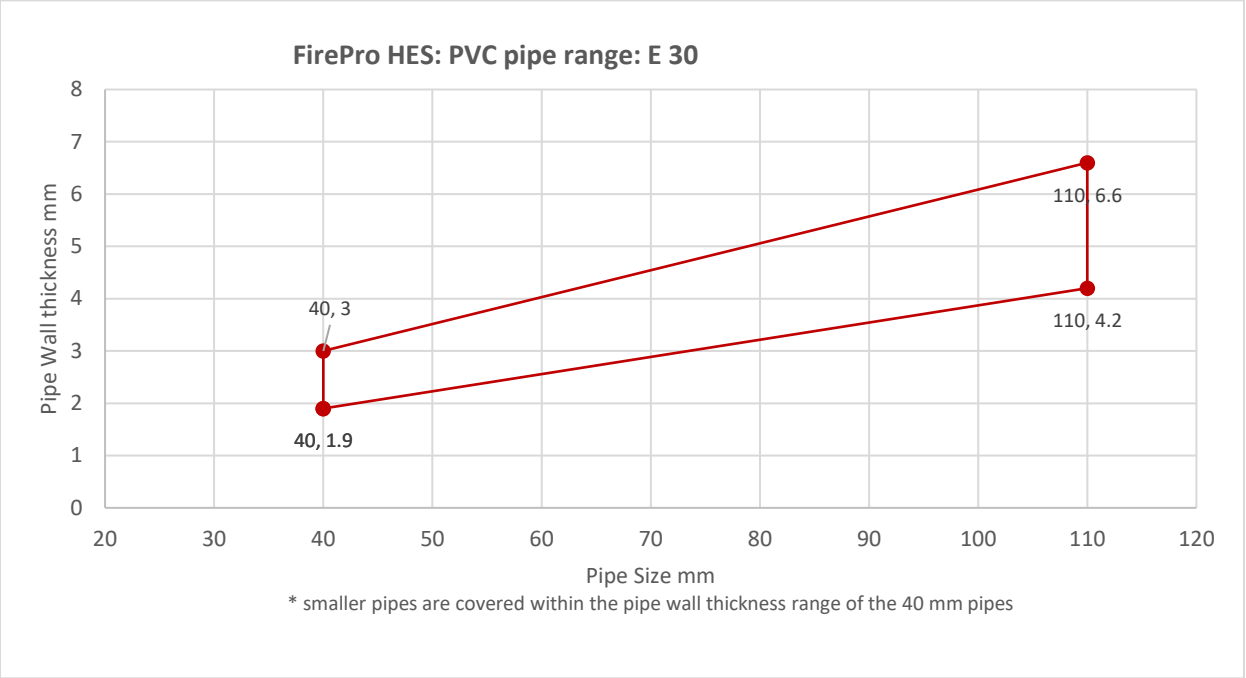


Pipe material	Pipe size (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 110	50	20	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal all joints. 20 mm annulus sealed with FirePro HES to the full depth of the batt.	**E 30 U/C**
PE	40 – 110				
PVC	40 - 110				

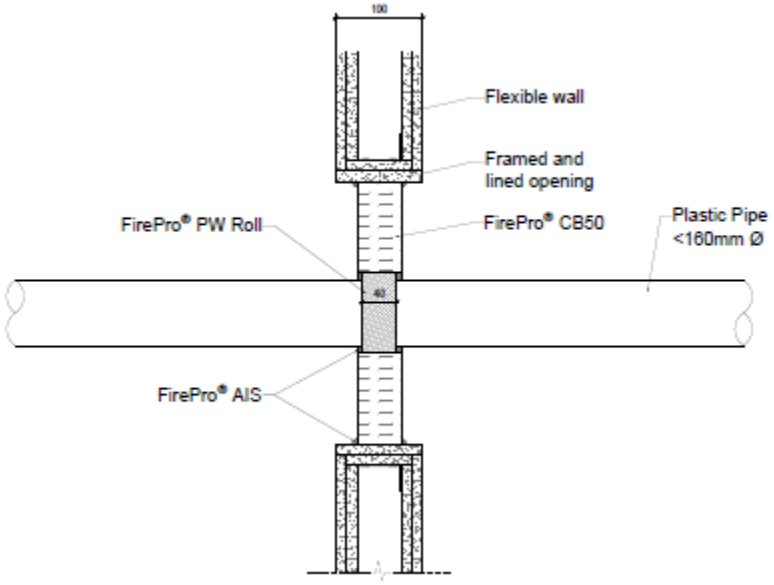




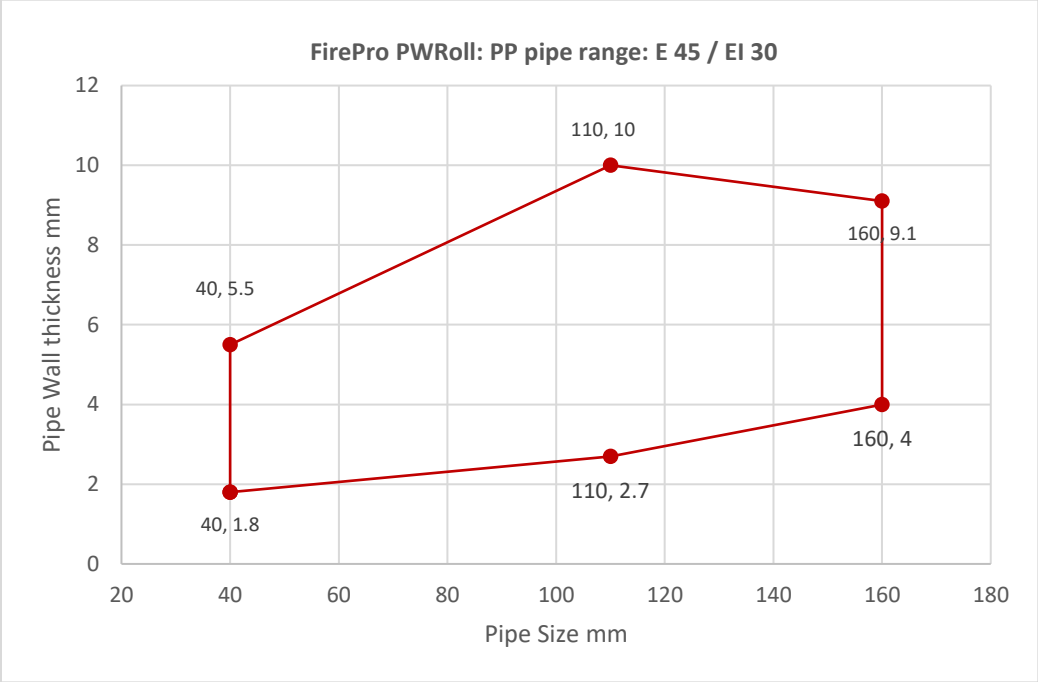
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

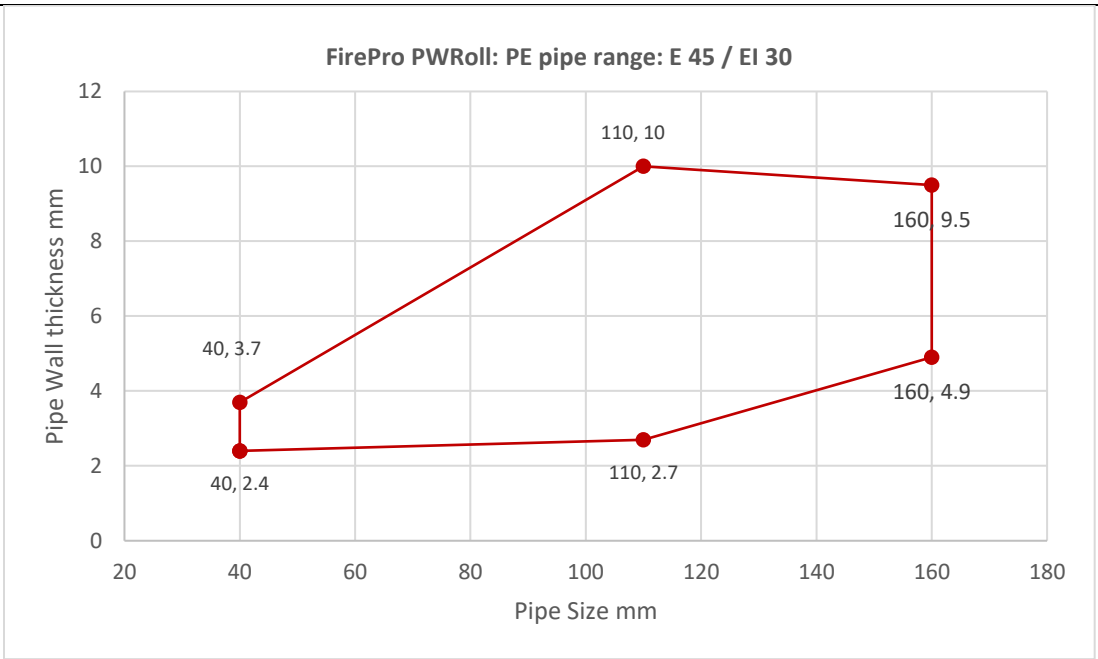

FirePro HES: PVC pipe range: E 30
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
40, 3
40, 1.9
110, 6.6
110, 4.2
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

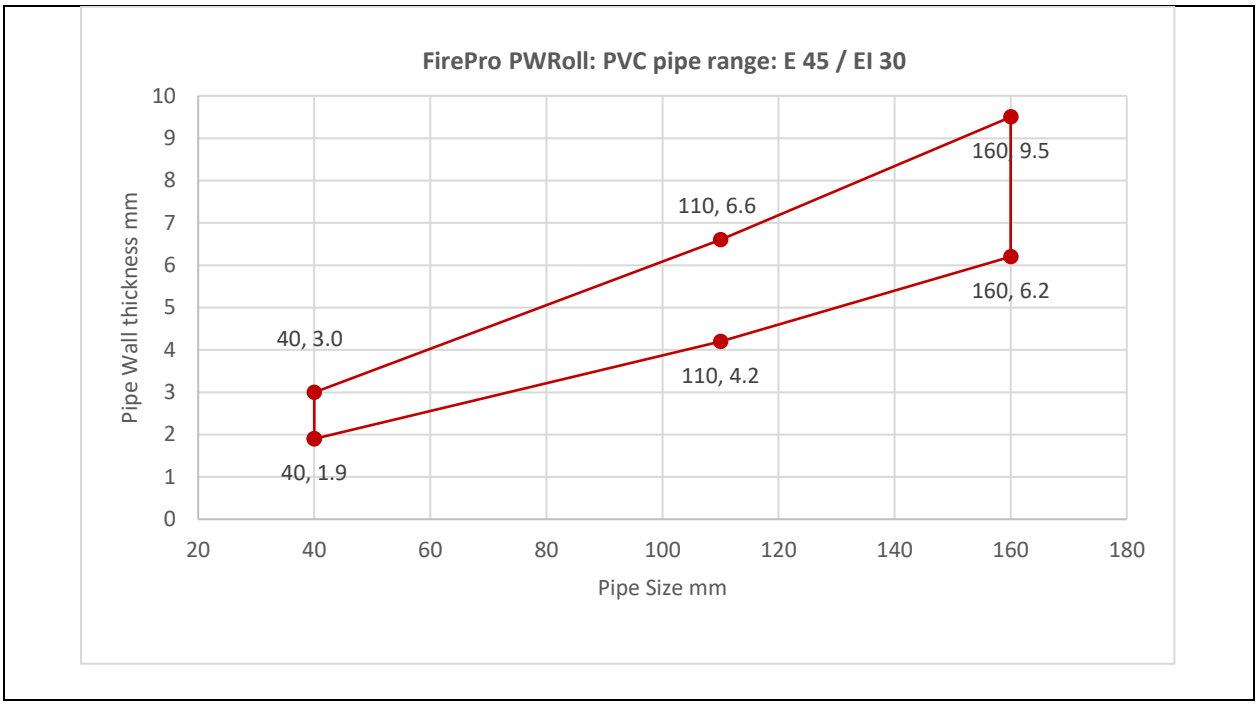
Plastic Pipe Penetrations – FirePro PWRoll



Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Annular gap (mm)	Classification
PP/PE/PVC	≤40	1	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the service.	≤10	**E 45 / EI 30 U/C**
	41-79	2			
	80-120	3			
	121-160	4			

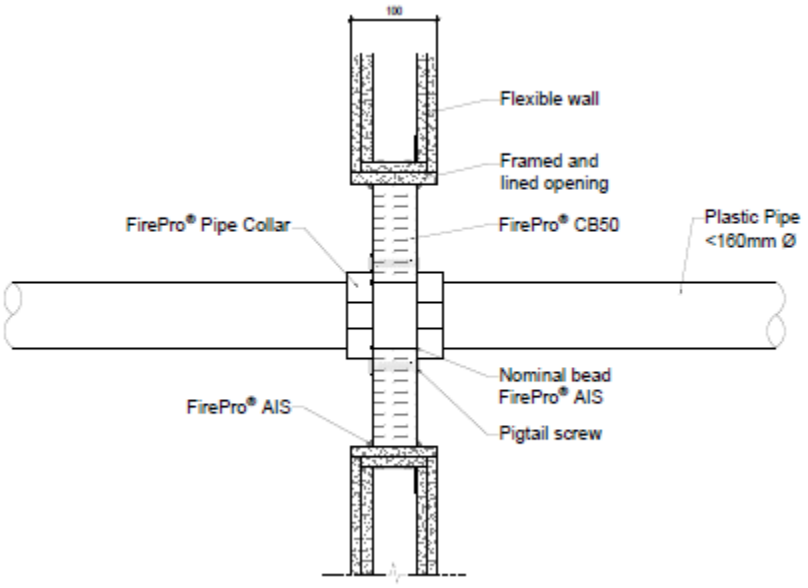

FirePro PWRoll: PP pipe range: E 45 / EI 30
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8


FirePro PWRoll: PE pipe range: E 45 / EI 30
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7


FirePro PWRoll: PVC pipe range: E 45 / EI 30
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
160, 9.5
110, 6.6
160, 6.2
40, 3.0
110, 4.2
40, 1.9

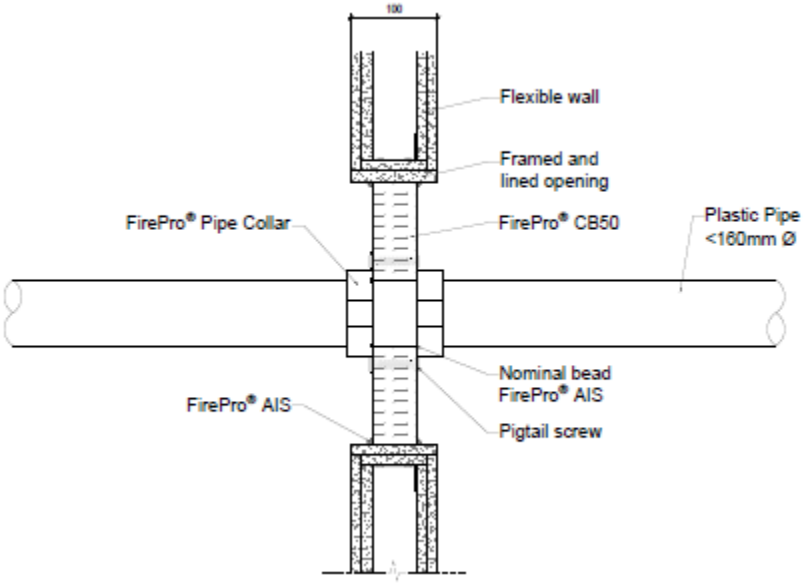
Plastic Pipe Penetrations – FirePro Pipe Collar

PP Pipes



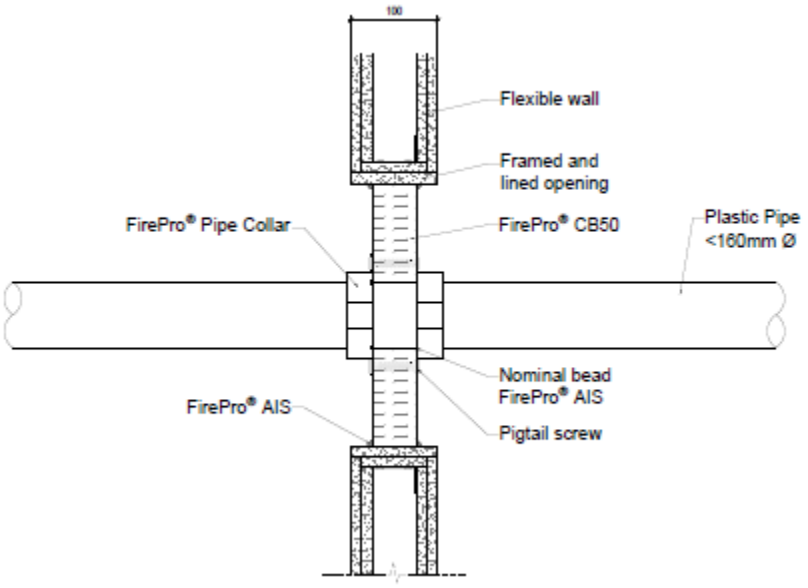
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.8 – 5.5	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service flush with both faces of the wall using pigtail screws	**EI 60 U/C**
55	55	2.0 – 5.6		
63	63	2.1 – 5.8		
75	75	2.2 – 5.9		
82	82	2.4 – 6.0		
90	90	2.6 – 6.2		
110	110	2.7 – 6.3		
125	125	3.1 – 7.2		
140	140	3.5 – 8.1		
160	160	4.0 – 9.1		

PE Pipes



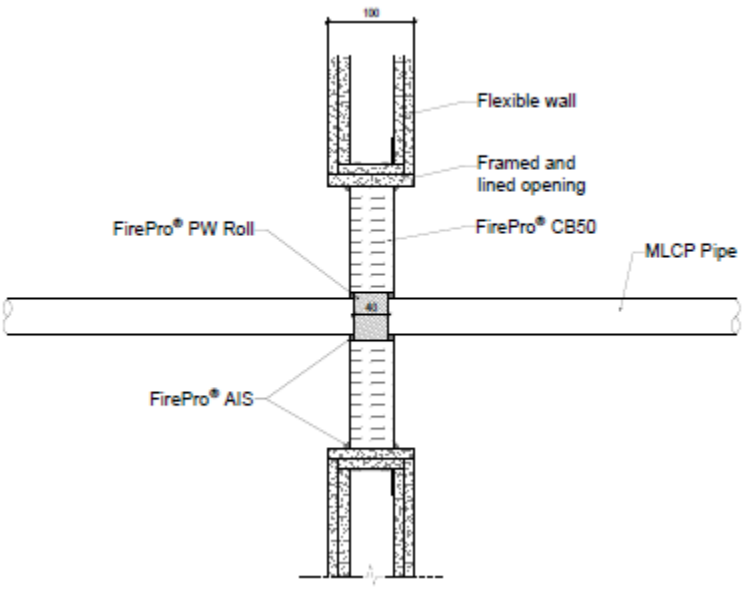
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	2.4 – 3.7	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service flush with both faces of the wall using pigtail screws	**EI 60 U/C**
55	55	2.5 – 5.0		
63	63	2.5 – 5.8		
75	75	2.5 – 6.9		
82	82	2.6 – 7.6		
90	90	2.6 – 8.3		
110	110	2.7 - 10		
125	125	3.4 – 9.8		
140	140	4.1 – 9.7		
160	160	4.9 – 9.5		

PVC Pipes



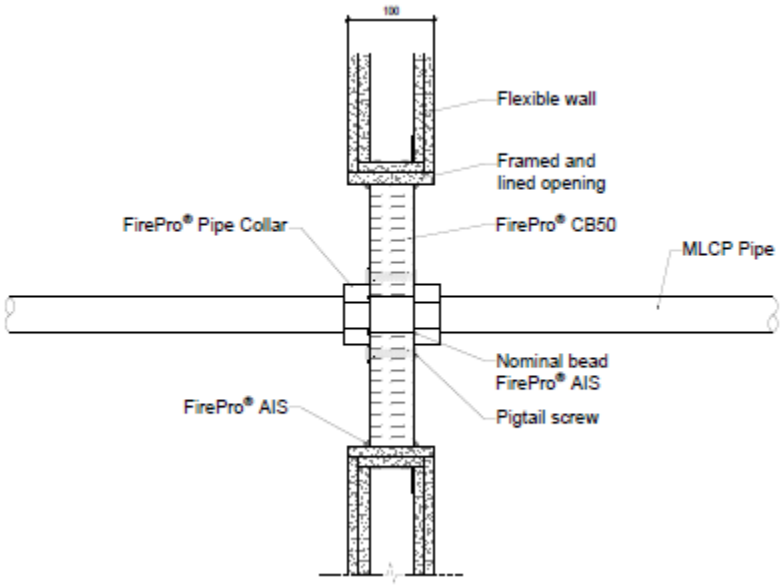
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.9 – 3.0	Single layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service flush with both faces of the wall using pigtail screws	**EI 60 U/C**
55	55	2.4 – 3.7		
63	63	2.6 – 4.1		
75	75	3.0 – 4.8		
82	82	3.2 – 5.1		
90	90	3.5 – 5.6		
110	110	4.2 – 6.6		
125	125	4.8 – 7.6		
140	140	5.5 – 8.4		
160	160	6.2 – 9.5		

MLCP Pipes – FirePro PWRoll



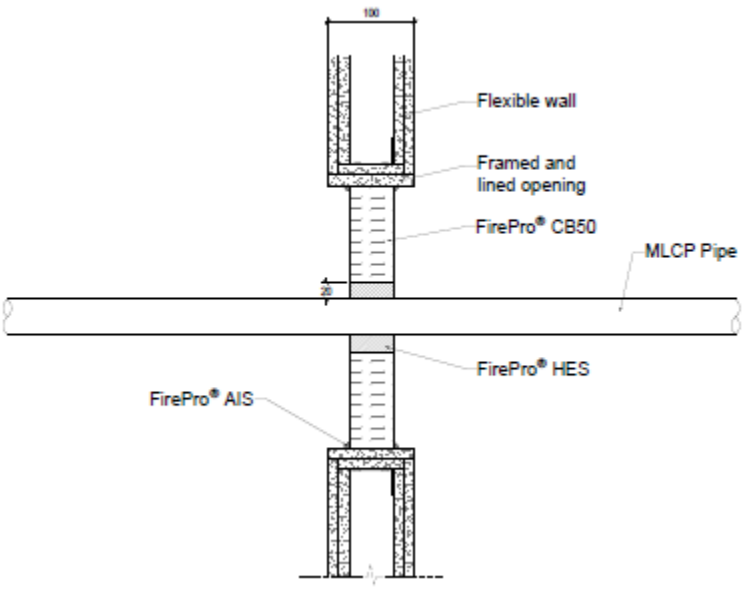
Single pipes					
Pipe material	**Pipe size (mm)**	**Pipe wall thickness (mm)**	**Pipe Wrap layers (2mm)**	**Service Protection**	**Classification**
UPONOR PP-RT / AL / PP-RT	110	10	3	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the pipe.	**E 60 / EI 45 U/C**
UPONOR PP-RT / AL / PP-RT	40	2	1		**E 60 / EI 45 U/C**
Multiple pipes – Linear Configuration					
UPONOR PP-RT / AL / PP-RT	63	6	3	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the pipe.	**E 60 / EI 30 U/C**
UPONOR PP-RT / AL / PP-RT	40	2	1		**E 60 / EI 30 U/C**

MLCP Pipes – FirePro Pipe Collar



Pipe Collar Size (mm)	Pipe size (mm)	Pipe Type	Pipe wall thickness range (mm)	Service protection	Classification
110	110	UPONOR PP-RT / AL / PP-RT	10	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**E 60 / EI 30 U/C**
40	40	UPONOR PP-RT / AL/ PP-RT	2		**E 60 / EI 30 U/C**

Insulated MLCP Pipes – Uponor Uni Pipe Plus – FirePro HES



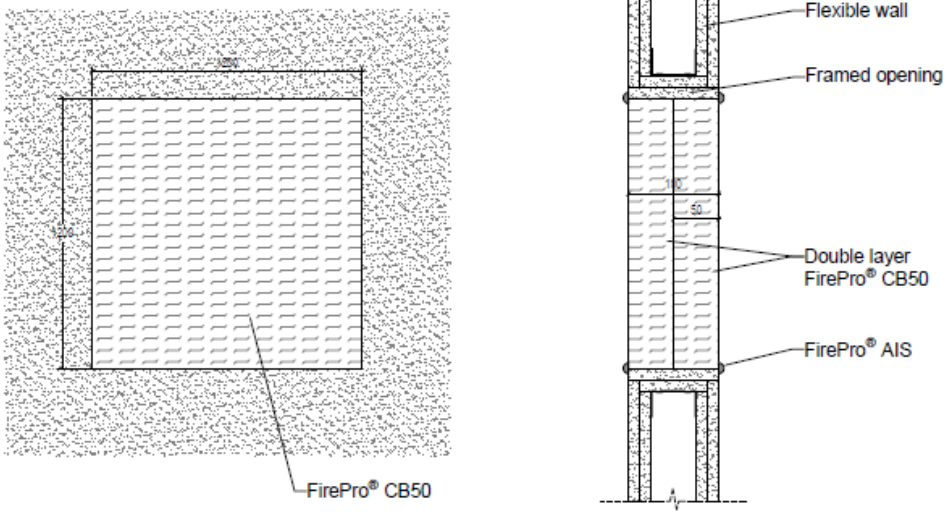
Single, linear or clustered configuration

Pipe Type	Pipe size (mm)	Insulation thickness (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP-RT/AL/PP-RT with PE Insulation (clustered 0 mm)	16 - 25	5 - 13	50	20	Single layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal all joints. 20 mm annulus sealed with FirePro HES to the full depth of the batt.	**E60 / EI 30 U/C**

4.6.2 Double Batt Seal Installation Methods

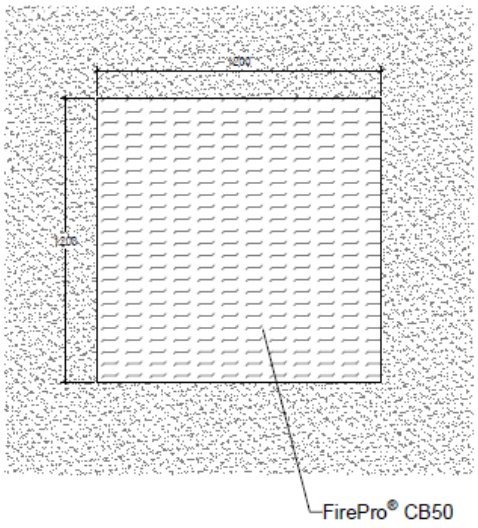
The following installation methods for FirePro® CB50 are considered as part of this classification.

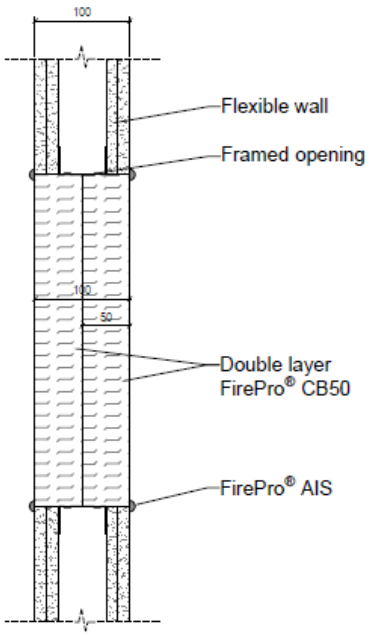
Framed and lined openings



Service type	Aperture size	Service protection	Classification
Blank	2600 x 2600 mm	Double layer of 50mm thick FirePro® CB50 batt, friction fitted centrally within the aperture. All edges and butt joints sealed with FirePro ® AIS sealant.	**EI 120**
Blank	1210 x 1200 mm	1010 mm high double layer of 50mm thick FIREPRO® CB50 batt was friction fitted into the aperture. 200 mm high by 100 mm thick FirePro® Flex Seal Coated Strip was compression fitted into the top of the aperture with 10 mm compression to the width and length. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FirePro® AIS". FirePro Flex Seal Coated Strip was brush coated with FirePro® Flex Seal Coating.	**EI 90**

Blank Seal – framed openings





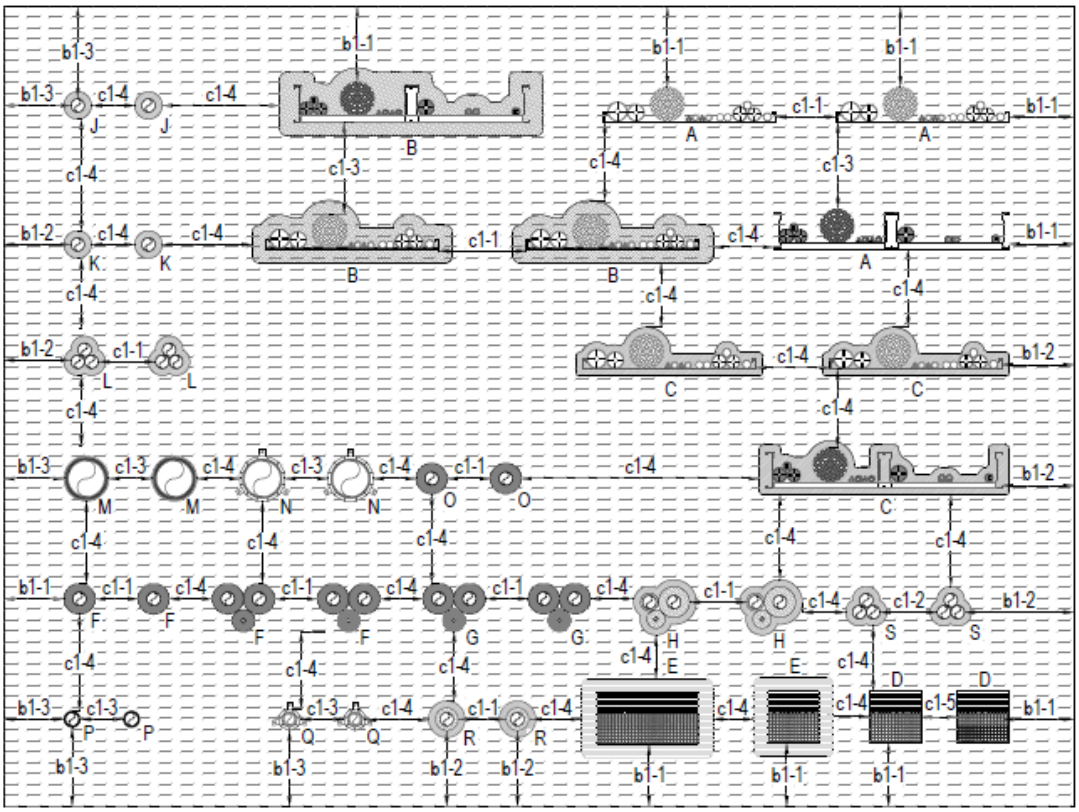
Service type	Aperture size	Service protection	Classification
Blank	1200 x 1200 mm	Double layer of 50mm thick FirePro® CB50 batt, friction fitted within the aperture. All edges and butt joints sealed with FirePro ® AIS sealant.	**EI 60**

4.6.2.1 Service Penetrations

FirePro® CB50 is approved for use with the following service items. Installation of FirePro® CB50 must be completed in accordance with one of the installation methods specified in the blank seal section and must adhere to the size limitations outlined for each methodology. Certain service items may require additional protection depending on the type of service and/or the performance requirements of the seal and service. Details of any additional protection required are provided, as appropriate, on the following performance tables.

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Double Skin Flexible walls ≥100mm - Double CB50

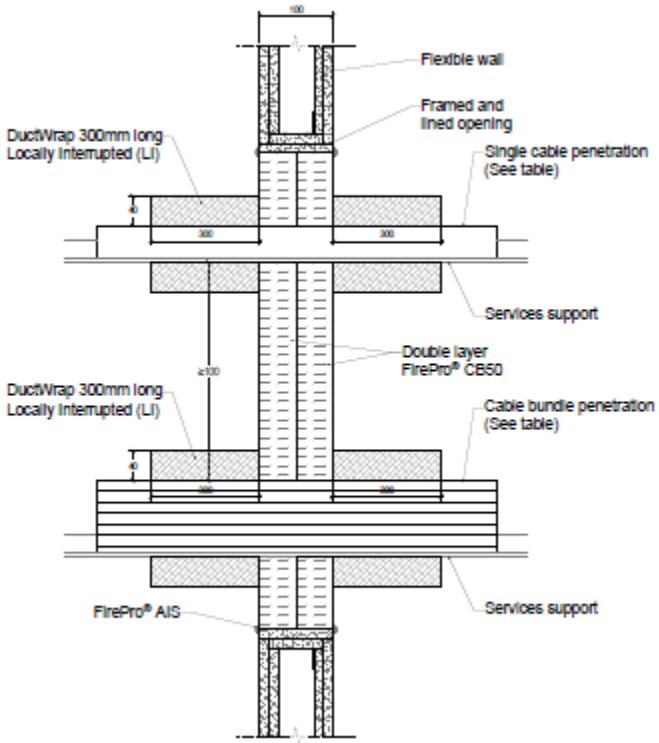


	Service Type
A	Unlagged cables & cable carriers
B	Lagged cables & cable carriers
C	HES cables & cable carriers
D	Trunking
E	Lagged trunking
F	H&V lagged metallic pipes (L/S)
G	DuctWrap lagged metallic pipes (L/I)
H	Combustible insulation on metallic pipes - HES
J	HES - combustible pipes
K	HES - CPVC
L	HES - PB
M	PWRoll - combustible pipes
N	Collar - combustible pipes
O	IFS - combustible pipes
P	PWRoll - MLC pipes (Uponor)
Q	Collar - MLC pipes (Uponor)
R	HES - Insulated MLC pipe
S	HES - TracPipe

	Aperture Edge Distance
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

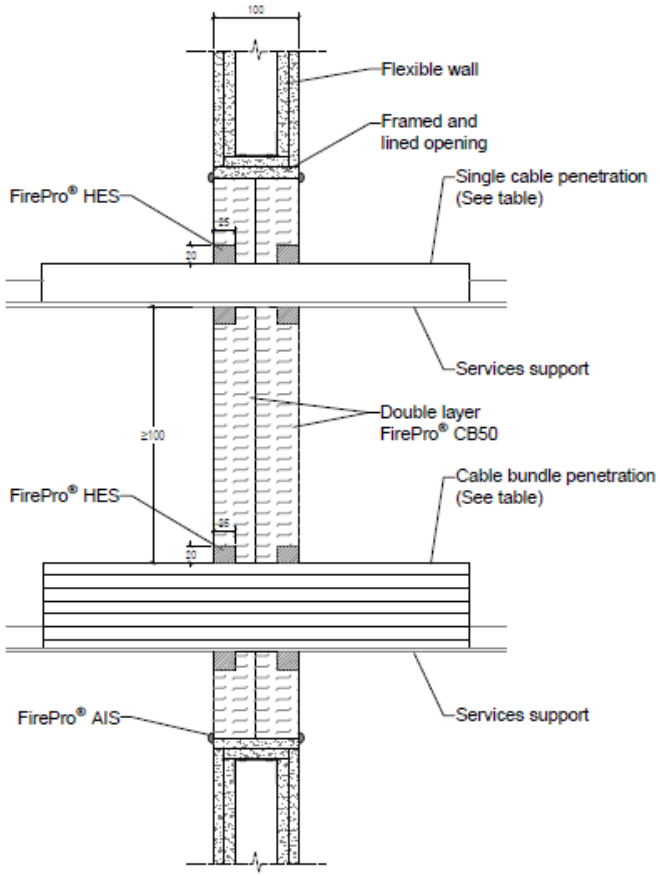
	Service Separation
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≥100 mm - Lagged



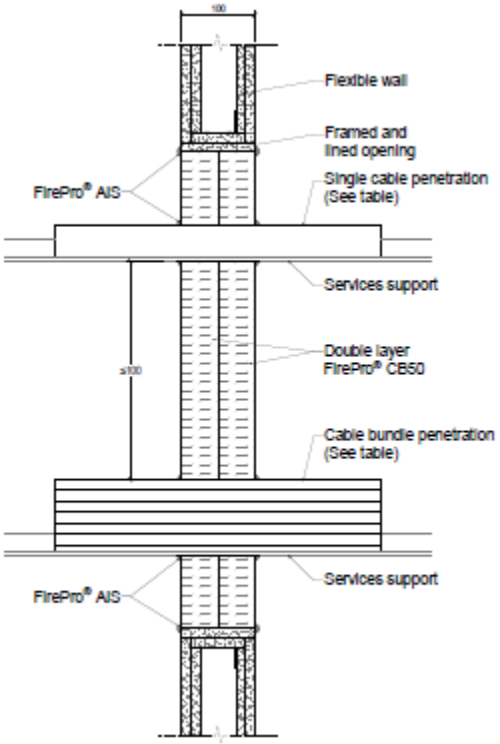
Service type		Service size (mm)	Service Protection	Classification
Sheathed cables	S	≤21	Double layer 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a local interrupted configuration 300 mm to both faces and secured to service with 2 no. steel wire.	**EI 120**
	M	≤50		**EI 120**
	L	≤80		**EI 120**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 120**
Unsheathed cables		≤24		**EI 120**
perforated tray, or basket		Unrestricted		**EI 120**
Cable ladder		Unrestricted		**EI 120**

Cable Penetrations with cable carrier separation ≥100 mm – FirePro HES



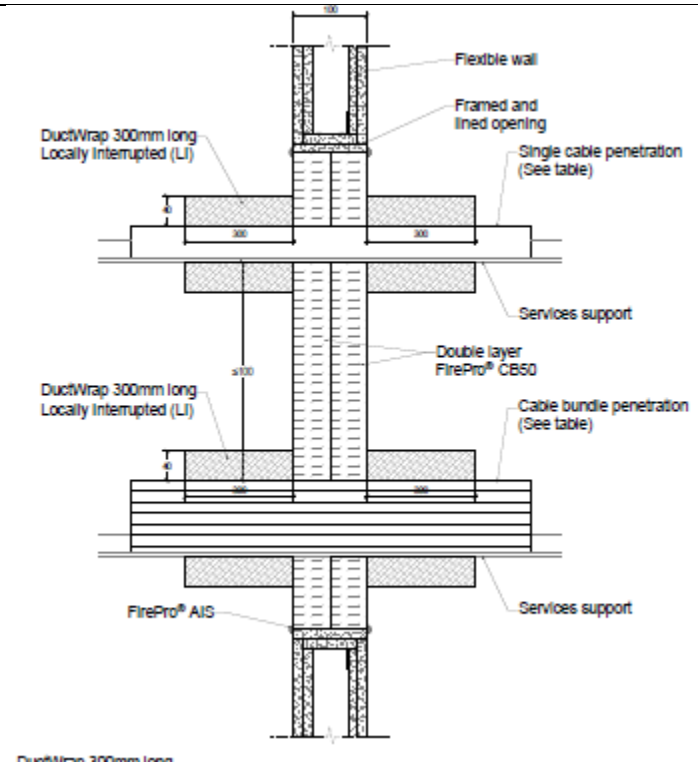
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service on each side of the seal.	**E 120 / EI 90**
	M	≤50		**E 120 / EI 90**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 120 / EI 90**
perforated tray, or basket		Unrestricted		**E 120 / EI 90**
Blank Seal (Max HES seal size)		NA	500 mm wide by 260 mm high by 25 mm deep cut back to the faces of the batt to the exposed and unexposed faces, filled with FirePro® HES	**EI 120**

Cable Penetrations with cable carrier separation ≤100 mm



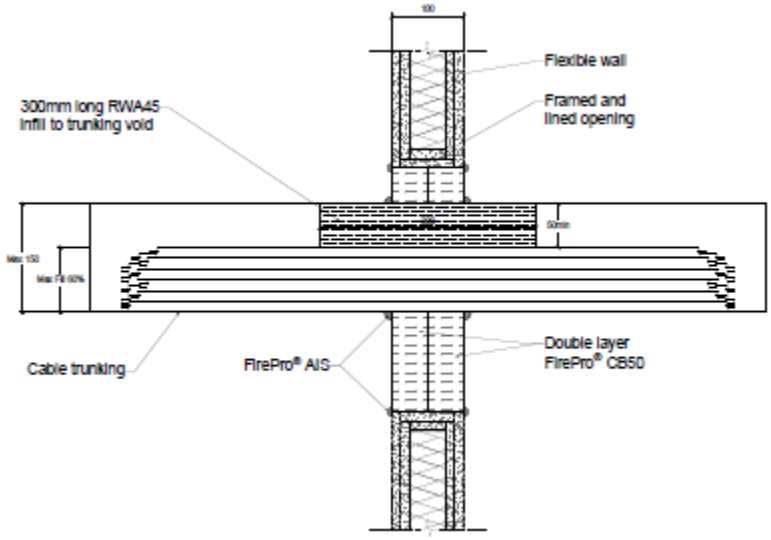
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services.	**E 120 / EI 45**
	M	≤50 mm		**E 120 / EI 45**
	L	≤80 mm		**E 120 / EI 45**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 120 / EI 30**
Unsheathed cables		≤24 mm		**E 120 / EI 45**
Steel tray, perforated tray, ladder or basket		Unrestricted		**E 120 / EI 60**

Cable Penetrations with cable carrier separation ≤100 mm - Lagged



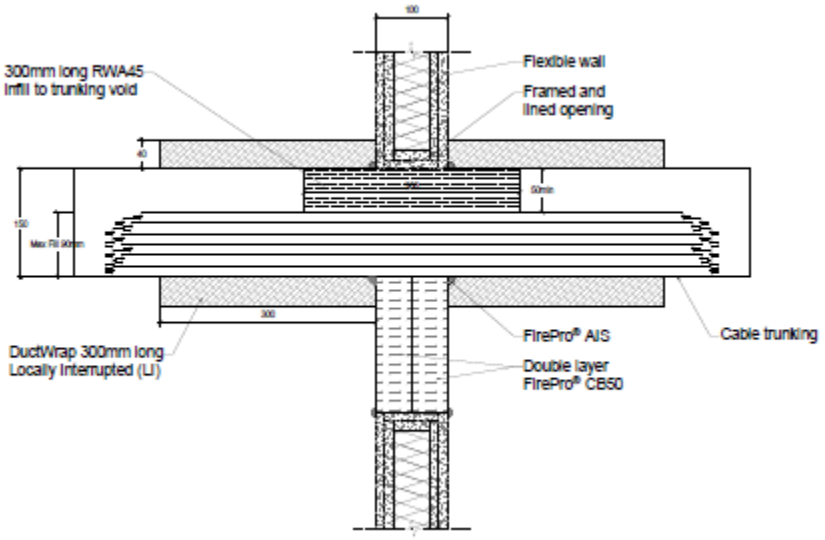
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a local interrupted configuration 300 mm to both faces and secured to service with steel wire.	**EI 120**
	M	≤50		**EI 120**
	L	≤80		**EI 120**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 120**
Unsheathed cables		≤24 mm		**EI 120**
Steel tray, perforated tray, ladder or basket		Unrestricted		**EI 120**

Cable Trunking – unlagged



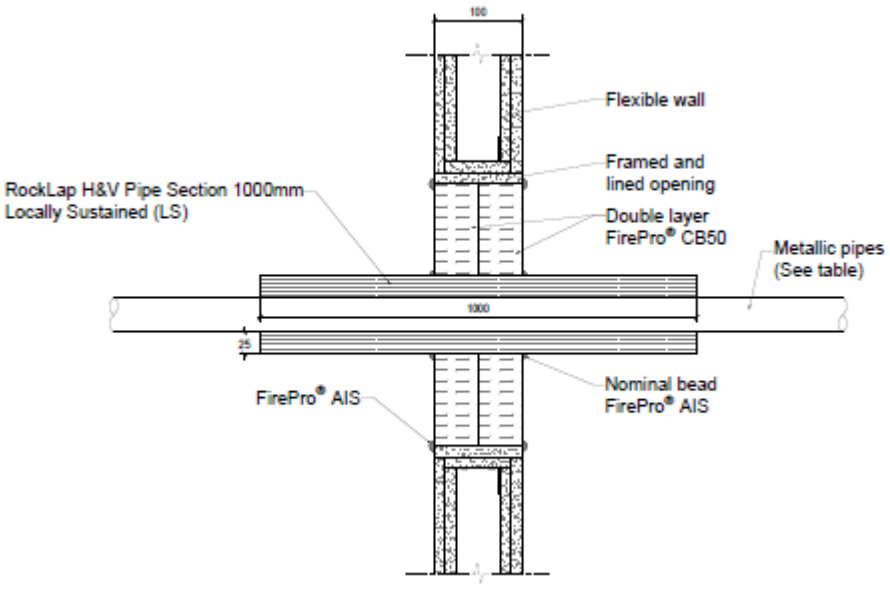
Service			Trunking inner protection	Service protection	Classification
Type	**Size (mm)**	**Cable Size (mm)**			
Steel trunking	≤100 x 100	≤80	300 mm long RWA45 inserted into the trunking on top of the cables under 50 mm compression. The RWA45 should full fill the trunking central to the CB50 seal.	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services.	**EI 120 U/U**
	≤150 x 150	≤80			**E 120 / EI 90 U/U**

Cable Trunking – lagged

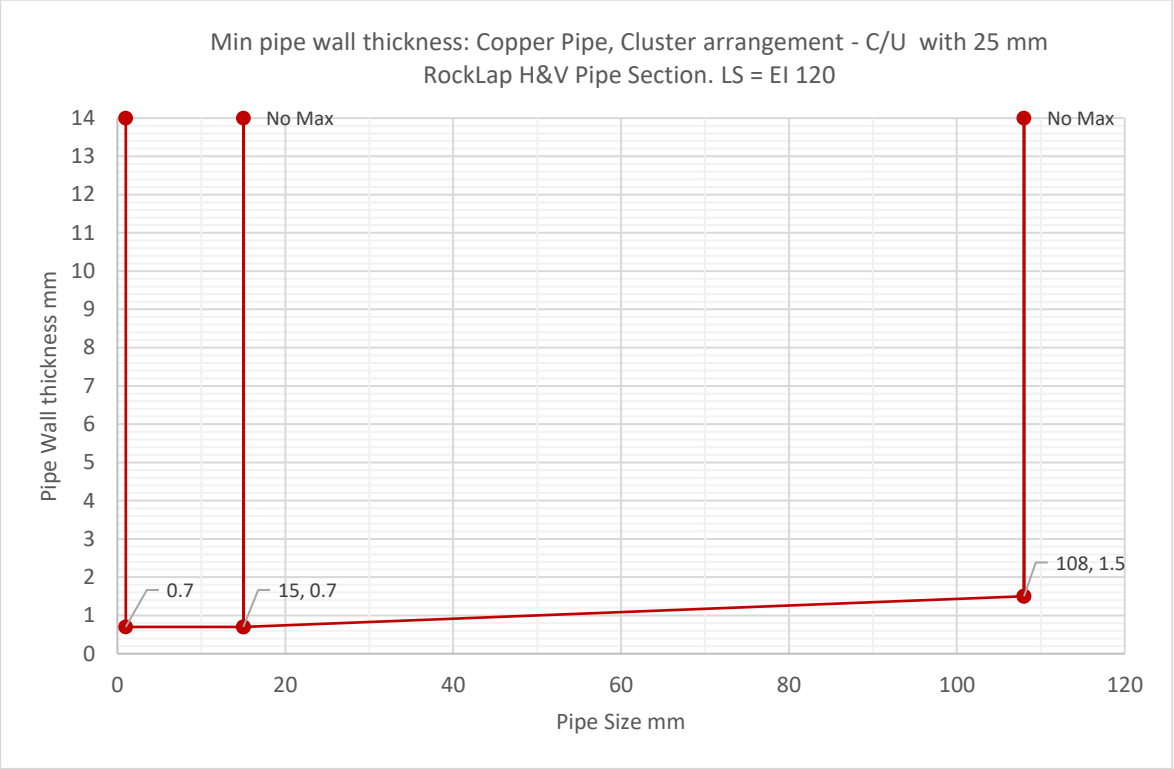


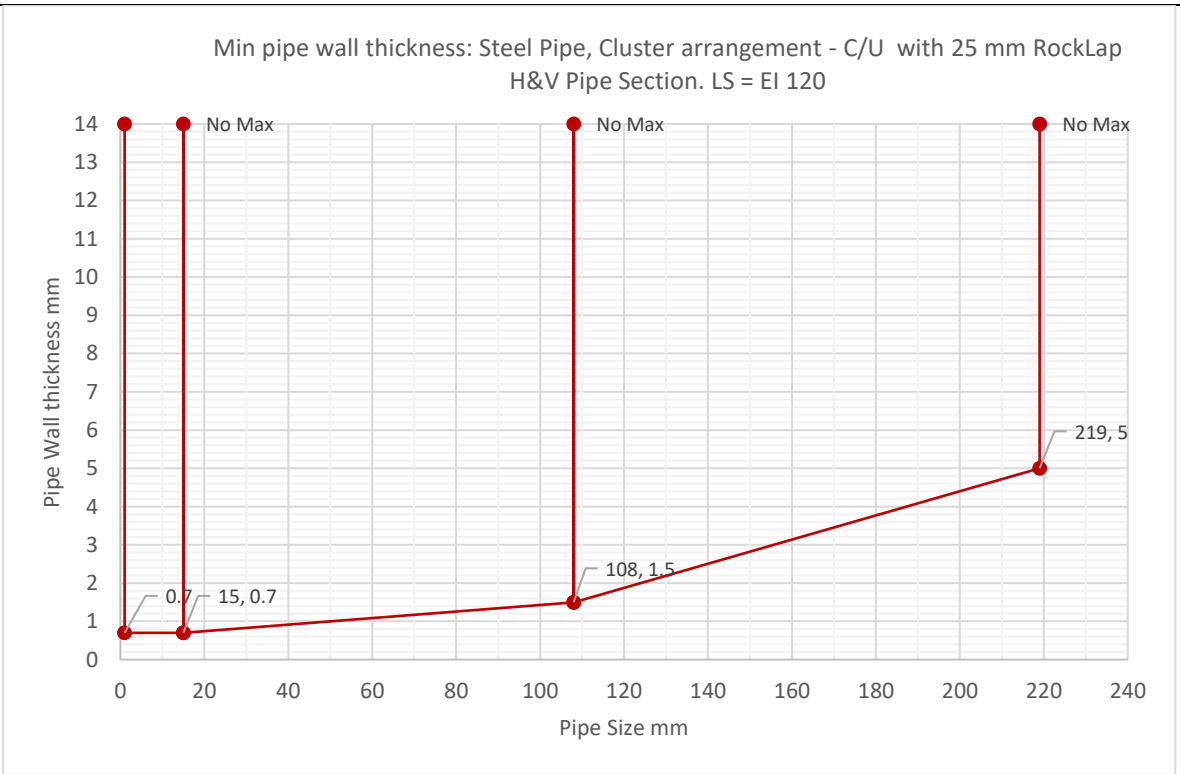
Service			Trunking inner protection	Service protection	Classification
Type	Size (mm)	Cable Size (mm)			
Steel trunking	≤300 x 150 (w x h)	≤80	300 mm long RWA45 inserted into the trunking on top of the cables under 50 mm compression. The RWA45 should full fill the trunking central to the CB50 seal.	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a LI configuration 300 mm to both faces and secured to service with 0.7 mm steel wire 50mm from both ends	**EI 120 U/U**

Metallic pipes: Insulated with RockLap H&V Pipe section – LS installation.

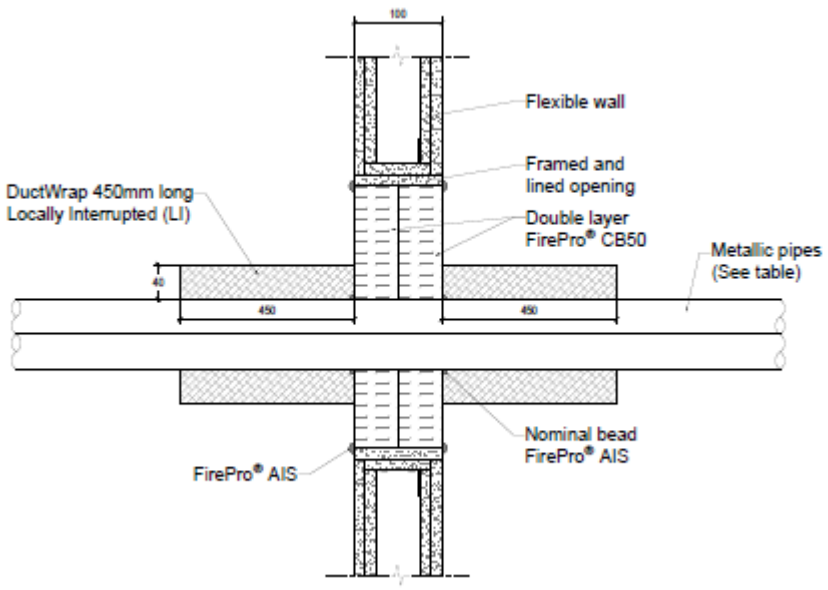


Service type	Service Size (mm)	Wall thickness (mm)	Pipe arrangement	Service protection	Lagging thickness (mm)	Classification
Copper and steel pipes	≤42 Ø	≥1.2	Linear (0 mm)	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 1000 mm long ROCKWOOL RockLap H&V Pipe Section in a LS configuration, fixed around the metallic pipes.	25	**E 120 / EI 90 C/U**
Copper and steel pipes	≤15 Ø	≥0.7	Cluster (0mm)			**EI 120 C/U**
Copper and steel pipes	≤108 Ø	≥1.5	Cluster (0mm)			**EI 120 C/U**
Steel pipes	≤219 Ø	≥5	Cluster (0mm)			**EI 120 C/U**

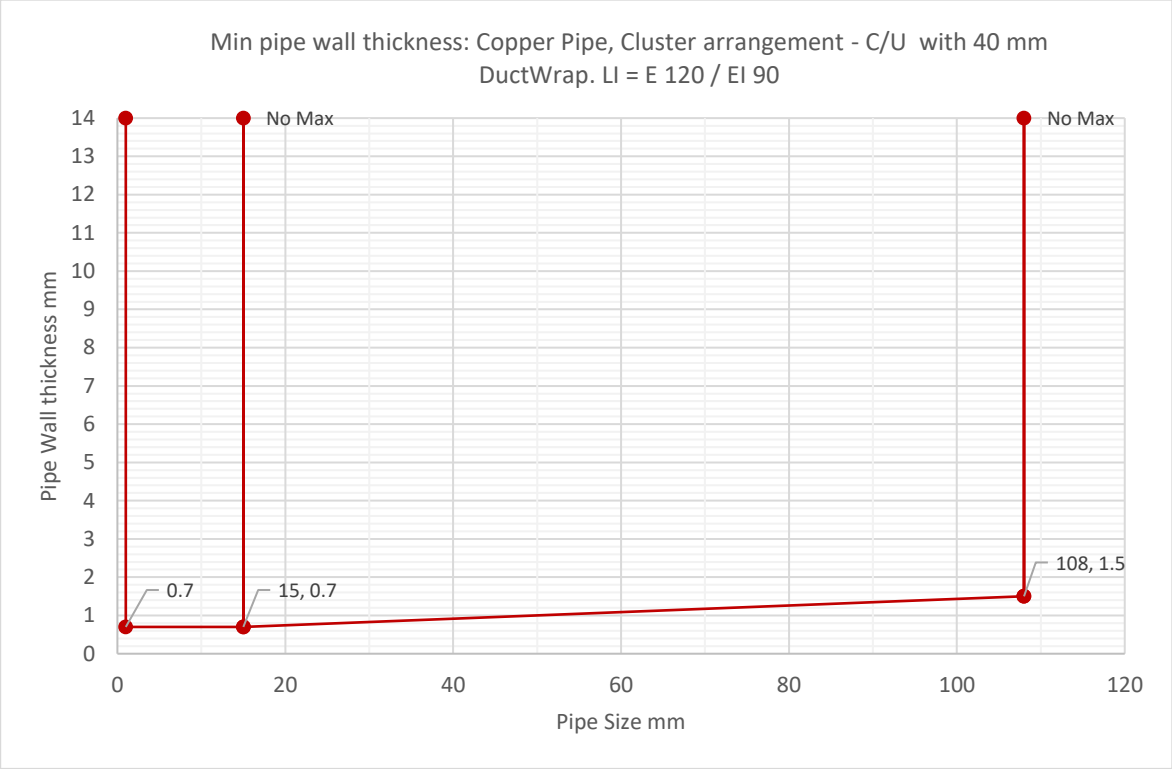

Min pipe wall thickness: Copper Pipe, Cluster arrangement - C/U with 25 mm RockLap H&V Pipe Section. LS = EI 120
Pipe Wall thickness mm
Pipe Size mm
No Max
No Max
0.7
15, 0.7
108, 1.5

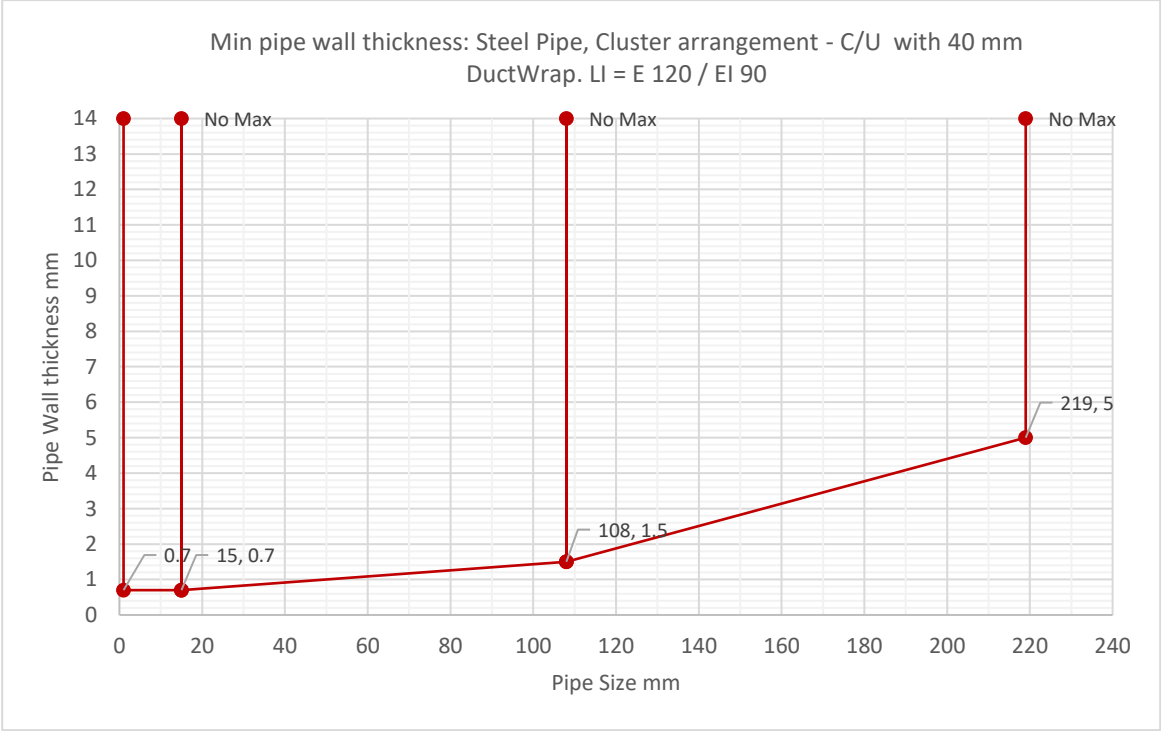

Min pipe wall thickness: Steel Pipe, Cluster arrangement - C/U with 25 mm RockLap H&V Pipe Section. LS = EI 120
Pipe Wall thickness mm
Pipe Size mm
No Max
No Max
No Max
0.7
15, 0.7
108, 1.5
219, 5

Metallic pipes: Insulated with ROCKWOOL DuctWrap – LI installation.

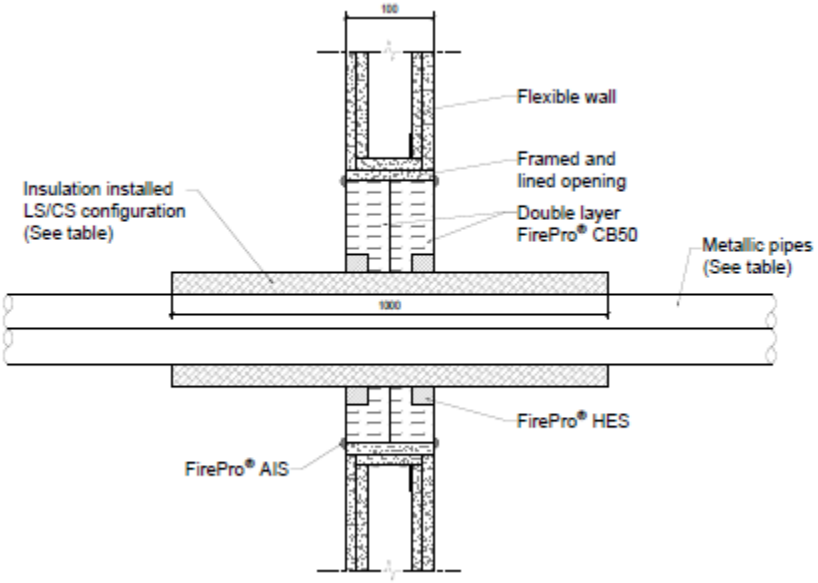


Service type	Service Size (mm)	Wall thickness (mm)	Pipe arrangement	Service protection	Lagging thickness (mm)	Classification
Copper and steel pipes	≤15 Ø	≥0.7	Cluster (0mm)	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. 450 mm long layer of ROCKWOOL® DuctWrap installed around the service in a LI configuration.	40	**EI 120 U/C**
Copper and steel pipes	≤108 Ø	≥1.5	Cluster (0mm)			**E 120 / EI 90 U/C**
Steel pipes	≤219 Ø	≥5	Cluster (0mm)			**E 120 / EI 90 U/C**


Min pipe wall thickness: Copper Pipe, Cluster arrangement - C/U with 40 mm DuctWrap. LI = E 120 / EI 90
Pipe Wall thickness mm
Pipe Size mm
No Max
No Max
0.7
15, 0.7
108, 1.5

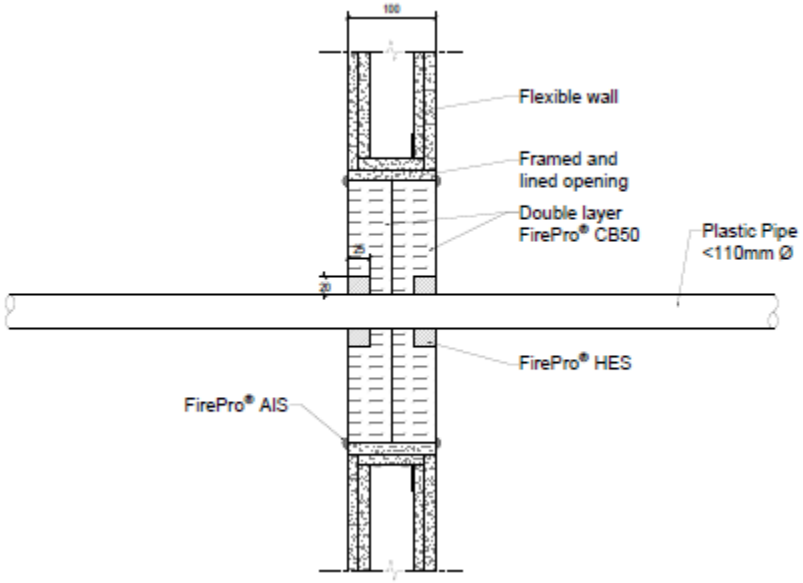

Min pipe wall thickness: Steel Pipe, Cluster arrangement - C/U with 40 mm DuctWrap. LI = E 120 / EI 90
Pipe Wall thickness mm
Pipe Size mm
No Max
No Max
No Max
0.7
15, 0.7
108, 1.5
219, 5

Metallic pipes: Insulated with combustible insulation – FirePro HES.

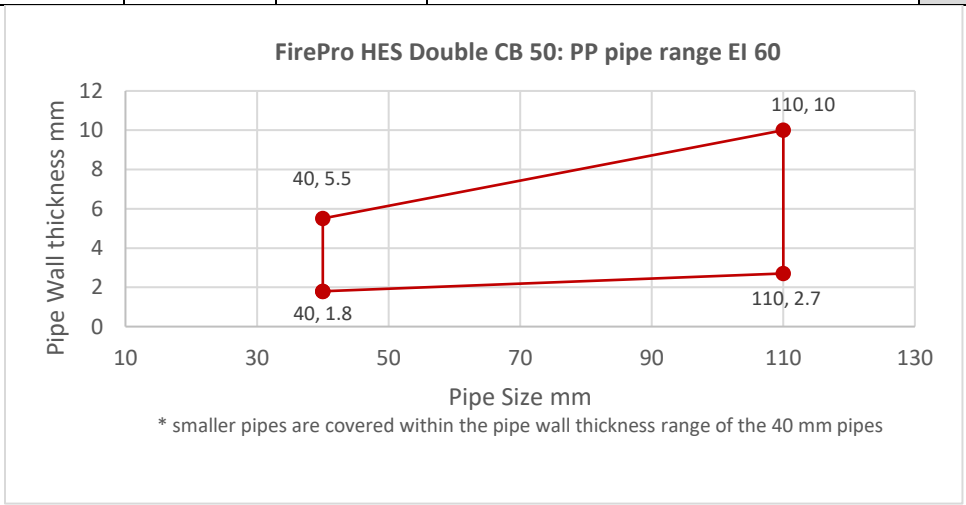


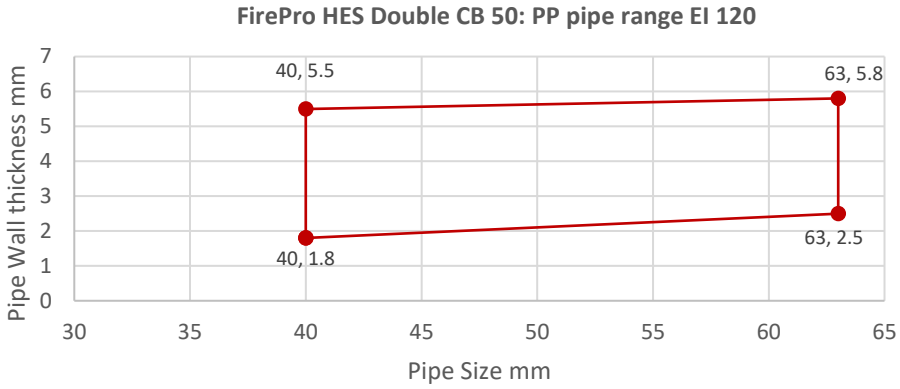
Service type	Pipe Size (mm)	Seal depth (mm)	Annular gap (mm)	Insulation type / thickness	Service protection	Classification
Copper and steel pipes Cluster (0 mm)	≤42 Ø	25	20	Armacell Armaflex 9-32 mm around the service in a LS/CS configuration	Double layer of 50mm thick FirePro® CB50.FirePro® AIS used on all batt edges to seal all joints 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the services on each face of the wall	**E 120 / EI 45 U/C**
Copper and steel pipes Cluster (0mm) mounted on a cable tray						**E 120 / EI 60 U/C**
Copper and steel pipes Cluster (0mm) mounted on a cable tray	≤15 Ø			Armacell Armaflex 6-19 mm around the service in a LS/CS configuration		**E 120 / EI 90 U/C**
Blank Seal (Max HES seal size)	NA		NA	NA	500 mm wide by 260 mm high by 25 mm deep cut back to the faces of the batt to the exposed and unexposed faces, filled with FirePro® HES	**EI 120**

Plastic Pipe Penetrations – FirePro HES

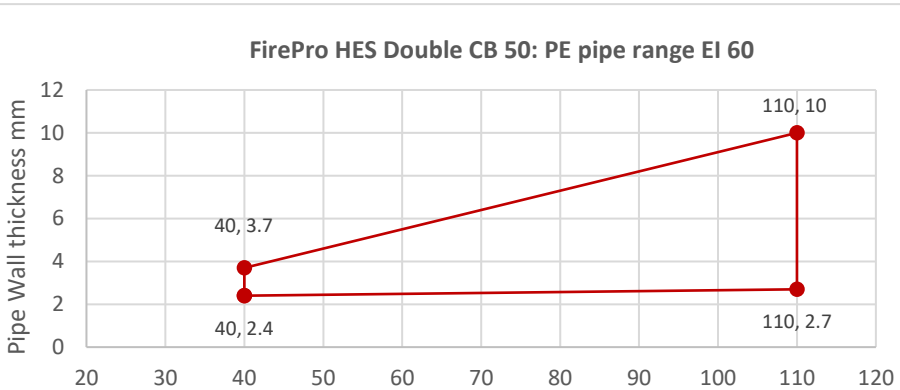


Pipe material	Pipe size Ø (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 63	25	20	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal all joints. 20 mm wide by 25 mm deep annular gap sealed with 25 mm FirePro HES to both faces	EI 120 U/C
	64 - 110				EI 60 U/C
PE	40 - 63				EI 120 U/C
	64 - 110				EI 60 U/C
PVC	40 - 63				EI 120 U/C
	64 - 110				EI 60 U/C

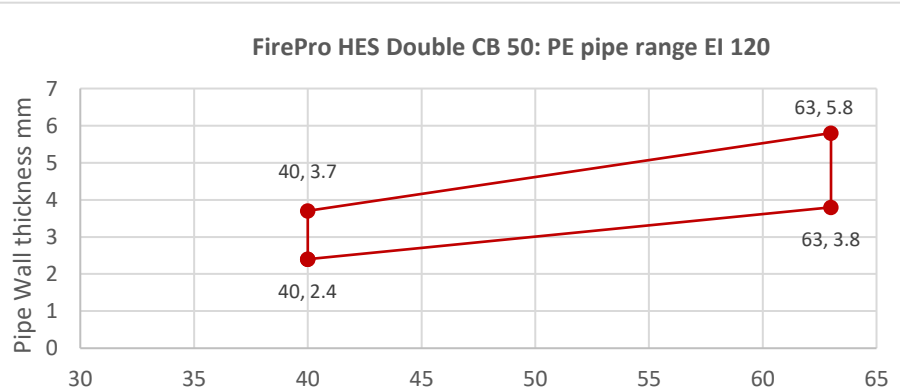




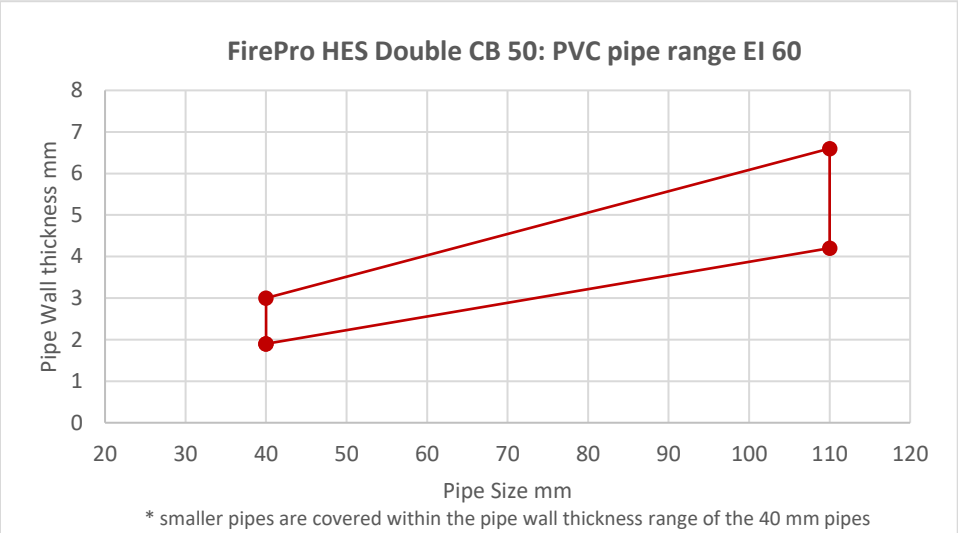
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

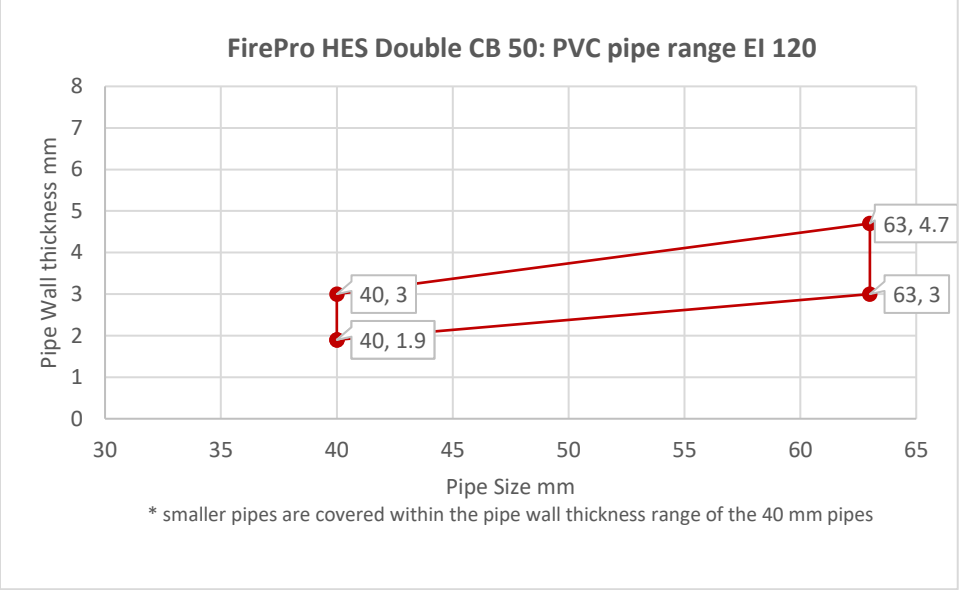


* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

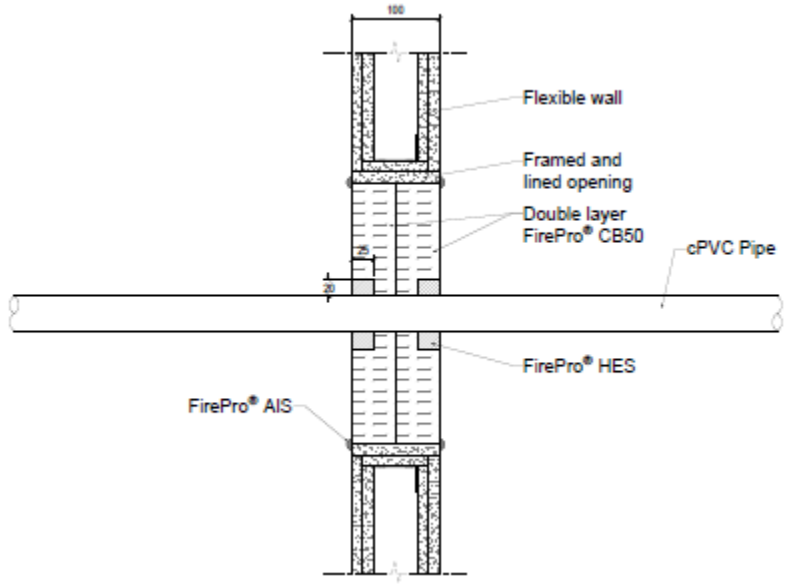


* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes


FirePro HES Double CB 50: PVC pipe range EI 60
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

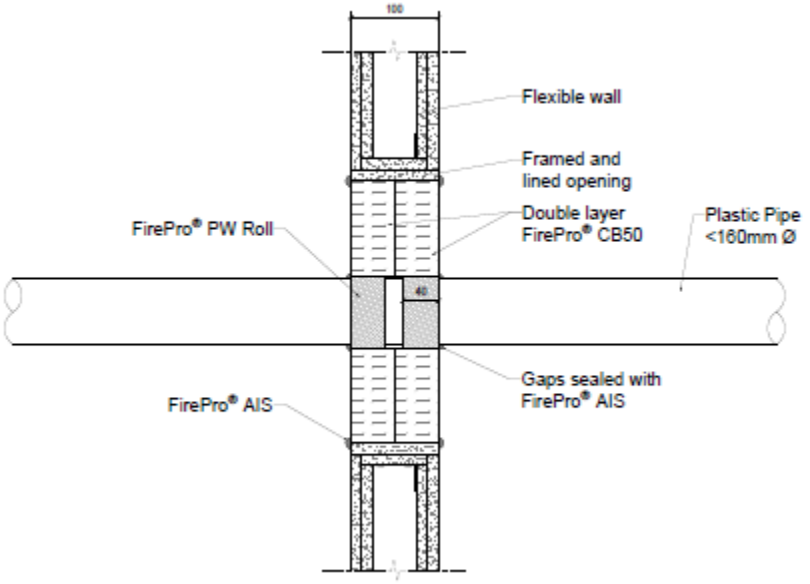

FirePro HES Double CB 50: PVC pipe range EI 120
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
30
35
40
45
50
55
60
65
63, 4.7
63, 3
40, 3
40, 1.9
Pipe Size mm
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

Plastic Pipe Penetrations – FirePro HES

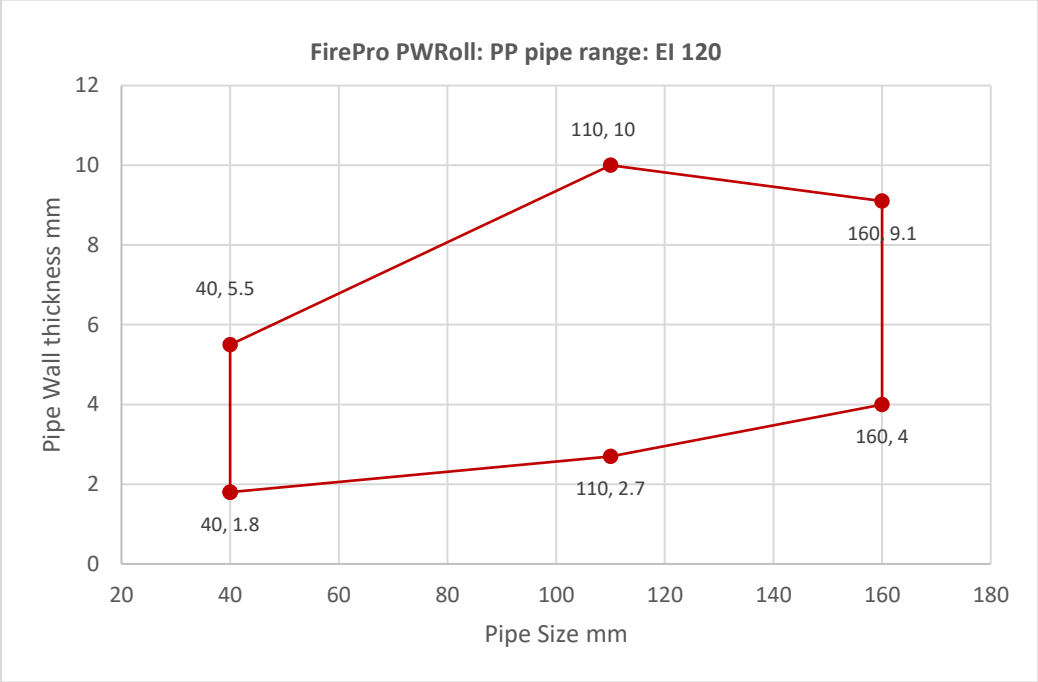


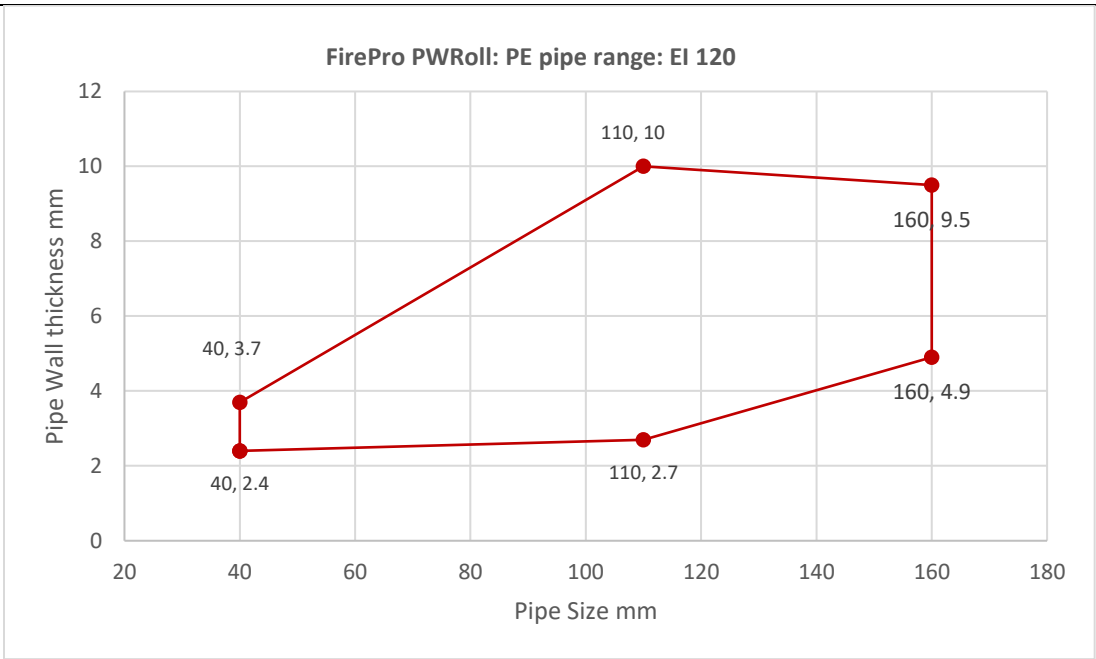
Pipe material	Pipe size (mm)	Wall thickness (mm)	Service Protection	Classification
cPVC (BlazeMaster)	Ø20	2.5	Double layer of 50 mm thick FirePro® CB50 friction fitted into the aperture, flush with both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS. 20 mm wide by 25 mm deep annular gap sealed with 25 mm FirePro HES to both faces	**EI 120 U/C**
cPVC (BlazeMaster)	Ø48	3.9		**EI 120 U/C**
cPVC (BlazeMaster)	Ø88	6.95		**EI 120 U/C**
PB Cluster (0mm)	Ø28	2.6		**E 120 / EI 90 U/C**

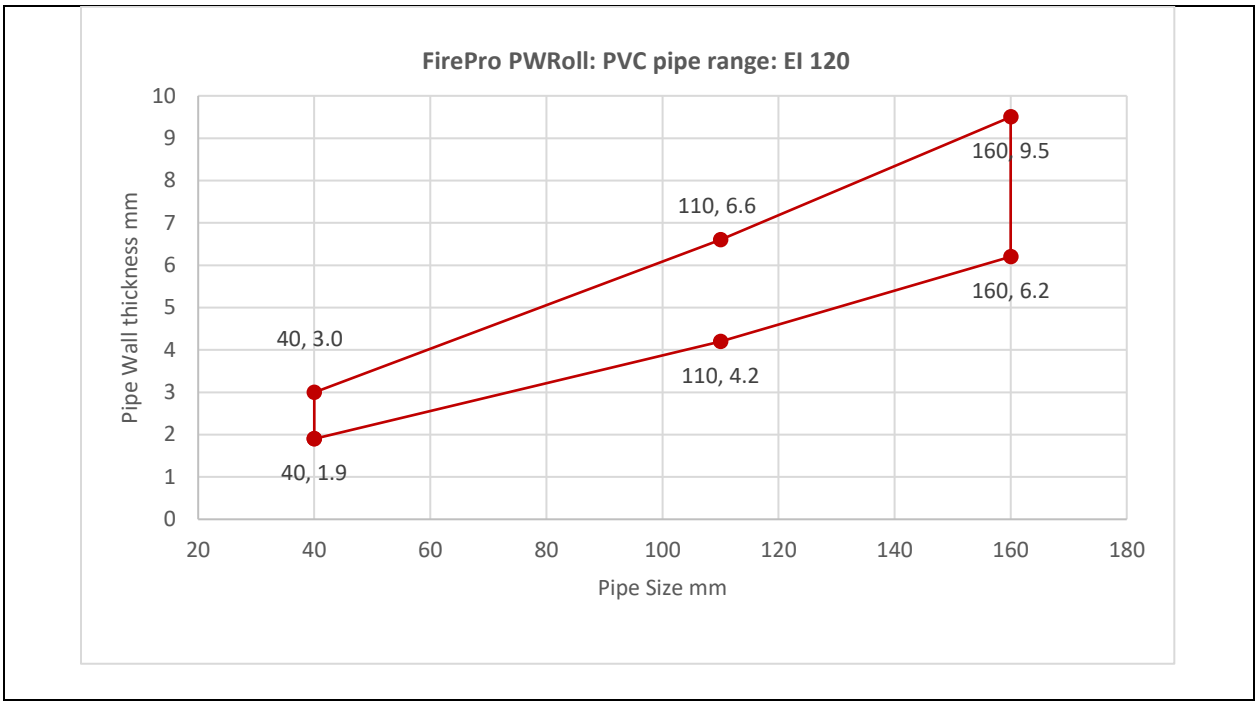
Plastic Pipe Penetrations – FirePro PWRoll



Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
PP/PE/PVC	≤40	1	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed flush with both faces of the batt around the service.	**EI 120 U/C**
	41-79	2		
	80-120	3		
	121-160	4		

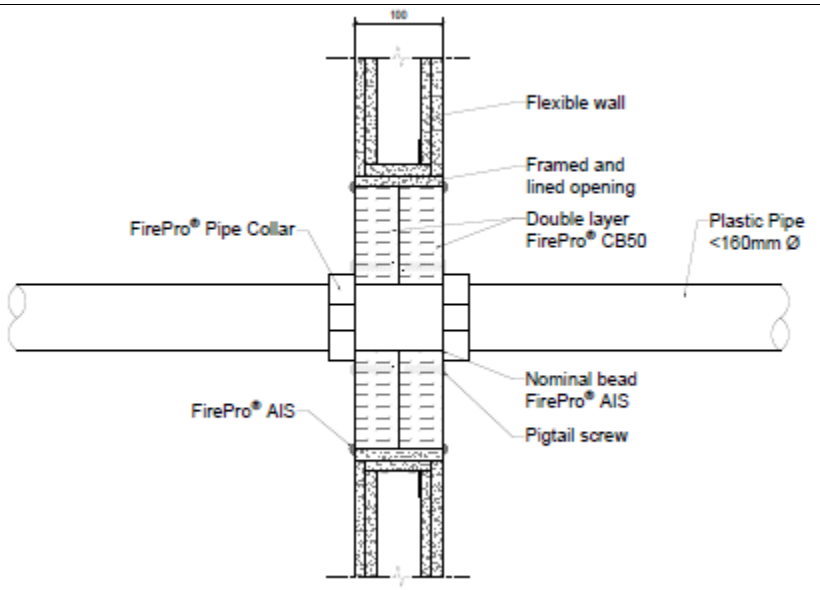

FirePro PWRoll: PP pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8


FirePro PWRoll: PE pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7


FirePro PWRoll: PVC pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
160, 9.5
110, 6.6
160, 6.2
40, 3.0
110, 4.2
40, 1.9

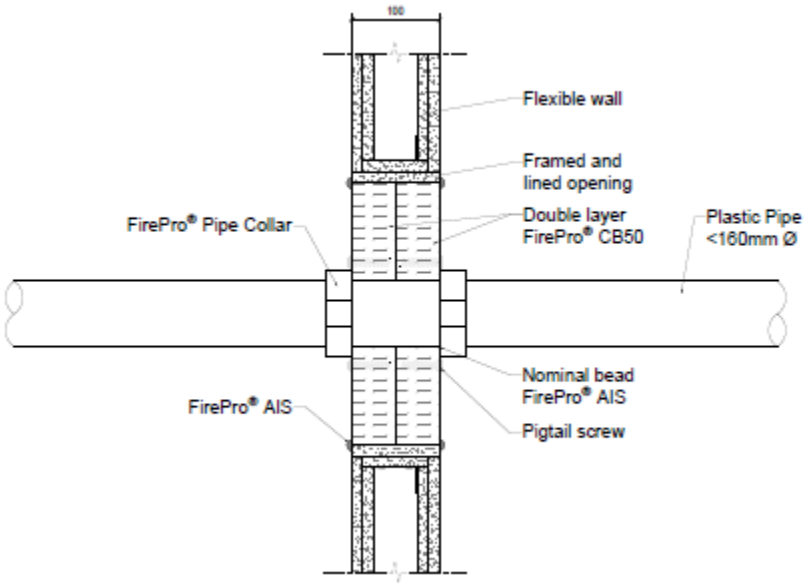
Plastic Pipe Penetrations – FirePro Pipe Collar

PP Pipes



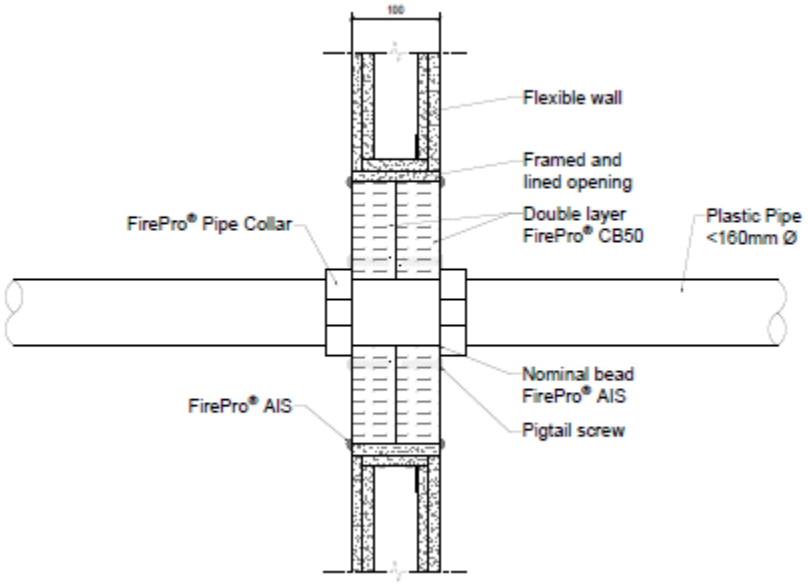
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.8 – 5.5	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 120 U/C**
55	55	2.0 – 5.6		
63	63	2.1 – 5.8		
75	75	2.2 – 5.9		
82	82	2.4 – 6.0		
90	90	2.6 – 6.2		
110	110	2.7 – 6.3		
125	125	3.1 – 7.2		
140	140	3.5 – 8.1		
160	160	4.0 – 9.1		

PE Pipes



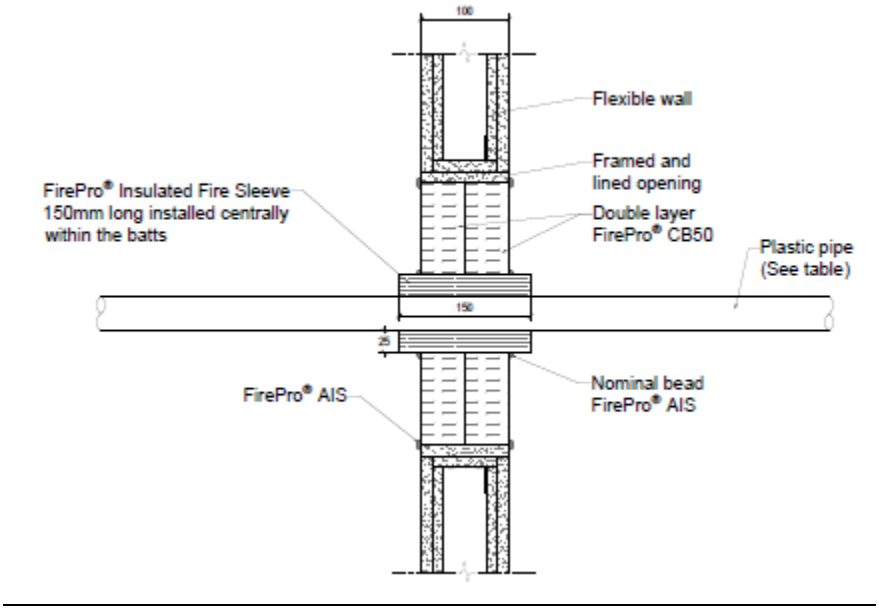
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	2.4 – 3.7	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 120 U/C**
55	55	2.5 – 5.0		
63	63	2.5 – 5.8		
75	75	2.5 – 6.9		
82	82	2.6 – 7.6		
90	90	2.6 – 8.3		
110	110	2.7 - 10		
125	125	3.4 – 9.8		
140	140	4.1 – 9.7		
160	160	4.9 – 9.5		

PVC Pipes

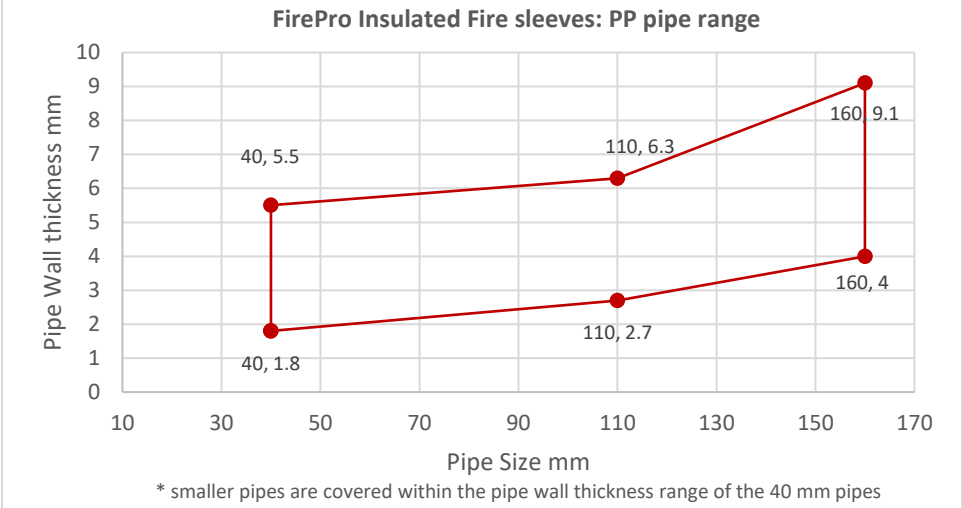


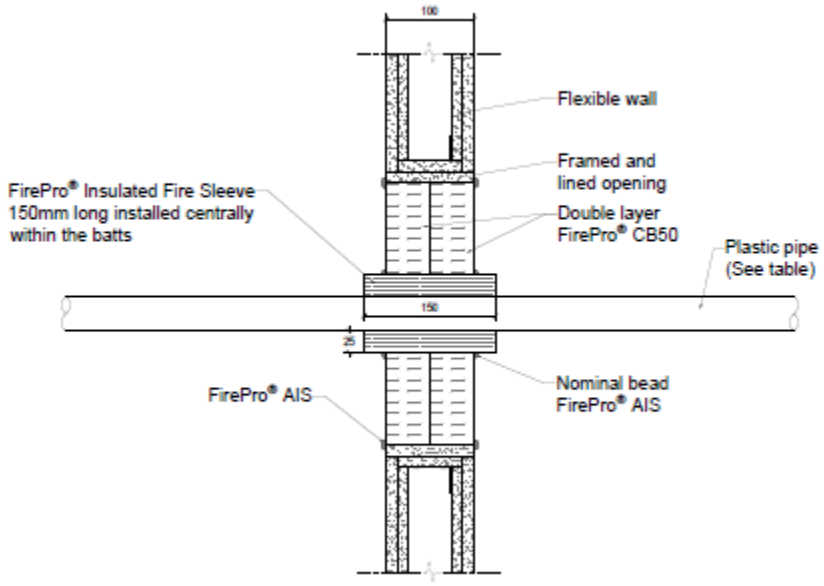
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.9 – 3.0	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 120 U/C**
55	55	2.4 – 3.7		
63	63	2.6 – 4.1		
75	75	3.0 – 4.8		
82	82	3.2 – 5.1		
90	90	3.5 – 5.6		
110	110	4.2 – 6.6		
125	125	4.8 – 7.6		
140	140	5.5 – 8.4		
160	160	6.2 – 9.5		

Plastic Pipes: Protected with FirePro® Insulated Fire Sleeves

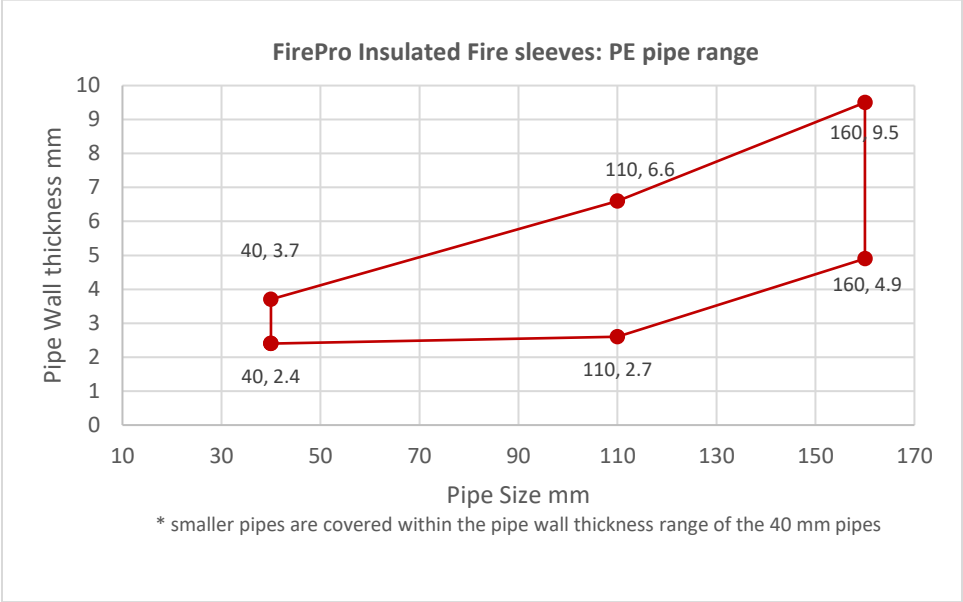


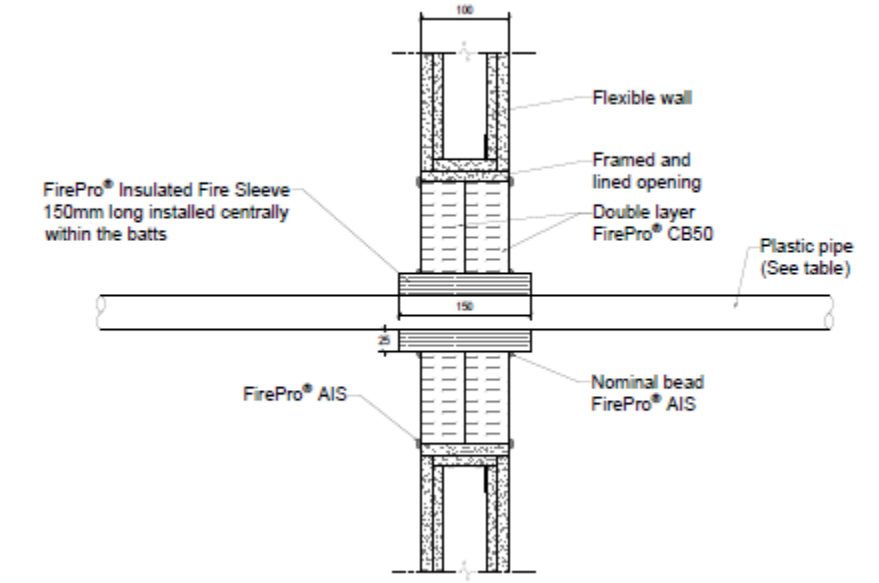
Pipe type	Service Size (mm)	Pipe arrangement	Service protection	Classification
PP	≤Ø 110	Linear (50 mm)	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Insulated Fire Sleeve (150 mm long) installed around the service, centrally within the batts.	**EI 120 U/C**
PP	≤Ø 110 - 160	Single (0 mm)		**EI 30 U/C**


FirePro Insulated Fire sleeves: PP pipe range
Pipe Wall thickness mm
Pipe Size mm
40, 5.5
110, 6.3
160, 9.1
160, 4
110, 2.7
40, 1.8
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

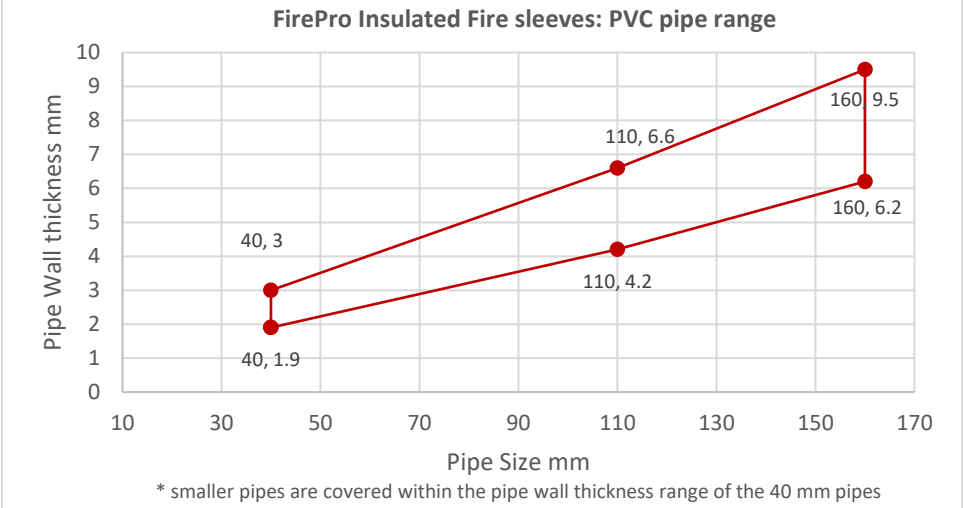


Pipe type	Service Size (mm)	Pipe arrangement	Service protection	Classification
PE	≤Ø 110	Linear (50 mm)	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Insulated Fire Sleeve (150 mm long) installed around the service, centrally within the batts.	**EI 120 U/C**
PE	≤Ø 110 - 160	Single		**EI 120 U/C**

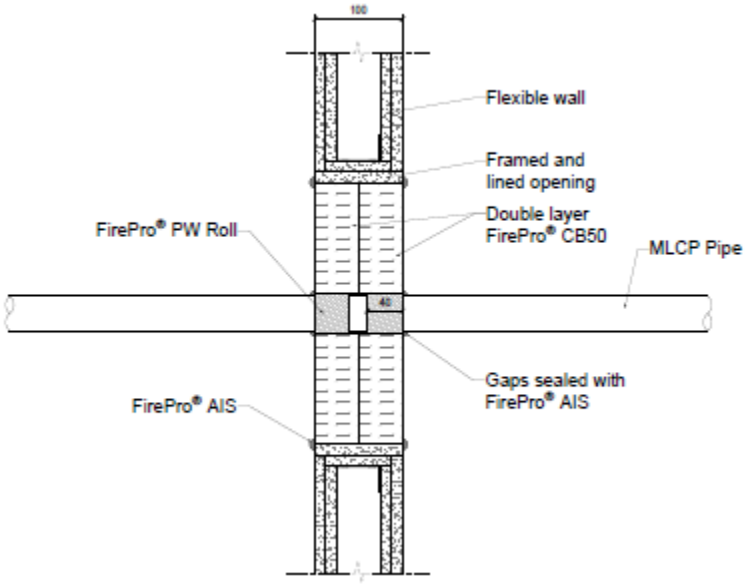

FirePro Insulated Fire sleeves: PE pipe range
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
9
10
10
30
50
70
90
110
130
150
170
Pipe Size mm
40, 3.7
40, 2.4
110, 6.6
110, 2.7
160, 9.5
160, 4.9
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes



Pipe type	Service Size (mm)	Pipe arrangement	Service protection	Classification
PVC	≤Ø 110	Linear (50 mm)	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Insulated Fire Sleeve (150 mm long) installed around the service, centrally within the batts.	**EI 120 U/C**
PVC	≤Ø 110 - 160	Single		**EI 120 U/C**

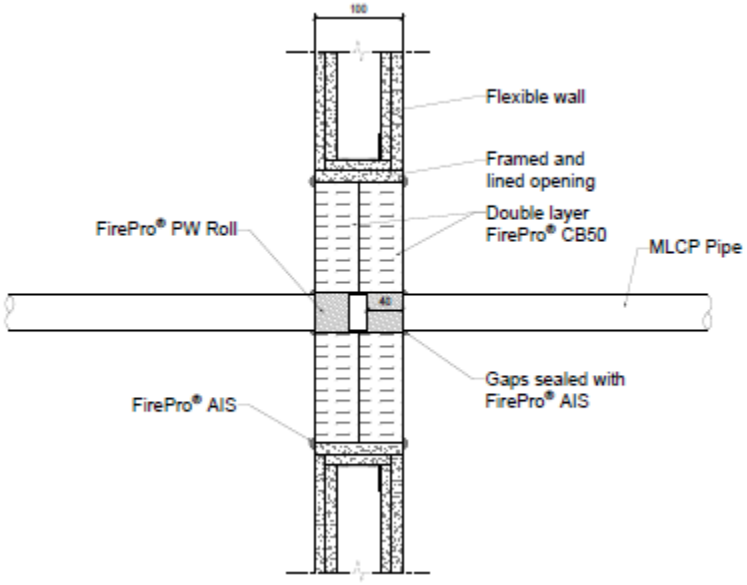

FirePro Insulated Fire sleeves: PVC pipe range
Pipe Wall thickness mm
Pipe Size mm
10
9
8
7
6
5
4
3
2
1
0
10
30
50
70
90
110
130
150
170
160, 9.5
110, 6.6
160, 6.2
40, 3
110, 4.2
40, 1.9
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

MLCP Pipes – FirePro PWRoll



Single pipes					
Pipe material	**Pipe size (mm)**	**Pipe wall thickness (mm)**	**Pipe Wrap layers (2mm)**	**Service Protection**	**Classification**
UPONOR PP-RT / AL / PP-RT	110	10	3	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWRoll installed flush with both faces of the batt around the service.	**E 120 / EI 60 U/C**
UPONOR PP-RT / AL / PP-RT	40	2	1		**E 120 / EI 30 U/C**
Multiple pipes – Linear Configuration					
UPONOR PP-RT / AL / PP-RT	63	6	3	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWRoll installed flush with both faces of the batt around the service.	**E 120 / EI 60 U/C**

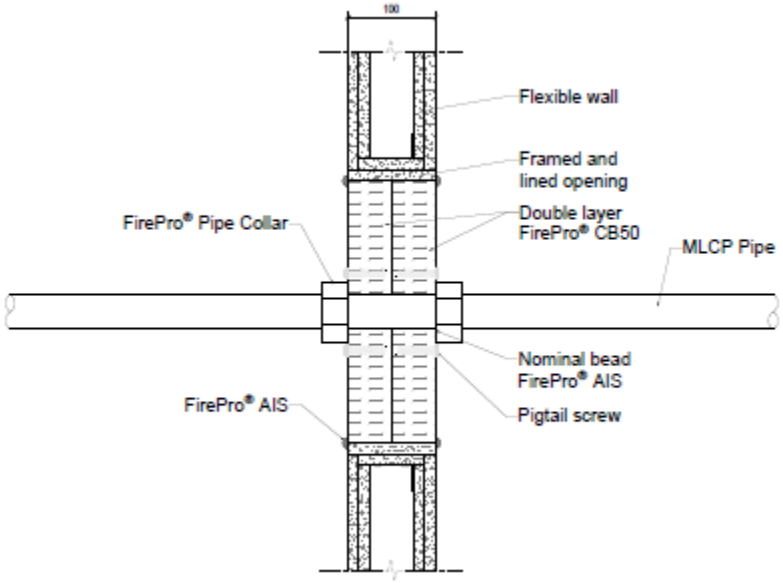
MLCP Pipes – FirePro PWRoll



Single pipes

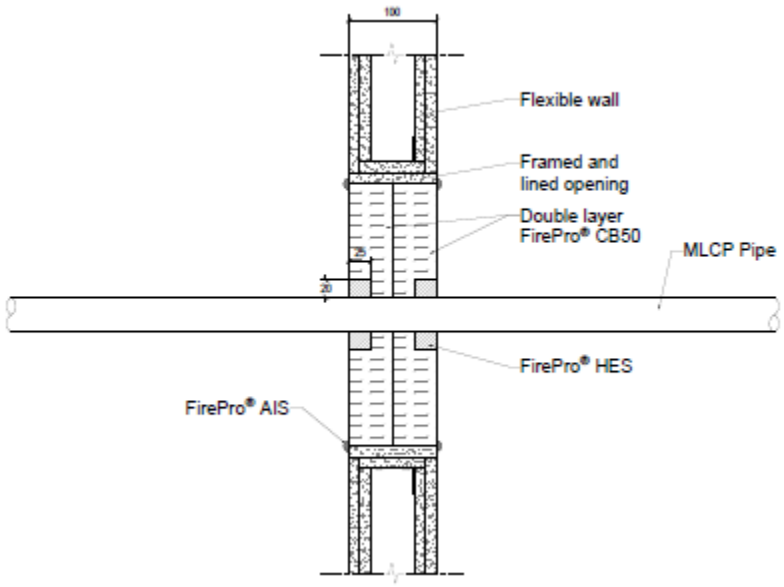
Pipe material	Pipe size (mm)	Pipe wall thickness (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
UPONOR PE-RT Pipe	63	6	3	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWRoll installed flush with both faces of the batt.	**E 120 / EI 60 U/C**

MLCP Pipes – FirePro Pipe Collar



Pipe Collar Size (mm)	Pipe size (mm)	Pipe Type	Pipe wall thickness range (mm)	Service protection	Classification
110	110	UPONOR PP-RT / AL / PP-RT	10	Double layer of 50mm thick FirePro® CB50. FirePro® AIS used on all batt edges to seal joints and around services. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**E 120 / EI 45 U/C**
40	40	UPONOR PP-RT / AL/ PP-RT	2		**E 120 / EI 60 U/C**

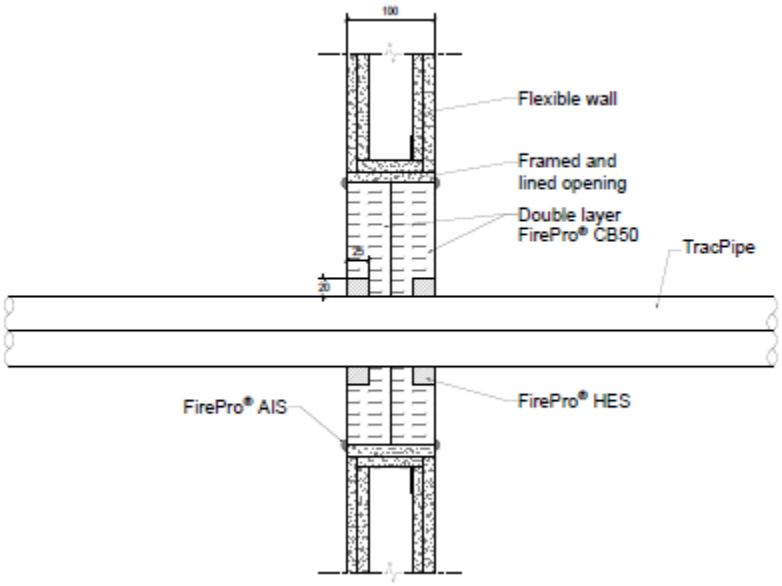
Insulated MLCP Pipes – Uponor Uni Pipe Plus – FirePro HES



Single, linear or clustered configuration

Pipe Type	Pipe size (mm)	Insulation thickness (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
UPONOR Uni Pipe Plus : PP-RT/AL/PP-RT with PE Insulation	16-25	10 - 13	25	20	Double layer FirePro® CB50 friction fitted into the aperture flush with both faces of the wall. All cuts, edges and joints were sealed with FirePro® AIS. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	**EI 120 U/C**
		6				**E 120 / EI 90 U/C**

TracPipe – FirePro HES



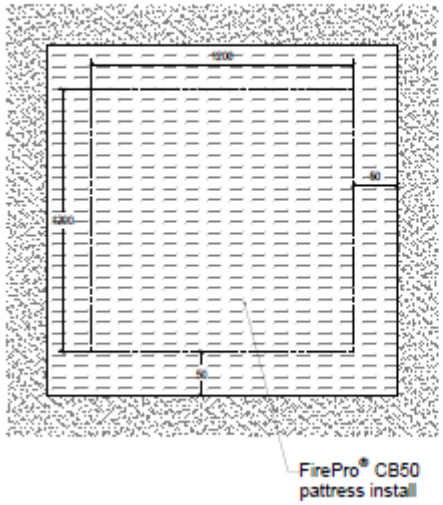
Single, linear or clustered configuration

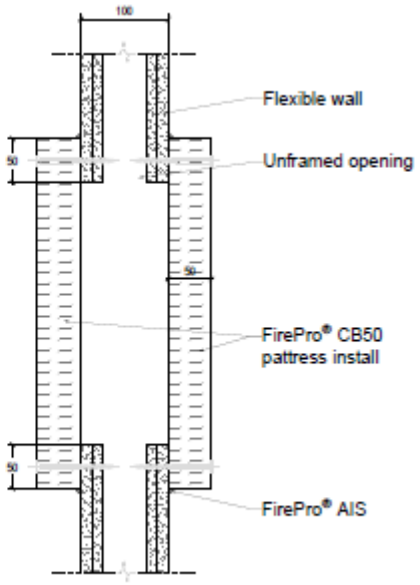
Pipe Type	Pipe size (mm)	Wall thickness (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
TracPipe. Corrugated stainless steel pipe wrapped within a yellow PE jacket	42	5	25	20	Double layer of 50 mm thick FirePro® CB50. All cuts, edges and joints were sealed with FirePro® AIS. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	**E 120 / EI 45 U/C**

4.6.3 Pattress Batt Seal installation methods

The following installation methods for FirePro® CB50 are considered as part of this classification.

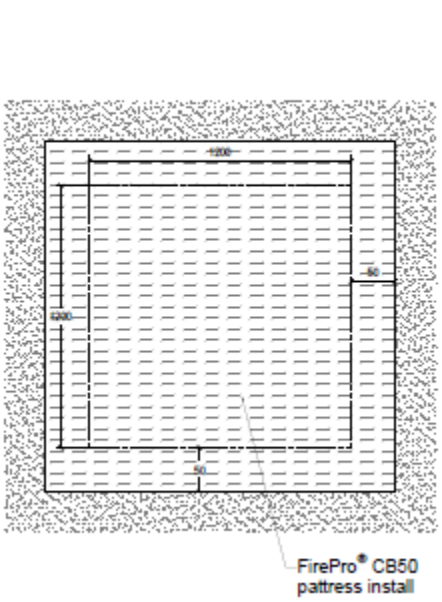
4.6.3.1 Blank Seal – Unframed openings

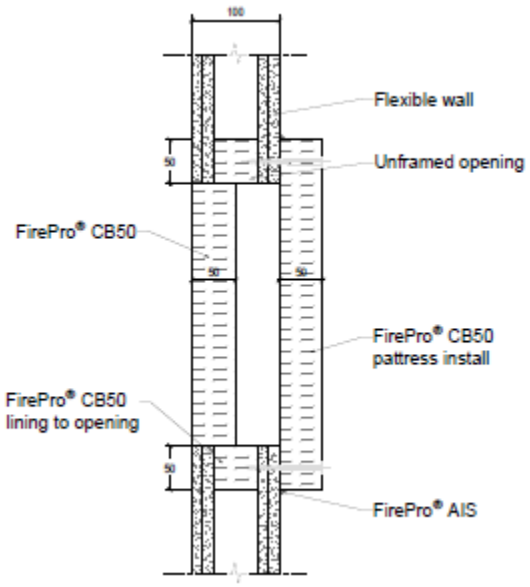




Service type	Aperture size	Service protection	Classification
Blank	2000 x 1100 mm	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. All edges and butt joints sealed with FirePro ® AIS sealant. The batts were mechanically fixed with 90 mm woodscrews and 25 mm washers at 300 mm centres.	**EI 120**

4.6.3.2 Blank Seal – CB50 lined opening with in-line and pattress. Single sided installation.





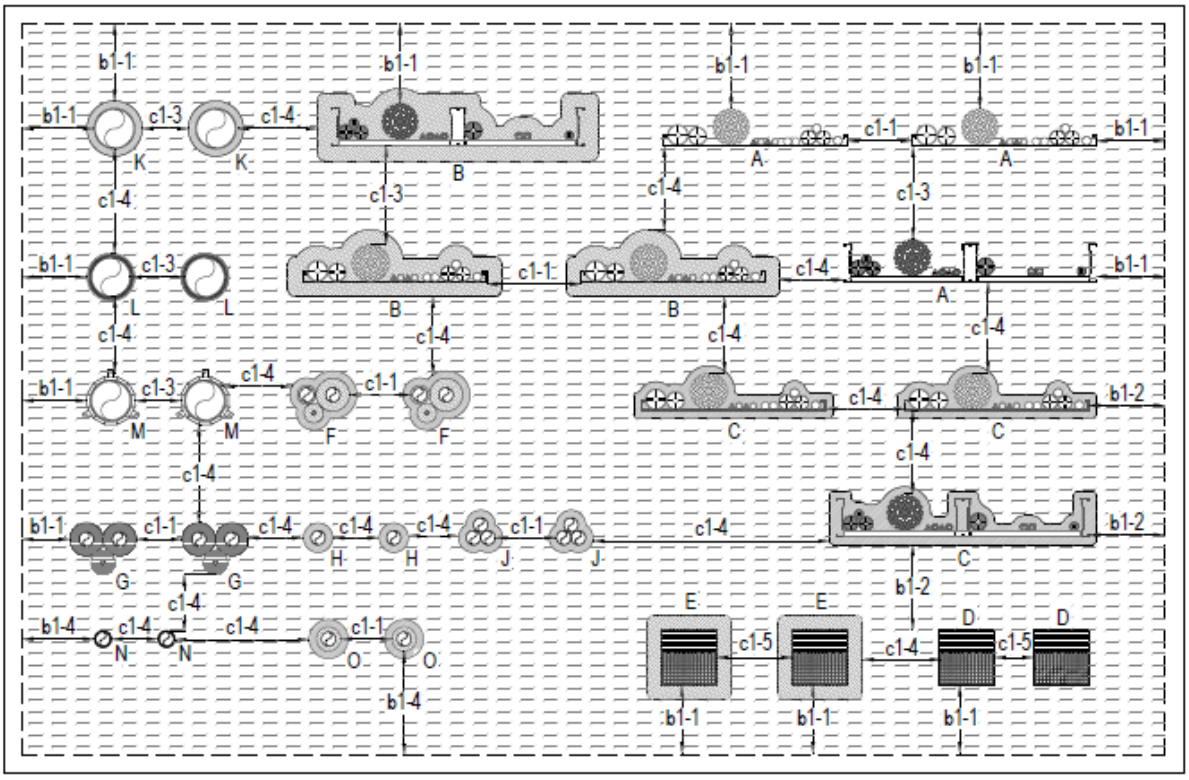
Service type	Aperture size	Service protection	Classification
Blank	600 x 800 mm (aperture lined with FirePro® CB50)	Single layer of 50mm thick FirePro® CB50 batt was friction fitted into the aperture, flush with the exposed face of the wall. Single layer of 50mm FirePro® CB50 pattress fitted to the unexposed face of the aperture, with 50mm overlap on all edges. All edges sealed with a nominal bead and all cuts and butt joints sealed with "FirePro® AIS". The batts were mechanically fixed with screws and washers at 300 mm centres.	**EI 90**

4.6.3.3 Service Penetrations

FirePro® CB50 is approved for use with the following service items. Installation of FirePro® CB50 must be completed in accordance with one of the installation methods specified in the blank seal section and must adhere to the size limitations outlined for each methodology. Certain service items may require additional protection depending on the type of service and/or the performance requirements of the seal and service. Details of any required additional protection are provided, as appropriate, in the following performance tables.

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Double Skin Flexible walls ≥100mm - Pattress CB50

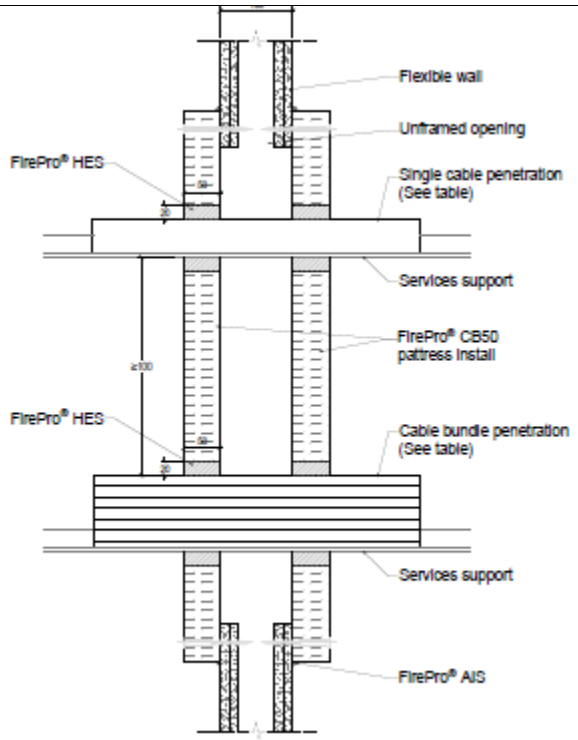


Service Type	
A	Unlagged cables & cable carriers
B	Lagged cables & cable carriers
C	HES cables & cable carriers
D	Trunking
E	Lagged trunking
F	HES - Metallic pipes combustible insulation
G	H&V lagged metallic pipes (L/S)
H	HES - CPVC
J	HES - PB
K	HES - combustible pipes
L	PWRoll - combustible pipes
M	Collar - combustible pipes
N	PWRoll - MLC pipes (Uponor)
O	HES - Insulated MLC pipe

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

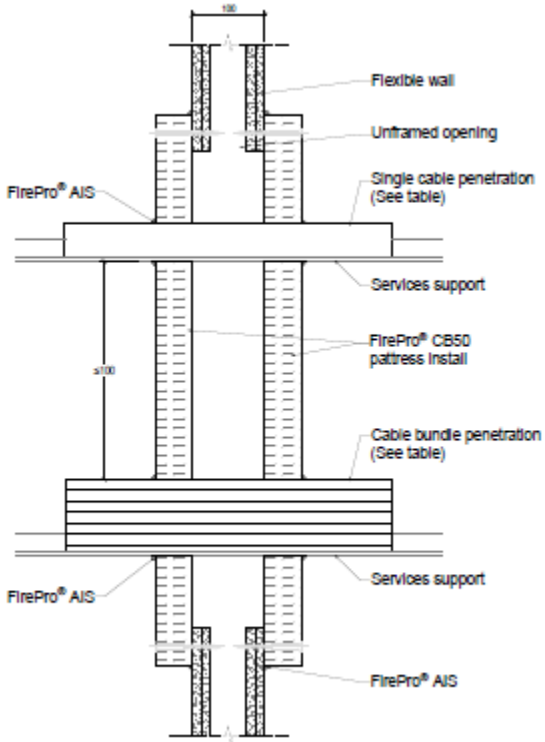
Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≥100 mm – FirePro HES



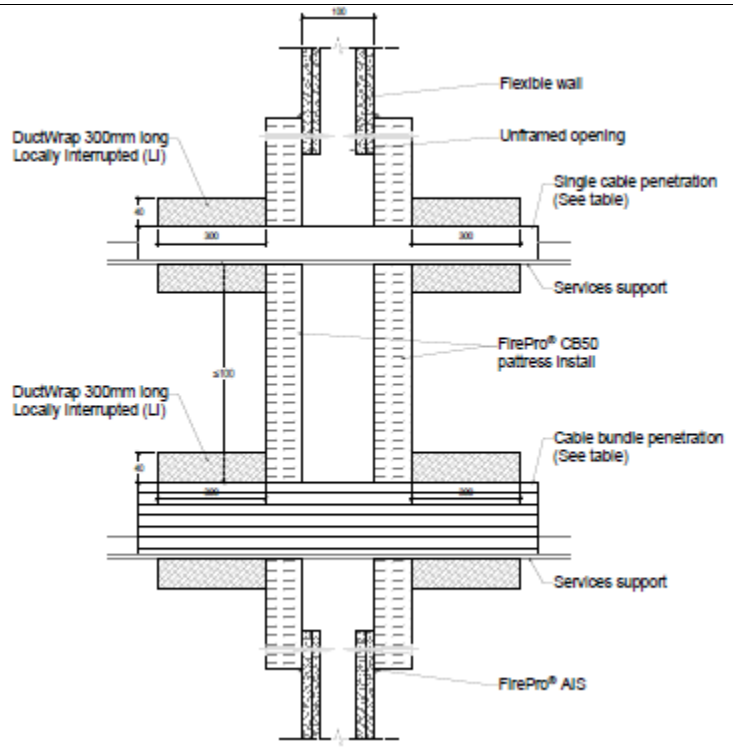
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 50 mm around the service.	**EI 60**
	M	≤50 mm		**E 60 / EI 20**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 60 / EI 20**
Perforated tray, or basket		Unrestricted		**EI 60**

Cable Penetrations with cable carrier separation ≤100 mm



Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services.	**E 120 / EI 60**
	M	≤50		**E 120 / EI 60**
	L	≤80		**E 120 / EI 60**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 120 / EI 60**
Unsheathed cables		≤24		**E 120 / EI 90**
Steel tray, perforated tray, ladder or basket		Unrestricted		**E 120 / EI 90**

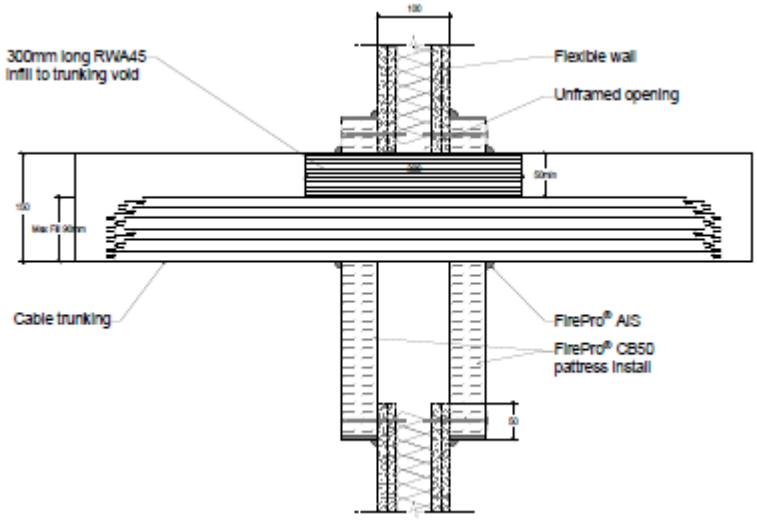
Cable Penetrations with cable carrier separation ≤100 mm - Lagged



Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a LI configuration 300 mm to both faces and secured to service with steel wire.	**EI 120**
	M	≤50		**EI 120**
	L	≤80		**EI 120**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**EI 120**
Unsheathed cables		≤24		**EI 120**
Steel tray, perforated tray, ladder or basket		Unrestricted		**EI 120**

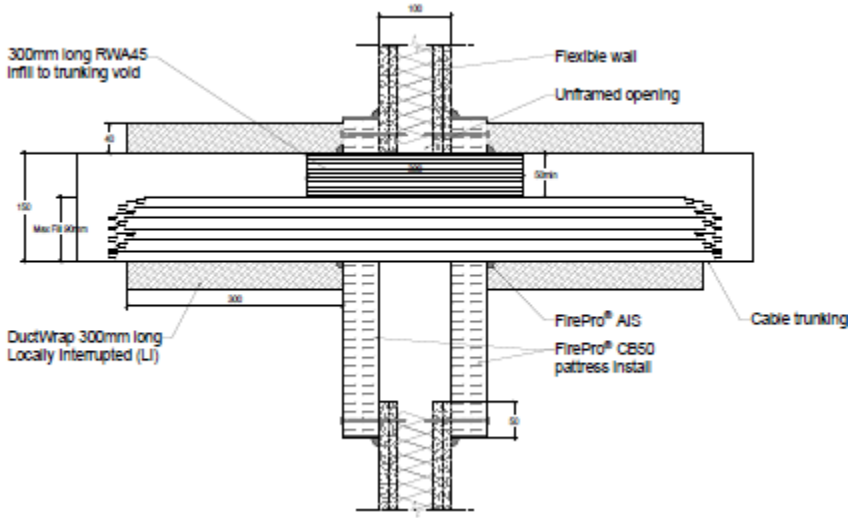
Cable Trunking – unlagged

Linear configuration – 30 mm separation



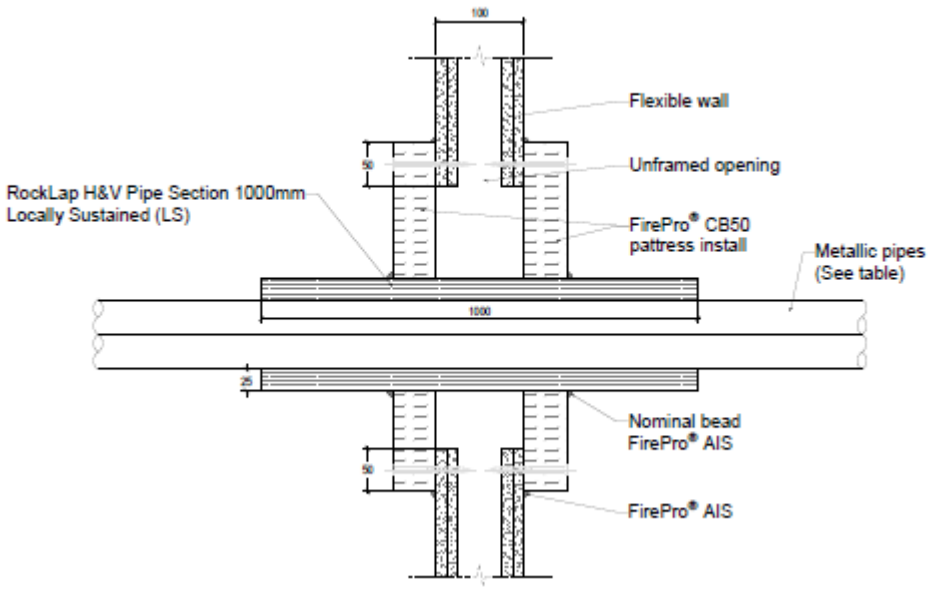
Service			Trunking inner protection	Service protection	Classification
Type	Size (mm)	Cable Size (mm)			
Steel trunking	150 x 150	≤80	300 mm long RWA45 inserted into the trunking on top of the cables under 50 mm compression. The RWA45 should full fill the trunking central to the CB50 seal.	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services.	**EI 120 U/U**

Cable Trunking – lagged

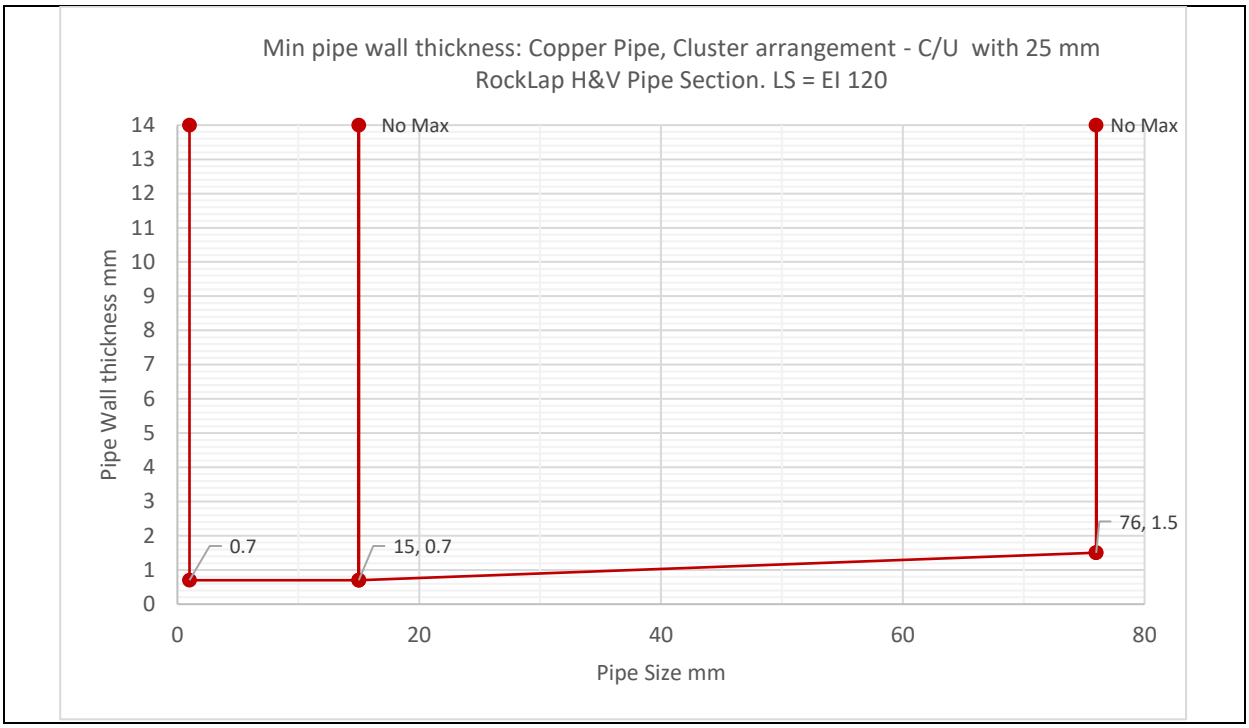


Service			Trunking inner protection	Service protection	Classification
Type	Size (mm)	Cable Size (mm)			
Steel trunking	300 x 150 (w x h)	≤80	300 mm long RWA45 inserted into the trunking on top of the cables under 50 mm compression. The RWA45 should fulfill the trunking central to the CB50 seal.	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around the service item in a LI configuration 300 mm to both faces and secured to service with 0.7 mm steel wire 50mm from both ends	**EI 120 U/U**

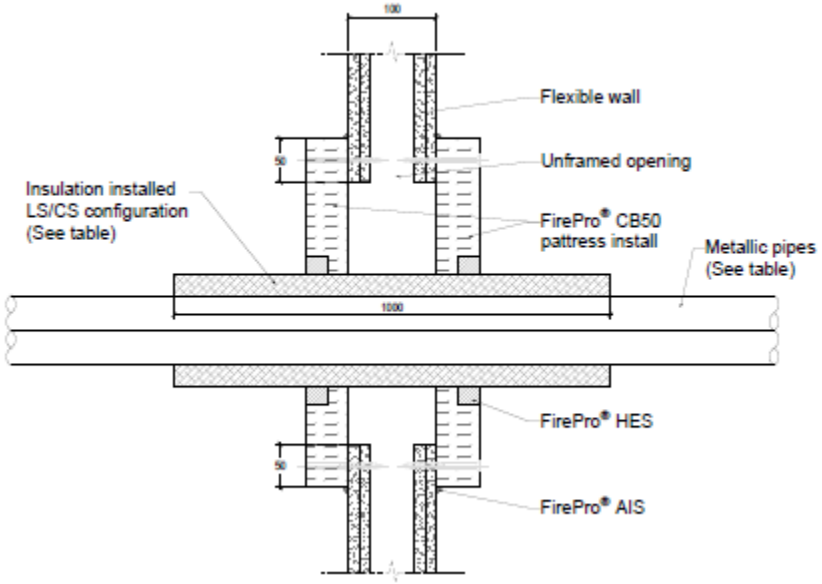
Metallic pipes: Insulated with RockLap H&V Pipe section – LS installation.



Service type	Service Size (mm)	Wall thickness (mm)	Pipe arrangement	Service protection	Classification
Copper and steel pipes	≤15 Ø	≥0.7	Cluster (0mm)	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. 1000 mm long x 25 mm thick ROCKWOOL RockLap H&V Pipe Section in a LS configuration, fixed around the metallic pipes.	**EI 120 C/U**
Copper and steel pipes	≤76 Ø	≥1.5	Cluster (0mm)		**EI 120 C/U**

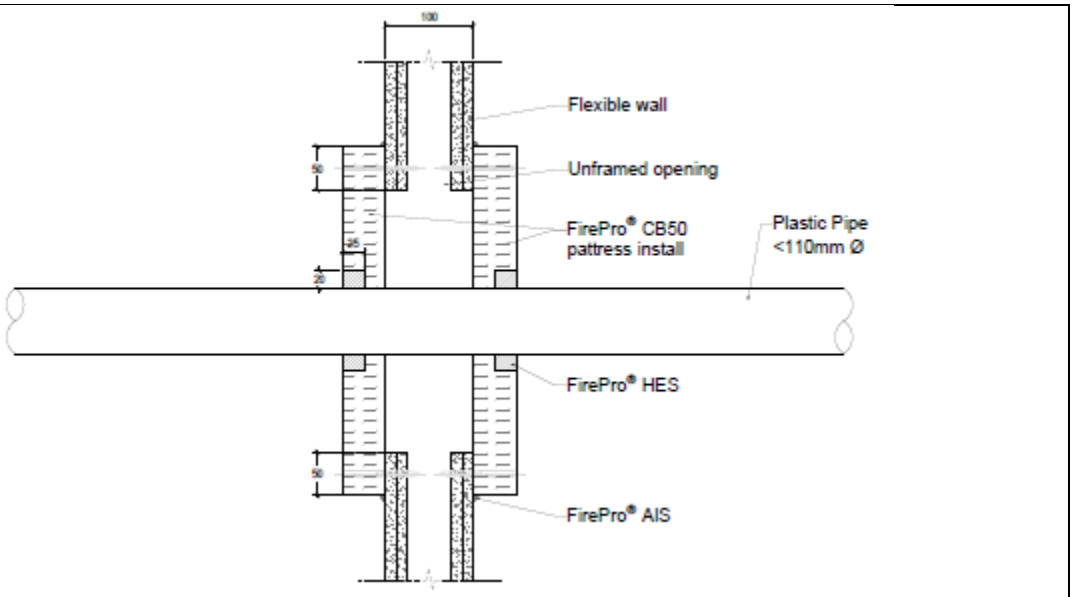

Min pipe wall thickness: Copper Pipe, Cluster arrangement - C/U with 25 mm RockLap H&V Pipe Section. LS = EI 120
Pipe Wall thickness mm
Pipe Size mm
No Max
No Max
0.7
15, 0.7
76, 1.5
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
0
20
40
60
80

Metallic pipes: Insulated with combustible insulation – FirePro HES.

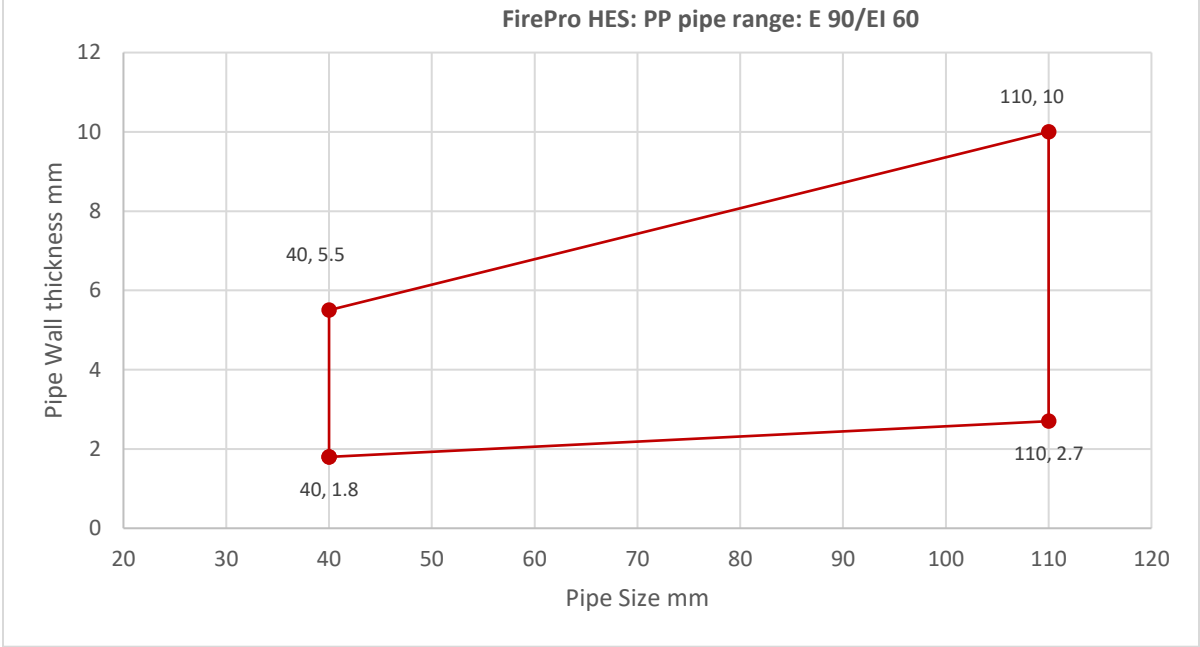


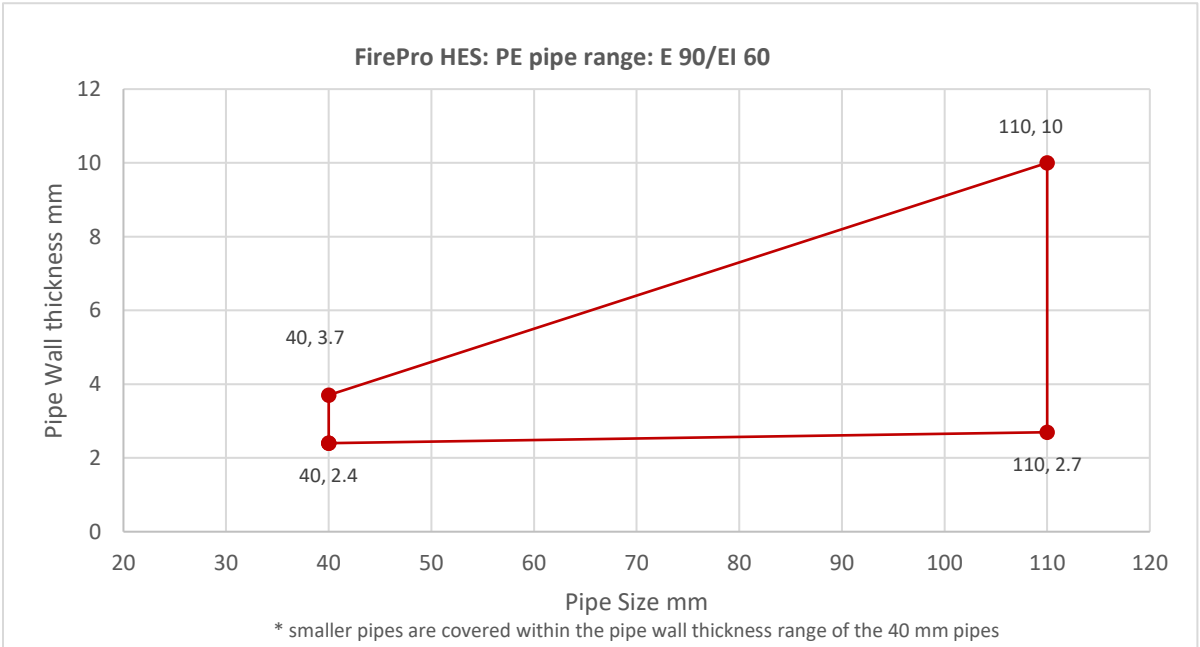
Service type	Pipe Size (mm)	Wall thickness (mm)	Seal depth (mm)	Annular gap (mm)	Insulation type / thickness	Service protection	Classification
Copper and steel pipes Cluster (0 mm)	≤42 Ø	≥1.2	25	20	Armacell Armaflex insulation, around the service in a LS/CS sustained config/ 9-32 mm.	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the services on each face of the wall	**E 120 / EI 90 C/U**
	≤6 Ø	≥0.6					

Plastic Pipe Penetrations – FirePro HES

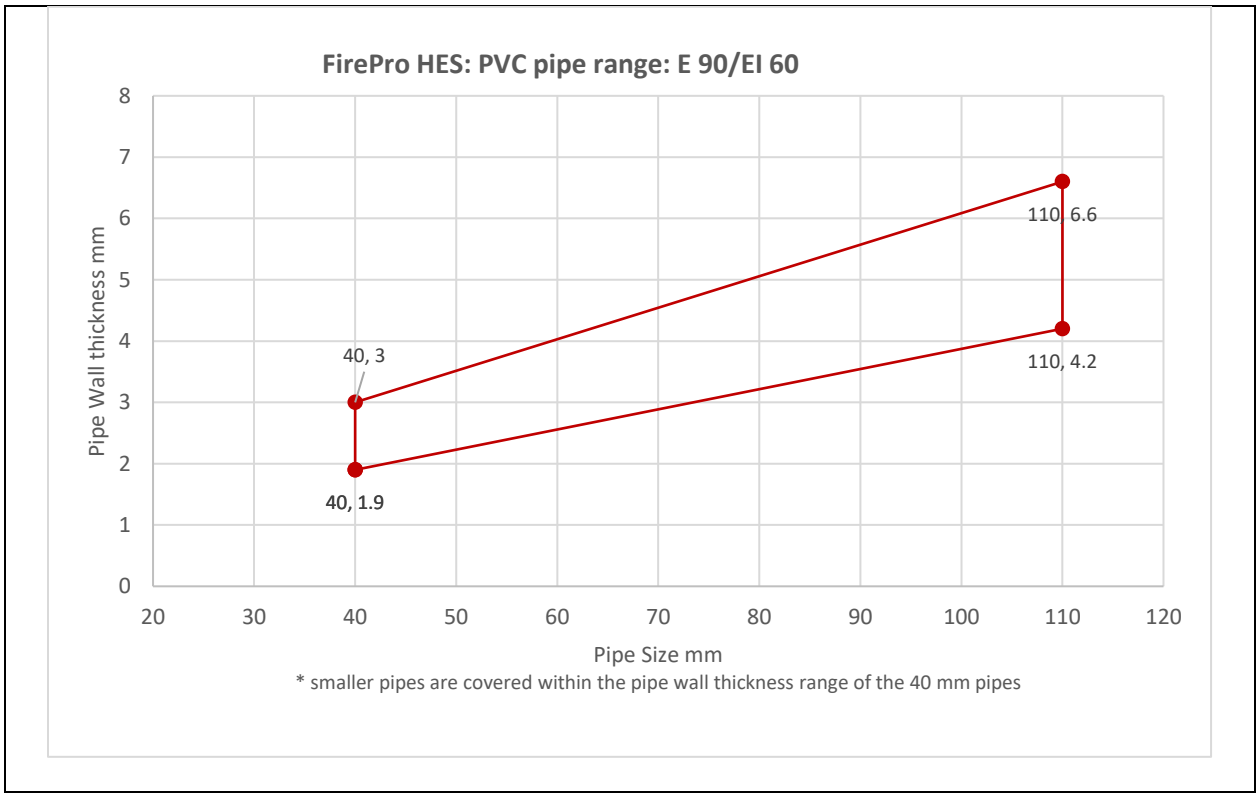


Pipe material	Pipe size (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 110	25 (each face)	20	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service, on each face of the seal.	**E 90 / EI 60 U/C**
PE	40 – 110				
PVC	40 - 110				

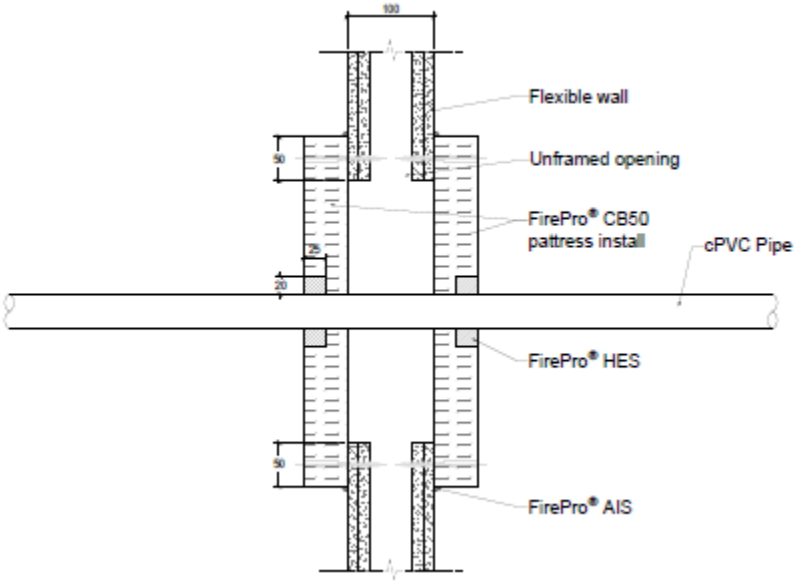




* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

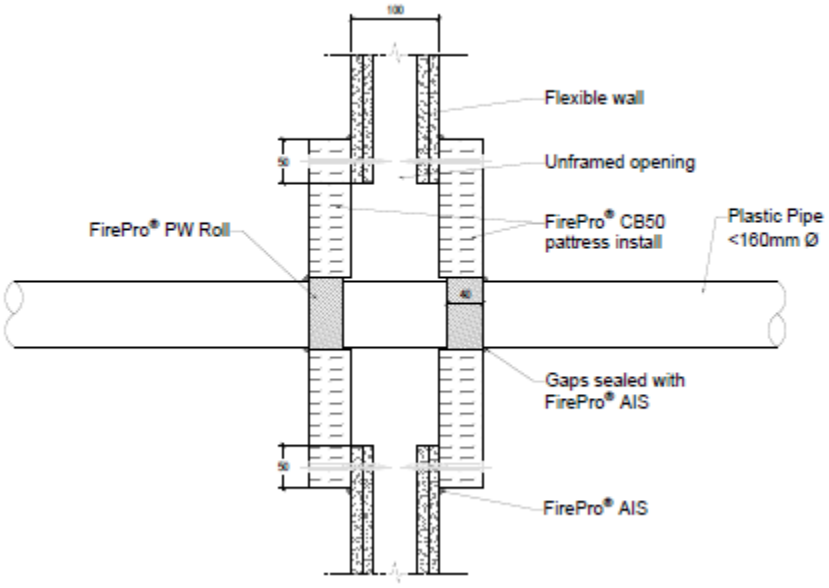

FirePro HES: PVC pipe range: E 90/EI 60
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
40, 3
40, 1.9
110, 6.6
110, 4.2
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

Plastic Pipe Penetrations – FirePro HES

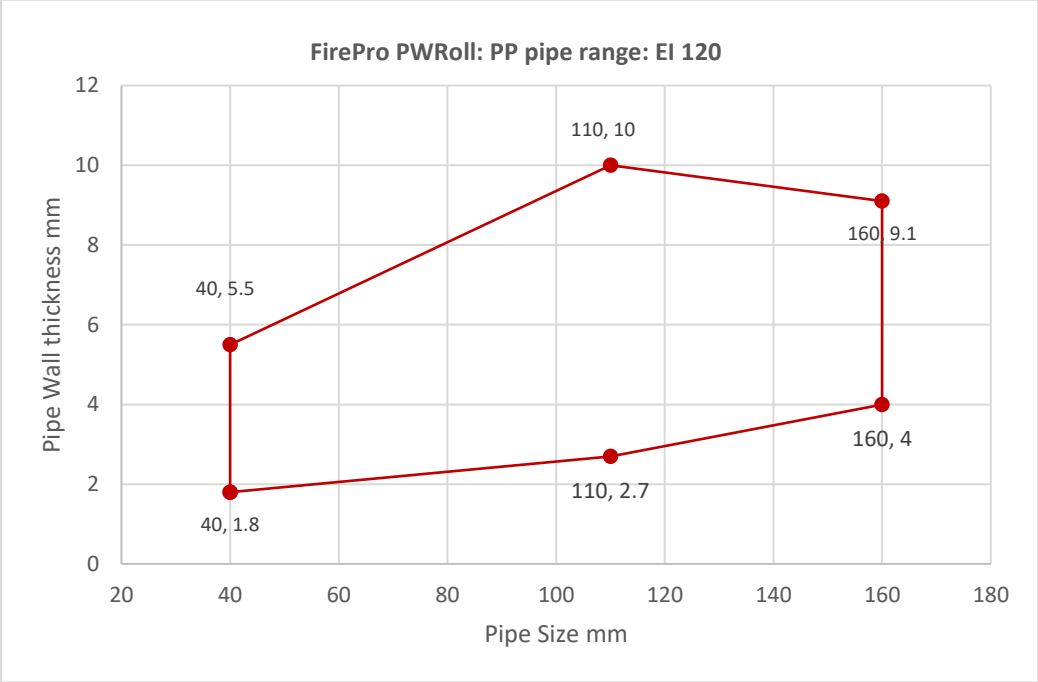


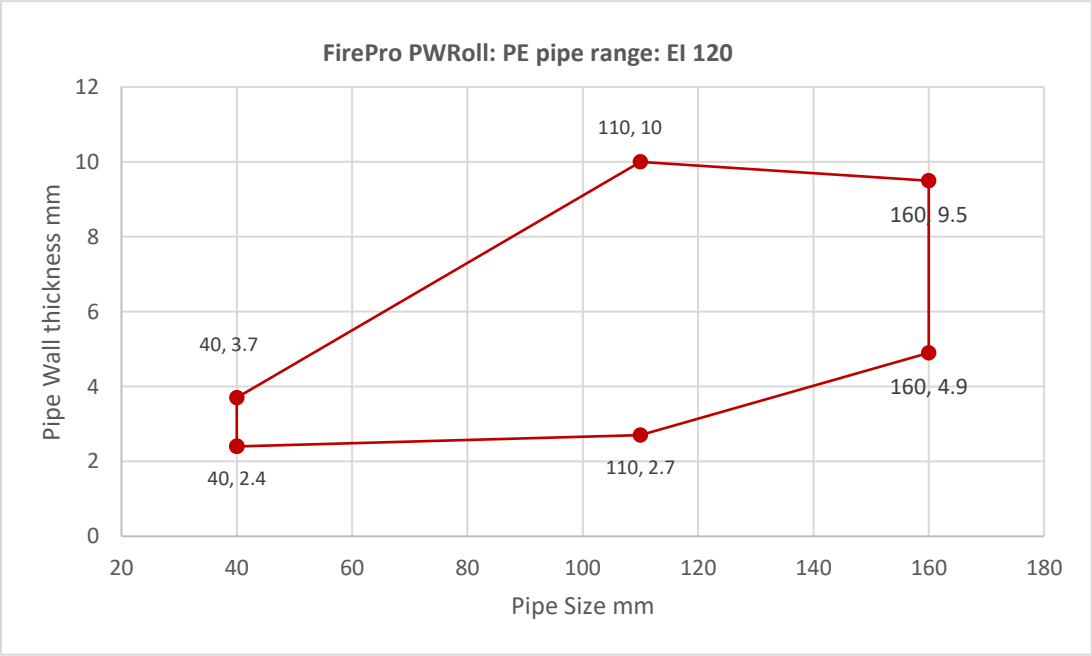
Pipe material	Pipe size (mm)	Wall thickness (mm)	Service Protection	Classification
cPVC (BlazeMaster)	≤Ø20	≥2.5	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm annulus of FirePro® HES cartridge gunned to a depth of 25 mm around the service, on each face of the seal.	**EI 120 U/C**
cPVC (BlazeMaster)	≤Ø48	≥3.85		**EI 120 U/C**
cPVC (BlazeMaster)	≤Ø88	≥6.95		**EI 120 U/C**
PB Cluster (0mm)	≤Ø28	≥2.6		**EI 120 U/C**

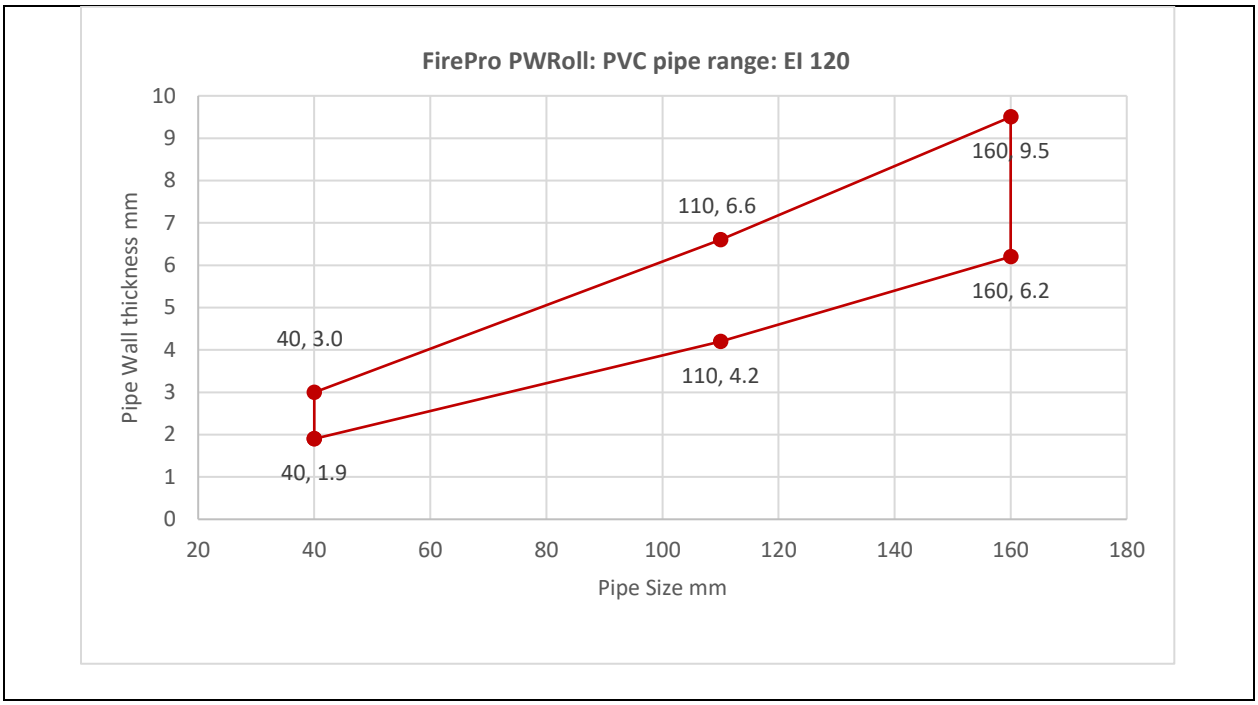
Plastic Pipe Penetrations – FirePro PWRoll



Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
PP/PE/PVC	≤40	1	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on all batt edges to seal joints and around services. FirePro® PWROLL installed centrally around the service in each layer of batt.	**EI 120 U/C**
	41-79	2		
	80-120	3		
	121-160	4		

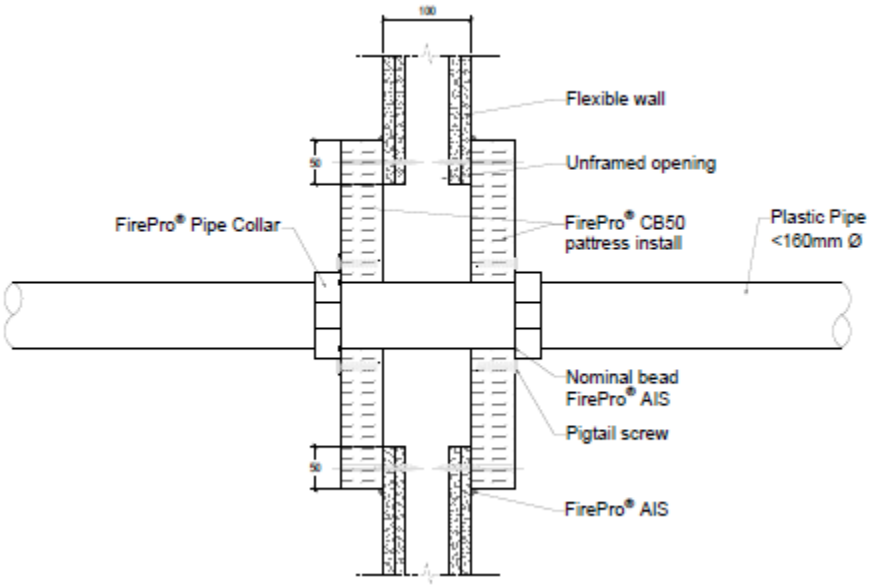

FirePro PWRoll: PP pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180


FirePro PWRoll: PE pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180


FirePro PWRoll: PVC pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
160, 9.5
110, 6.6
160, 6.2
40, 3.0
110, 4.2
40, 1.9

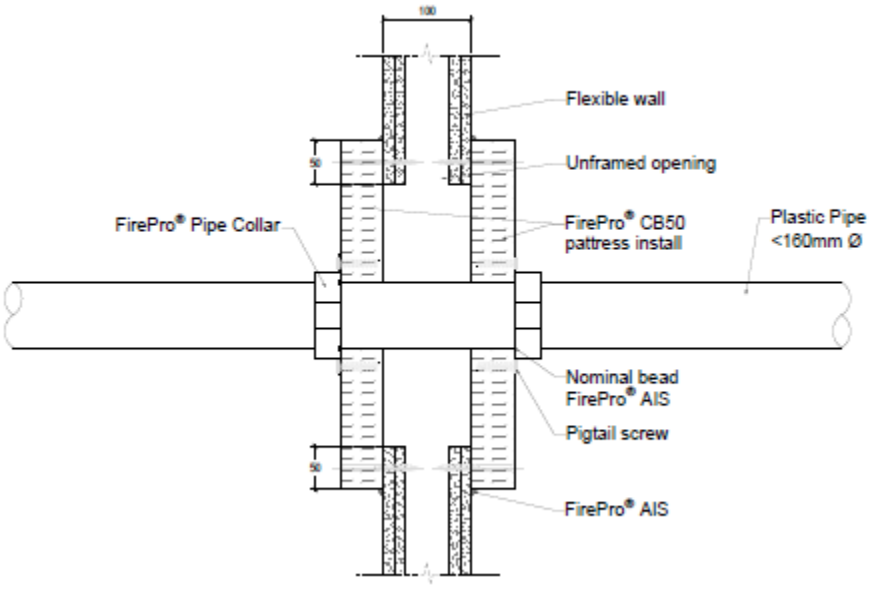
Plastic Pipe Penetrations – FirePro Pipe Collar

PP Pipes



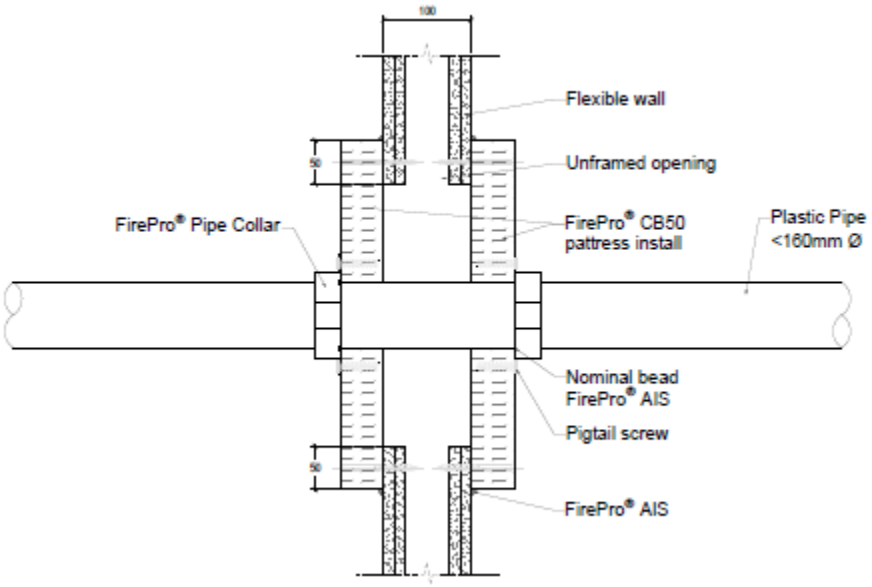
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.8 – 5.5	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. FirePro® AIS used on all batt edges to seal joints and around services, installed only from the unexposed only. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 120 U/C**
55	55	2.0 – 5.6		
63	63	2.1 – 5.8		
75	75	2.2 – 5.9		
82	82	2.4 – 6.0		
90	90	2.6 – 6.2		
110	110	2.7 – 6.3		
125	125	3.1 – 7.2		
140	140	3.5 – 8.1		
160	160	4.0 – 9.1		

PE Pipes



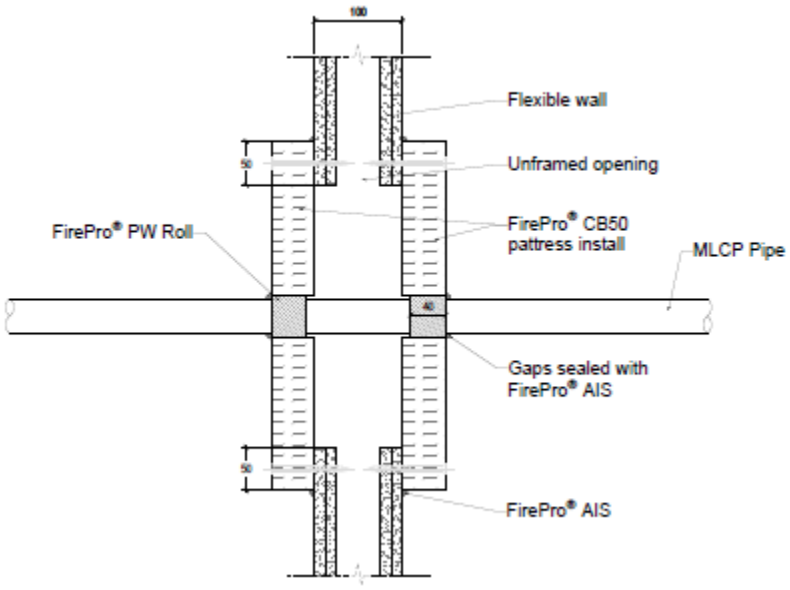
Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	2.4 – 3.7	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. FirePro® AIS used on all batt edges to seal joints and around services, installed only from the unexposed only. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 120 U/C**
55	55	2.5 – 5.0		
63	63	2.5 – 5.8		
75	75	2.5 – 6.9		
82	82	2.6 – 7.6		
90	90	2.6 – 8.3		
110	110	2.7 - 10		
125	125	3.4 – 9.8		
140	140	4.1 – 9.7		
160	160	4.9 – 9.5		

PVC Pipes



Pipe Collar Size (mm)	Pipe size (mm)	Pipe wall thickness range (mm)	Service Protection	Classification
40	40	1.9 – 3.0	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges. FirePro® AIS used on all batt edges to seal joints and around services, installed only from the unexposed only. FirePro® Pipe Collar fixed around the service on both sides of the batt using pigtail screws	**EI 120 U/C**
55	55	2.4 – 3.7		
63	63	2.6 – 4.1		
75	75	3.0 – 4.8		
82	82	3.2 – 5.1		
90	90	3.5 – 5.6		
110	110	4.2 – 6.6		
125	125	4.8 – 7.6		
140	140	5.5 – 8.4		
160	160	6.2 – 9.5		

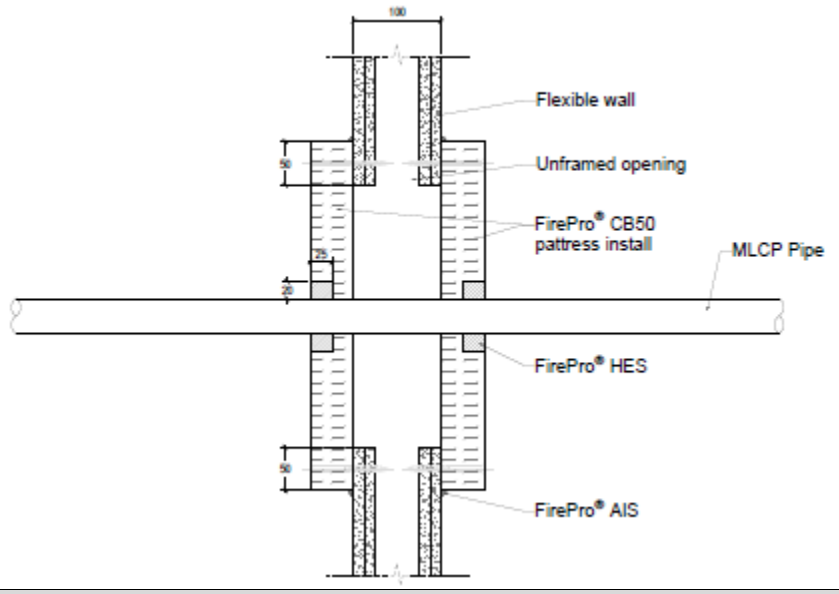
MLCP Pipes – FirePro PWRoll



Single pipes

Pipe material	Pipe size (mm)	Pipe wall thickness (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
UPONOR MLCP PE-RT Pipe	63	6	3	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. FirePro® PWRoll installed flush with both faces of the batt around the service.	**E 120 / EI 60 U/C**

Insulated MLCP Pipes – Uponor Uni Pipe Plus – FirePro HES



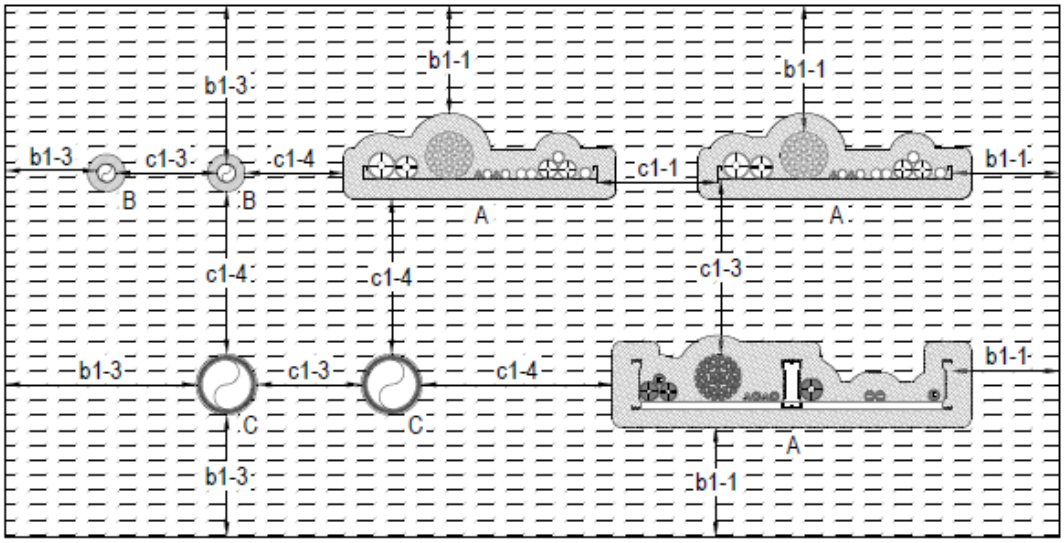
Single, linear or clustered configuration

Pipe Type	Pipe size (mm)	Insulation thickness (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
UPONOR Uni Pipe Plus : PP-RT/AL/PP-RT with PE Insulation Cluster (0 mm)	16 - 25	10 - 13	25	20	50mm thick layer of FirePro® CB50 pattress fitted over the aperture, to both faces, with a 50 mm overlap on all edges with FirePro® AIS used on batt edges to seal all joints. 20 mm wide by 25 mm deep annular gap sealed with FirePro® HES to both faces of the wall.	**E 120 / EI 60 U/C**

4.6.4 Single sided seals

Service arrangement (spacings)– distances as defined by 1366-3: 2021+2024

Double Skin Flexible walls ≥100mm - Single Sided Double CB50

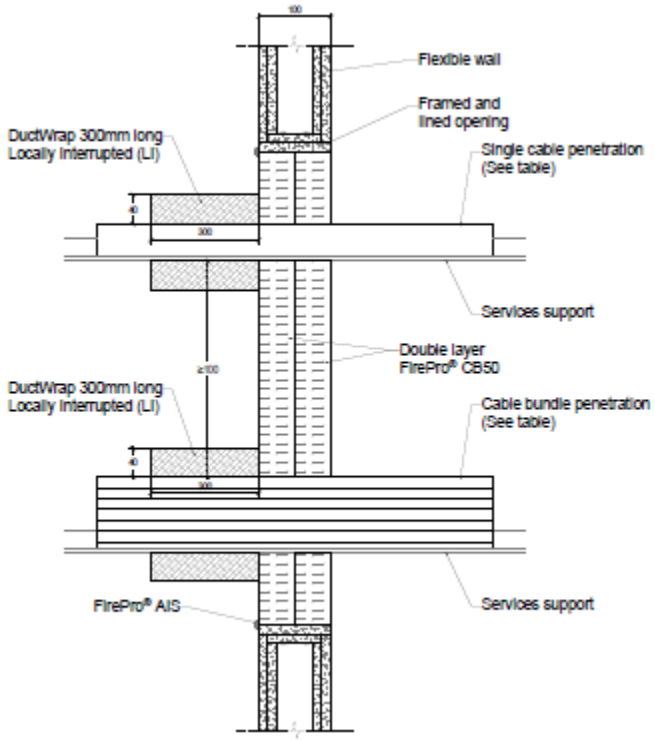


Service Type	
A	Lagged cables & cable carriers
B	HES cables & cable carriers
C	PWRoll - combustible pipes

Aperture Edge Distance	
b1-1	0mm
b1-2	20mm
b1-3	50mm
b1-4	100mm

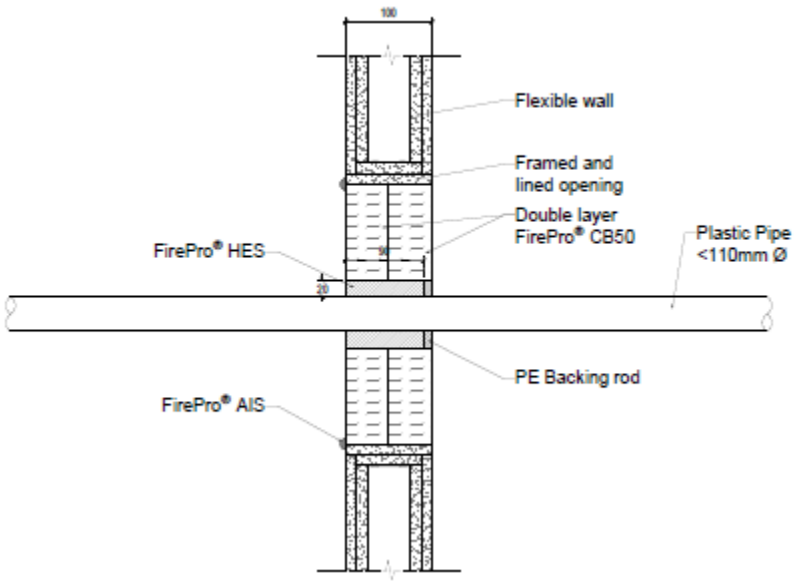
Service Separation	
c1-1	0mm
c1-2	25mm
c1-3	50mm
c1-4	100mm
c1-5	30mm

Cable Penetrations with cable carrier separation ≤100 mm - Lagged

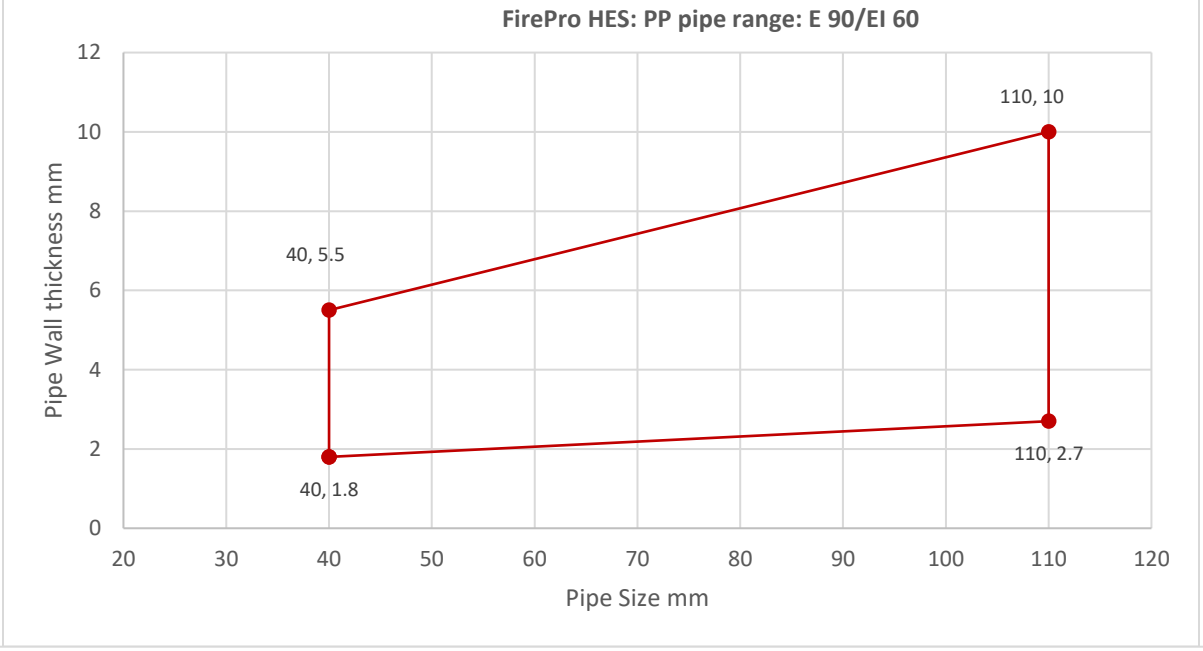


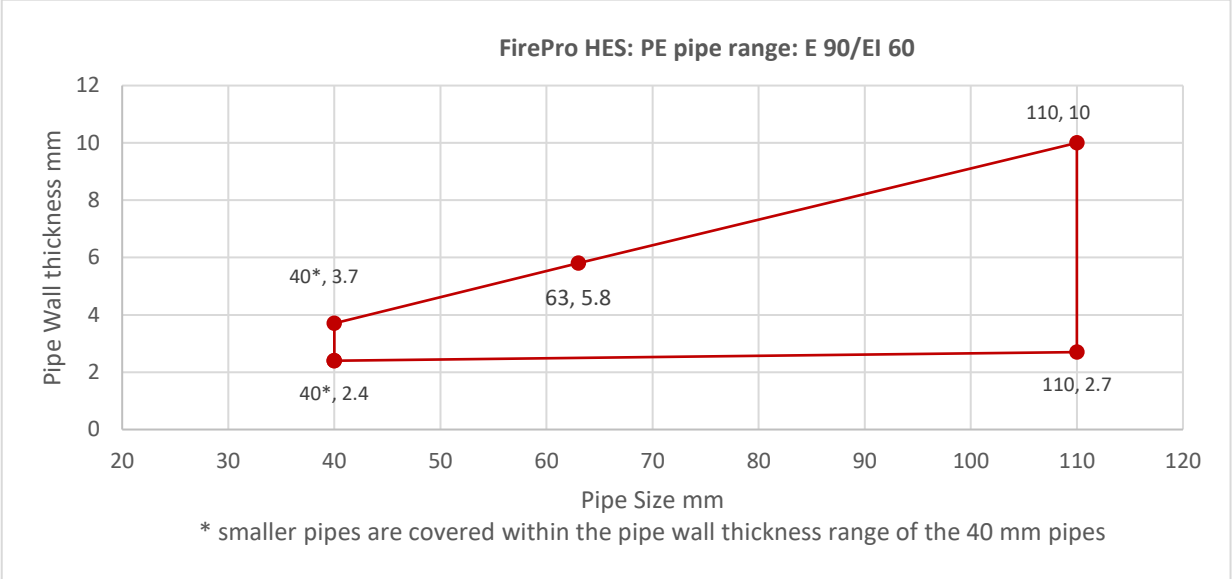
Service type		Service size (mm)	Service protection	Classification
Sheathed cables	S	≤21	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, from a single (unexposed) side, with FirePro® AIS used on all batt edges to seal joints and around services. 40 mm ROCKWOOL® DuctWrap, cut to size and wrapped around a single side of the service item in a LI configuration, 300 mm from the face of the batt. Secured to service with steel wire.	**E 120 / EI 90**
	M	≤50		**E120 / EI 90**
	L	≤80		**E120 / EI 90**
Cable bundle		≤Ø100 cable bundle of ≤Ø21 cables		**E 120 / EI 90**
Unsheathed cables		≤24		**E120 / EI 90**
Steel tray, perforated tray, ladder or basket		Unrestricted		**E120 / EI 90**

Plastic Pipe Penetrations – FirePro HES

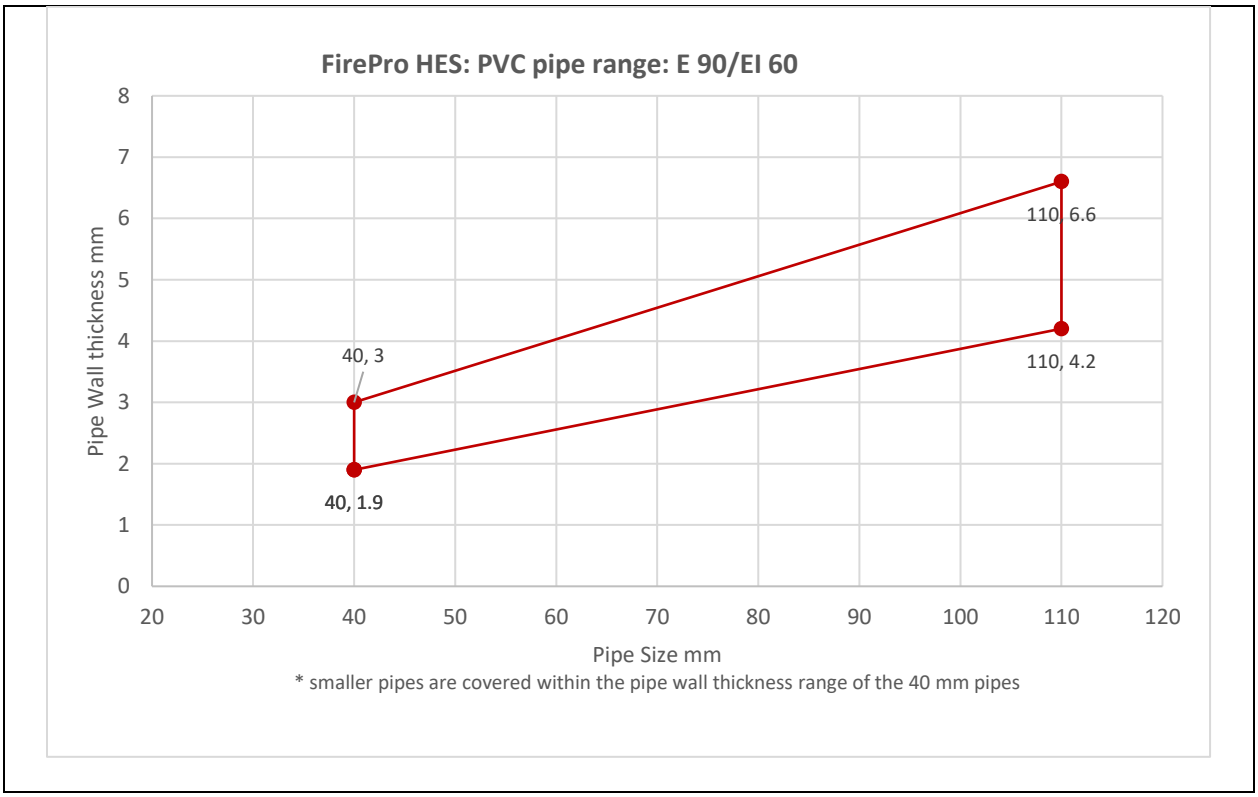


Pipe material	Pipe size (mm)	HES depth (mm)	Annular gap (mm)	Service Protection	Classification
PP	40 - 110	90	20	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, from a single side, with FirePro® AIS used on all batt edges to seal joints and around services. 20 mm wide by 90 mm deep annular gap sealed with FirePro® HES installed from a single face (unexposed) over a PE backing rod.	**E 90 / EI 60 U/C**
PE	40 – 110				
PVC	40 - 110				

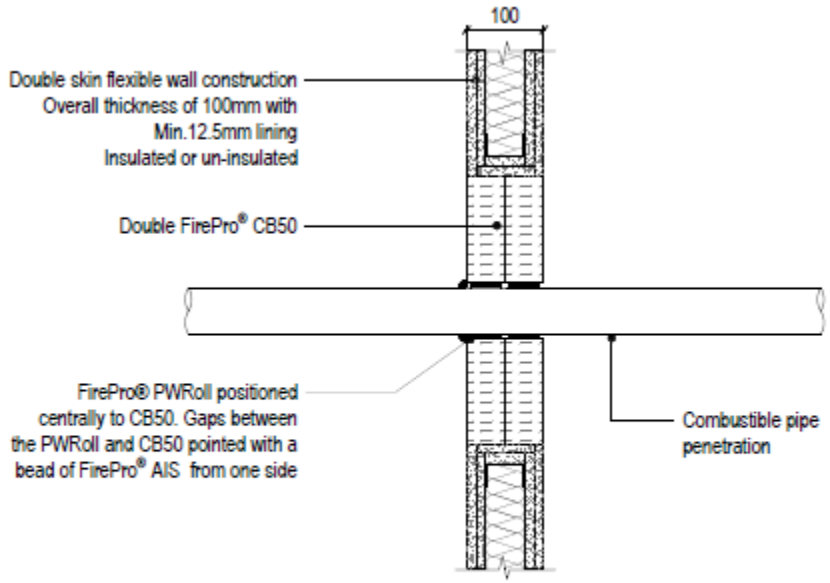




* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

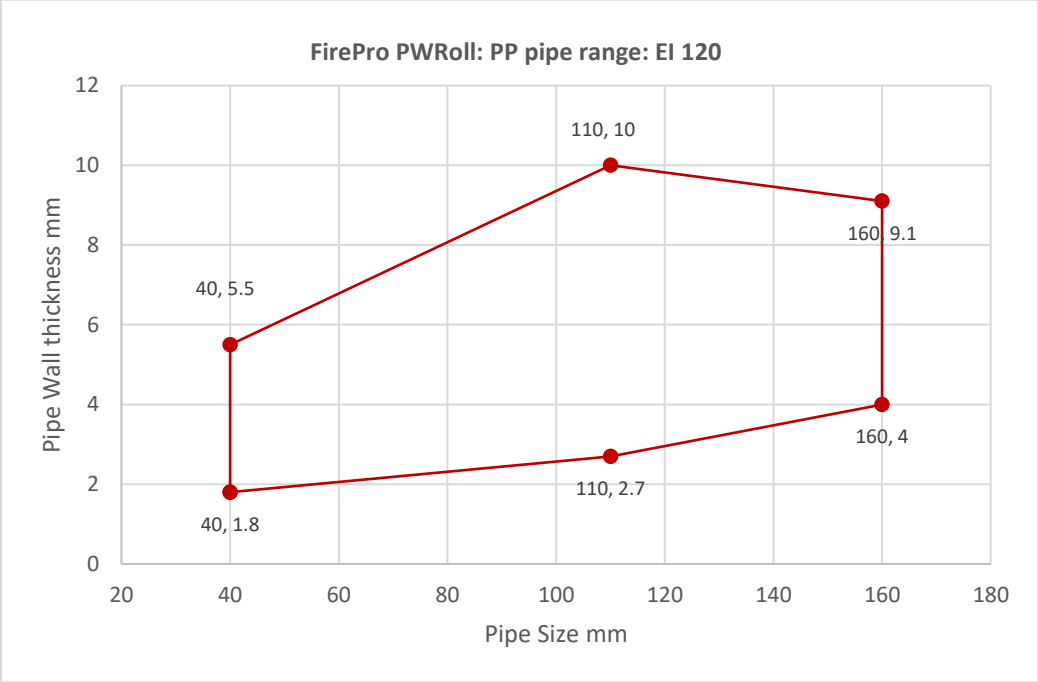

FirePro HES: PVC pipe range: E 90/EI 60
Pipe Wall thickness mm
0
1
2
3
4
5
6
7
8
20
30
40
50
60
70
80
90
100
110
120
Pipe Size mm
40, 3
40, 1.9
110, 6.6
110, 4.2
* smaller pipes are covered within the pipe wall thickness range of the 40 mm pipes

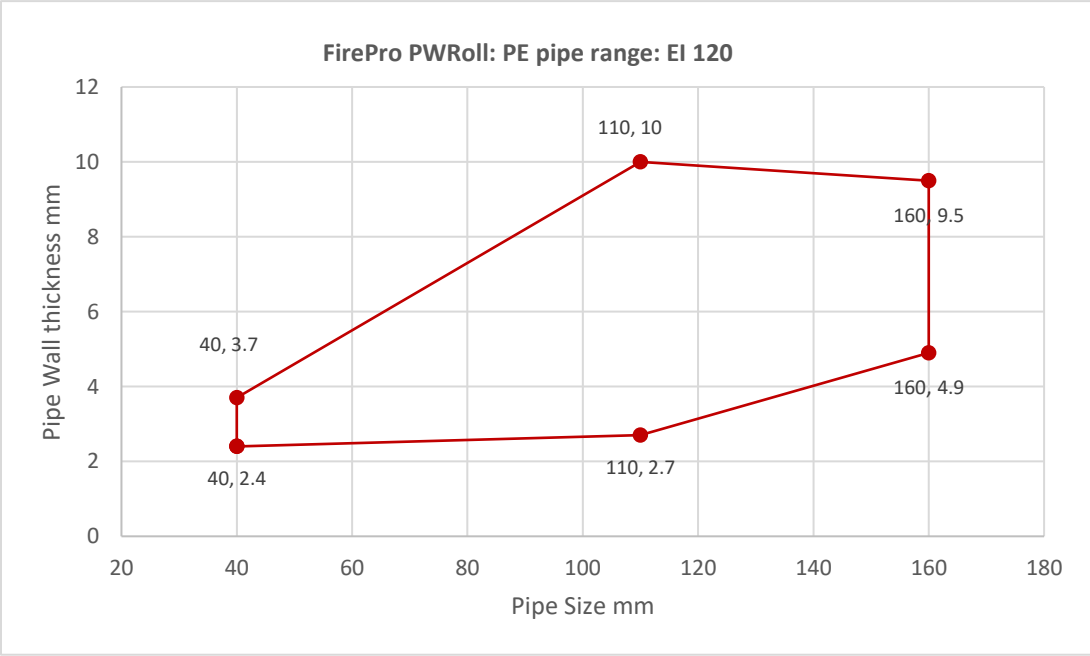
Plastic Pipe Penetrations – FirePro PWRoll

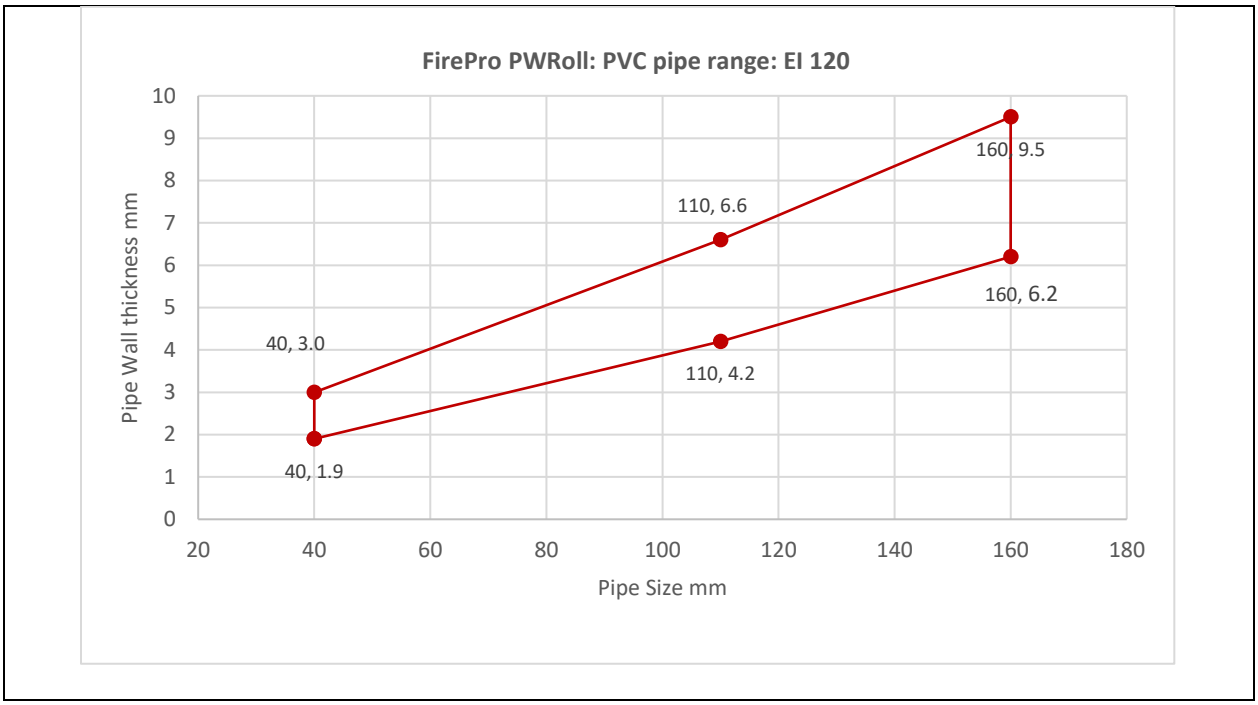


SECTION
COMBUSTIBLE PIPE PENETRATIONS
DOUBLE CB50

Pipe material	Pipe size (mm)	Pipe Wrap layers (2mm)	Service Protection	Classification
PP/PE/PVC	≤40	1	Double layer of 50mm thick FirePro® CB50, friction fitted into the aperture, with FirePro® AIS used on all batt edges to seal joints and around services, installed from the exposed face only FirePro® PWROLL installed flush with both faces of the batt around the service.	**EI 120 U/C**
	41-79	2		
	80-120	3		
	121-160	4		


FirePro PWRoll: PP pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.1
40, 5.5
160, 4
110, 2.7
40, 1.8


FirePro PWRoll: PE pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
2
4
6
8
10
12
20
40
60
80
100
120
140
160
180
110, 10
160, 9.5
40, 3.7
160, 4.9
40, 2.4
110, 2.7


FirePro PWRoll: PVC pipe range: EI 120
Pipe Wall thickness mm
Pipe Size mm
0
1
2
3
4
5
6
7
8
9
10
20
40
60
80
100
120
140
160
180
160, 9.5
110, 6.6
160, 6.2
40, 3.0
110, 4.2
40, 1.9