

UL-EU CERTIFICATE

Certificate No. UL-EU-00834-A2-CPR
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Date of Issue 2015-09-09
Revised 2021-12-16

Certificate Holder Astroflame Fireseals LTD
Unit 8, I.O Centre,
Stephenson Road,
Segensworth,
Fareham,
PO15 5RU

Manufacturer A/008

Certified Product Type Fire Stop – Coated Board
Product Trade Name Astro Batt and Coating
Trademark N/A
Rating/Classification See Appendix

Harmonised Technical Specifications ETAG 026-2 / EN 13501-2 / EN 13501-3
Expiry date 2025-09-08



A handwritten signature in purple ink, appearing to read 'Chris Miles'.

Authorized Certification Decision Maker
Chris Miles

This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



Appendix UL-EU CERTIFICATE

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This certificate relates to the use of Astro Batt and Coating for fire stopping where services penetrate floors and walls. The detailed scope is given in pages 3 to 156 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 120 minutes (EI 120).

The product is certificated on the basis of:

- i) Inspection and surveillance of factory production control by UL
- ii) Fire resistance test data in accordance with 1366-3: 2009 & EN 1366-1: 2000
- iii) Classification in accordance with EN 13501-2 & EN 13501-3
- iv) Durability and Servicability as defined in ETAG 026-2

The durability class of Astro Batt and Coating is Z₁ -intended for use at internal conditions with high humidity, excluding temperatures below 0°C

VOC test report – Indoor Air Comfort GOLD® referenced – eurofins 392-2017-00008801_A_EN, is also available.

Fire resisting & smoke extraction ducts penetrating the Astro Batt and Coating shall be classified (EN13501-3/4) for the required performance period, in addition to the details given on page 156.



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Product-type: Coated board		Intended use: Penetration Seal
Basic requirement for construction work	Basic Requirement	Basic requirement for construction work
BWR 1 Mechanical resistance and stability		
-	None	-
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	Class E
EN 13501-2	Resistance to fire	See pages 7 to 156
BWR 3 Hygiene, health and environment		
EN 1026:2000	Air permeability (material property)	See page 4
ETAG 026-3, Annex C	Water permeability (material property)	No performance determined
Declaration of manufacturer	Release of dangerous substances	Declaration of manufacturer
BWR 4 Safety in use		
EOTA TR 001:2003	Mechanical resistance and stability	No performance determined
EOTA TR 001:2003	Resistance to impact/movement	No performance determined
EOTA TR 001:2003 ISO 11600	Adhesion	No performance determined
BWR 5 Protection against noise		
EN 10140-2/ EN ISO 717-1	Airborne sound insulation	R _w (C;C _{tr})= 24(-2;-3) and See pages 5&6
EN 10140-3/ EN ISO 717-2	Impact sound insulation	No performance determined
BWR 6 Energy economy and heat retention		
EN 12664, EN 12667 or EN 12939	Thermal properties	No performance determined
EN ISO 12572 EN 12086	Water vapour permeability	No performance determined
General aspects relating to fitness for use		
ISO 8339: 2005, ISO 9046: 2004 & ISO 7389: 2003	Durability and serviceability	Z ₁
BWR 7 Sustainable use of natural resources		
-	-	No performance determined



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Astro Batt and Coating: Air Permeability according to BS EN 1026

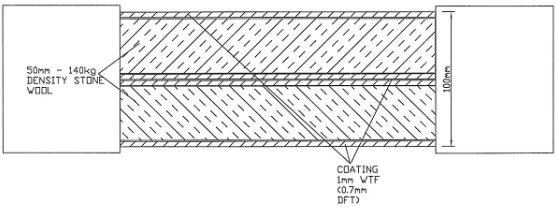
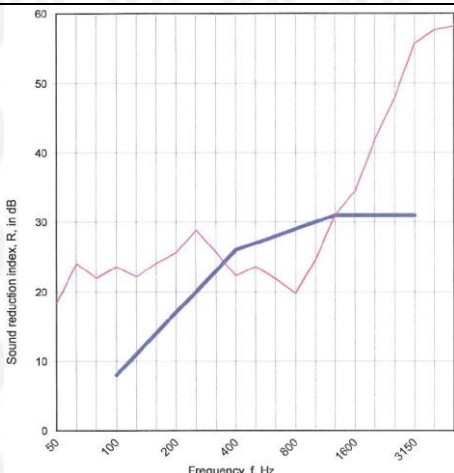
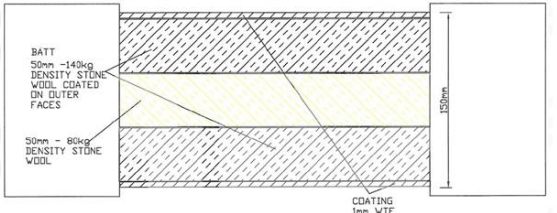
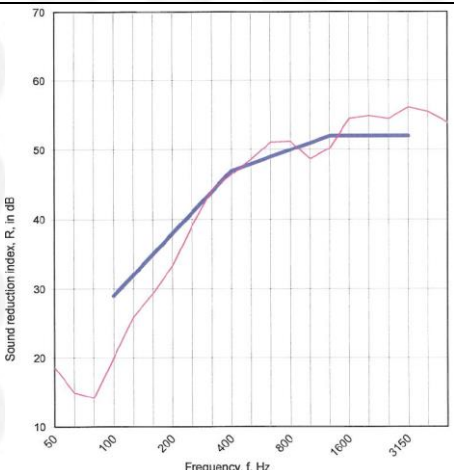
Pressure (Pa)	Results under positive chamber pressure		Results under negative chamber pressure	
	Leakage (m ³ /h)	Leakage (m ³ /m ² / h)	Leakage (m ³ /h)	Leakage (m ³ /m ² / h)
50	0.6	0.8	1.1	1.5
100	1.0	1.4	1.3	1.8
150	2.8	3.9	1.5	2.1
200	3.8	5.3	1.9	2.6
250	4.5	6.3	2.0	2.8
300	5.0	6.9	2.4	3.3
450	5.1	7.1	1.9	2.6
600	6.7	9.3	2.2	3.1



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Astro Batt and Coating: Acoustic performance according to BS EN ISO 10140-2:2010

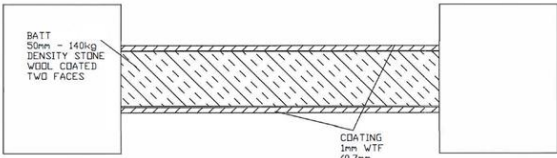
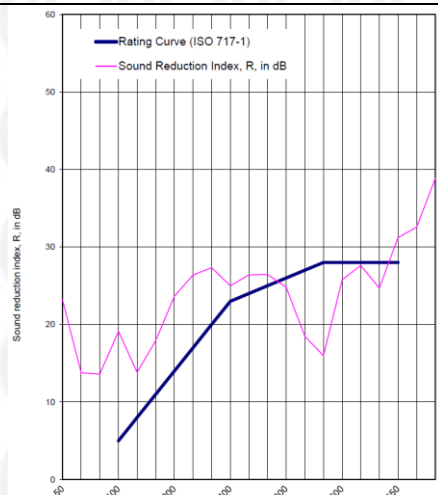
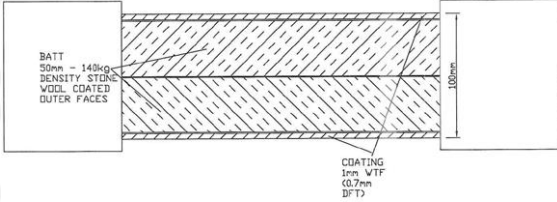
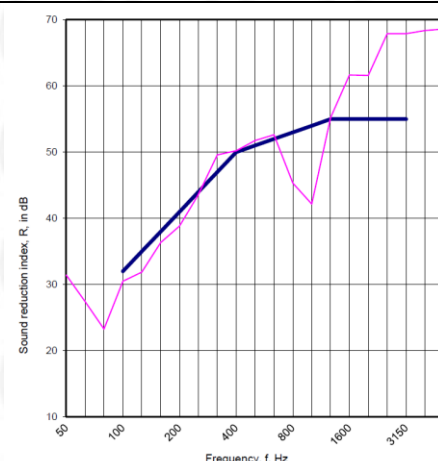
Configuration	$R_w(C; C_{tr})$ Specimen only, 1m ²	D_{new} Partition & Specimen, 14.2m ²
 <p>50mm - 140kg DENSITY STONE WOOL</p> <p>COATING 1mm VTF (0.7mm DFT)</p> <p>100mm</p>	<p>27 (0; -2)</p>  <p>Sound reduction index, R, in dB</p> <p>Frequency, f, Hz</p>	<p>37 (0; -2)</p>
 <p>BATT 50mm - 140kg DENSITY STONE WOOL COATED ON OUTER FACES</p> <p>50mm - 80kg DENSITY STONE WOOL</p> <p>COATING 1mm VTF (0.7mm DFT)</p> <p>150mm</p>	<p>48 (-3; 16)</p>  <p>Sound reduction index, R, in dB</p> <p>Frequency, f, Hz</p>	<p>58 (-3; 16)</p>



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Astro Batt and Coating: Acoustic performance according to BS EN ISO 10140-2:2010

Configuration	$R_w(C; C_{tr})$ Specimen only, 1m ²	D_{new} Partition & Specimen, 14.2m ²
 <p>BATT 50mm - 140kg DENSITY STONE WOOL COATED TWO FACES</p> <p>COATING 1mm VTF (0.7mm DFT)</p>	<p>24 (-2; -3)</p> 	<p>35 (-2; -4)</p>
 <p>BATT 50mm - 140kg DENSITY STONE WOOL COATED OUTER FACES</p> <p>COATING 1mm VTF (0.7mm DFT)</p> <p>100mm</p>	<p>41 (-2; -7)</p> 	<p>51 (-2; -7)</p>



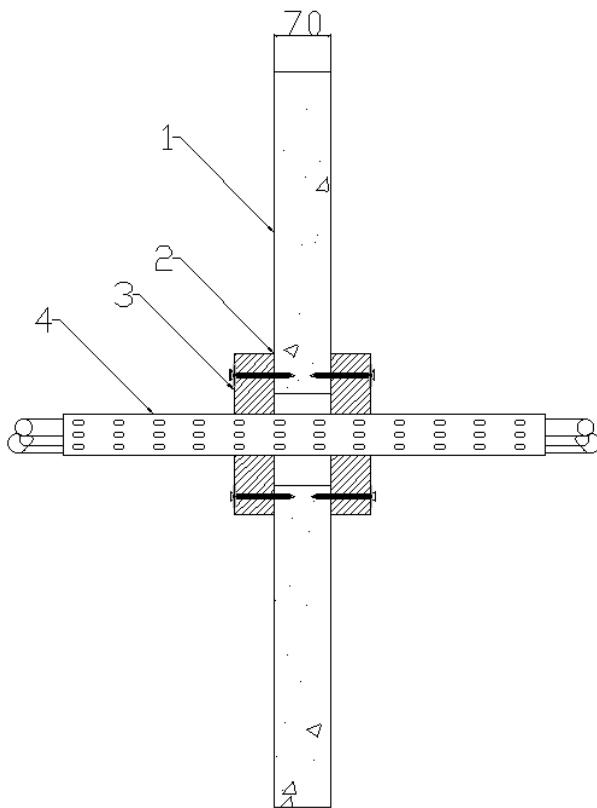
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Rigid Walls Minimum Thickness 70mm

Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting Construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Service Penetration

Service(s)

500mm wide x 60mm deep steel cable basket containing 3 x type 'B' cable and 20 x bundle of telecoms cables

500mm wide x 60mm deep steel cable tray containing 1 x type 'B' cable, 3 x type 'A1' cable, 3 x type 'A2' cable, and 3 x type 'A3' cable

Classification

EI 90

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed on all edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

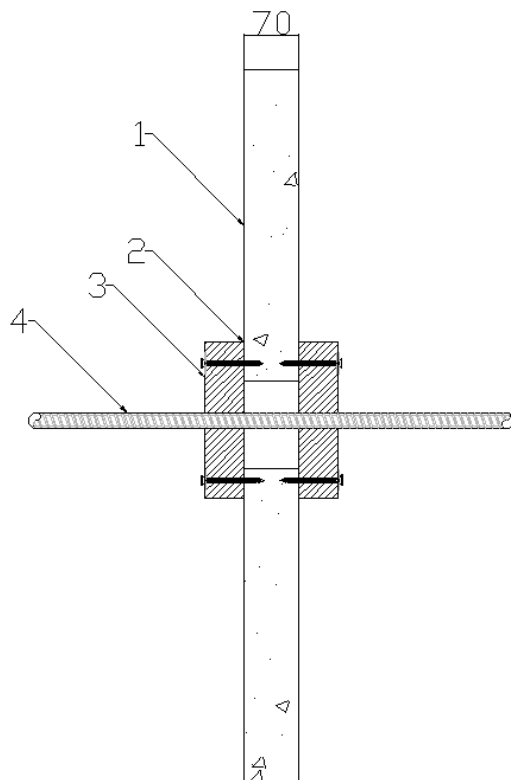


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Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting Construction
2. Astro mastic
3. Astro Batt and Coating
4. Service Penetration

Service(s)

20mm dia Adaptaflex SPL20 flexible conduit
 20mm dia Kopex KSU 316 stainless steel flexible conduit
 150mm wide x 60mm deep steel cable tray containing 4 x FP200 Gold (Firealarm cable 7mm dia red) Cables

Classification

EI 90

E 90 EI 60

¹Pattress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed on all edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres



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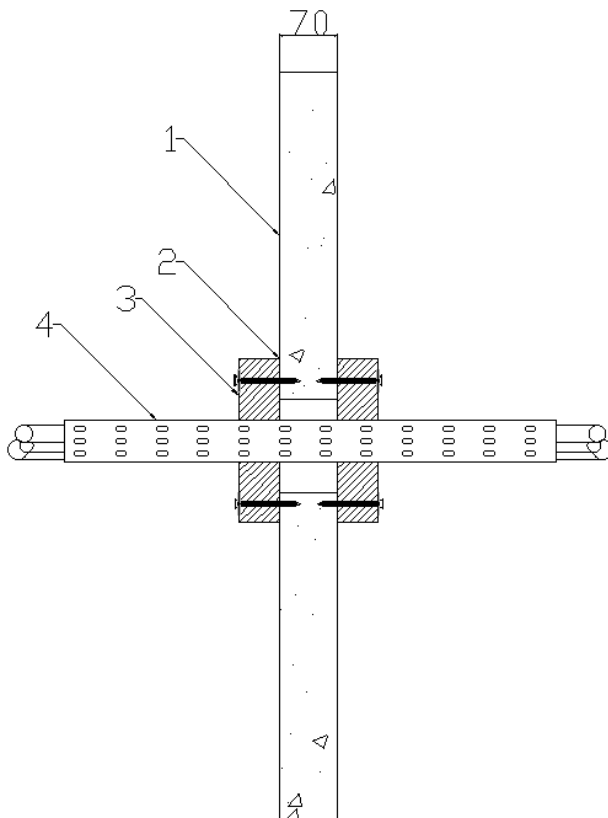
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Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting Construction
2. Astro batt mastic
3. Astro Batt and Coating
4. Service Penetration

Service(s)

500mm wide x 60mm deep steel cable basket containing 3 x type 'B' cable and 20 x bundle of telecoms cables

500mm wide x 60mm deep steel cable tray containing 1 x type 'B' cable, 3 x type 'A1' cable, 3 x type 'A2' cable, and 3 x type 'A3' cable

Classification

EI 60

Installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed on all edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

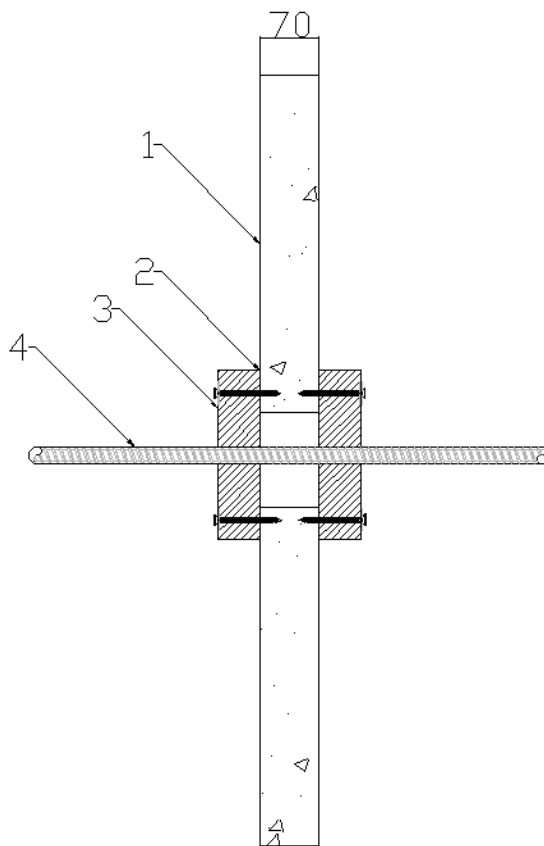


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Single Layer Patress Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting Construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Service Penetration

Service(s)

Classification

20mm dia Adaptaflex SPL20 flexible conduit

20mm dia Kopex KSU 316 stainless steel flexible conduit

150mm wide x 60mm deep steel cable tray containing 4 x FP200 Gold (Firealarm cable 7mm dia red) Cables

EI 60

EI 60

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed on all edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

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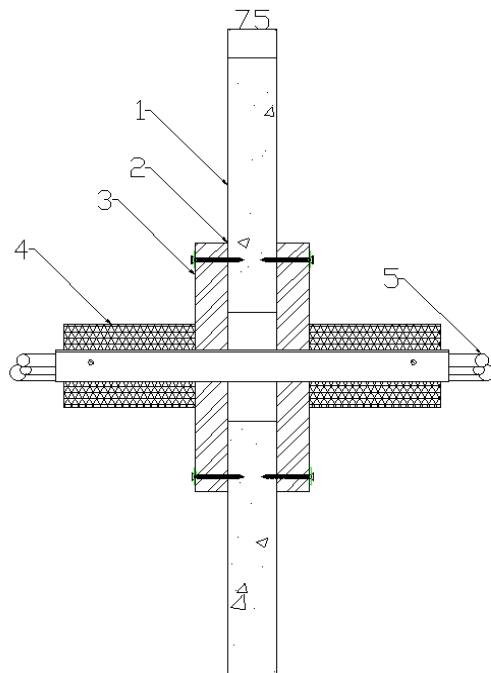
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Rigid Walls Minimum Thickness 75mm

Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables and Cable Trunking

Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting Construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Service Penetration

Service(s)

150mm x 150mm Insulated steel cable trunking, Stone Wool 40mm thick, 45kg/m³ (LI 400mm). Astro X Series Pillow tightly fitted around the cables in the section of trunking within the depth of the partition
 Cables 1xB1, 1xC1, 1xG1, 1xG2
 Cables 1xB1
 Cables 1xC1
 Unsheathed electrical cables 0-24mm dia

Classification

EI 60 U/U

EI 60

¹Pattress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

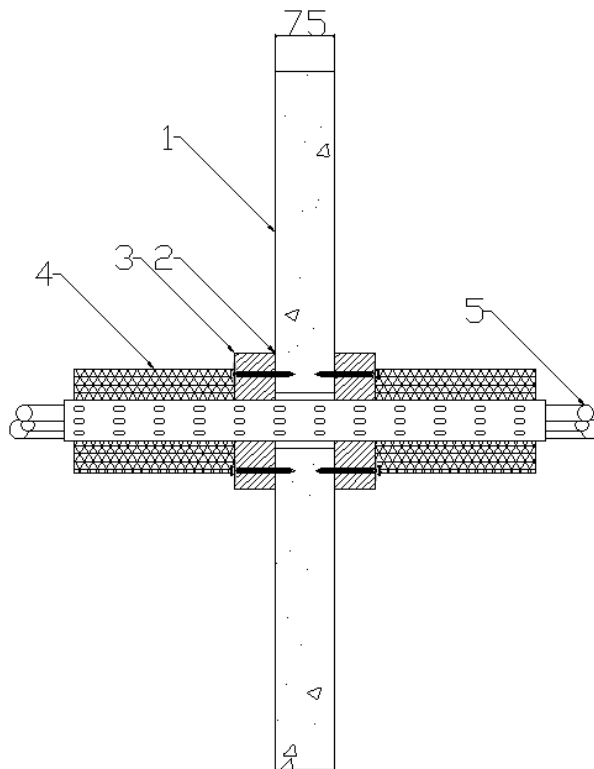


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Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables and Cable Trunking

Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting Construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Service Penetrations

Service(s)

50mm x 50mm Insulated steel cable trunking, Stone Wool 40mm thick, 45kg/m³ (LI 400mm).
 Astro X Series Pillow tightly fitted around the cables in the section of trunking within the depth of the partition

Cables 1xA1, 1xA2, 1xA3

Cables 1xA1

Cables 1xA2

Cables 1xA3

Classification

EI 60 U/U

EI 60

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres



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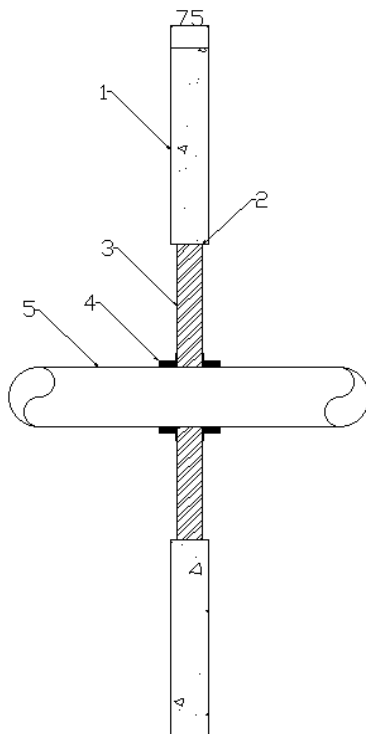
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Single Layer Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 600mm Wide x 600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Service Penetration

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 60 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	



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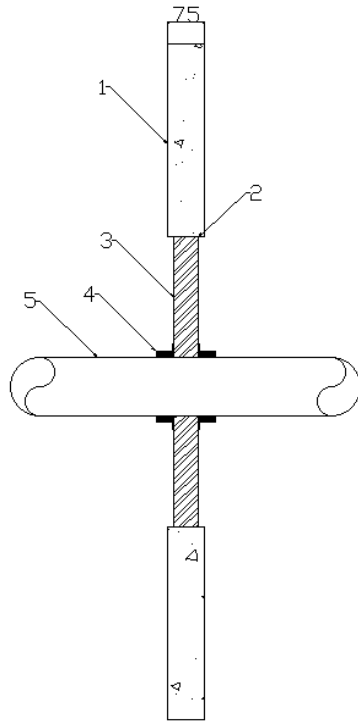
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Max Aperture 600mm Wide x 600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Service Penetration

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

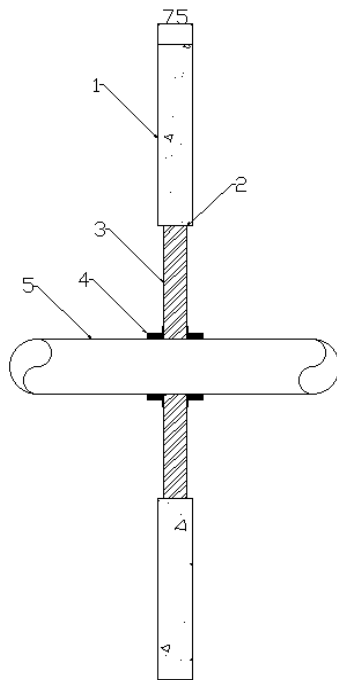


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Max Aperture 600mm Wide x 600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
 Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Service Penetration

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	



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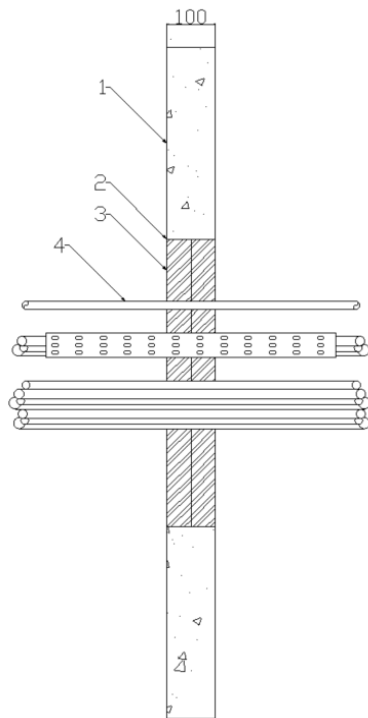
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Rigid Walls Minimum Thickness 100mm

Double Layer Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro Batt and Coating
4. Service Penetration

Service(s)	Classification
Electrical cables 0mm to 21mm dia	EI 60
Electrical cables 22mm to 50mm dia	E 60 EI 45
Electrical cables 51mm to 80mm dia	E 60 EI 30
Cable Trays and Ladders	E 60 EI 45
100 mm diameter bundle telecommunication cable type "F"	EI 60
Unsheathed electrical cables 0-24mm dia	
Steel or Copper Conduits up to 16mm	E 60 C/U
Plastic conduits up to 16mm	EI 60 C/U

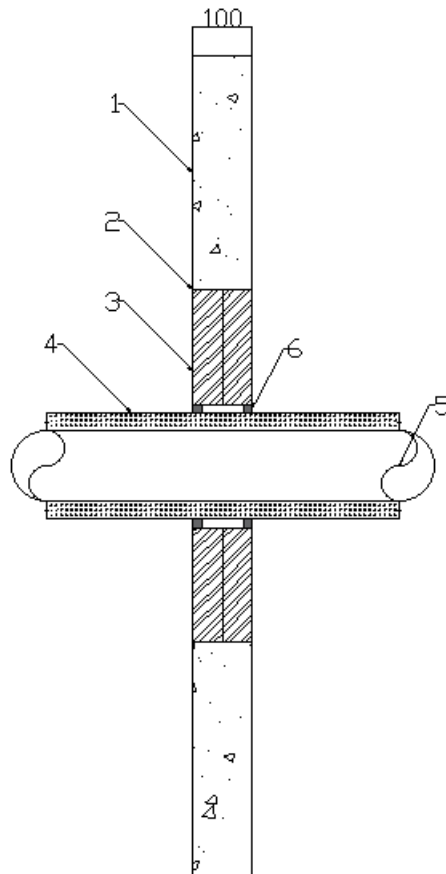


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Double Layer Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service
6. Astro HPE Sealant

Service(s)

Classification

¹Single copper or mild steel pipe 40mm diameter and 1.5 – 14.2 mm wall with sustained/continuous 20mm thick foil faced glass wool insulation (min 80Kg/m³)

E 90 U/C
 EI 60 U/C

¹Single copper or mild steel pipe 40-159mm diameter and 1.5 – 14.2 mm wall (see graph below) with sustained/continuous 30mm thick foil faced glass wool insulation (min 80Kg/m³)

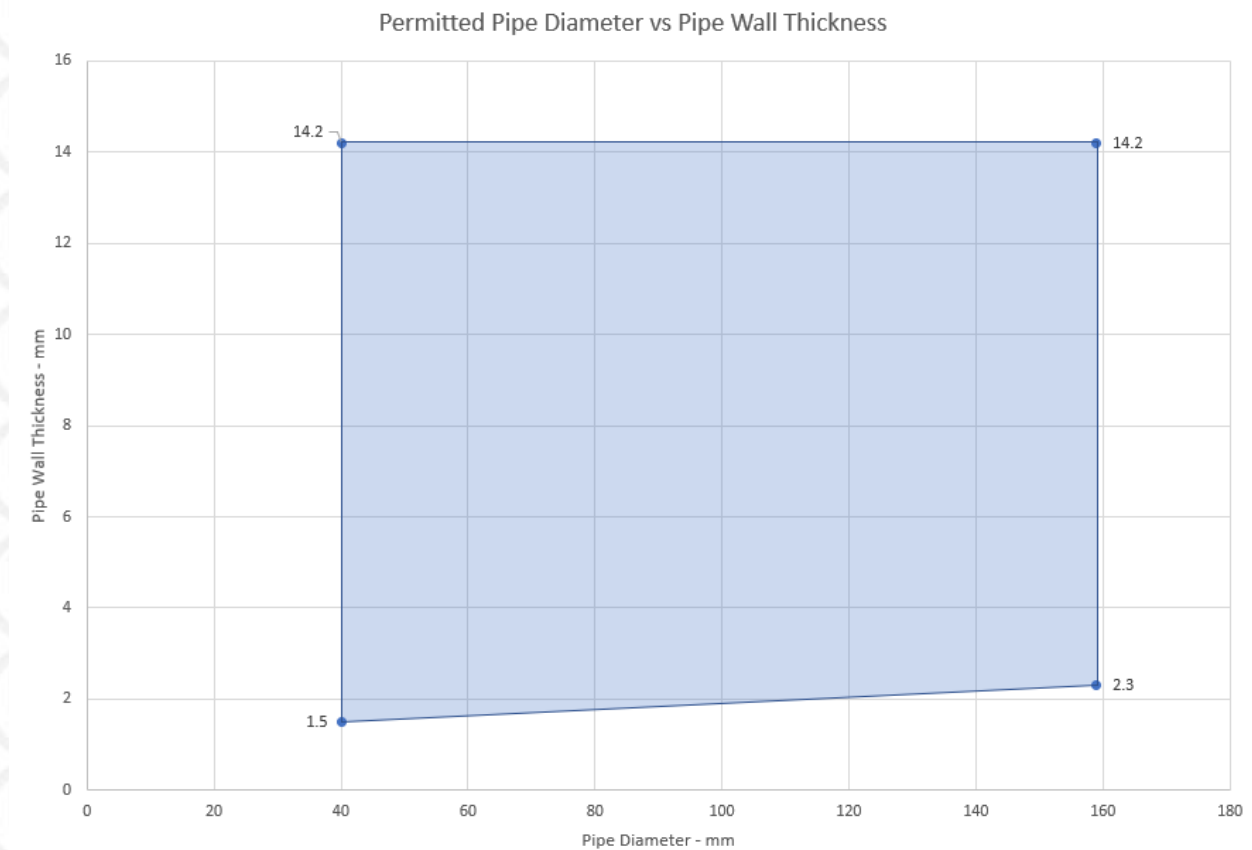
EI 60 U/C

¹15mm deep x 15mm wide annulus Astro HPE Sealant to both faces of the pipe



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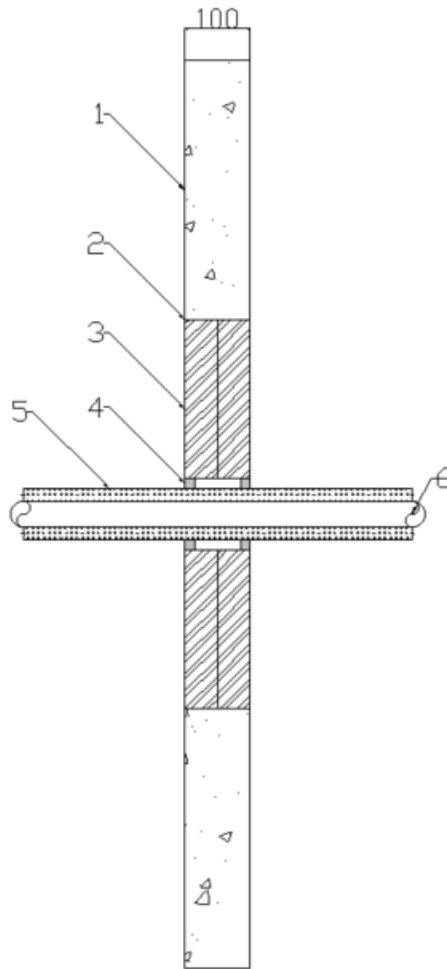
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Insulation
6. Penetration Service

Service(s)

Classification

¹Single copper or mild steel pipe 40mm diameter and 1.5 – 14.2 mm wall with sustained/continuous 20mm thick foil faced glass wool insulation (min 80Kg/m³)

EI 60 U/C

¹Single copper or mild steel pipe 40-159mm diameter and 1.5 – 14.2 mm wall (see graph below) with sustained/continuous 30mm thick foil faced glass wool insulation (min 80Kg/m³)

EI 60 U/C

¹15mm deep x 15mm wide annulus Astro HPE Sealant to both faces of the pipe

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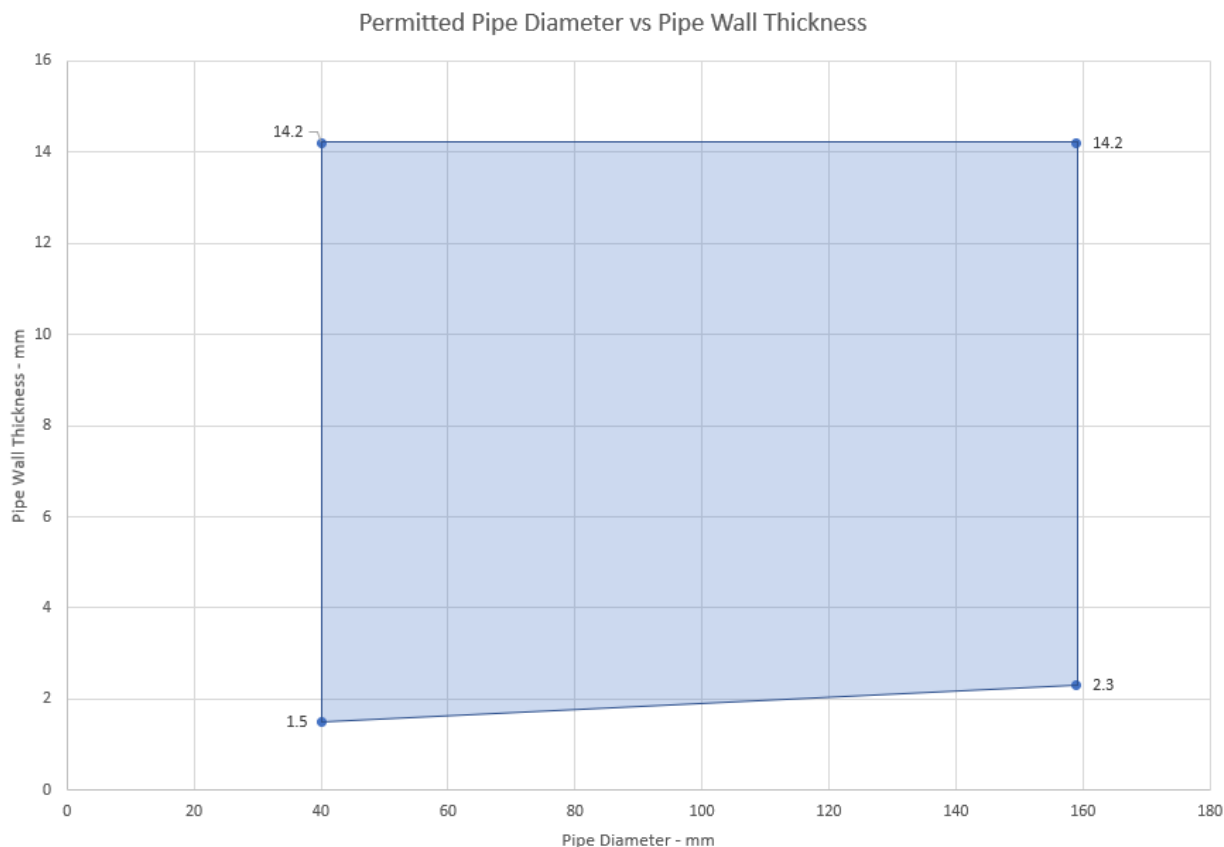


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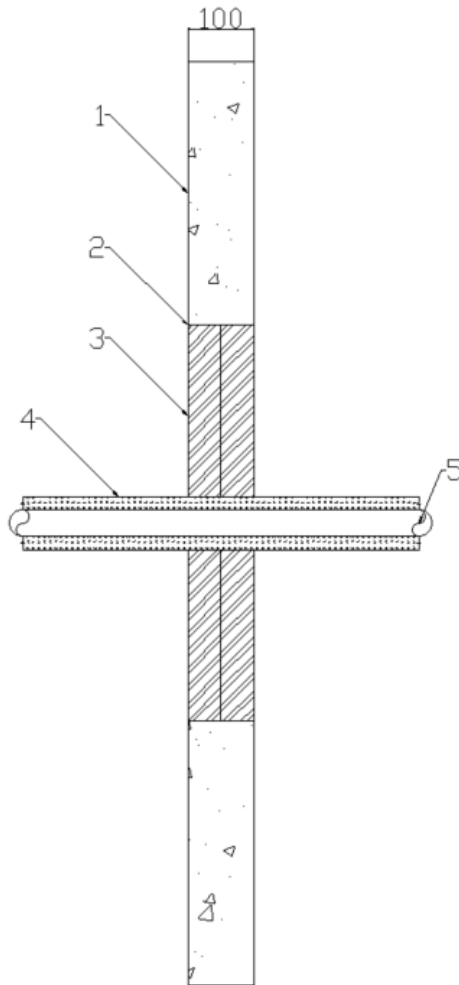
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Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below). 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

E 120 C/U
 EI 45 C/U

Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

E 120 C/U
 EI 60 C/U

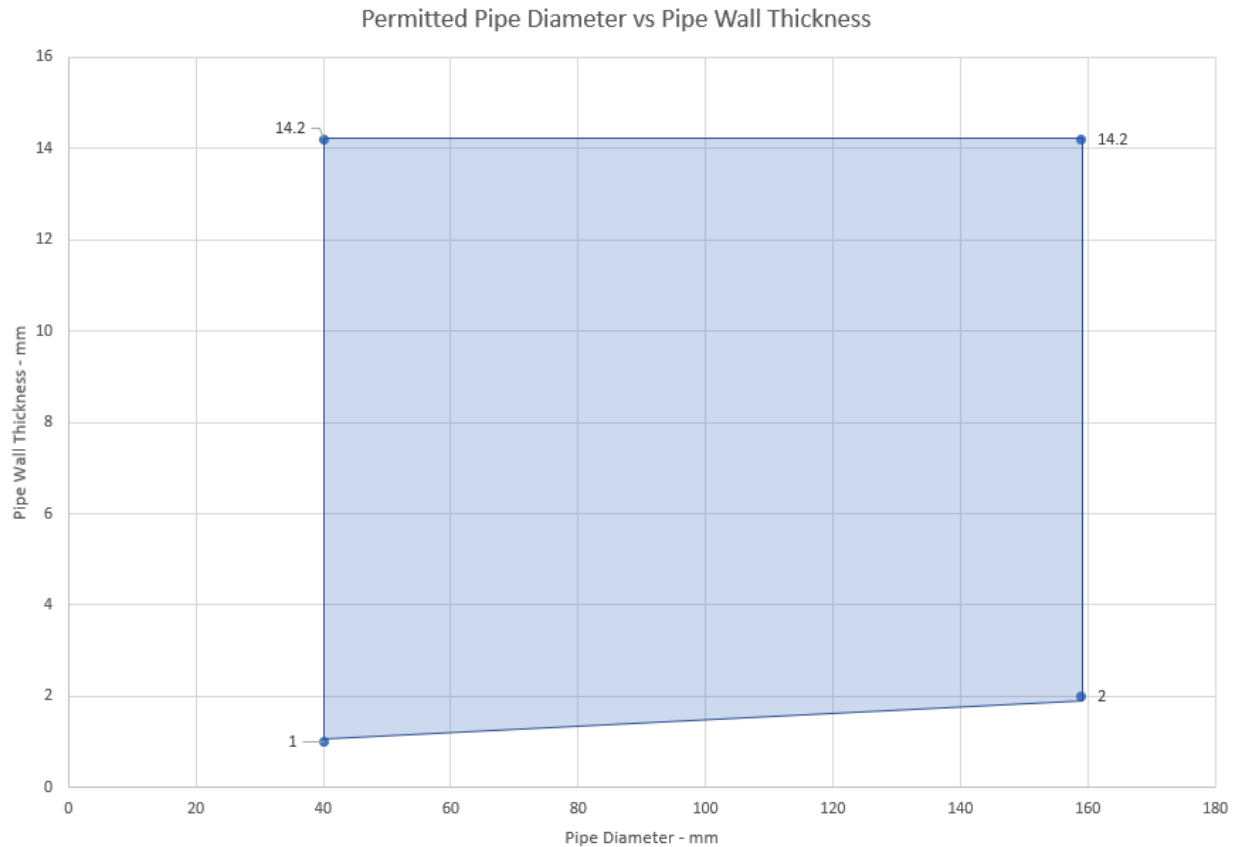


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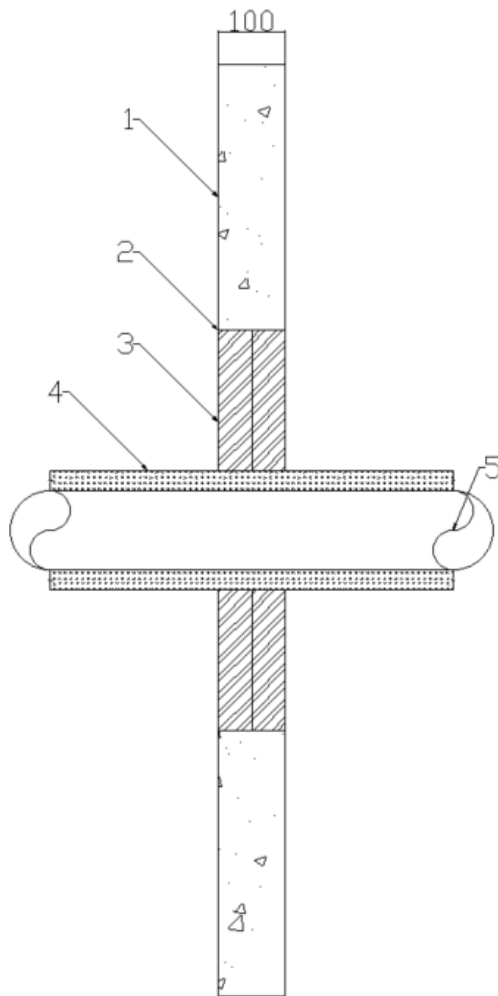
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below). 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

E 60 C/U
 EI 45 C/U

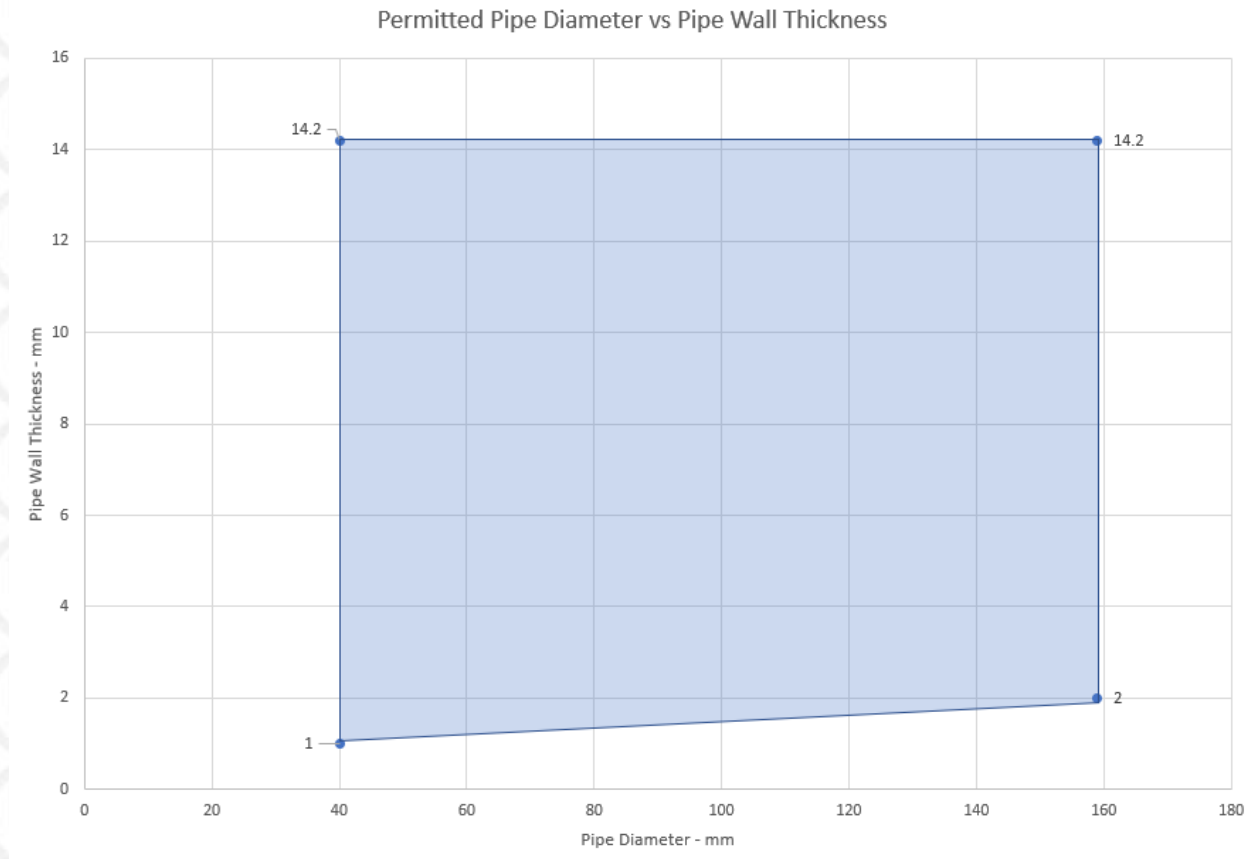
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E 60 C/U
 EI 60 C/U



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Max Aperture 730mm Wide x 1200mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)	
	Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro PST Coating 5. Penetration Service
Service(s)	Classification
Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm wall thickness, 50mm thick foil faced stonewool insulation min. 100kg/m ³ (L/I 500mm)	E 120 C/U EI 45 C/U
Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm wall thickness, 50mm thick foil faced stonewool insulation min. 100kg/m ³ (C/I)	E 120 C/U EI 60 C/U
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below), 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel or Copper Pipe 42mm Ø, 1.0mm – 14.2mm wall thickness, Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 120 C/U EI 45 C/U
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below), Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 120 C/U EI 20 C/U
Steel 42-324mm Ø, 16mm wall thickness. 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 120 C/U EI 45 C/U



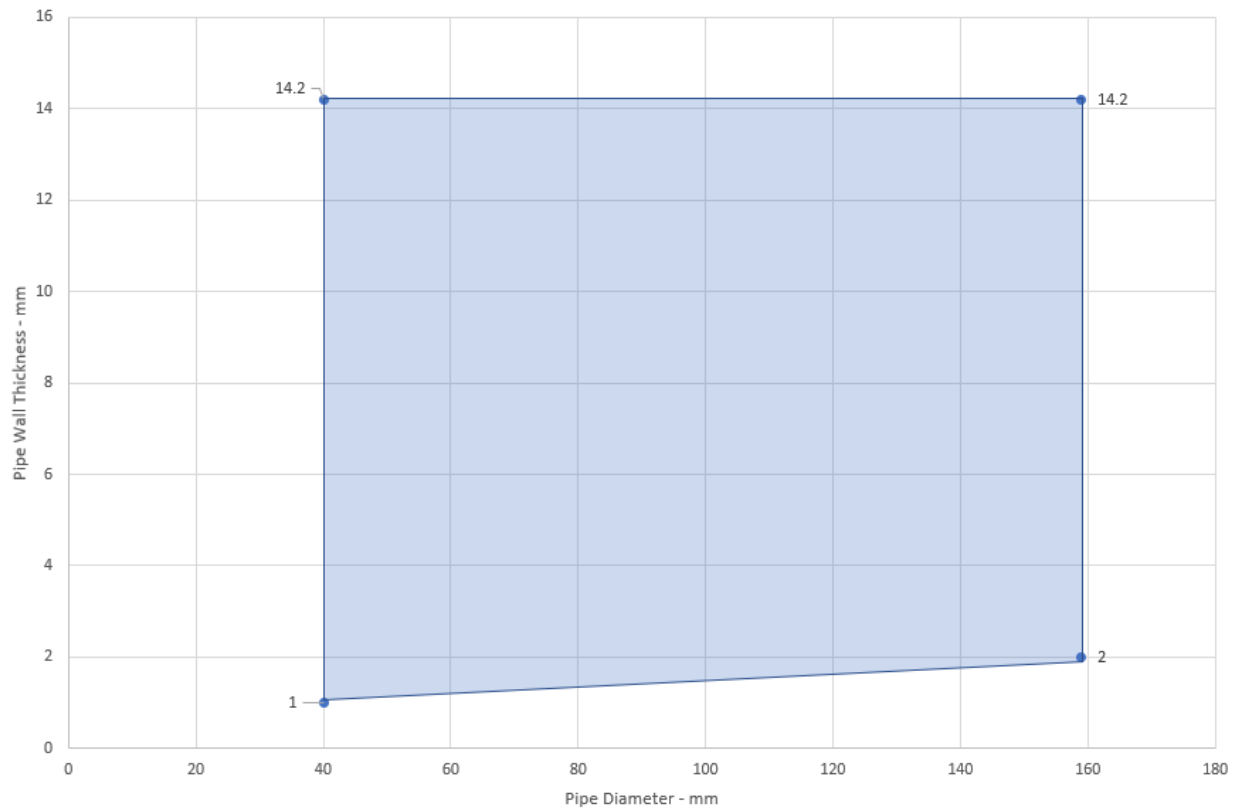
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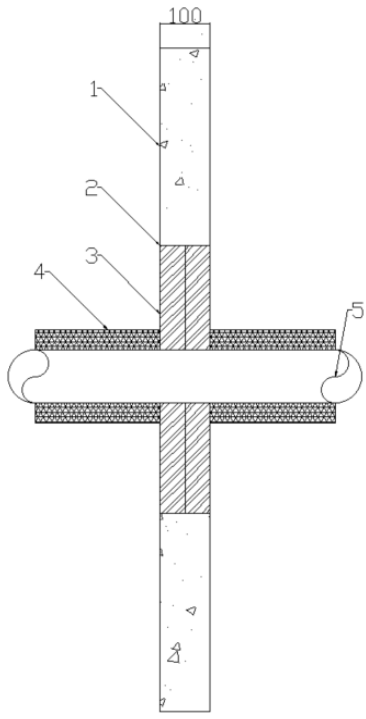
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Permitted Pipe Diameter vs Pipe Wall Thickness



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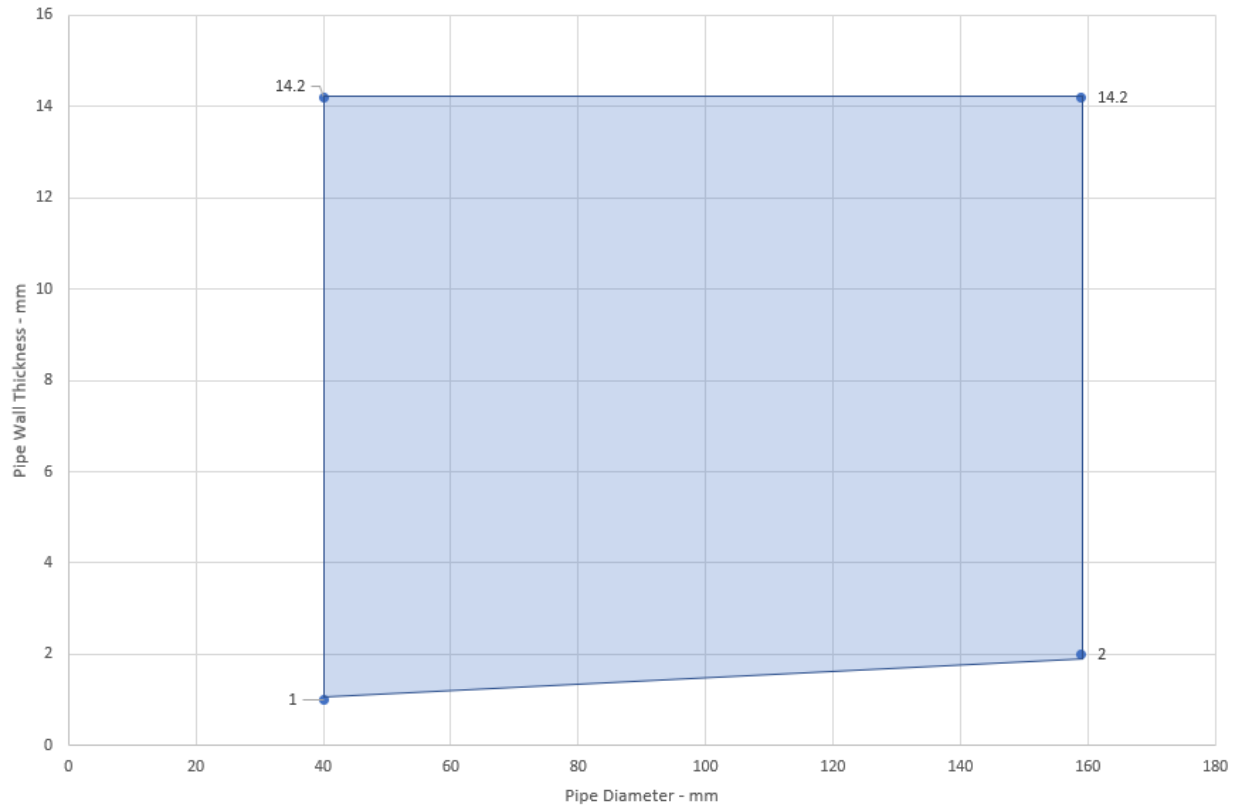
Max Aperture 2600mm Wide x 2600mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)	
	Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Insulation 5. Penetration Service
Service(s)	Classification
Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm wall thickness 50mm thick foil faced stonewool insulation min. 100kg/m ³ (L/I 500mm)	E 60 C/U EI 45 C/U
Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm wall thickness, 50mm thick foil faced stonewool insulation min. 100kg/m ³ (C/I)	EI 60 C/U
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below), 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel or Copper Pipe 42mm Ø, 1.0mm – 14.2mm wall thickness, Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 60 C/U EI 45 C/U
Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness (see graph below), Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 60 C/U EI 20 C/U
Steel 42-324mm Ø, 16mm wall thickness. 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 400mm)	E 60 C/U EI 45 C/U



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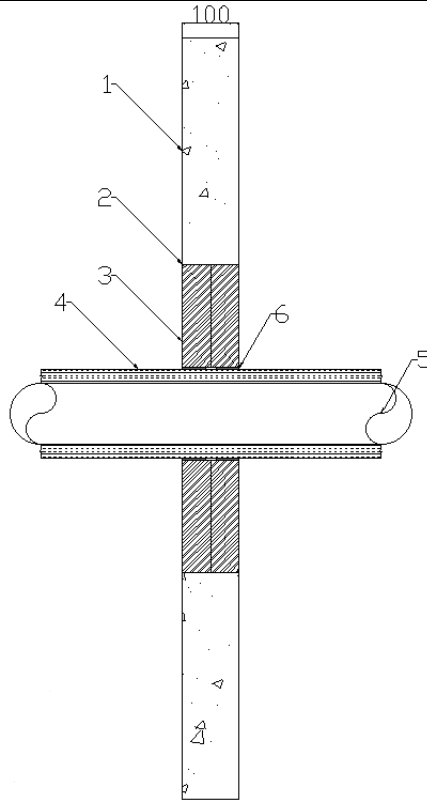
Permitted Pipe Diameter vs Pipe Wall Thickness



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Max Aperture 750mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service
6. Astro X Series CE Pipe Wrap
UL/ Astro X Series CE Pipe
Wrap

Service(s)

Classification

¹Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation² (C/S)

E 120 C/U
EI 60 C/U

¹Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST insulation² (C/S)

E 120 C/U
EI 90 C/U

¹Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation³ (C/S)

E 120 C/U
EI 60 C/U

¹Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation³ (C/S)

E 120 C/U
EI 90 C/U

¹Steel or Copper Pipe 42mm Ø, 1.0–14.2mm wall thickness. 50mm thick glassfibre insulation (C/S)

E 120 C/U
EI 90 C/U

¹2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

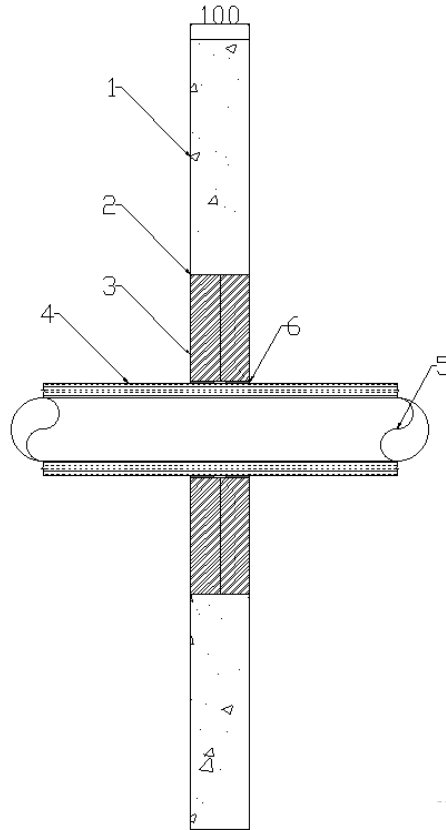
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service
6. Astro X Series CE Pipe Wrap
UL/ Astro X Series CE Pipe
Wrap

Service(s)

Classification

¹Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation² (C/S)

EI 60 C/U

¹Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST insulation² (C/S)

EI 60 C/U

¹Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation³ (C/S)

EI 60 C/U

¹Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation³ (C/S)

EI 60 C/U

¹Steel or Copper Pipe 42mm Ø, 1.02–14.2mm wall thickness. 50mm thick glassfibre insulation (C/S)

EI 60 C/U

¹2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

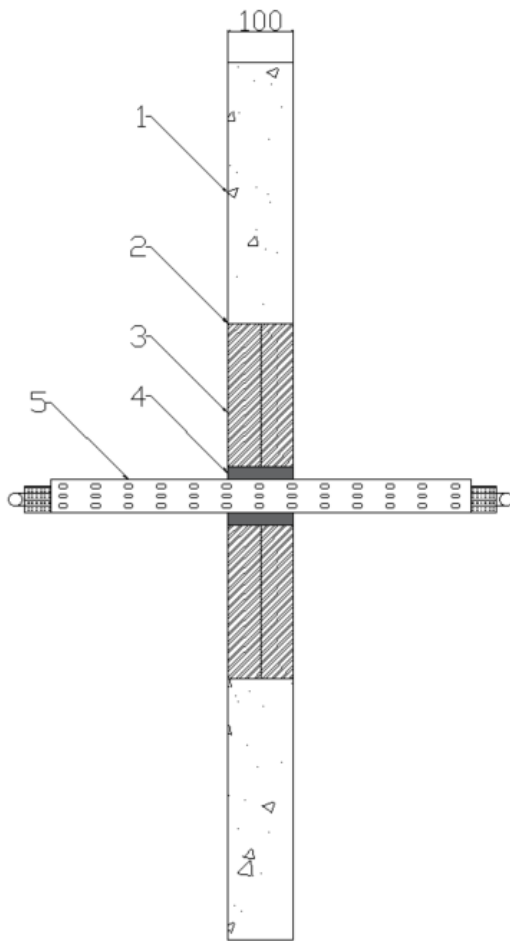
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Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Penetration Service

Service(s)

Classification

¹ 6 off Steel or Copper Pipe 22mm Ø, 0.9mm – 14.2mm wall thickness. 19mm thick Armaflex² (L/S 400mm)

EI 90 C/U

¹500mm steel cable tray

E 90
EI 15

¹Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating

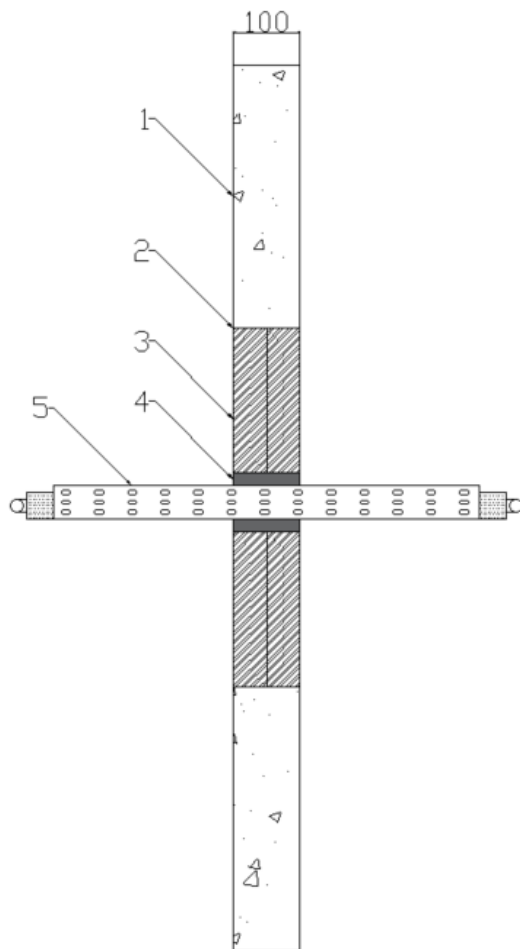
²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Penetration Service

Service(s)

Classification

¹ 6 off Steel or Copper Pipe 22mm Ø, 0.9mm – 14.2mm wall thickness. 19mm thick Armaflex² (L/S 400mm)

EI 60 C/U

¹500mm steel cable tray

E 60
EI 15

¹Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1



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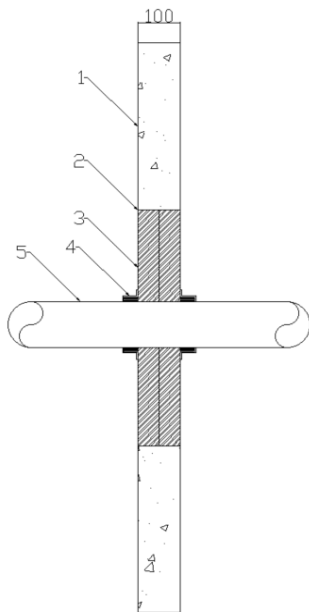
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Double Layer Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro batt into mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 120 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	



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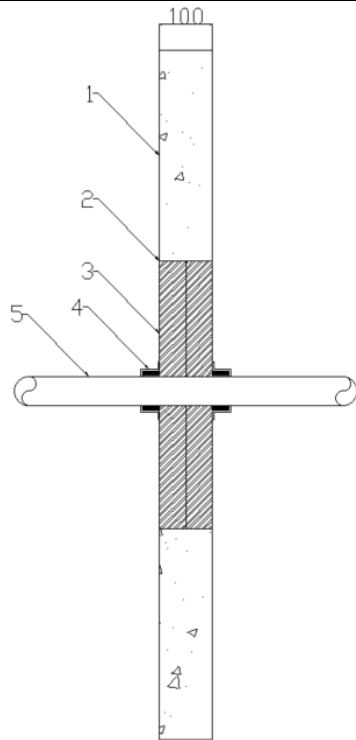
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 60 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

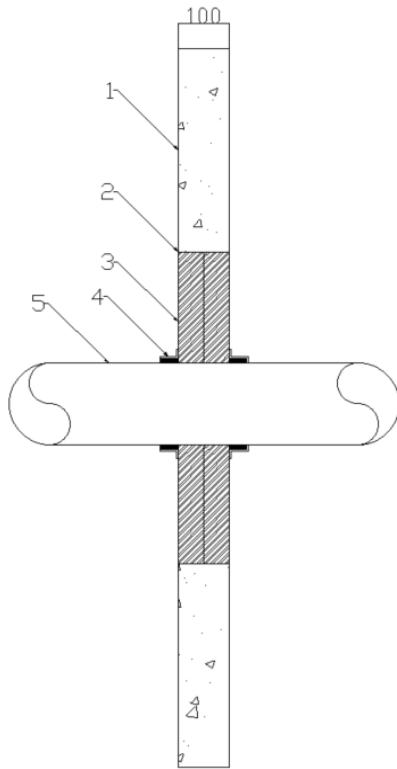


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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
 Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	



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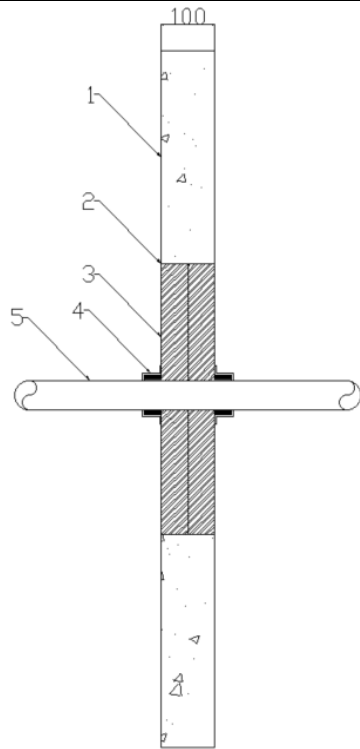
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	



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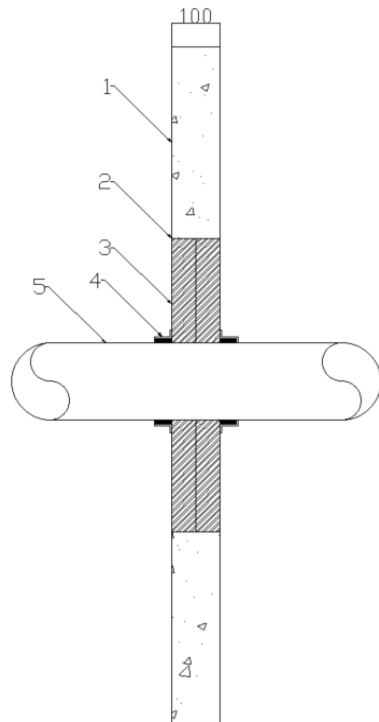
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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro into mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	



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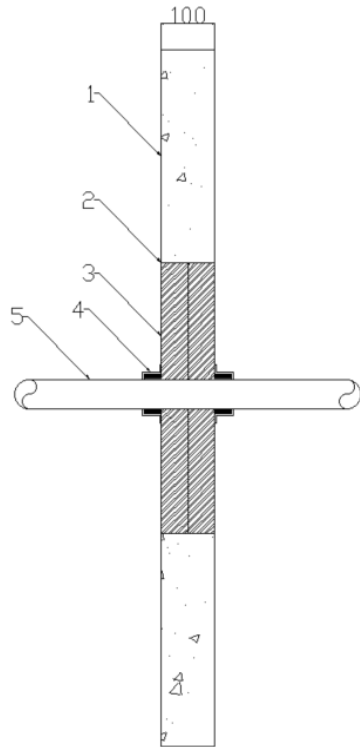
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	



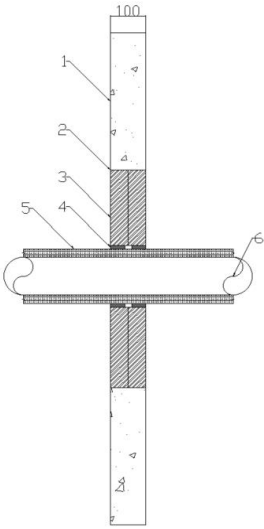
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Double Layer Astro Batt and Coating 50mm, Insulated Plastic Pipes

Max Aperture 730mm Wide x 1200mm High (Penetrations positioned as per option 1 or 2 below, 100mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe 40mm Ø, 1.9mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	E 120 U/C EI 90 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 15 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	EI 120 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 20 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	E 120 U/C EI 90 U/C
PVC Pipe 40mm Ø, 1.9mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	E 120 U/C EI 90 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 9 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 120 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 13 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	E 120 U/C EI 90 U/C

¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

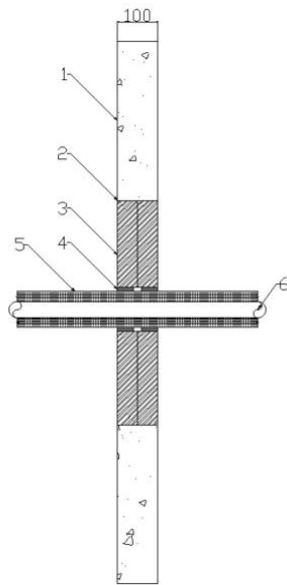
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Max Aperture 2600mm Wide x 2600mm High
(Penetrations positioned as per option 1 or 2 below, 100mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap
5. Insulation
6. Penetration Service

Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe 40mm Ø, 1.9mm wall thickness. 25 mm thick Kingspan Kooltherm FM insulation ³ (C/S)	3 x 2mm thickness	EI 60 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 15 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	EI 60 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 20 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	EI 60 U/C
PVC Pipe 40mm Ø, 1.9mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	EI 60 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 9 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 60 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 13 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 60 U/C

¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

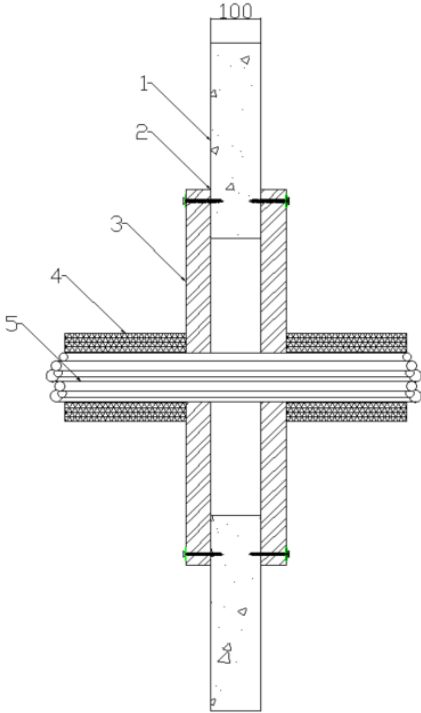
³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1



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Single Layer Patress, Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 750mm Wide x 1200mm High	
	<p><u>Key</u></p> <ol style="list-style-type: none"> Supporting construction Astro intu mastic Astro Batt and Coating Insulation Penetration Service
Service(s)	Classification
² Electrical cables upto 80mm Ø	EI 120
² Cable Trays and Ladders	
² 100 mm diameter bundle telecommunication cable type "F"	
² Unsheathed electrical cables up to 24mm Ø	
² Steel or Copper Conduits up to 16mm Ø	
² Plastic conduits up to 16mm Ø	

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

²Cables and cable trays wrapped with a single layer of 40mm thick, 40kg/m³ Stonewool (L/I 300mm)

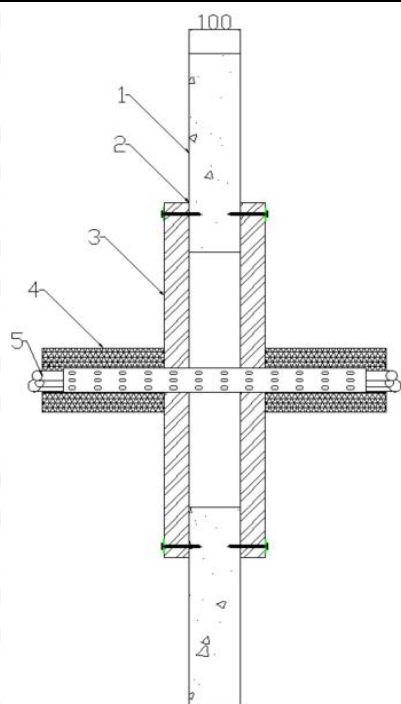
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)	Classification
² Electrical cables upto 80mm Ø	EI 60
² Cable Trays and Ladders	
² 100 mm diameter bundle telecommunication cable type "F"	
² Unsheathed electrical cables up to 24mm Ø	
² Steel or Copper Conduits up to 16mm Ø	
² Plastic conduits up to 16mm Ø	

¹Patent installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

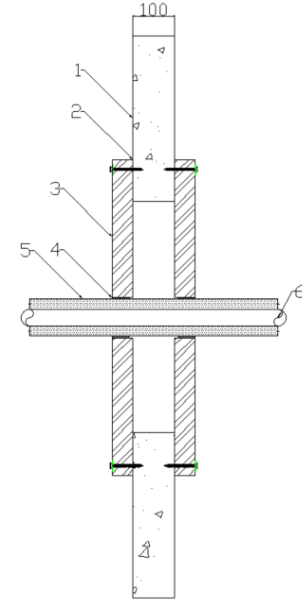
²Cables and cable trays wrapped with a single layer of 40mm thick, 40kg/m³ Stonewool (L/I 300mm)



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Single Layer Patress, Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 750mm Wide x 1200mm High	
	Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Classification
² Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST Insulation ³ (C/S)	E 120 C/U EI 60 C/U
² Steel or Copper Pipe 42-159mm Ø, 1.2 – 14.2mm wall thickness. 25mm thick K Flex ST insulation ³ (C/S)	E 120 C/U EI 90 C/U
² Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST insulation ³ (C/S)	EI 120 C/U
² Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation ⁴ (C/S)	E 120 C/U EI 90 C/U
² Steel or Copper Pipe 42mm Ø, 1-14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM insulation ⁴ (C/S)	EI 120 C/U
² Steel or Copper Pipe 42mm Ø, 1.2-14.2mm wall thickness. 50mm thick glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 90 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

²2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

³Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

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⁴Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

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Max Aperture 2600mm Wide x 2600mm High	
	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Classification
² Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST ³ Insulation (C/S)	EI 60 C/U
² Steel or Copper Pipe 42-159mm Ø, 1.2 – 14.2mm wall thickness. 25mm thick K Flex ST ³ insulation (C/S)	
² Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST ³ insulation (C/S)	
² Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ⁴ insulation (C/S)	
² Steel or Copper Pipe 42mm Ø, 1-14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ⁴ insulation (C/S)	
² Steel or Copper Pipe 42mm Ø, 1.2-14.2mm wall thickness. 50mm thick glassfibre insulation min. 30kg/m ³ (C/S)	

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

²2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

³Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

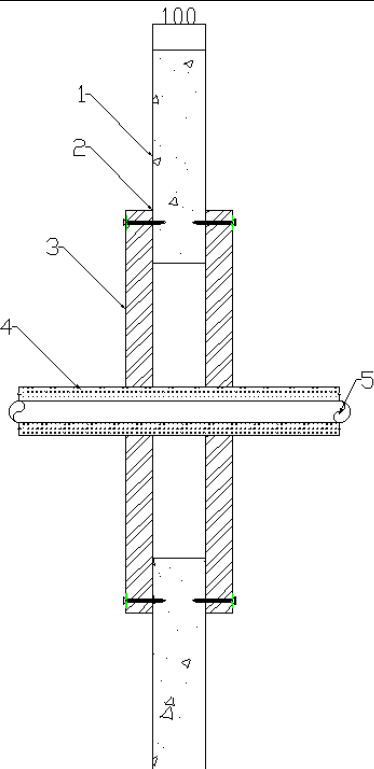
⁴Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

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Max Aperture 750mm Wide x 1200mm High	
	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Insulation 5. Penetration Service
Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below). 25mm thick foil faced glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 90 C/U
Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m ³ (C/S)	EI 120 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

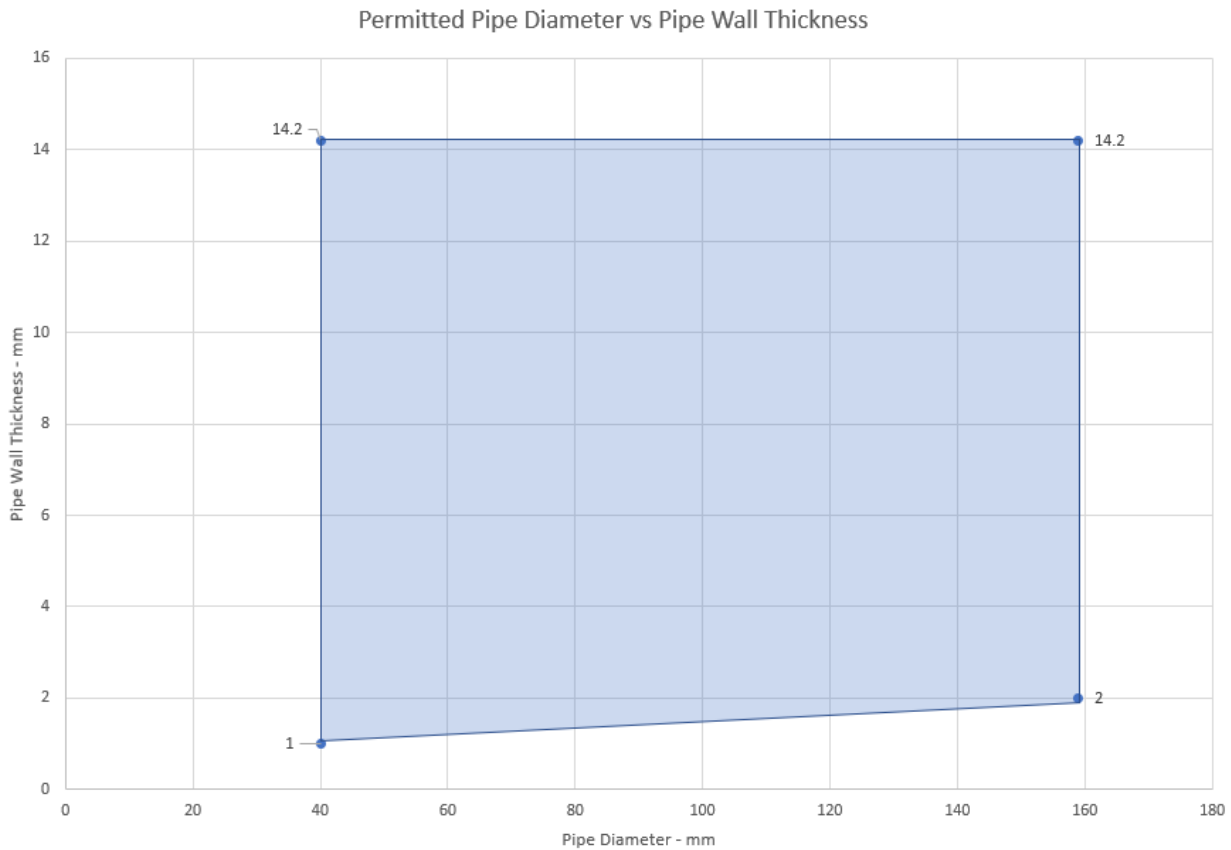


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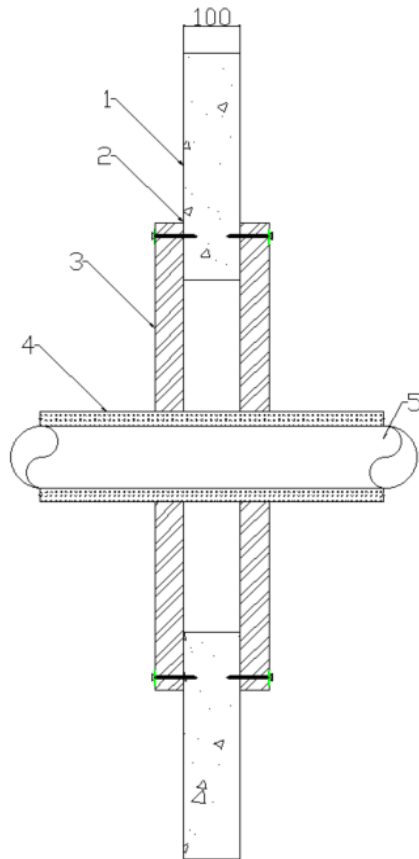
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intumescible
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness (see graph below). 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

EI 60 C/U

Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

EI 60 C/U

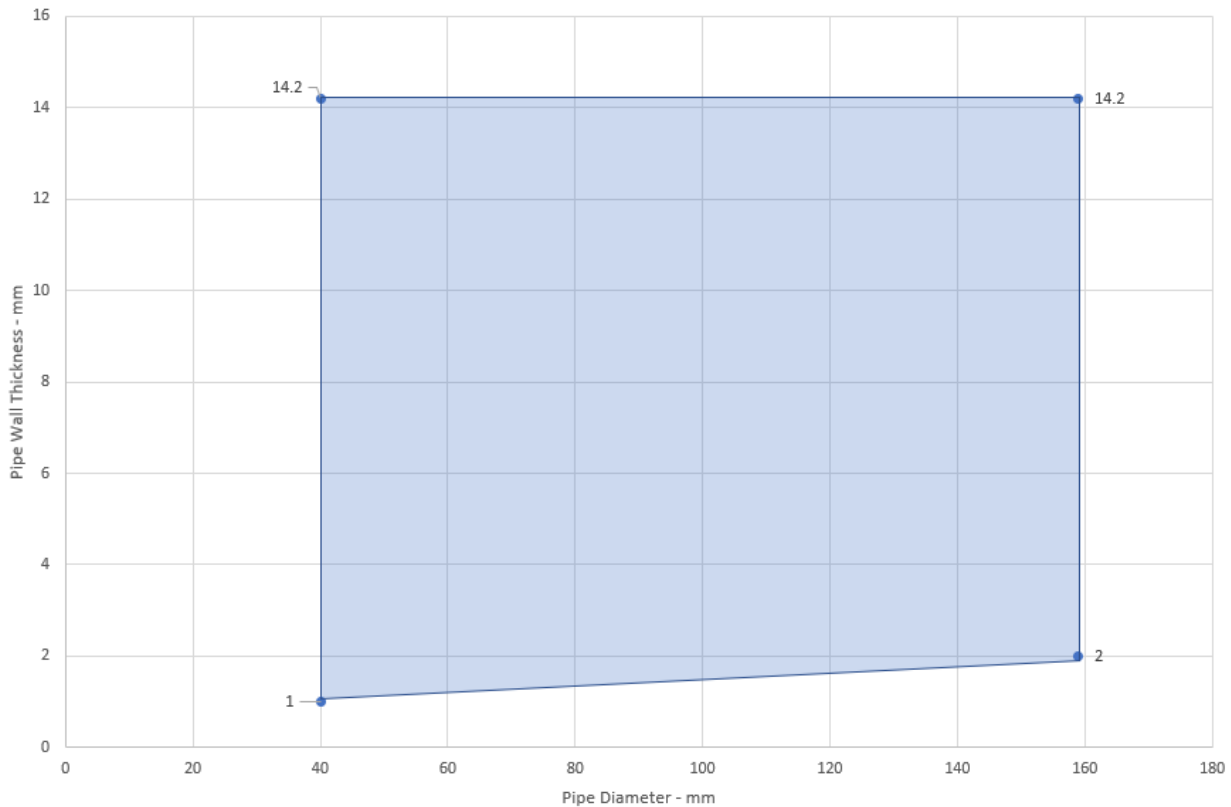
¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



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Permitted Pipe Diameter vs Pipe Wall Thickness



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Single Layer Patress, Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 730mm Wide x 1200mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intumescible mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Collar 5. Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 120 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

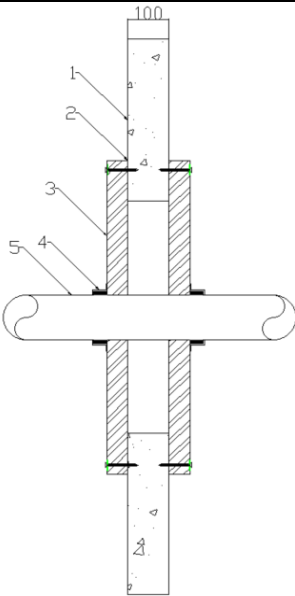
¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating



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Max Aperture 2600mm Wide x 2600mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key <ol style="list-style-type: none"> Supporting construction Astro intumescing mastic Astro Batt and Coating Astro X Series CE Pipe Collar Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 60 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

¹Patent installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating



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Max Aperture 730mm Wide x 1200mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Collar 5. Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

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Max Aperture 2600mm Wide x 2600mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intumescing mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Collar 5. Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	

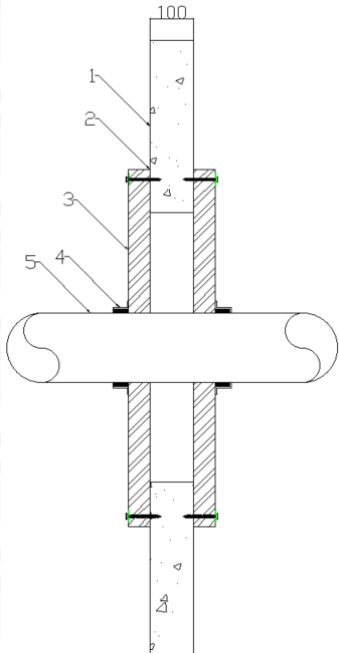
¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating



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Max Aperture 730mm Wide x 1200mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Collar 5. Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

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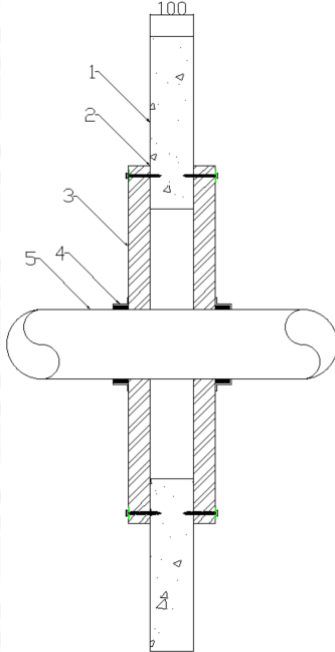


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Max Aperture 2600mm Wide x 2600mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Collar 5. Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

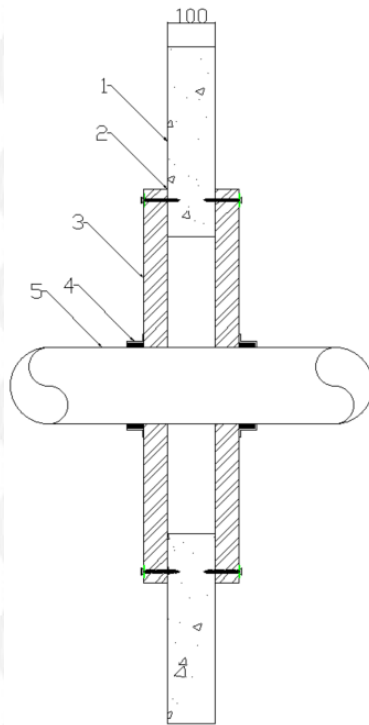


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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro intumescible
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Scope and Classifications as below

Intumescent Thickness	
Pipe Diameter	Intumescent Material
ø 32 mm - ø 50 mm	40 mm (W) x 2 mm (T)
ø 51 mm - ø 82 mm	40 mm (W) x 4 mm (T)
ø 83 mm - ø 115 mm	40 mm (W) x 6 mm (T)
ø 116 mm - ø 160 mm	40 mm (W) x 8 mm (T)
ø 161 mm - ø 200 mm	40 mm (W) x 10 mm (T)
ø 201 mm - ø 250 mm	40 mm (W) x 12 mm (T)

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

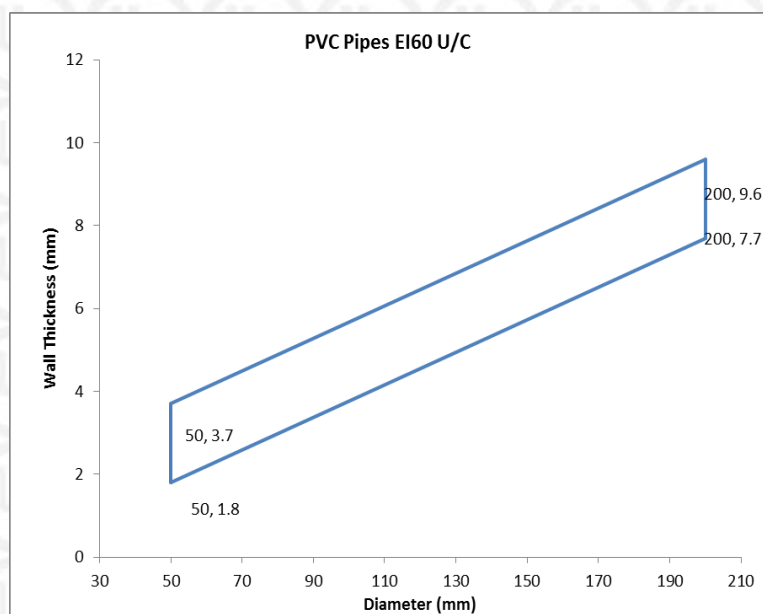
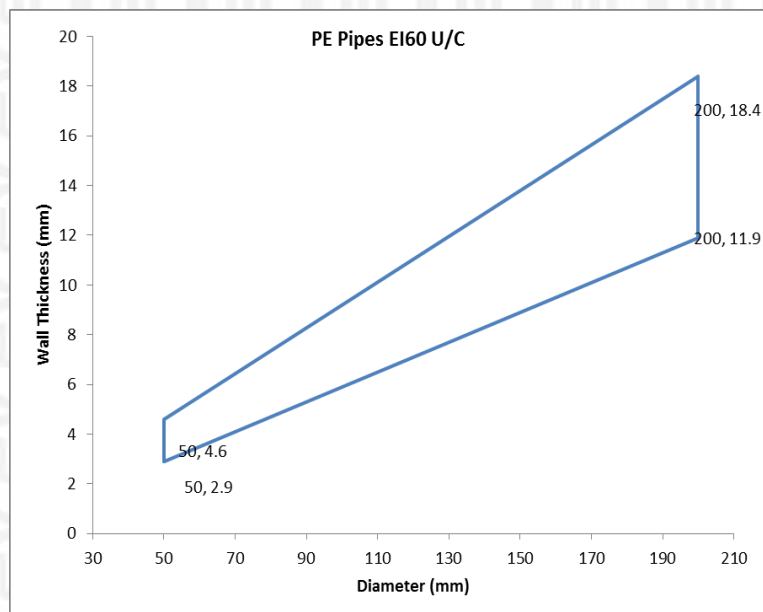


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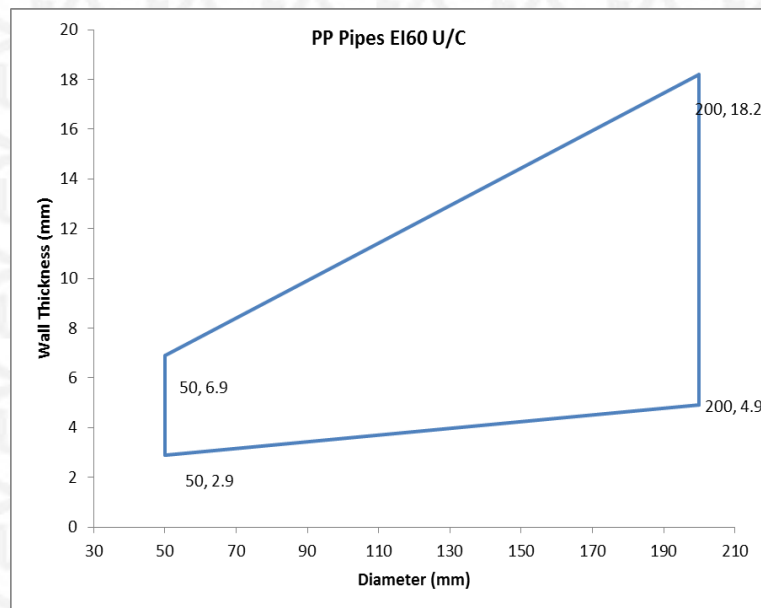


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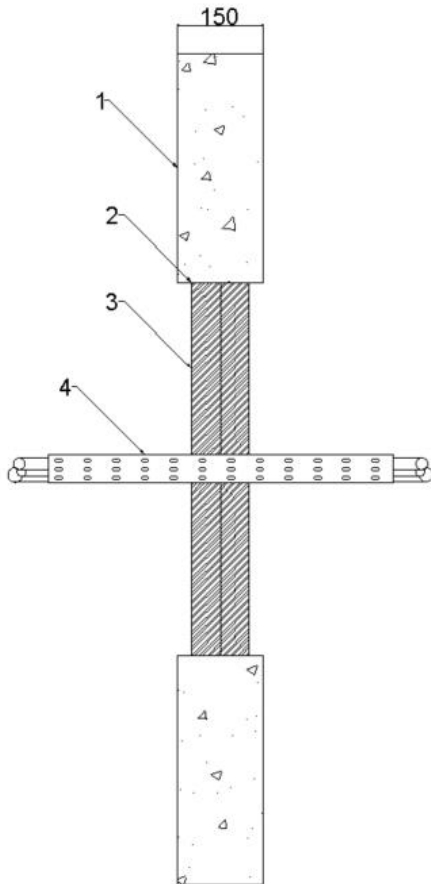
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Rigid Walls Minimum Thickness 150mm

Double Layer, Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro intumescible
3. Astro Batt and Coating
4. Penetration Service

Service(s)

Classification

Electrical cables up to 0-21mm Ø

E120

EI90

Cable Tray

EI 60



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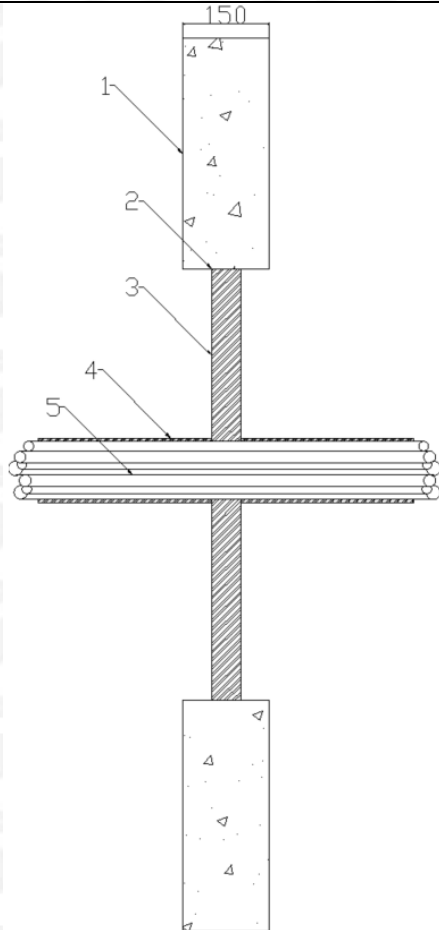
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Single Layer, Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro batt mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

¹Electrical cables up to 80mm Ø

EI 60

¹Cable Trays and Ladders

EI 60

¹100 mm diameter bundle telecommunication cable type "F"

EI 60

¹Unsheathed electrical cables up to 24mmØ

EI 60

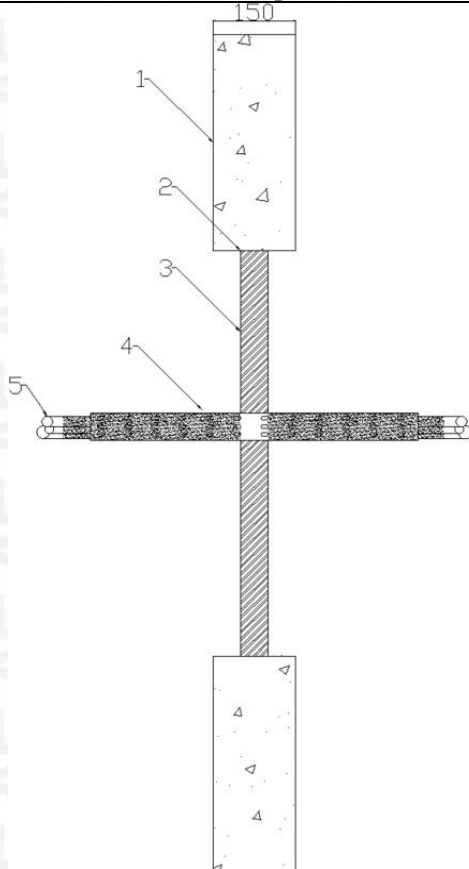
¹Cables and cable trays wrapped with a single layer of 6mm thick Astro Thermal Defense Wrap (L/I 300mm)



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Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Penetration Specification

Classification

*500mm perforated cable tray

EI 30

*Electrical cables up to 21mm ø

*1 off 'C1' Cable

*1 off 'C2' Cable

*1 off 'C3' Cable

EI 45

*All cables coated with 2mm DFT Astro PST Coating 300mm along the cables both sides of the seal



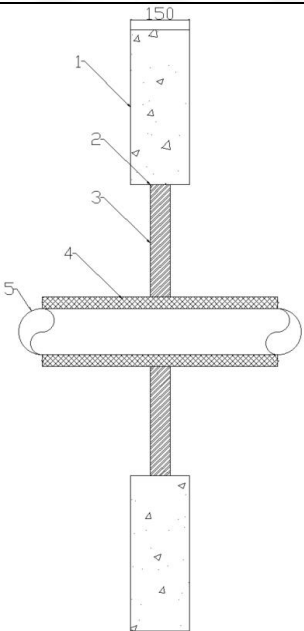
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Single Layer, Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 750mm Wide x 1100mm High	
	Key 1. Supporting construction 2. Astro intumescible mastic 3. Astro Batt and Coating 4. Insulation 5. Penetration Service
Service(s)	Classification
¹ Steel or Copper Pipe 108mm Ø, 1.5mm – 14.2mm Wall Thickness. (C/S) 40mm stone wool insulation (min 140Kg/m ³)	E60 C/U EI45 C/U
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	EI45 C/U
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	E45 C/U EI20 C/U
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (C/I) 40mm stone wool insulation (min 40Kg/m ³)	E45 C/U EI30 C/U

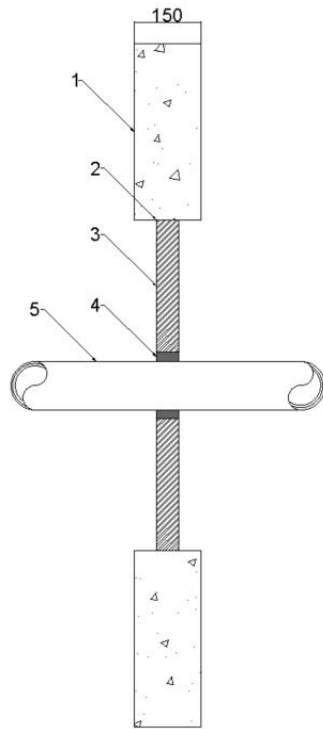


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Single Layer, Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Penetration Service

Penetration Specification

Classification

Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness

E 45 U/C
 EI 30 U/C

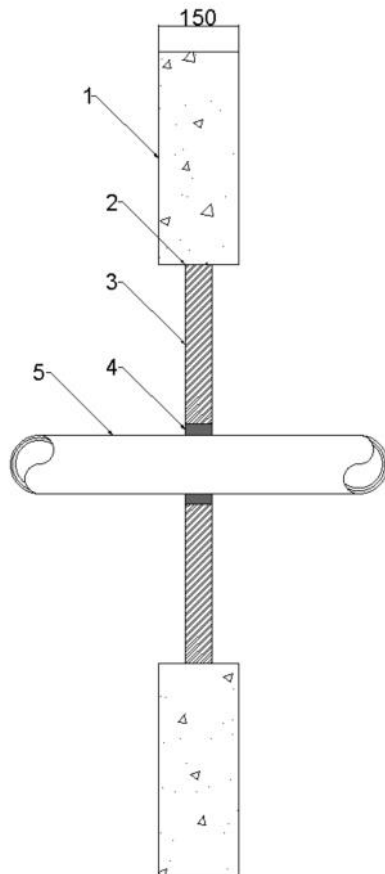
Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



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Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro into mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Penetration Service

Penetration Specification

PVC Pipe 50mm ϕ 2.4mm wall thickness

Classification

EI45 U/C

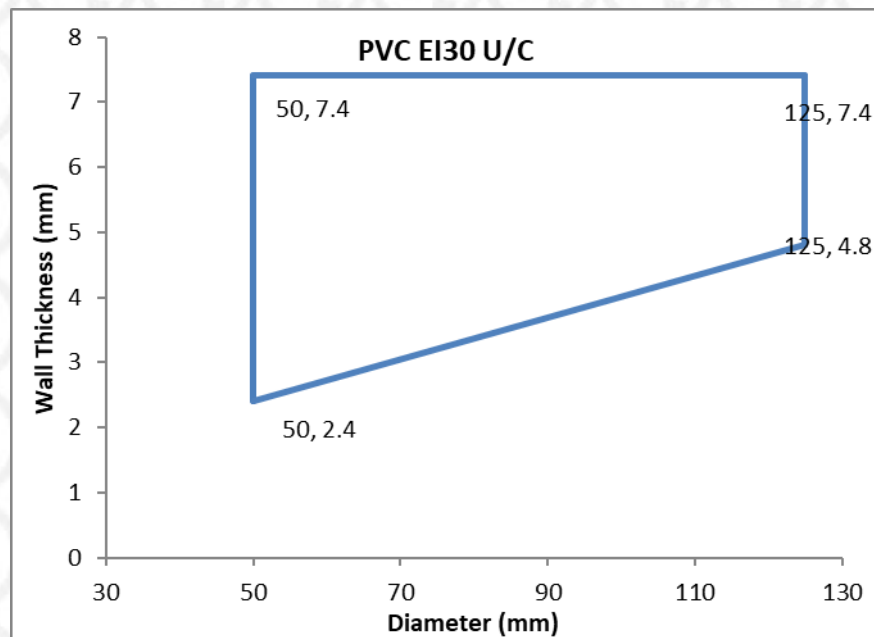
Also scope as per graphs below

Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



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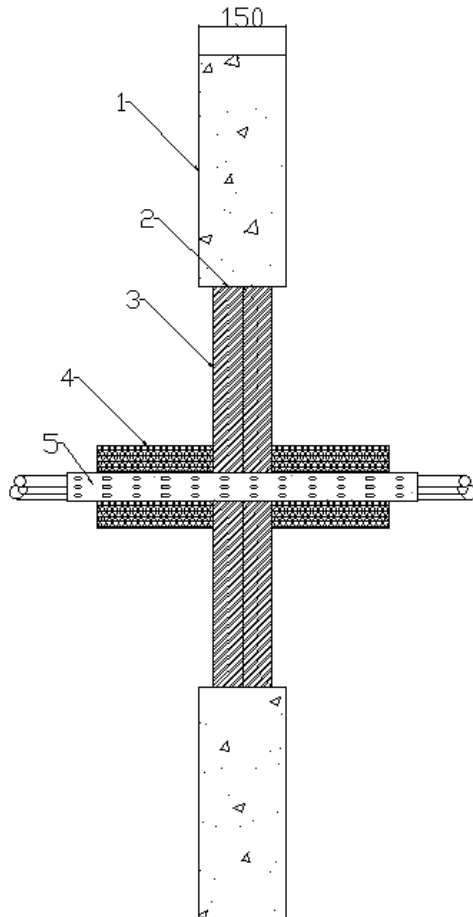


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Double Layer, Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)	Classification
¹ Electrical cables up to 21mm dia	EI 120
¹ Electrical cables 22mm – 80mm dia	E 120 EI 90
¹ Cable Trays and Ladders	EI 120
¹ 100 mm diameter bundle telecommunication cable type "F"	EI 120
¹ Unsheathed electrical cables up to 24mm dia	EI 120

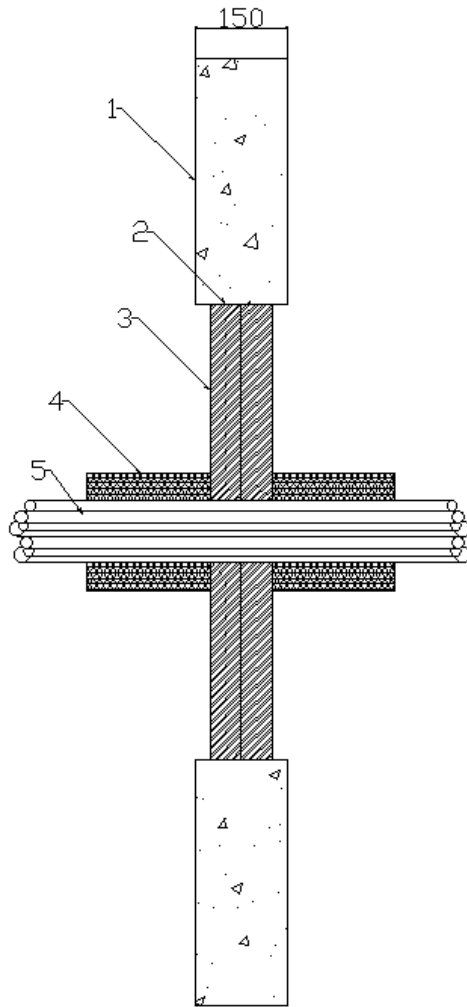
¹Cables and cable trays wrapped with Stone Wool Insulation 45mm thick, 40Kg/m³ (L/I 200mm)



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

¹Electrical cables up to 21mm dia

¹Electrical cables 22mm – 80mm dia

¹Cable Trays and Ladders

¹100 mm diameter bundle telecommunication cable type “F”

¹Unsheathed electrical cables up to 24mm dia

EI 60

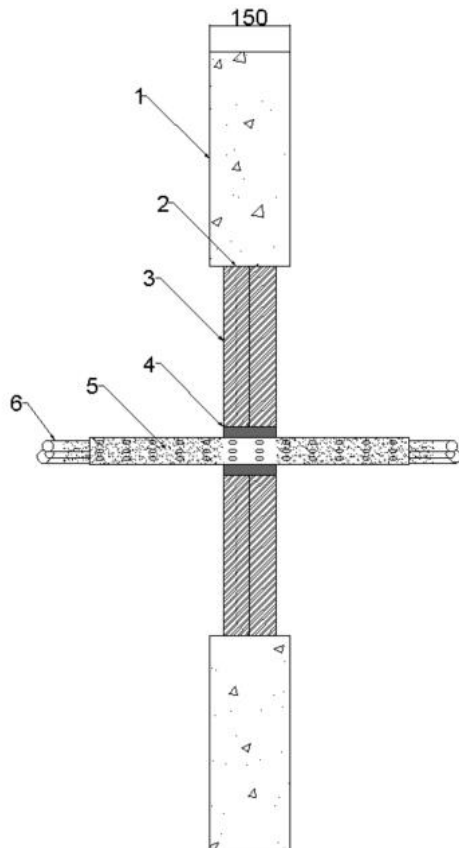
¹Cables and cable trays wrapped with Stone Wool Insulation 45mm thick, 40Kg/m³ (L/I 200mm)



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Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Astro PST Coating
6. Penetration Service

Penetration Specification

Classification

*500mm perforated cable tray

*Electrical cables up to 21mm ø

*1 off 'C1' Cable

*1 off 'C2' Cable

*1 off 'C3' Cable

EI120

E120

EI90

EI120

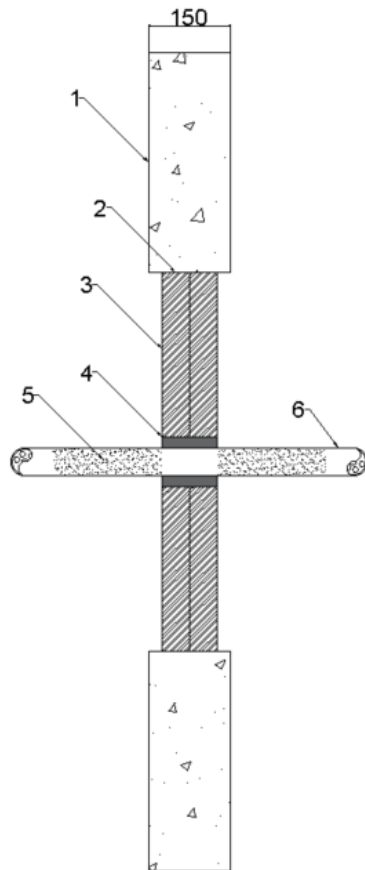
*All cables coated with 2mm DFT Astro PST Coating 300mm along the cables both sides of the seal
 Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Astro PST Coating
6. Penetration Service

Penetration Specification

Classification

*500mm perforated cable tray

*Electrical cables up to 21mm ø

*1 off 'C1' Cable

*1 off 'C2' Cable

*1 off 'C3' Cable

EI 60

*All cables coated with 2mm DFT Astro PST Coating 300mm along the cables both sides of the seal
 Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating

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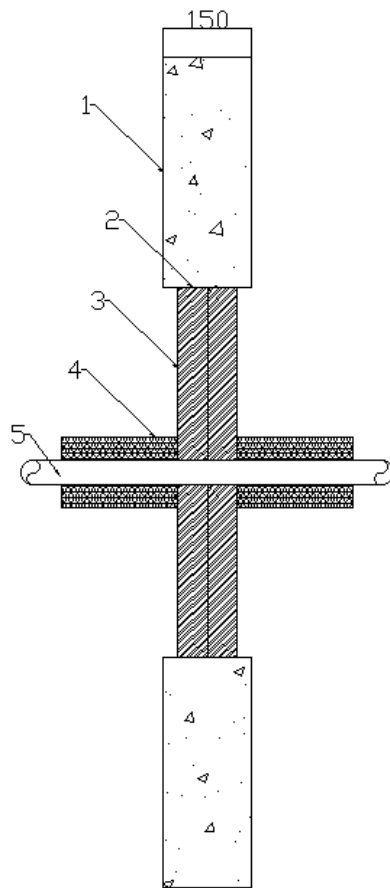
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Double Layer, Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 730mm Wide x 1200mm High

Service(s)



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Penetration Specification

Classification

Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m³)

E 120 C/U

EI 60 C/U

Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m³)

E 120 C/U

EI 30 C/U

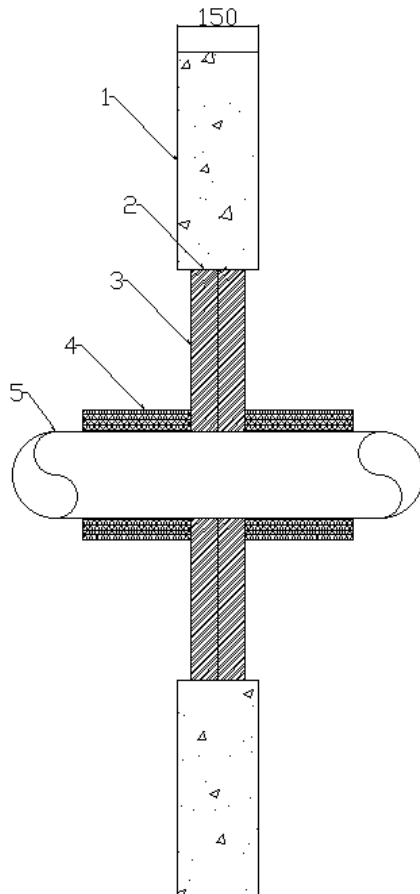


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Max Aperture 2600mm Wide x 2600mm High

Service(s)



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Penetration Specification

Classification

Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m³)

EI 60 C/U

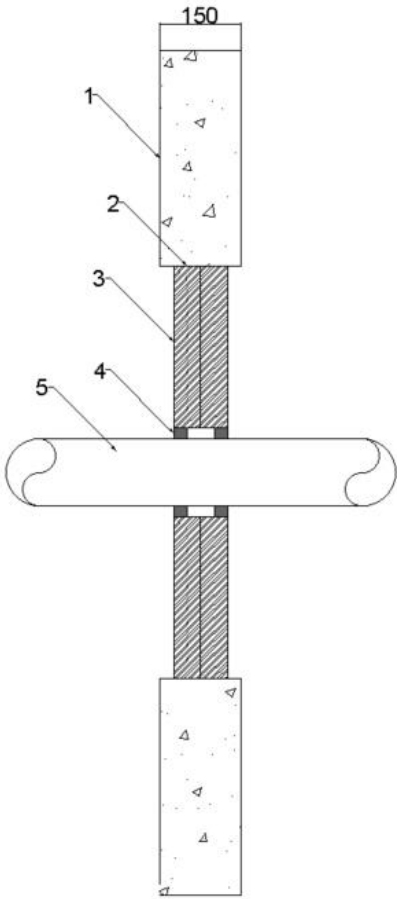
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m³)

E 60 C/U
EI 30 C/U



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Max Aperture 750mm Wide x 1100mm High		Key
		<ol style="list-style-type: none"> 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro HPE Sealant 5. Penetration Service
Penetration Specification	Astro HPE Sealant	Classification
Pipe Diameters as below	20mm annulus, 25mm deep both faces of the Astro Batt and Coating	See graphs below

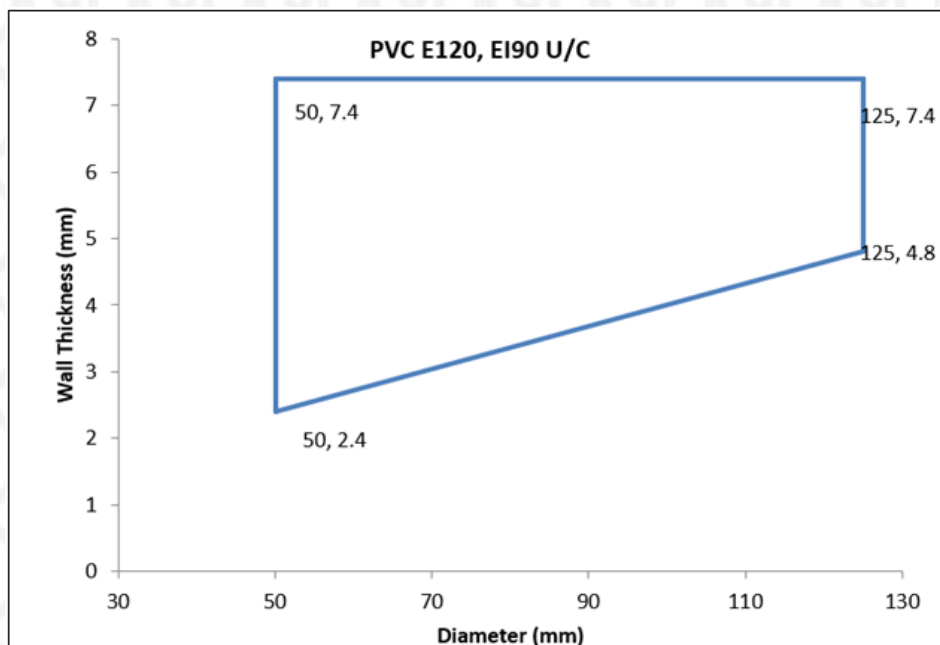
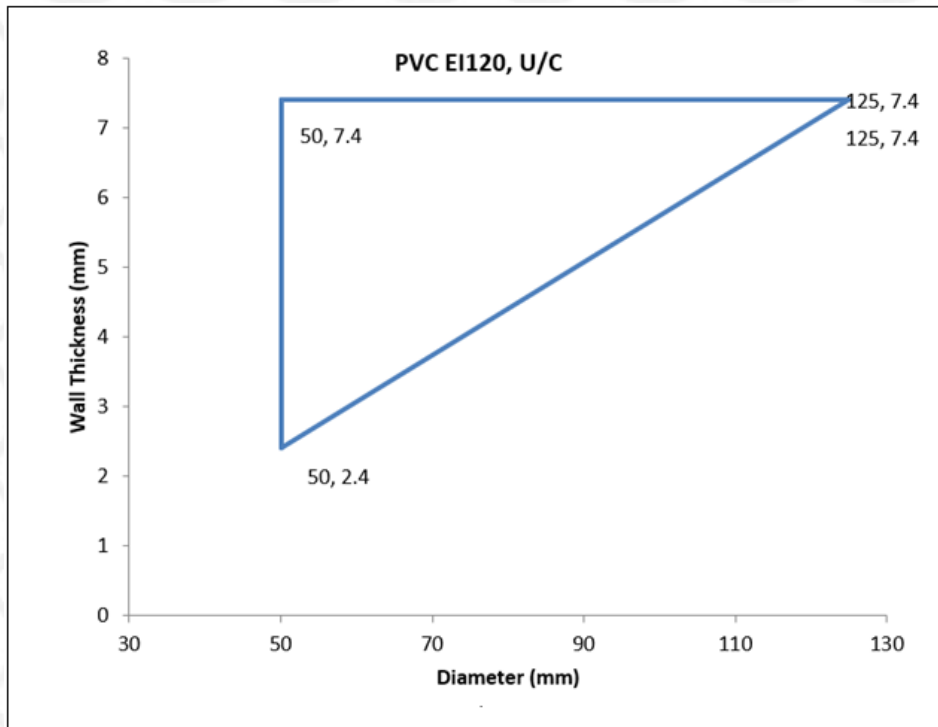


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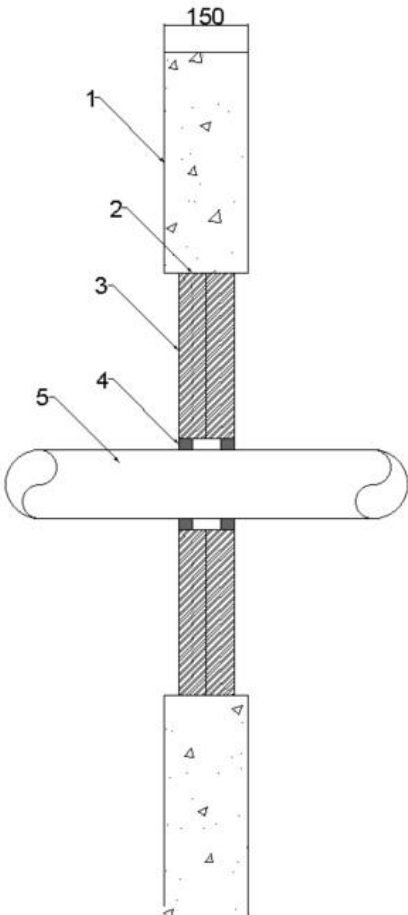


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Max Aperture 2600mm Wide x 2600mm High		
		<p><u>Key</u></p> <ul style="list-style-type: none">1. Supporting construction2. Astro intu mastic3. Astro Batt and Coating4. Astro HPE Sealant5. Penetration Service
Penetration Specification	Astro HPE Sealant	Classification
Pipe Diameters as below	20mm annulus, 25mm deep both faces of the Astro Batt and Coating	EI 60

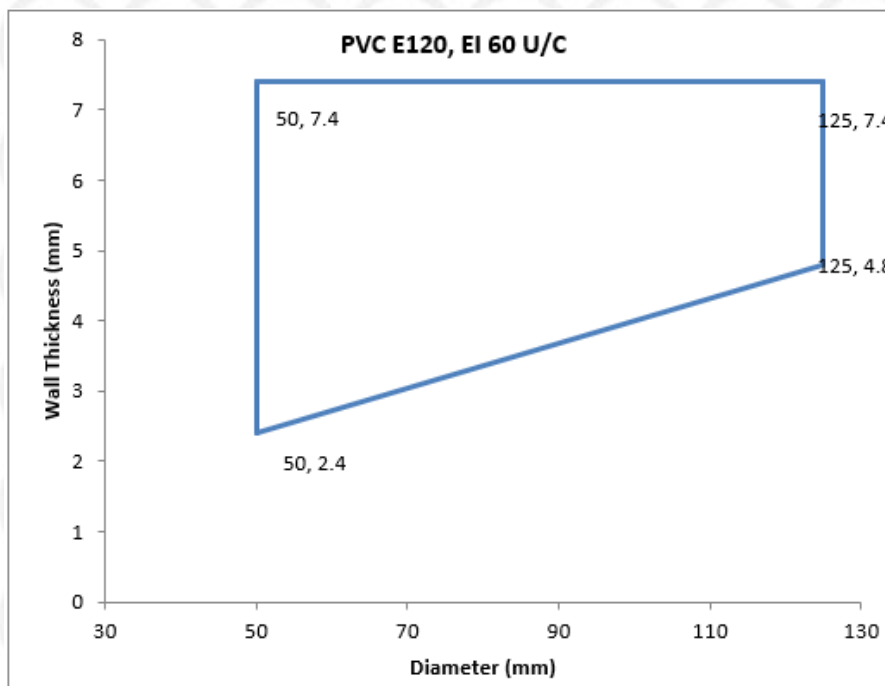
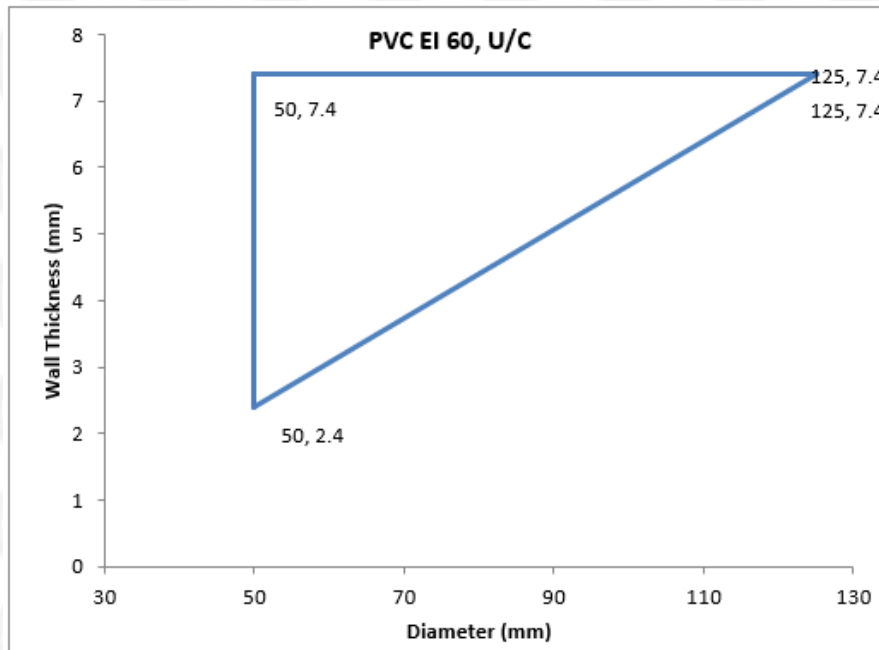


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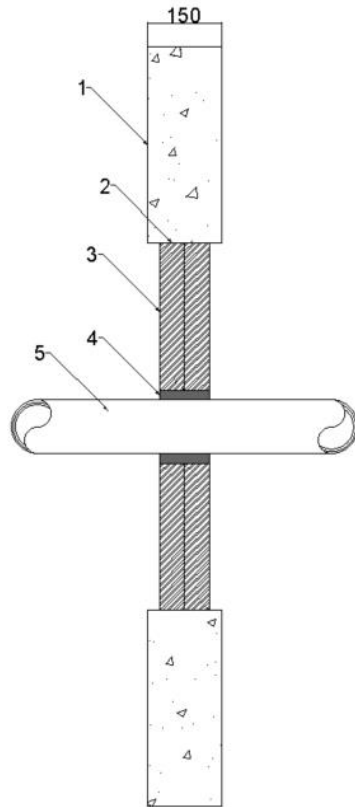
Form-ULID-006104 (DCS:27-CP-F0855) 5.0



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Max Aperture 750mm Wide x 1100mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Penetration Service

Penetration Specification

Classification

Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness

EI 120 U/C

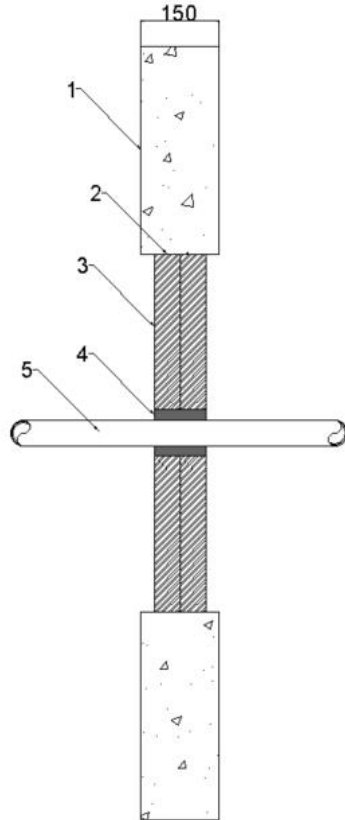
Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Penetration Service

Penetration Specification

Classification

Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness

EI 60 U/C

Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



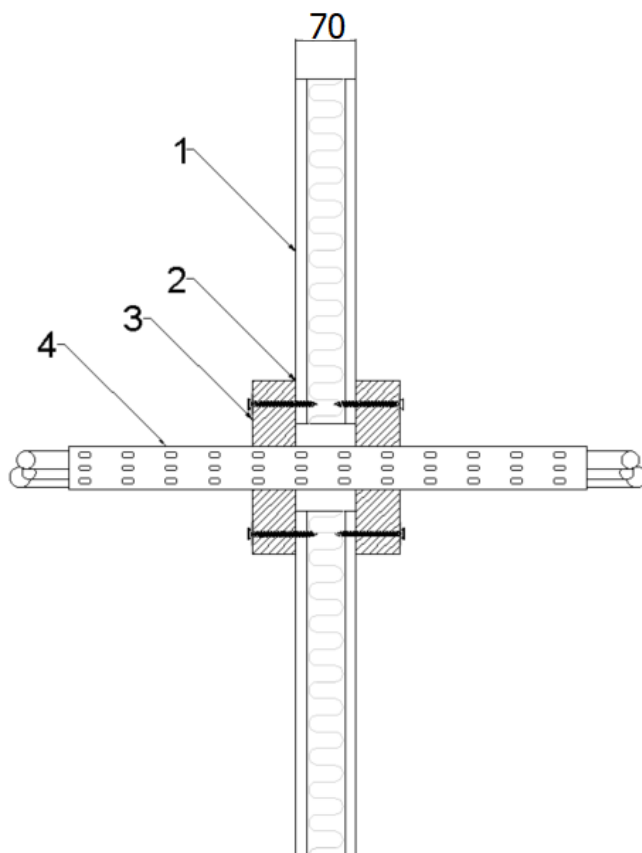
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Flexible Walls Minimum Thickness 70mm

Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 570mm Wide x 200mm High



Key

1. Supporting Construction
2. Astro batt mastic
3. Astro Batt and Coating
4. Service Penetration

Service(s)

500mm wide x 60mm deep steel cable basket containing 3 x type 'B' cable and 20 x bundle of telecoms cables

500mm wide x 60mm deep steel cable tray containing 1 x type 'B' cable, 3 x type 'A1' cable, 3 x type 'A2' cable, and 3 x type 'A3' cable

Classification

EI 90

¹Pattress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed on all edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres



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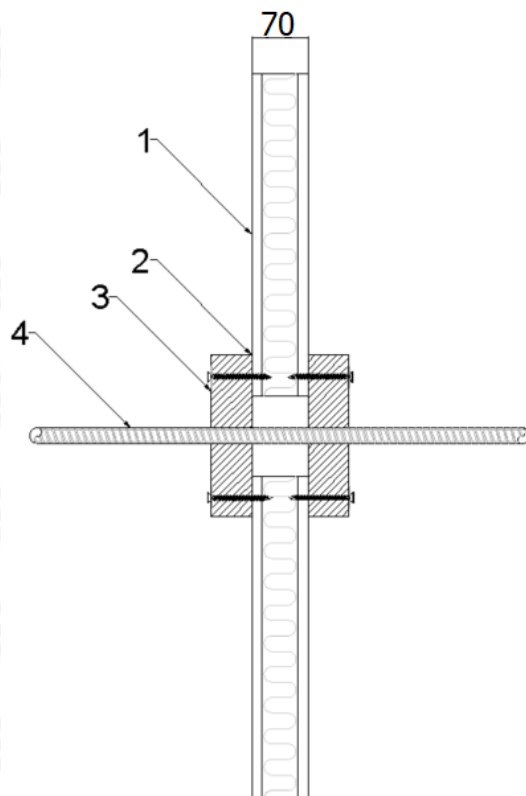
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Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 570mm Wide x 200mm High



Key

1. Supporting Construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Service Penetration

Service(s)

20mm dia Adaptaflex SPL20 flexible conduit

20mm dia Kopex KSU 316 stainless steel flexible conduit

150mm wide x 60mm deep steel cable tray containing 4 x FP200 Gold (Firealarm cable 7mm dia red) Cables

Classification

EI 90

E 90 EI 60

¹Pattress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed on all edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres



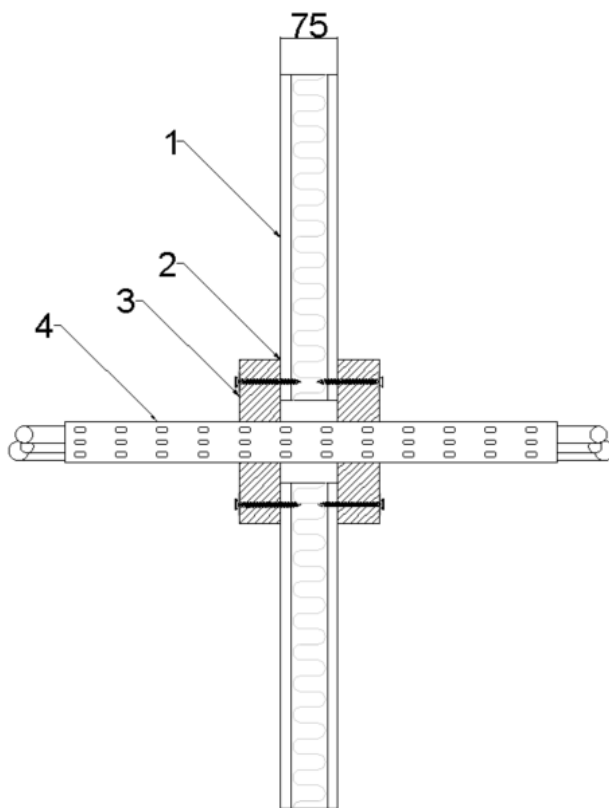
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Flexible Walls Minimum Thickness 75mm

Single Layer Patress Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 570mm Wide x 200mm High



Key

1. Supporting construction
2. Astro intumescing mastic
3. Astro Batt and Coating
4. Penetration Service

Service(s)

500mm wide x 60mm deep steel cable basket containing 3 x type 'B' cable and 20 x bundle of telecoms cables

500mm wide x 60mm deep steel cable tray containing 1 x type 'B' cable, 3 x type 'A1' cable, 3 x type 'A2' cable, and 3 x type 'A3' cable

Classification

EI 90

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

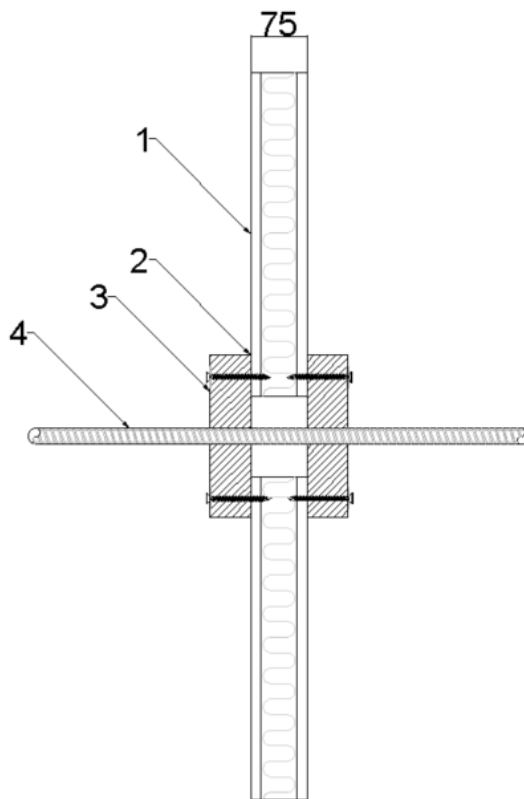


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Single Layer Patress Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 200mm Wide x 200mm High



Key

1. Supporting construction
2. Astro batt and Coating
3. Astro Batt and Coating
4. Penetration Service

Service(s)

20mm dia Adaptaflex SPL20 flexible conduit
 20mm dia Kopex KSU 316 stainless steel flexible conduit
 150mm wide x 60mm deep steel cable tray
 4 x FP200 Gold (Firealarm cable 7mm dia red) Cables

Classification

EI 90
 E 90
 EI 60

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres



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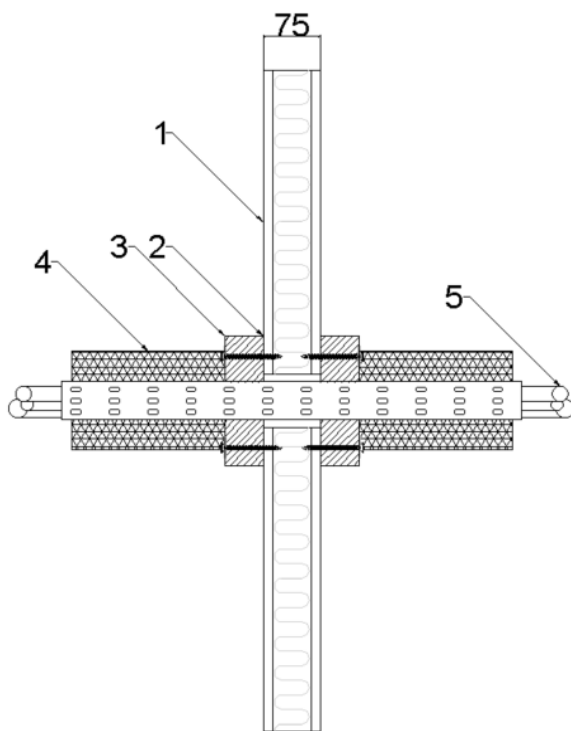
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Flexible Walls Minimum Thickness 75mm

Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables and Cable Trunking

Max Aperture 70mm Wide x 70mm High



Key

1. Supporting construction
2. Astro batt and mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

50mm x 50mm Insulated steel cable trunking, Stone Wool 40mm thick, 45kg/m³ (LI 400mm). Astro X Series Pillow tightly fitted around the cables in the section of trunking within the depth of the partition.

Cables 1xA1, 1xA2, 1xA3

Cables 1xA1

Cables 1xA2

Cables 1xA3

Classification

EI 60 U/U

EI 60

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

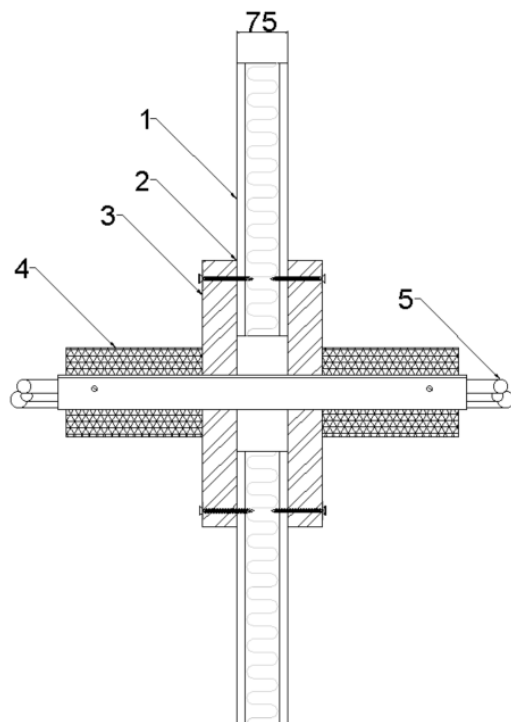


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Single Layer Pattress Astro Batt and Coating 50mm, Electrical Cables and Cable Trunking

Max Aperture 170mm Wide x 170mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

150mm x 150mm Insulated steel cable trunking, Stone Wool 40mm thick, 45kg/m³ (LI 400mm). Astro X Series Pillow tightly fitted around the cables in the section of trunking within the depth of the partition.

Cables 1xB1, 1xC1, 1xG1, 1xG2

Cables 1xB1

Cables 1xC1

Unsheathed electrical cables 0-24mm dia

Classification

EI 60 U/U

EI 60

¹Pattress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 50mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres



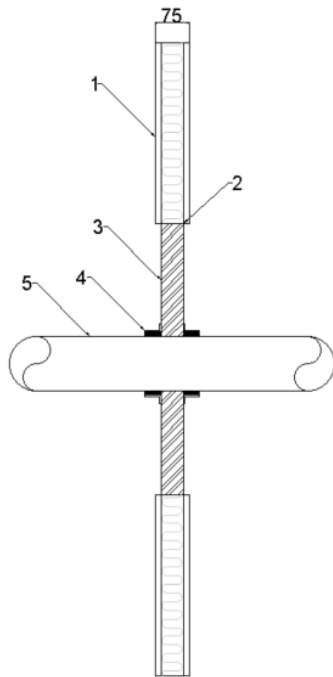
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Single Layer Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 600mm Wide x 600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
 Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 60 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	



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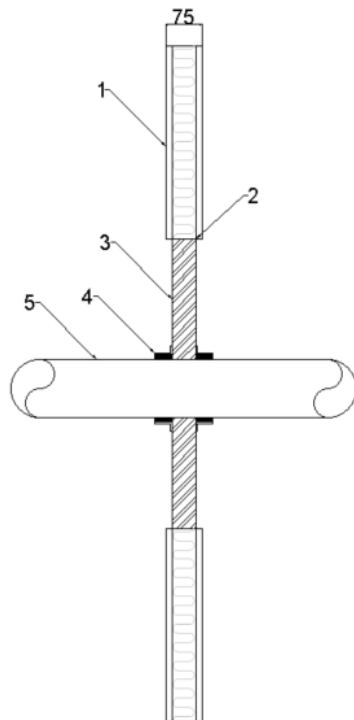
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Max Aperture 600mm Wide x 600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

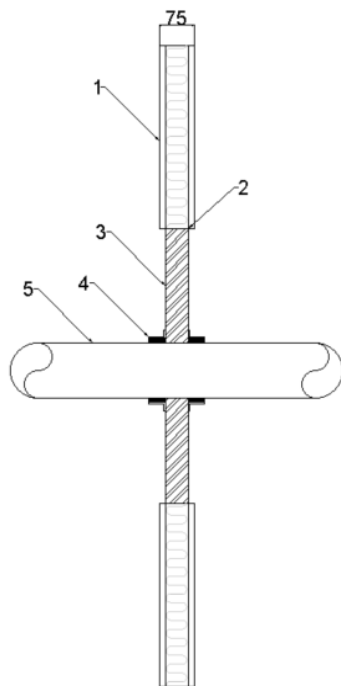


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Max Aperture 600mm Wide x 600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
 Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	



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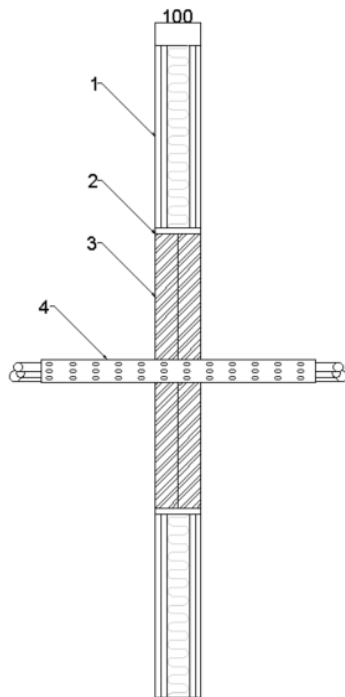
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Flexible Walls Minimum Thickness 100mm

Double Layer Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Penetration Service

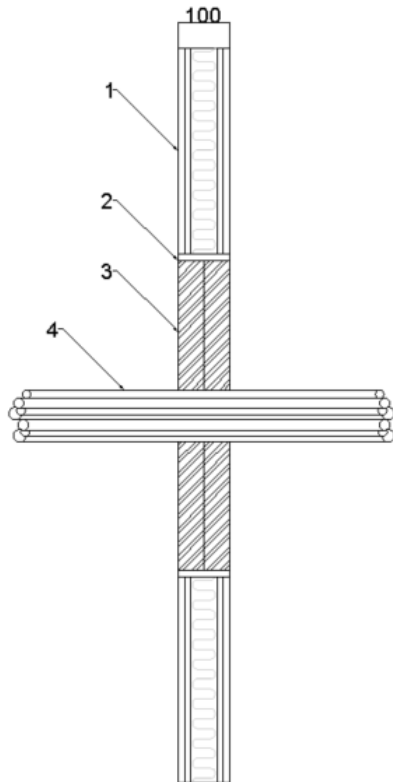
Service(s)	Classification
Electrical cables 0mm to 21mm dia	EI 60
Electrical cables 22mm to 50mm dia	E 60 EI 45
Electrical cables 51mm to 80mm dia	E 60 EI 30
Cable Trays and Ladders	E 60 EI 45
100 mm diameter bundle telecommunication cable type "F"	EI 60
Unsheathed electrical cables 0-24mm dia	
Steel or Copper Conduits up to 16mm	E 60 C/U
Plastic conduits up to 16mm	EI 60 C/U



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Penetration Service

Service(s)	Classification
Electrical cables up to 21mm dia	EI 60
Electrical cables 22mm to 80mm dia	E 60 EI 45
Cable Trays and Ladders	EI 60
100 mm diameter bundle telecommunication cable type "F"	EI 60
Unsheathed electrical cables up to 17mm dia	E 60 EI 30
Unsheathed electrical cables 18-24mm dia	E 60 EI 15
Steel or Copper Conduits up to 16mm	E 60 EI 15
Plastic conduits up to 16mm	EI 60



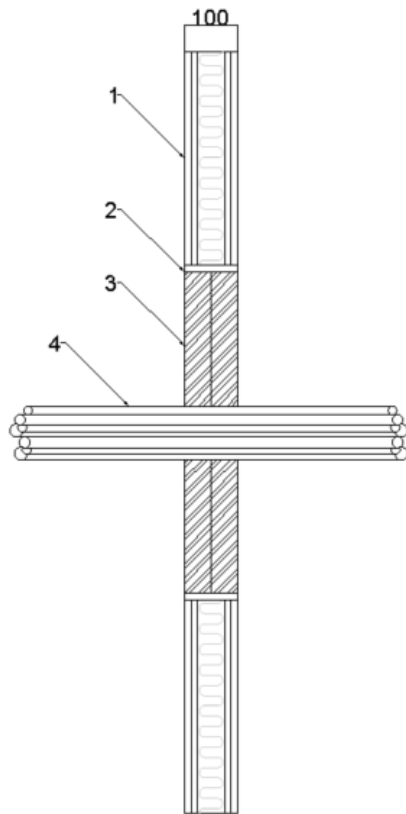
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Penetration Service

Service(s)	Classification
Electrical cables up to 21mm dia	EI 60
Electrical cables 22mm to 80mm dia	E 60 EI 45
Cable Trays and Ladders	EI 60
100 mm diameter bundle telecommunication cable type "F"	EI 60
Unsheathed electrical cables up to 17mm dia	E 60 EI 30
Unsheathed electrical cables 18-24mm dia	E 60 EI 15
Steel or Copper Conduits up to 16mm	E 60 EI 15
Plastic conduits up to 16mm	EI 60

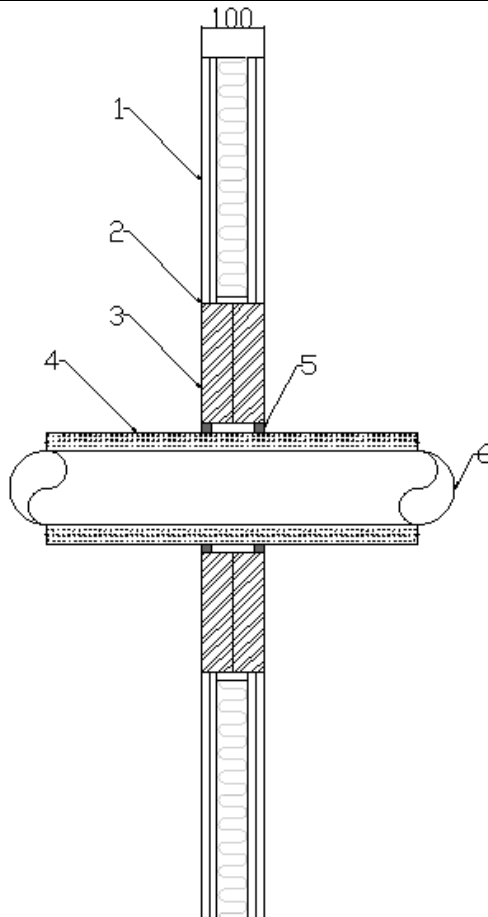


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Double Layer Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Astro HPE Sealant
6. Penetration Service

Service(s)

Classification

¹Single copper or mild steel pipe 40mm diameter and 1.5 – 14.2 mm wall with sustained/continuous 20mm thick foil faced glass wool insulation (min 80Kg/m³)

E 90 U/C
EI 60 U/C

¹Single copper or mild steel pipe 40-159mm diameter and 2.3 – 14.2 mm wall with sustained/continuous 30mm thick foil faced glass wool insulation (min 80Kg/m³)

EI 60 U/C

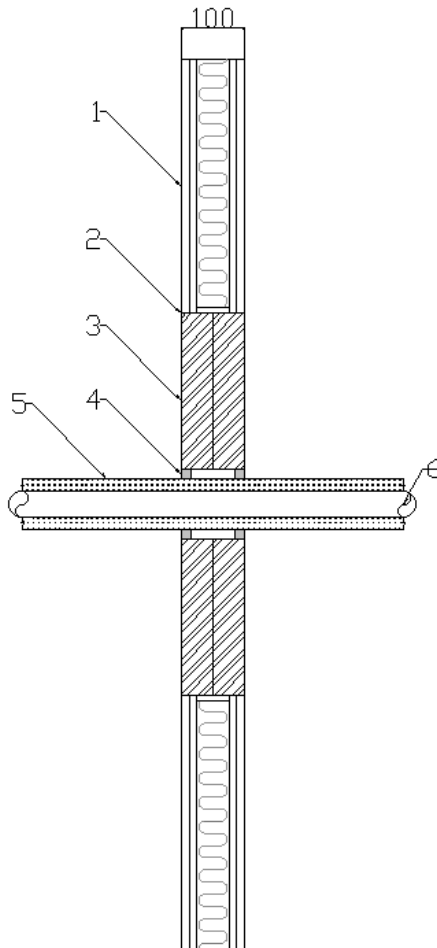
¹15mm deep x 15mm wide annulus Astro HPE Sealant to both faces of the pipe



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro HPE Sealant
5. Insulation
6. Penetration Service

Service(s)

Classification

¹Single copper or mild steel pipe 40mm diameter and 1.5 – 14.2 mm wall with sustained/continuous 20mm thick foil faced glass wool insulation (min 80Kg/m³)

EI 60 U/C

¹Single copper or mild steel pipe 40-159mm diameter and 2.3 – 14.2 mm wall with sustained/continuous 30mm thick foil faced glass wool insulation (min 80Kg/m³)

EI 60 U/C

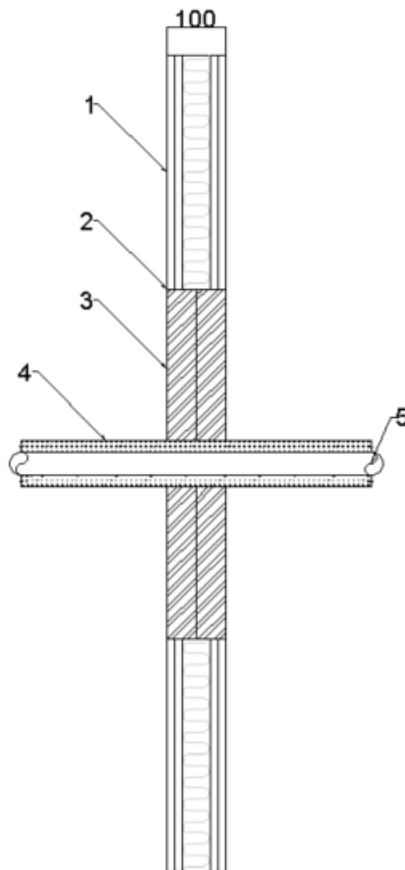
¹15mm deep x 15mm wide annulus Astro HPE Sealant to both faces of the pipe



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Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

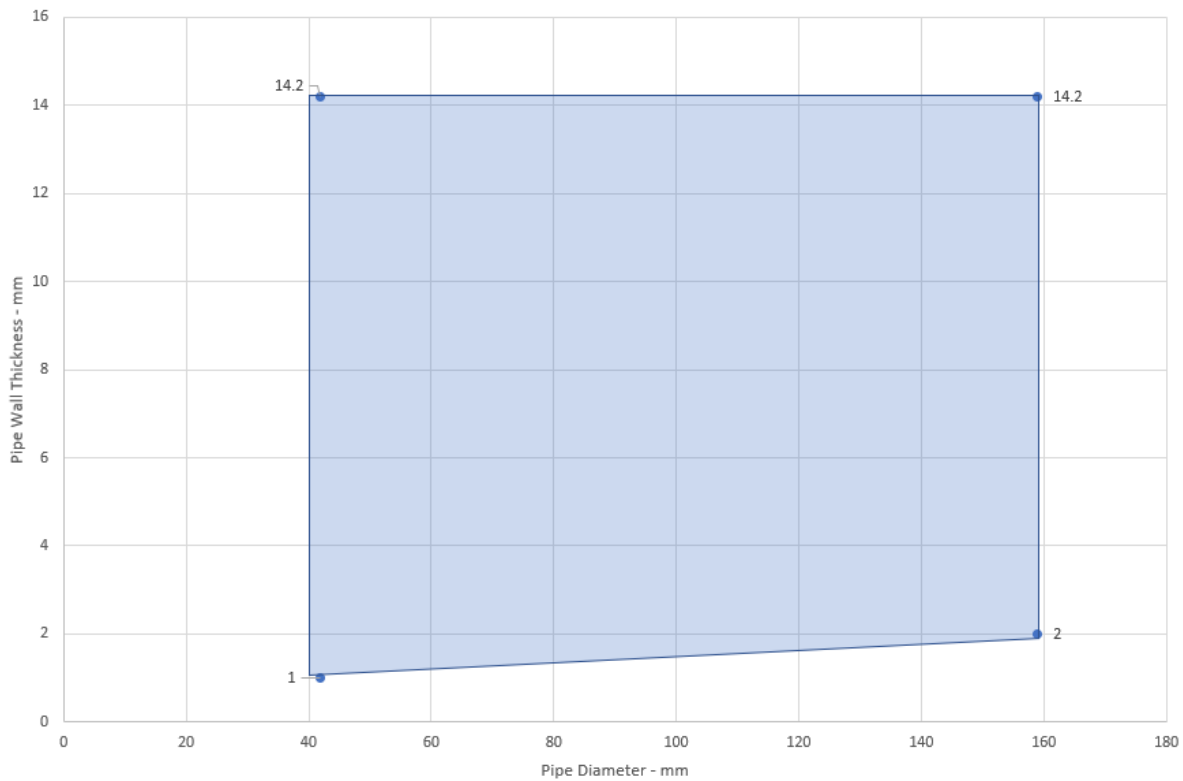
Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 45 C/U
Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 60 C/U



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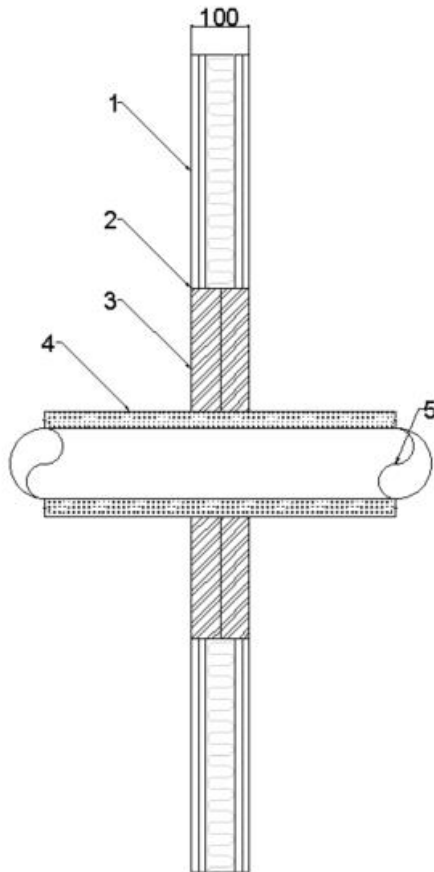
Permitted Pipe Diameter vs Pipe Wall Thickness



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

E 60 C/U
 EI 45 C/U

Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

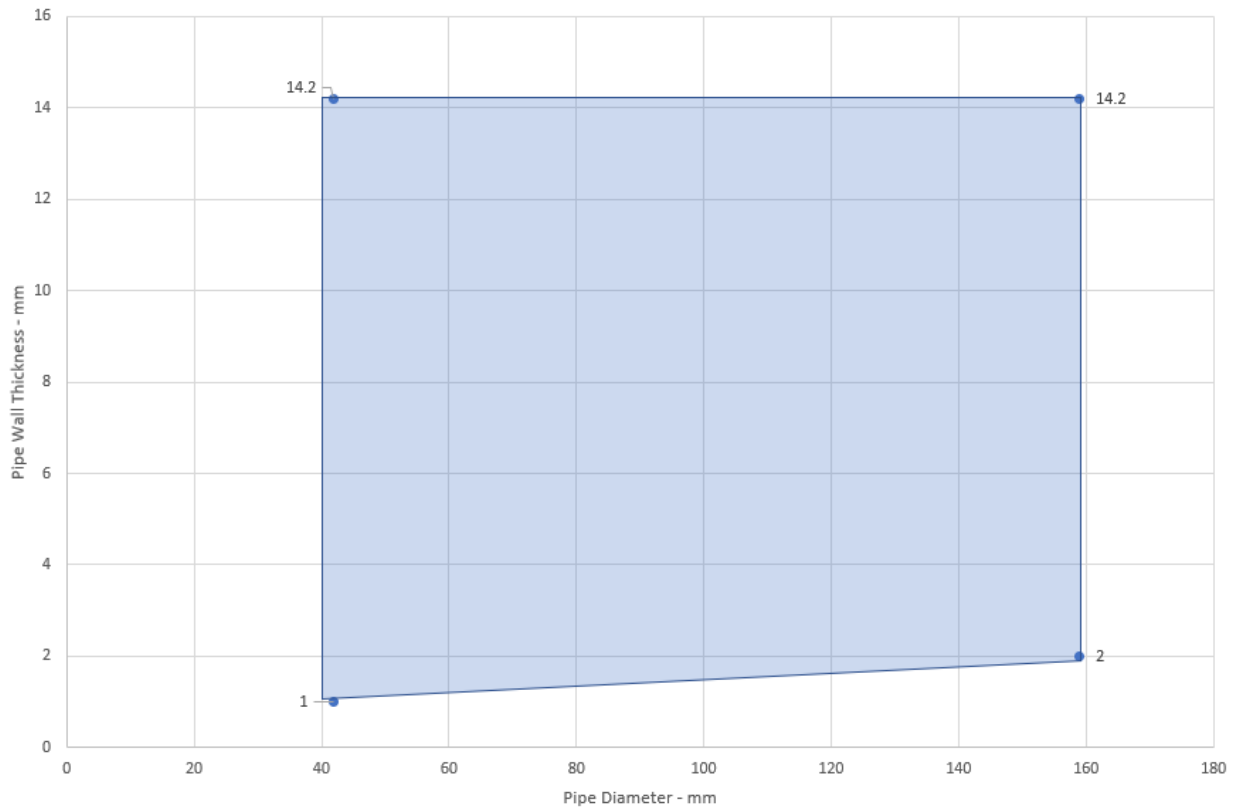
E 60 C/U
 EI 60 C/U



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Permitted Pipe Diameter vs Pipe Wall Thickness



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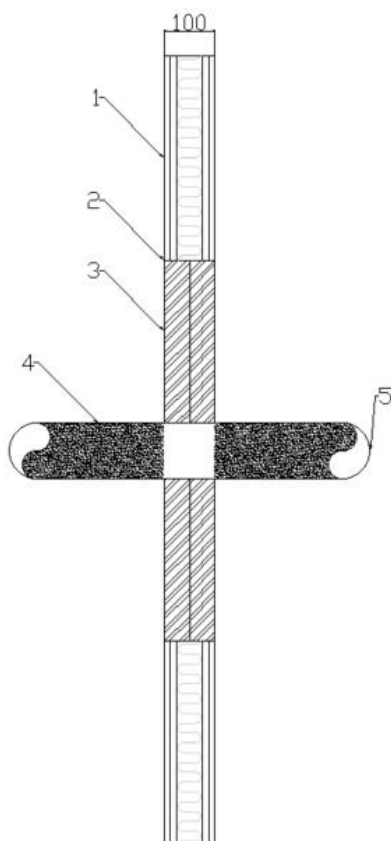
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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

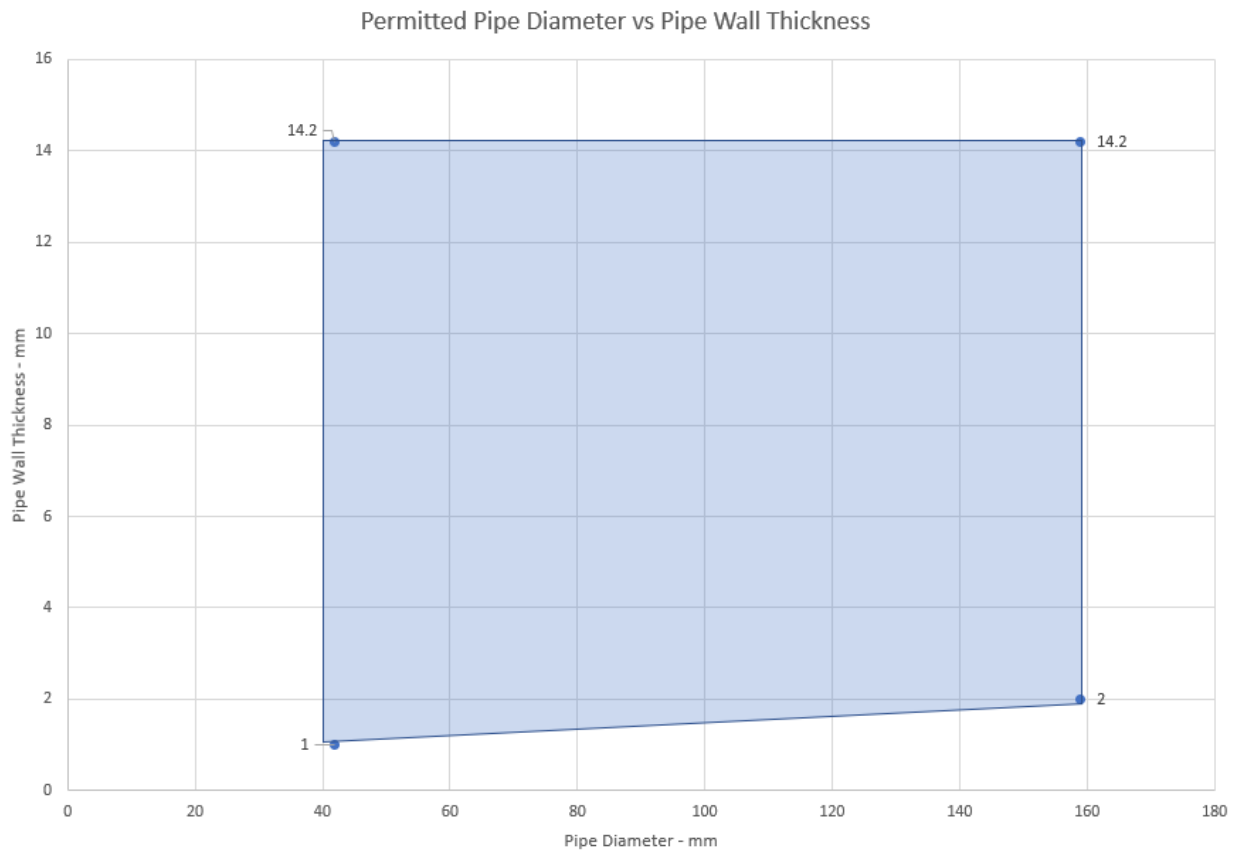
1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro PST Coating
5. Penetration Service

Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick foil faced stonewool insulation min. 40kg/m ³ (C/I)	EI 60 C/U
Steel or Copper Pipe 42mm Ø, 1.0mm – 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 120 C/U EI 45 C/U
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 120 C/U EI 20 C/U
Steel 42-324mm Ø, 16mm wall thickness. 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 120 C/U EI 45 C/U



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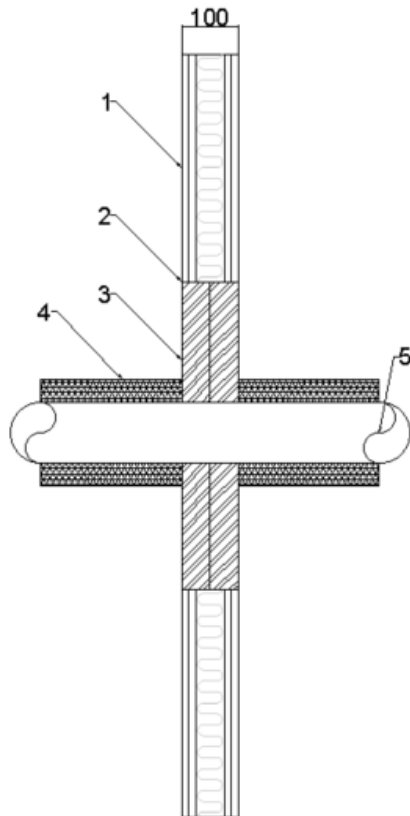
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

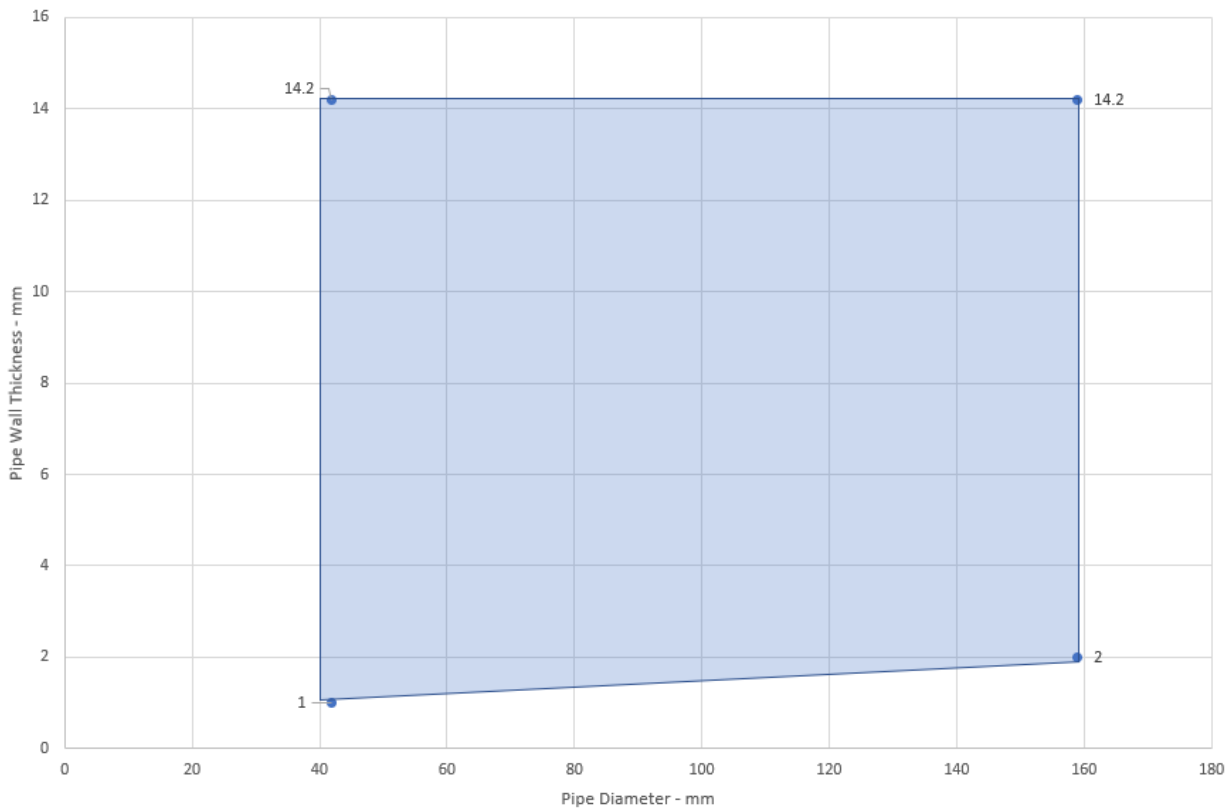
Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick foil faced stonewool insulation min. 40kg/m ³ (L/I 400mm)	EI 45 C/U
Steel 42-324mm Ø, 16mm wall thickness. 40mm thick foil faced stonewool insulation min. 40kg/m ³ (C/I)	EI 60 C/U
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 60 C/U EI 45 C/U
Steel or Copper Pipe 42-159mm Ø, 1.0mm – 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 60 C/U EI 20 C/U
Steel 42-324mm Ø, 16mm wall thickness. 14.2mm wall thickness Astro PST Coating along the penetration 2mm DFT (L/I 300mm)	E 60 C/U EI 45 C/U



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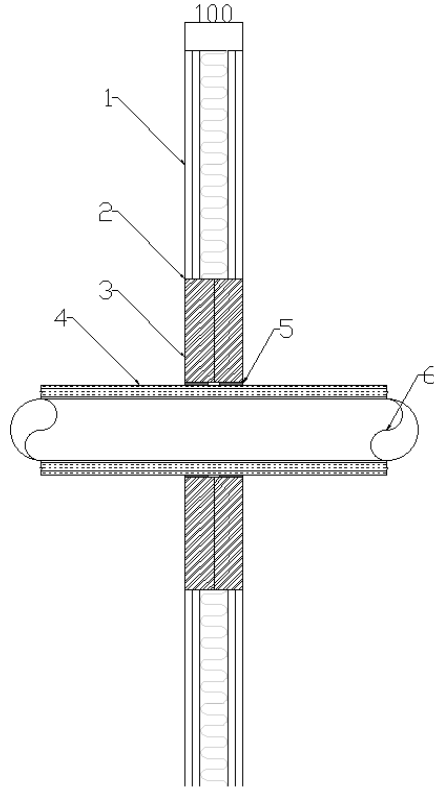
Permitted Pipe Diameter vs Pipe Wall Thickness



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Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap
6. Penetration Service

Service(s)	Classification
¹ Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST ² Insulation (C/S)	E 120 C/U EI 60 C/U
¹ Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST ² insulation (C/S)	E 120 C/U EI 90 C/U
¹ Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM3 insulation (C/S)	E 120 C/U EI 60 C/U
¹ Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ³ insulation (C/S)	E 120 C/U EI 90 C/U
¹ Steel or Copper Pipe 42mm Ø, 1.0–14.2mm wall thickness. 50mm thick glassfibre insulation (C/S)	E 120 C/U EI 90 C/U

¹2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

³Or equivalent Phenloic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

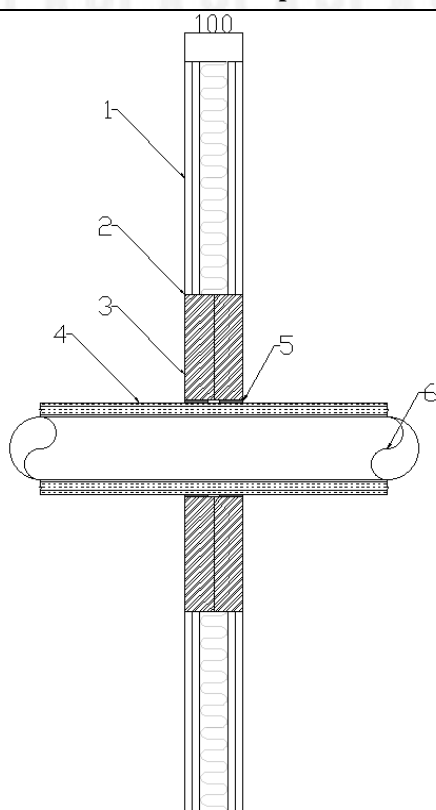
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Astro X Series CE Pipe Wrap
UL/ Astro X Series CE Pipe
Wrap
6. Penetration Service

Service(s)	Classification
¹ Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST ² Insulation (C/S)	EI 60 C/U
¹ Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST ² insulation (C/S)	EI 60 C/U
¹ Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ³ insulation (C/S)	EI 60 C/U
¹ Steel or Copper Pipe 42mm Ø, 1–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ³ insulation (C/S)	EI 60 C/U
¹ Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 50mm thick glassfibre insulation (C/S)	EI 60 C/U

¹2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

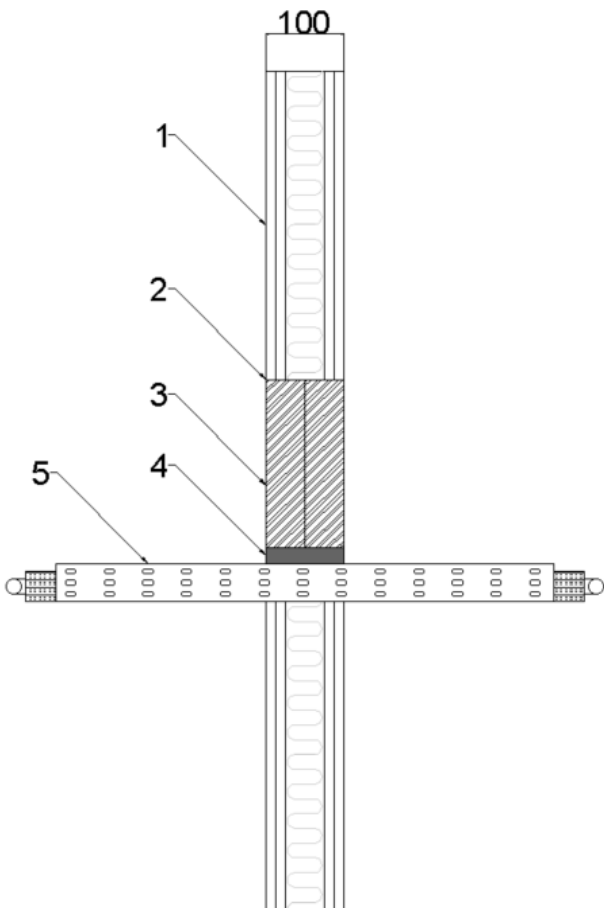
³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

Form-ULID-006104 (DCS:27-CP-F0855) 5.0



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Max Aperture 730mm Wide x 1200mm High	
<p>Zero distance to bottom of seal</p> 	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro HPE Sealant 5. Penetration Service
Service(s)	Classification
¹ 6 off Steel or Copper Pipe 22mm Ø, 0.9mm – 14.2mm wall thickness. 19mm thick Armaflex ² (L/S 400mm)	EI 90 C/U
¹ 500mm steel cable tray	E 90 EI 15

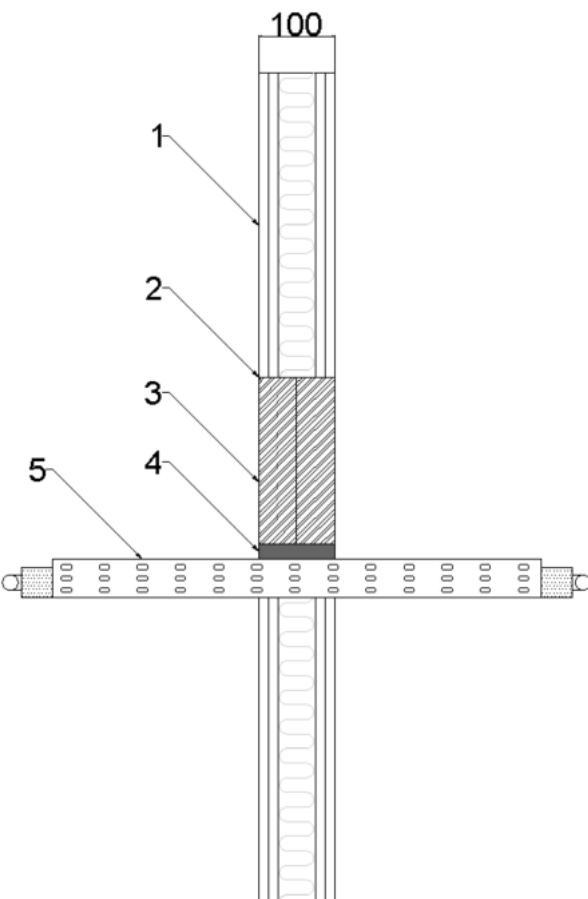
¹Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1



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Max Aperture 2600mm Wide x 2600mm High	
<p>Zero distance to bottom of seal</p> 	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro HPE Sealant 5. Penetration Service
Service(s)	Classification
¹ 6 off Steel or Copper Pipe 22mm Ø, 0.9mm – 14.2mm wall thickness. 19mm thick Armaflex ² (L/S 400mm)	EI 60 C/U
¹ 500mm steel cable tray	E 60 EI 15

¹Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1



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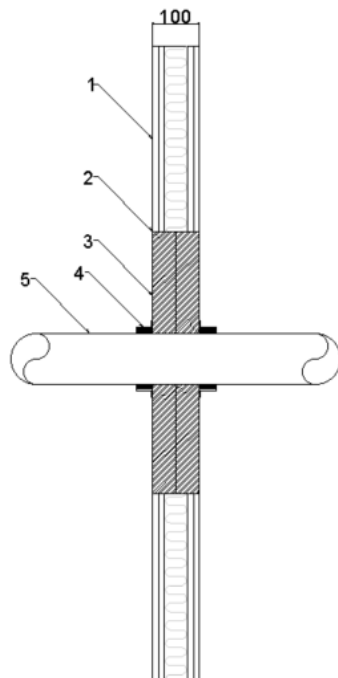
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Double Layer Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 120 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	



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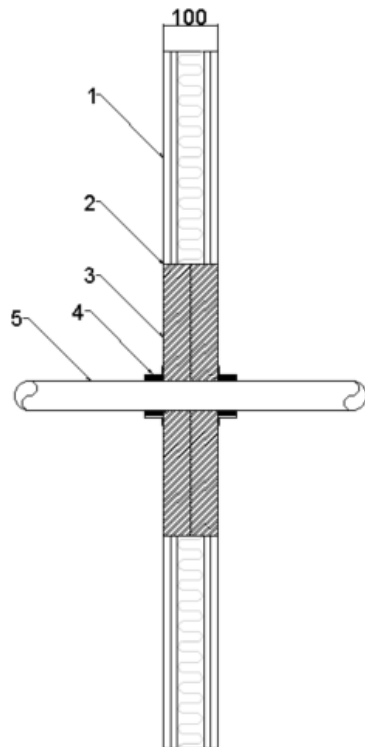
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 60 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	



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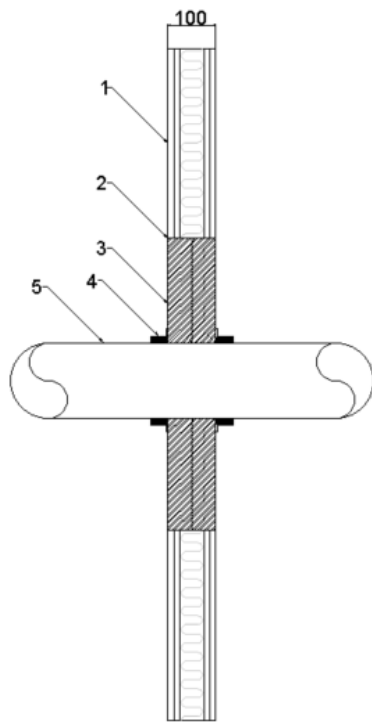
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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	

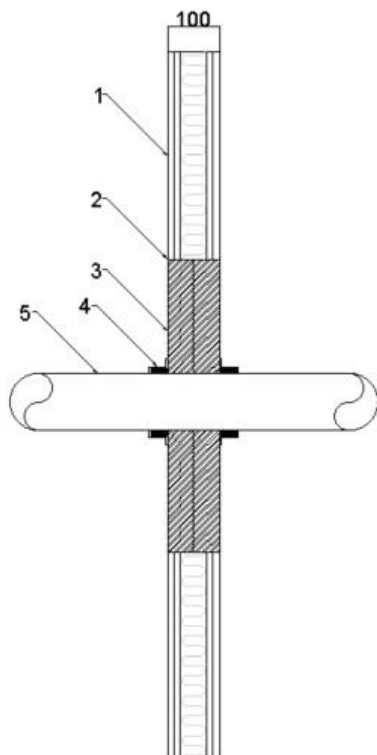


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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
 Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	



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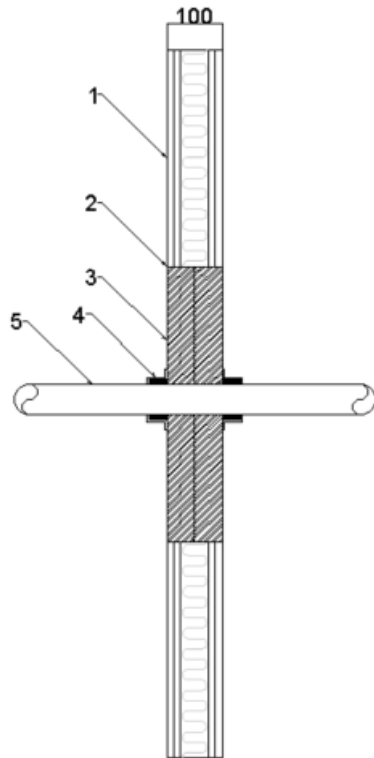
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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

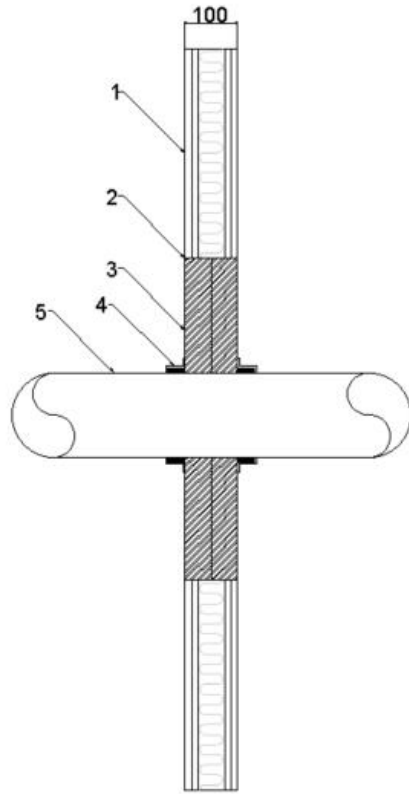


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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)
 Collars secured both faces of the substrate utilising 80mm long steel pig tail screw through to Astro Batt and Coating



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

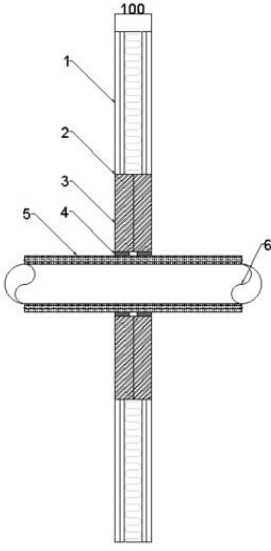
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	



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Double Layer Astro Batt and Coating 50mm, Insulated Plastic Pipes

Max Aperture 730mm Wide x 1200mm High (Penetrations positioned as per option 1 or 2 below, 100mm distance between services and 50mm to edge of seal)		
		Key 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe 40mm Ø, 1.9mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	E 120 U/C EI 90 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 15 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	EI 120 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 20 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	E 120 U/C EI 90 U/C
PVC Pipe 40mm Ø, 1.9mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	EI 120 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 9 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 120 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 13 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 120 U/C

¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

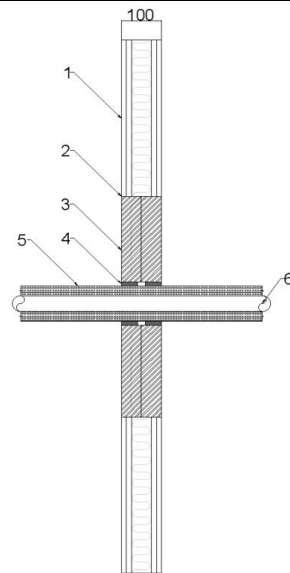
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Max Aperture 2600mm Wide x 2600mm High
 (Penetrations positioned as per option 1 or 2 below, 100mm distance between services and 50mm to edge of seal)



- Key**
1. Supporting construction
 2. Astro intu mastic
 3. Astro Batt and Coating
 4. Astro X Series CE Pipe Wrap
UL/ Astro X Series CE Pipe Wrap
 5. Insulation
 6. Penetration Service

Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe 40mm Ø, 1.9mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	EI 60 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 15 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 25 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	EI 60 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 20 mm thick Kingspan Kooltherm FM ³ insulation (C/S)	5 x 2mm thickness	EI 60 U/C
PVC Pipe 40mm Ø, 1.9mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	EI 60 U/C
PVC Pipe 40mm Ø, 3mm wall thickness. 9 mm thick Armacell Armaflex Class O ² (C/S)	3 x 2mm thickness	
PVC Pipe 110mm Ø, 4.2mm wall thickness. 32 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 60 U/C
PVC Pipe 110mm Ø, 6.6mm wall thickness. 13 mm thick Armacell Armaflex Class O ² (C/S)	5 x 2mm thickness	EI 60 U/C

¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating

²Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

³Or equivalent Phenloic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1



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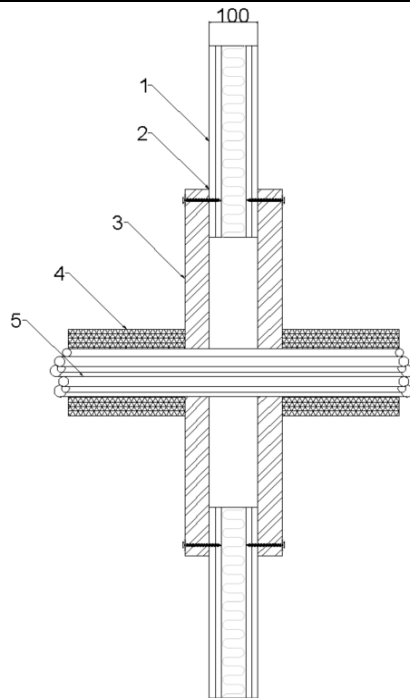
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Single Layer Patress, Astro Batt and Coating 50mm, Electrical Cables and Conduits

Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

²Electrical cables up to 80mm Ø

²Cable Trays and Ladders

²100 mm diameter bundle telecommunication cable type "F"

²Unsheathed electrical cables up to 24mm Ø

²Steel or Copper Conduits up to 16mm Ø

²Plastic conduits up to 16mm Ø

EI 120

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

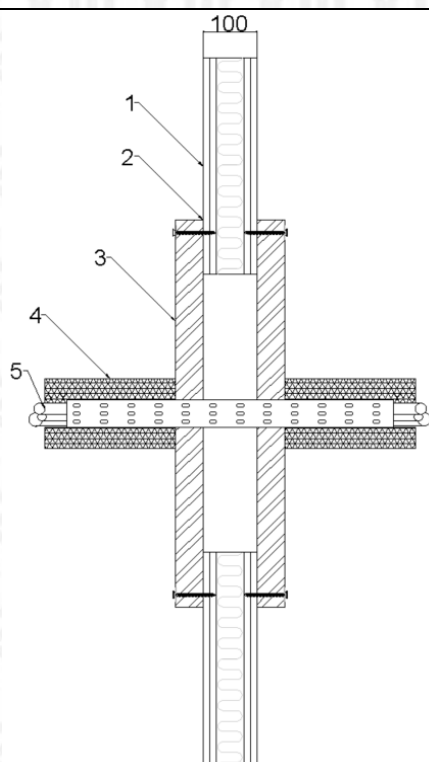
²Cables and cable trays wrapped with a single layer of 40mm thick, 40kg/m³ Stonewool (L/I 300mm)



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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro intumescible mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

²Electrical cables upto 80mm Ø

²Cable Trays and Ladders

²100 mm diameter bundle telecommunication cable type "F"

²Unsheathed electrical cables up to 24mm Ø

²Steel or Copper Conduits up to 16mm Ø

²Plastic conduits up to 16mm Ø

EI 60

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres

²Cables and cable trays wrapped with a single layer of 40mm thick, 40kg/m³ Stonewool (L/I 300mm)

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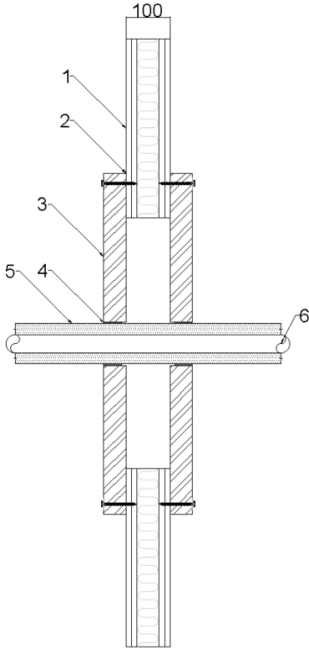
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Single Layer Patress, Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 730mm Wide x 1200mm High	
	Key <ol style="list-style-type: none"> Supporting construction Astro intu mastic Astro Batt and Coating Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Insulation Penetration Service
Service(s)	Classification
² Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST ³ Insulation (C/S)	E 120 C/U EI 60 C/U
² Steel or Copper Pipe 42mm Ø, 1.2 – 14.2mm wall thickness. 13-25mm thick K Flex ST ³ insulation (C/S)	E 120 C/U EI 90 C/U
² Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ⁴ insulation (C/S)	E 120 C/U EI 60 C/U
² Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ⁴ insulation (C/S)	E 120 C/U EI 90 C/U
² Steel or Copper Pipe 42mm Ø, 1.2–14.2mm wall thickness. 50mm thick glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 90 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

²2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

³Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

⁴Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1

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Max Aperture 2600mm Wide x 2600mm High	
	Key <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intumescible mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Classification
² Steel or Copper Pipe 42-159mm Ø, 1.2mm – 14.2mm wall thickness. 13-25mm thick K Flex ST ³ Insulation (C/S)	EI 60 C/U
² Steel or Copper Pipe 42-159mm Ø, 1.2 – 14.2mm wall thickness. 25mm thick K Flex ST ³ insulation (C/S)	
² Steel or Copper Pipe 42mm Ø, 1 – 14.2mm wall thickness. 25-13mm thick K Flex ST ³ insulation (C/S)	
² Steel or Copper Pipe 42-108mm Ø, 1.2 – 14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ⁴ insulation (C/S)	
² Steel or Copper Pipe 42mm Ø, 1-14.2mm wall thickness. 25 -40mm thick Kingspan Kooltherm FM ⁴ insulation (C/S)	
² Steel or Copper Pipe 42mm Ø, 1.2-14.2mm wall thickness. 50mm thick glassfibre insulation min. 30kg/m ³ (C/S)	

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

²2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

³Or equivalent elastomeric pipe insulation classified BL – s2, d0 or better to EN 13501-1

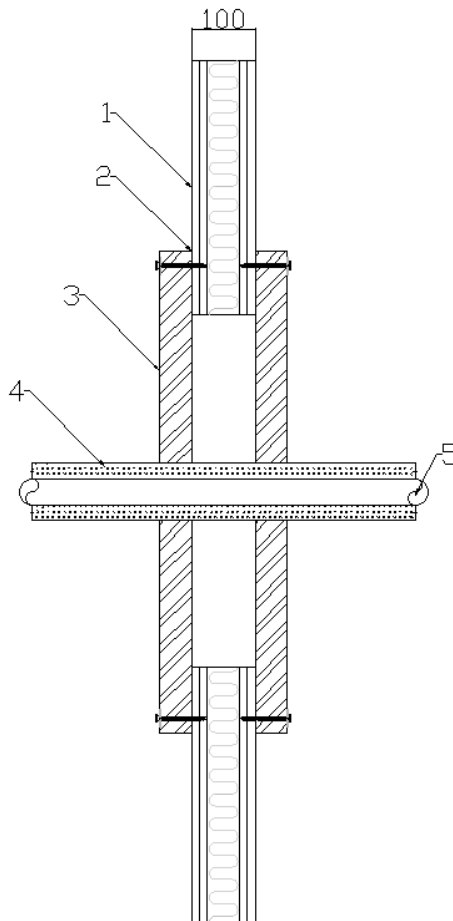
⁴Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1



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Max Aperture 730mm Wide x 1200mm High



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)	Classification
Steel or Copper Pipe 42-159mm Ø, 2mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 45 C/U
Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m ³ (C/S)	E 120 C/U EI 60 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



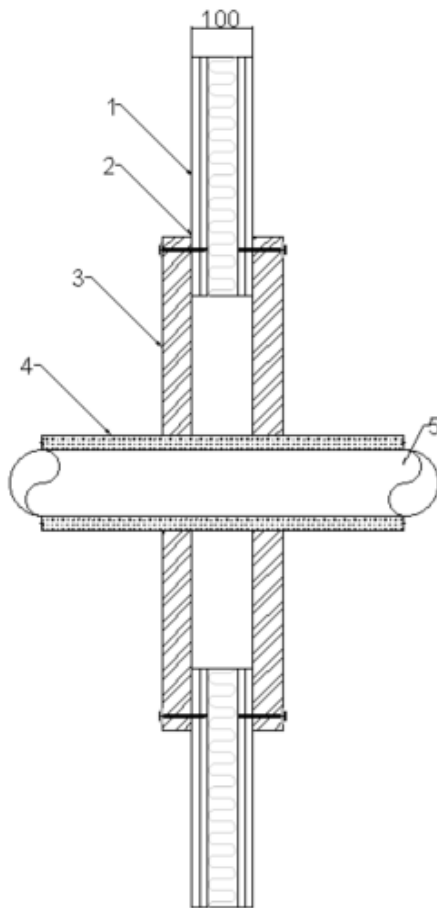
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Max Aperture 2600mm Wide x 2600mm High



Key

1. Supporting construction
2. Astro into mastic
3. Astro Batt and Coating
4. Insulation
5. Penetration Service

Service(s)

Classification

Steel or Copper Pipe 42-159mm Ø, 2mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

E 60 C/U
EI 45 C/U

Steel or Copper Pipe 42mm Ø, 1mm – 14.2mm wall thickness. 25mm thick foil faced glassfibre insulation min. 30kg/m³ (C/S)

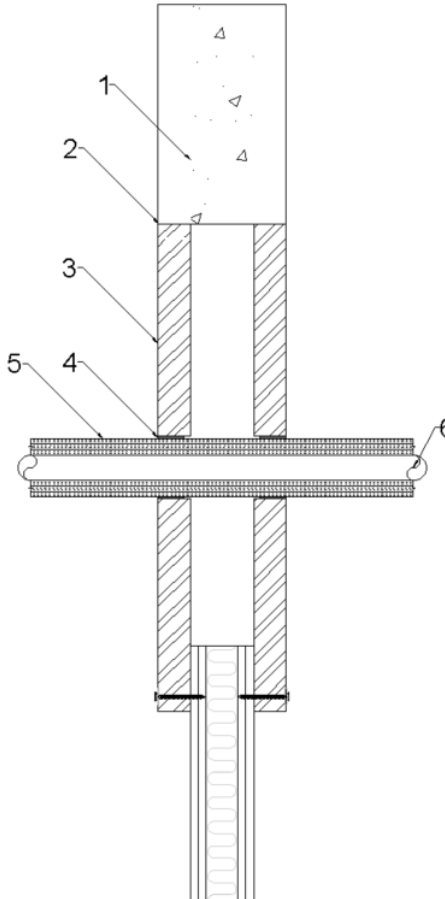
E 60 C/U
EI 60 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



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Max Aperture 730mm Wide x 1200mm High	
<p>30mm overlap patress installed flush to soffit</p> 	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.0mm – 14.2mm wall thickness. 50mm thick Kingspan ³ (C/S 400mm)	EI 60 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 30mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres. No fixing is applied to the head flush to the soffit

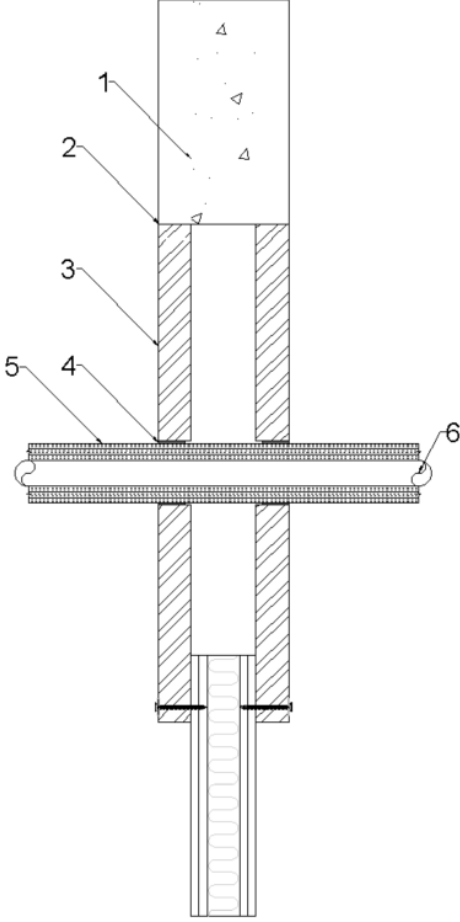
²2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1



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Max Aperture 2600mm Wide x 2600mm High	
<p>30mm overlap patress installed flush to soffit</p> 	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intumescible mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Insulation 6. Penetration Service
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.0mm – 14.2mm wall thickness. 50mm thick Kingspan ³ (C/S 400mm)	EI 60 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 30mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres. No fixing is applied to the head flush to the soffit

²2 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

³Or equivalent Phenolic foam pipe insulation classified BL – s1, d0 or better to EN 13501-1



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Single Layer Patress, Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 2600mm Wide x 2600mm High (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)		
		Key <ol style="list-style-type: none"> Supporting construction Astro intu mastic Astro Batt and Coating Astro X Series CE Pipe Collar Penetration Service
Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 60 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating
 1Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges.
 Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

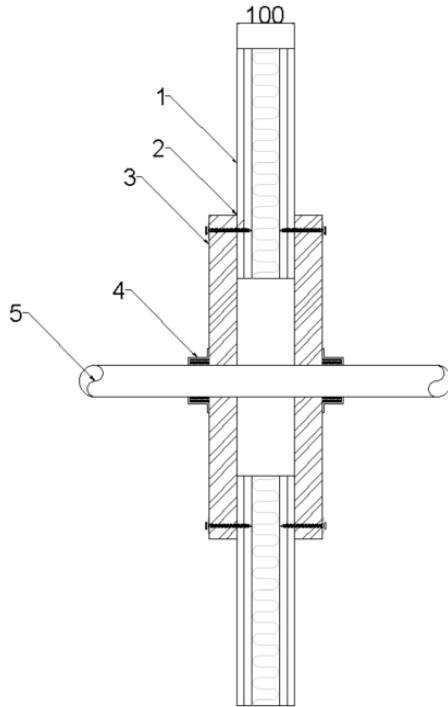
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Max Aperture 730mm Wide x 1200mm High
 (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro X Series CE Pipe Collar
4. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PVC Pipe 32mm Ø, 1.8mm wall thickness	32mm	EI 120 U/C
PVC Pipe 40mm Ø, 1.8mm wall thickness	40mm	
PVC Pipe 50mm Ø, 1.8mm wall thickness	50mm	
PVC Pipe 55mm Ø, 1.8-2.3mm wall thickness	55mm	
PVC Pipe 63mm Ø, 2.3-3mm wall thickness	63mm	
PVC Pipe 75mm Ø, 3.1-4.8mm wall thickness	75mm	
PVC Pipe 82mm Ø, 3.1-4.8mm wall thickness	82mm	
PVC Pipe 90mm Ø, 4.2-7.4mm wall thickness	90mm	
PVC Pipe 100mm Ø, 4.2-7.4mm wall thickness	100mm	
PVC Pipe 110mm Ø, 4.2-7.4mm wall thickness	110mm	
PVC Pipe 125mm Ø, 6mm wall thickness	125mm	
PVC Pipe 140mm Ø, 6.1-7.5mm wall thickness	140mm	
PVC Pipe 160mm Ø, 6.2-9.5mm wall thickness	160mm	

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Form-ULID-006104 (DCS:27-CP-F0855) 5.0



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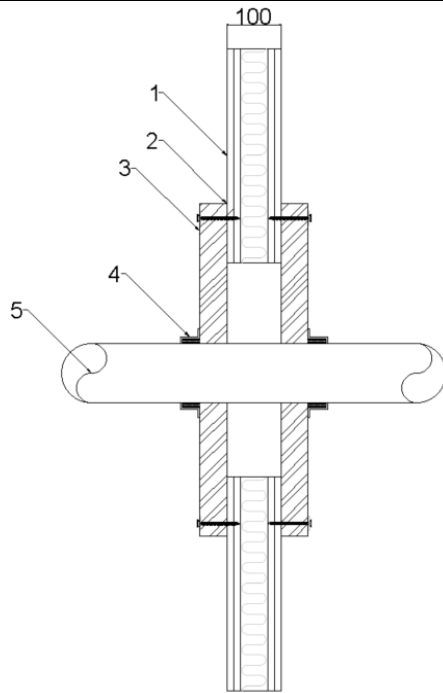
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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



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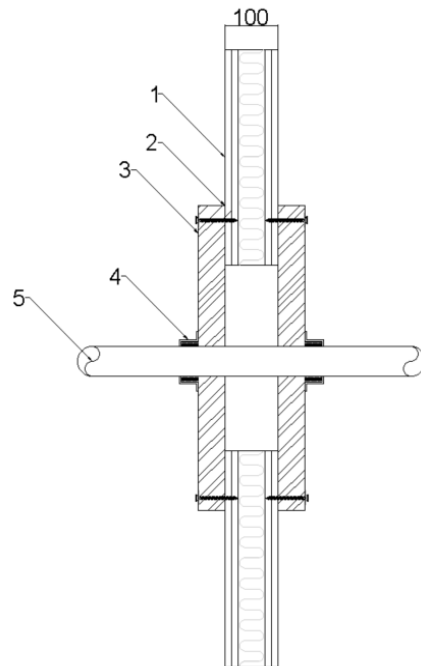
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro intu mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PP Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PP Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PP Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PP Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PP Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PP Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PP Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PP Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PP Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PP Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PP Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PP Pipe 140mm Ø, 3.5-8mm wall thickness	140mm	
PP Pipe 160mm Ø, 4-14.6mm wall thickness	160mm	

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.

Form-ULID-006104 (DCS:27-CP-F0855) 5.0

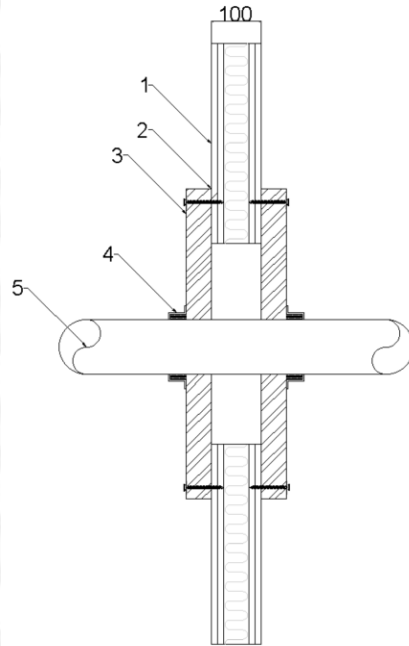


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Max Aperture 730mm Wide x 1200mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro batt mastic
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 120 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating

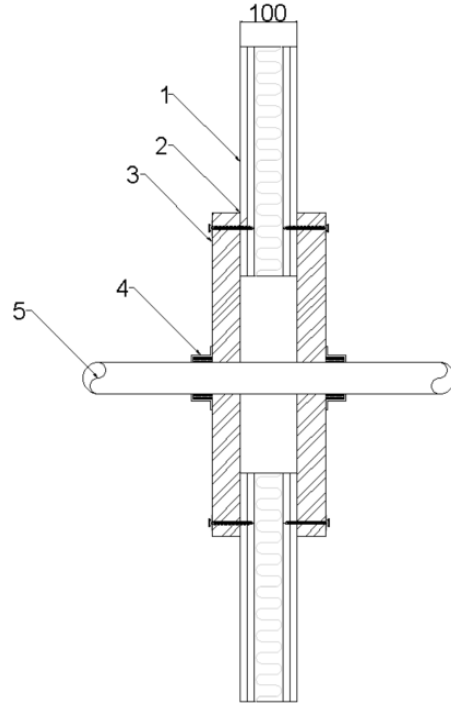
¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



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Max Aperture 2600mm Wide x 2600mm High
 (Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



- Key**
1. Supporting construction
 2. Astro intu mastic
 3. Astro Batt and Coating
 4. Astro X Series CE Pipe Collar
 5. Penetration Service

Service(s)	Astro X Series CE Pipe Collar Ref	Classification
PE Pipe 32mm Ø, 2.9mm wall thickness	32mm	EI 60 U/C
PE Pipe 40mm Ø, 2.9mm wall thickness	40mm	
PE Pipe 50mm Ø, 2.9mm wall thickness	50mm	
PE Pipe 55mm Ø, 2.9-4.4mm wall thickness	55mm	
PE Pipe 63mm Ø, 2.9-4.4mm wall thickness	63mm	
PE Pipe 75mm Ø, 2.8-6.7mm wall thickness	75mm	
PE Pipe 82mm Ø, 2.8-6.7mm wall thickness	82mm	
PE Pipe 90mm Ø, 2.7-10mm wall thickness	90mm	
PE Pipe 100mm Ø, 2.7-10mm wall thickness	100mm	
PE Pipe 110mm Ø, 2.7-10mm wall thickness	110mm	
PE Pipe 125mm Ø, 3.1mm wall thickness	125mm	
PE Pipe 140mm Ø, 3.9-5.8mm wall thickness	140mm	
PE Pipe 160mm Ø, 4.9-9.5mm wall thickness	160mm	

Collars secured both faces of the substrate utilising 80mm long pig tail screw through to the Astro Batt and Coating
 1. Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



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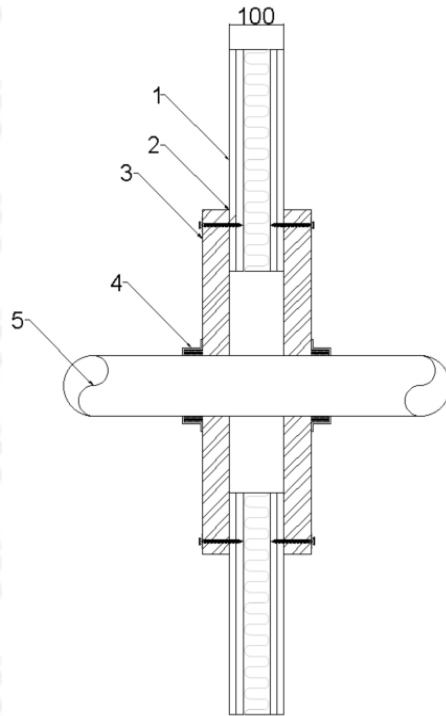
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Max Aperture 2600mm Wide x 2600mm High

(Penetrations positioned as per option 1 or 2 below, 0mm distance between services and 50mm to edge of seal)



Key

1. Supporting construction
2. Astro intumescant
3. Astro Batt and Coating
4. Astro X Series CE Pipe Collar
5. Penetration Service

Scope and Classifications as below

Intumescent Thickness	
Pipe Diameter	Intumescent Material
ø 32 mm - ø 50 mm	40 mm (W) x 2 mm (T)
ø 51 mm - ø 82 mm	40 mm (W) x 4 mm (T)
ø 83 mm - ø 115 mm	40 mm (W) x 6 mm (T)
ø 116 mm - ø 160 mm	40 mm (W) x 8 mm (T)
ø 161 mm - ø 200 mm	40 mm (W) x 10 mm (T)
ø 201 mm - ø 250 mm	40 mm (W) x 12 mm (T)

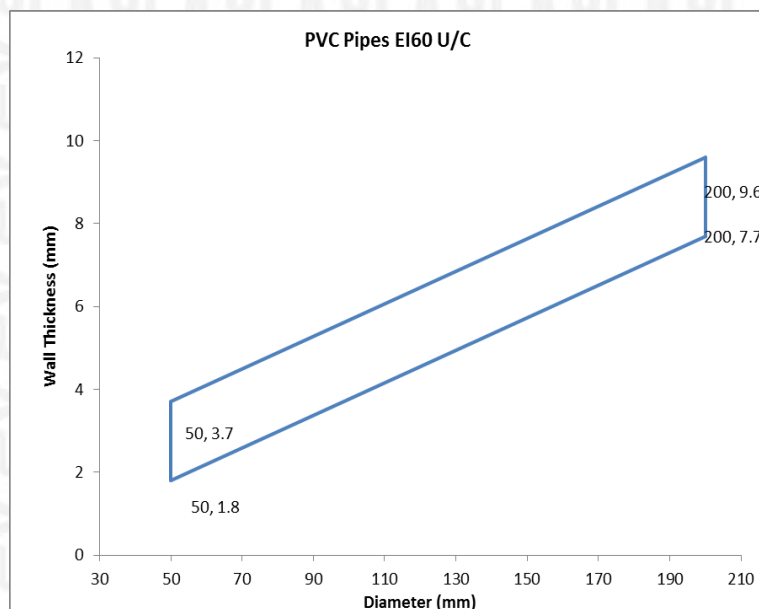
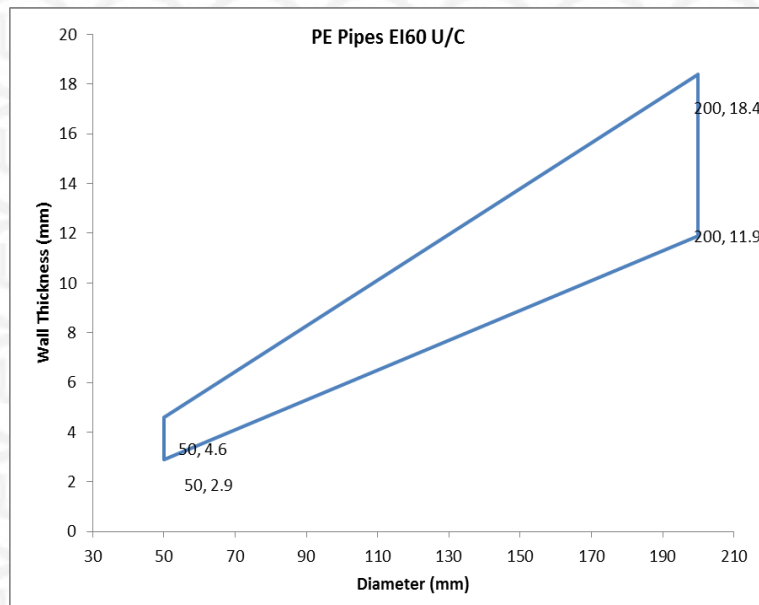
Wrap secured internally within both faces of the Astro Batt and Coating

Installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 100mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres.



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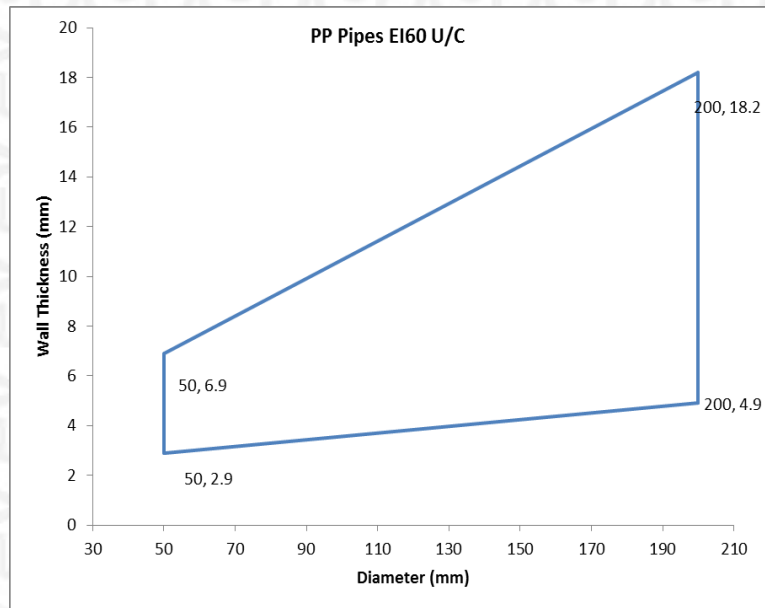


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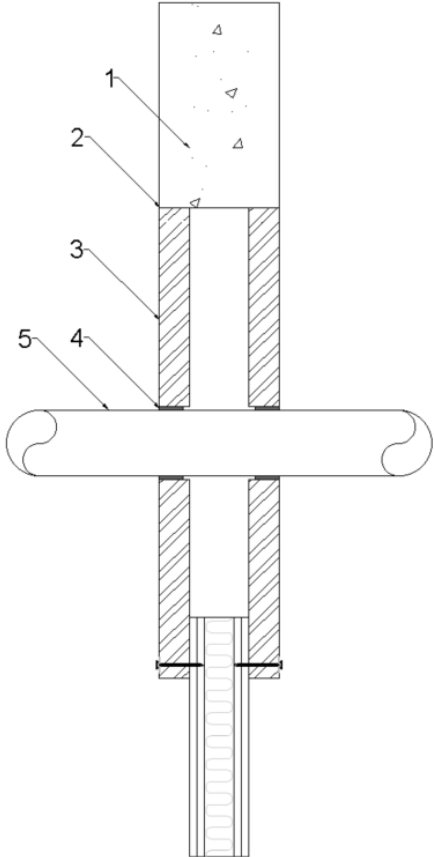
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Max Aperture 2600mm Wide x 2600mm High	
<p>30mm overlap patress installed flush to soffit</p> 	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intu mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Penetration Service
Service(s)	Classification
PVC Pipe 110mm Ø, 4.2mm wall thickness	EI 60 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 30mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres. No fixing is applied to the head flush to the soffit

²4 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation

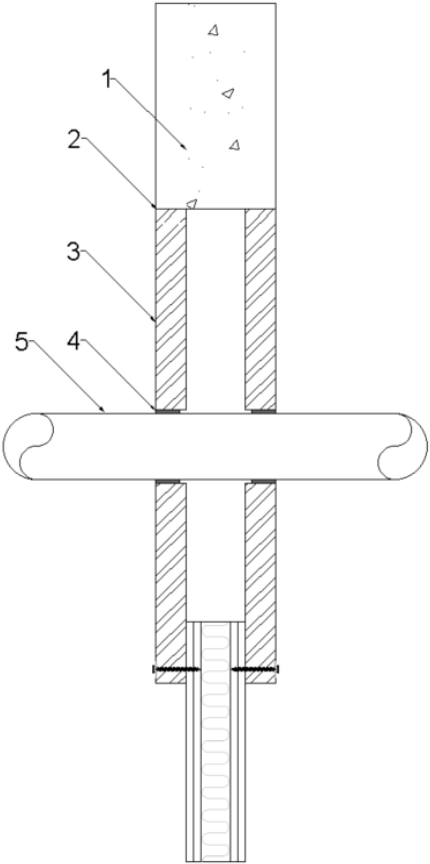


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Max Aperture 2600mm Wide x 2600mm High	
<p>30mm overlap patress installed flush to soffit</p> 	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro intumescible mastic 3. Astro Batt and Coating 4. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap 5. Penetration Service
Service(s)	Classification
PVC Pipe 110mm Ø, 4.2mm wall thickness	EI 60 C/U

¹Patress installation of Astro Batt and Coating. The Batts are installed in horizontal rows and fixed in minimum two vertical edges. Overlap of batts to substrate min 30mm. Batts mechanically fixed to substrate with min 6mm x 80mm steel screws and steel retaining washer. Fixings installed at max 300mm centres. No fixing is applied to the head flush to the soffit

²4 x 2mm thick layers of Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap installed both sides of the substrate within the patress installation



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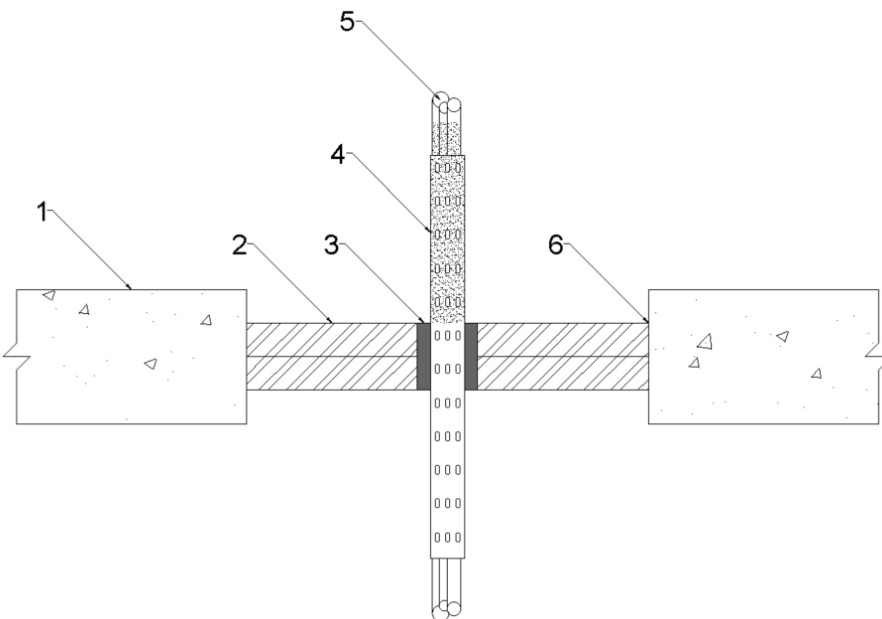
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Rigid Floors Minimum Thickness 150mm

Double Layer, Astro Batt and Coating 50mm, Electrical Cables

Max Aperture 1100mm Wide x 1500mm Long

	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro Batt and Coating 3. Astro HPE Sealant 4. Astro PST Coating 5. Penetration Service 6. Astro intumescing mastic
Penetration Specification	Classification
*500mm perforated cable tray	EI 60
*Electrical cables up to 21mm ø	
*1 off 'C1' Cable	
*1 off 'C2' Cable	
*1 off 'C3' Cable	

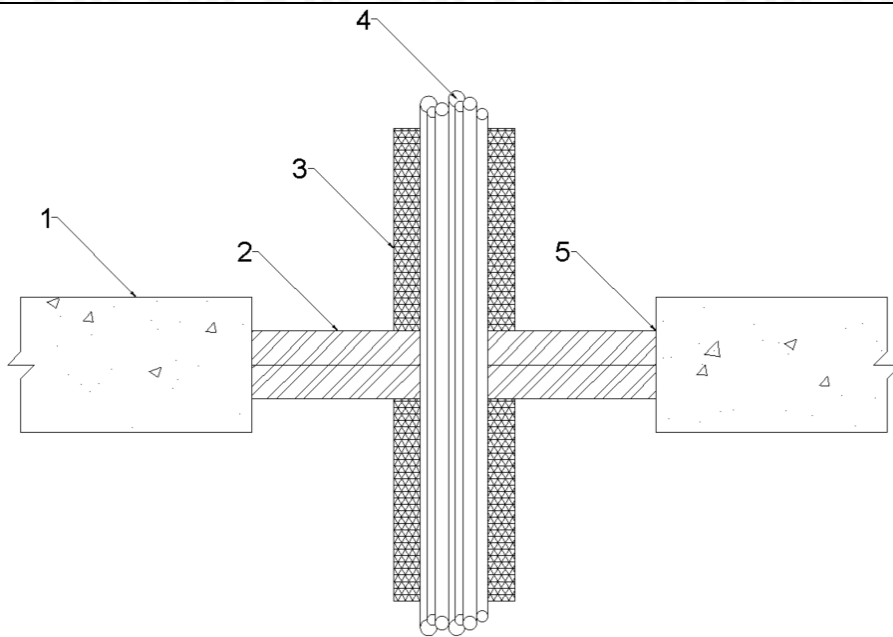
*All cables coated with 2mm DFT Astro PST Coating 300mm along the cables upper side of the seal
Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



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Max Aperture 1100mm Wide x 1500mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Insulation
4. Penetration Service
5. Astro intumescible mastic

Service(s)

Classification

¹Electrical cables upto 80mm dia

¹Cable Trays and Ladders

¹100 mm diameter bundle telecommunication cable type "F"

¹Unsheathed electrical cables up to 17mm dia

¹Unsheathed electrical cables 18-24mm dia

¹Steel or Copper Conduits up to 16mm

¹Plastic conduits up to 16mm

EI 60

¹Cables and cable trays wrapped with a single layer of 40mm thick stonewool, min 40kg/m³ (L/I 300mm)



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Max Aperture 700mm Wide x 1100mm Long

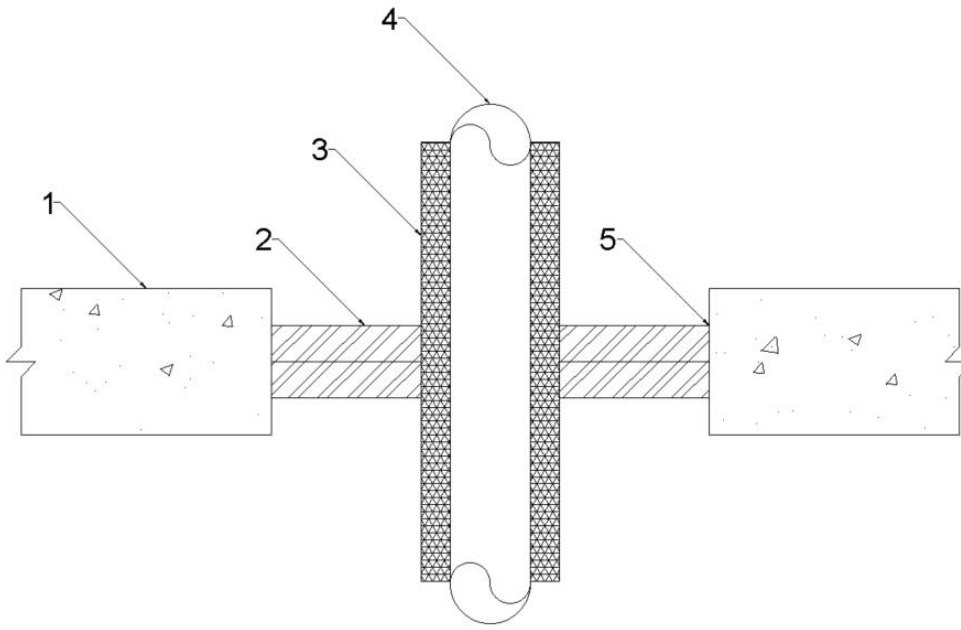
<p>The diagram shows a cross-section of a wall assembly with a vertical pipe passing through it. The wall assembly is composed of three main layers: a supporting construction (1) on the left, a layer of insulation (2) in the middle, and a penetration service (4) on the right. The pipe is surrounded by a layer of insulation (3) and sealed with Astro intumescible mastic (5). The diagram is labeled with numbers 1 through 5 corresponding to the key.</p>	<p><u>Key</u></p> <ol style="list-style-type: none"> 1. Supporting construction 2. Astro Batt and Coating 3. Insulation 4. Penetration Service 5. Astro intumescible mastic
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	EI 120 C/U
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	E 120 C/U EI 30 C/U



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Double Layer, Astro Batt and Coating 50mm, Insulated Metallic Pipes

Max Aperture 1100mm Wide x 1500mm Long	
	Key 1. Supporting construction 2. Astro Batt and Coating 3. Insulation 4. Penetration Service 5. Astro intu mastic
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	E 90 C/U EI 60 C/U
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	E 90 C/U EI 30 C/U



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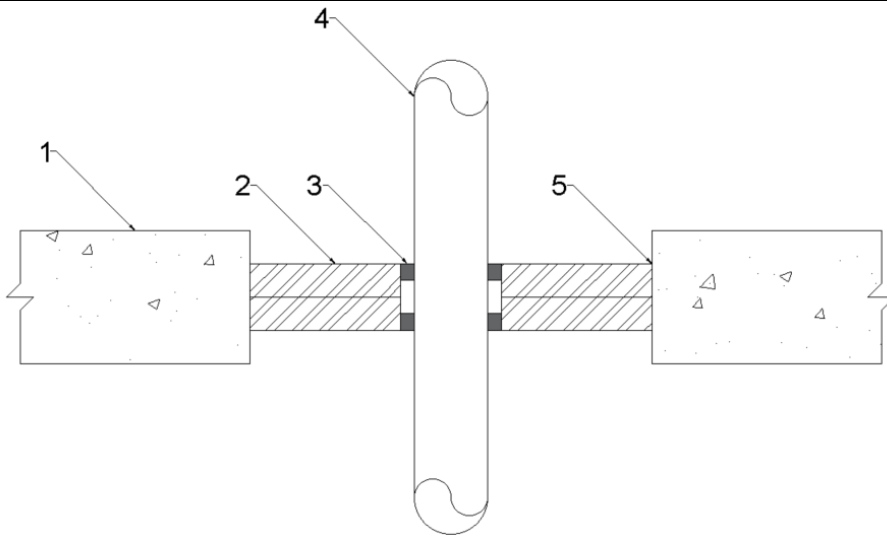
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Double Layer, Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 750mm Wide x 1100mm Long

Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro HPE Sealant
4. Penetration Service
5. Astro intu mastic



Penetration Specification

Astro HPE Sealant

Classification

Pipe Diameters as below

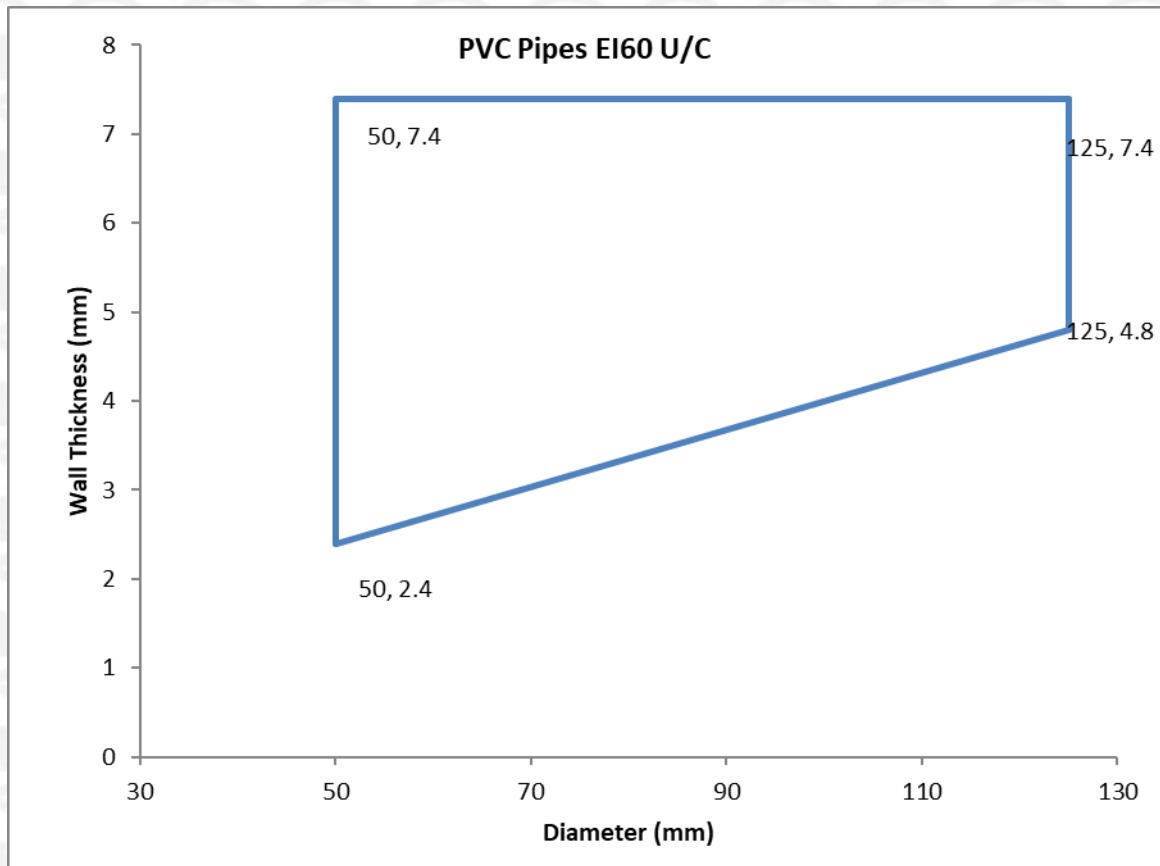
20mm annulus, 25mm deep both faces of the Astro Batt and Coating

See graphs below



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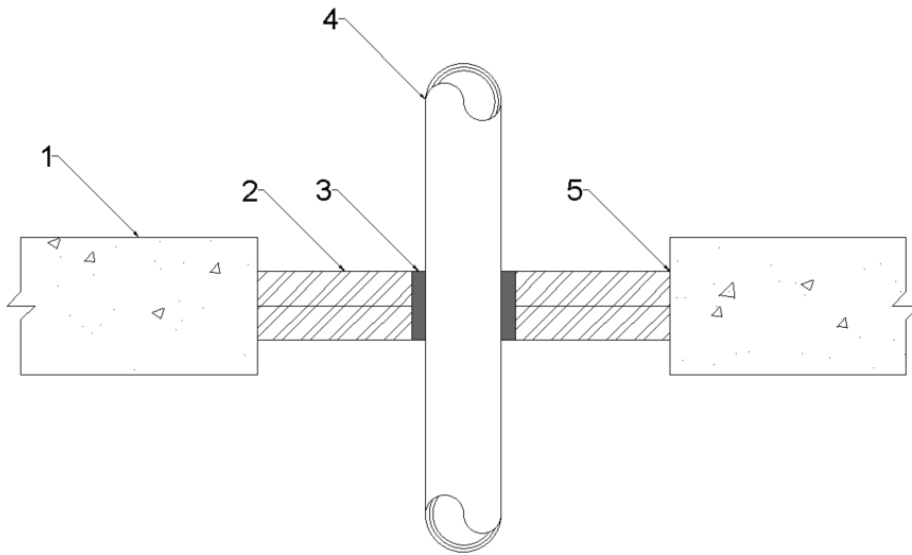
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Max Aperture 750mm Wide x 1100mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro HPE Sealant
4. Penetration Service
5. Astro intu mastic

Penetration Specification

Classification

Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness

EI 60 U/C

Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



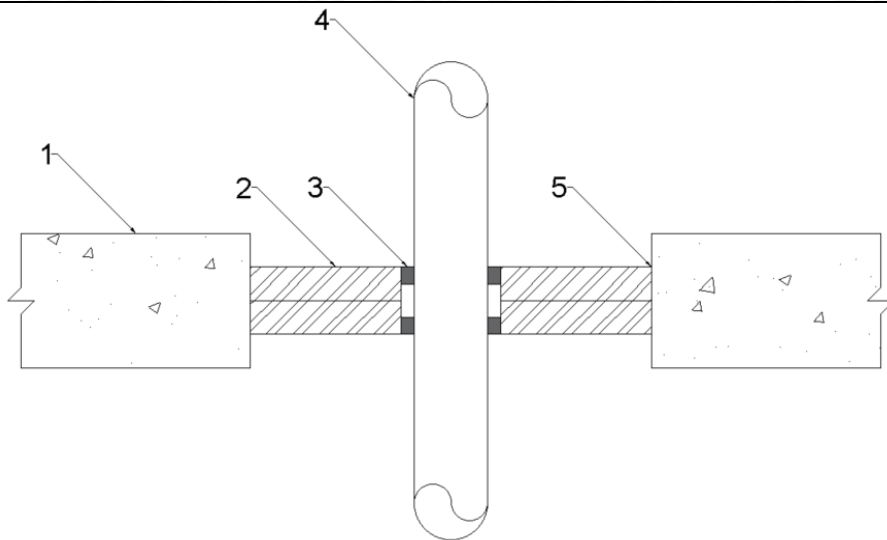
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Max Aperture 1100mm Wide x 1500mm Long

Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro HPE Sealant
4. Penetration Service
5. Astro intu mastic



Penetration Specification

Astro HPE Sealant

Classification

Pipe Diameters as below

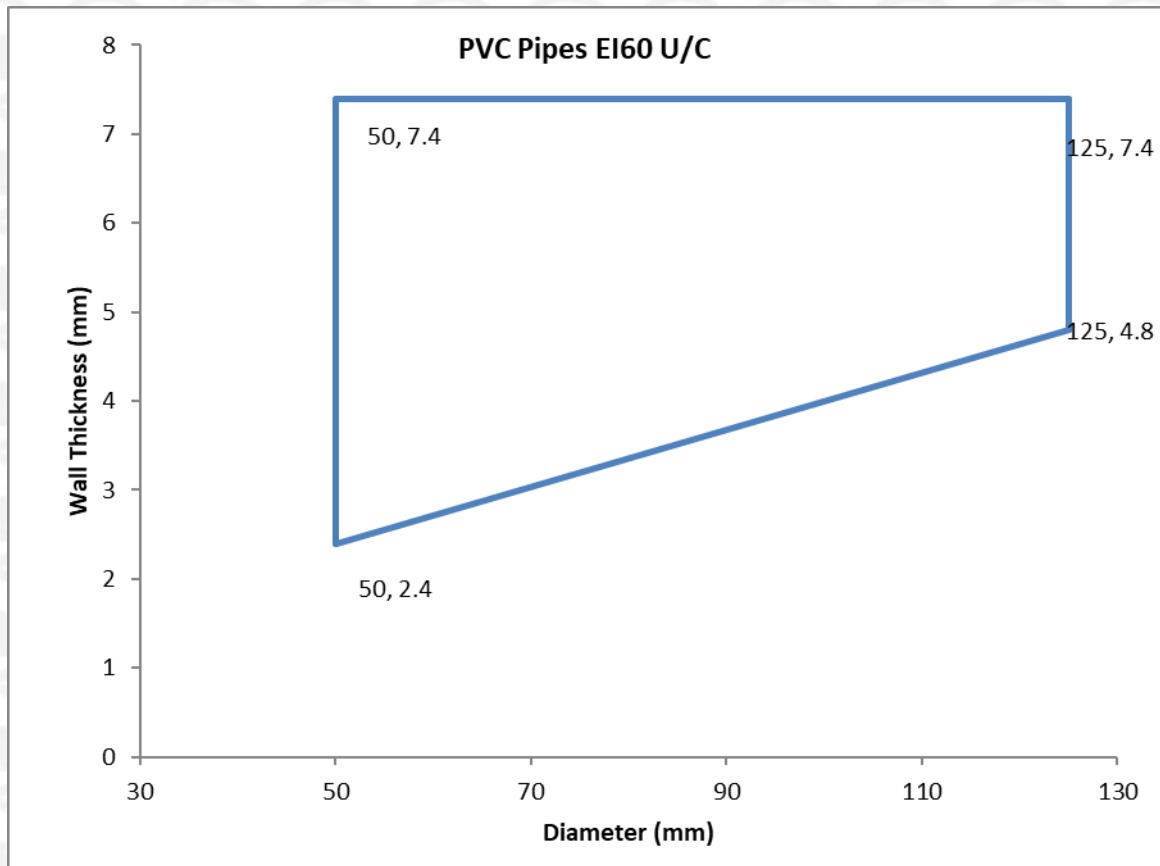
20mm annulus, 25mm deep both faces of the Astro Batt and Coating

See graphs below



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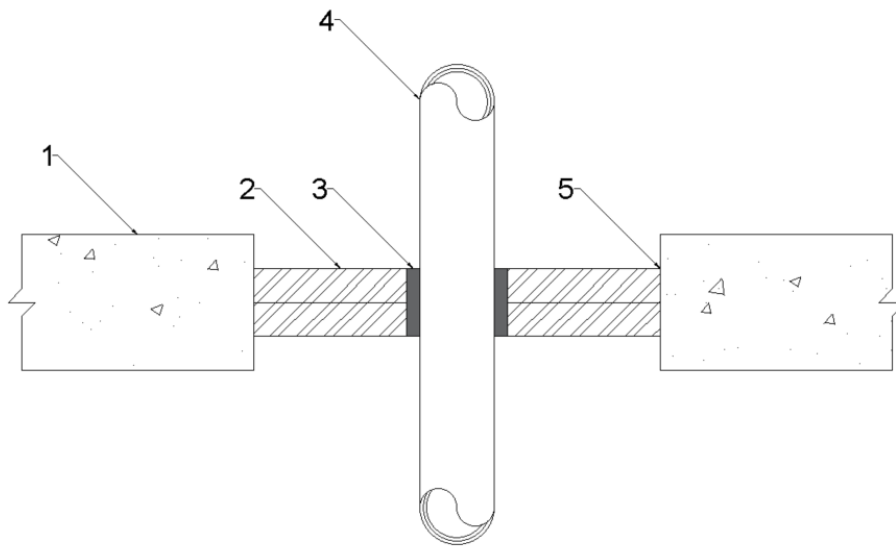
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Max Aperture 1100mm Wide x 1500mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro HPE Sealant
4. Penetration Service
5. Astro intu mastic

Penetration Specification

Classification

Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness

EI 60 U/C

Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



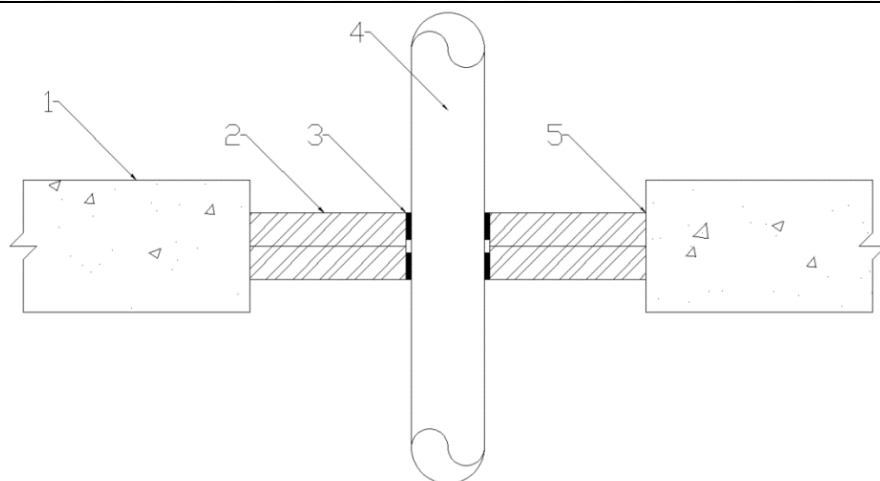
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Max Aperture 350mm Wide x 1000mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap
4. Penetration Service
5. Astro intumescence

Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe up to 125mm Ø, 4.8-7.4mm wall thickness.	2mm thickness	EI 120 U/C
PP Pipe up to 40mm Ø, 3.1-17.1mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 11.4mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 3.1-11.4mm wall thickness.	2mm thickness	E 120 U/C EI 90 U/C

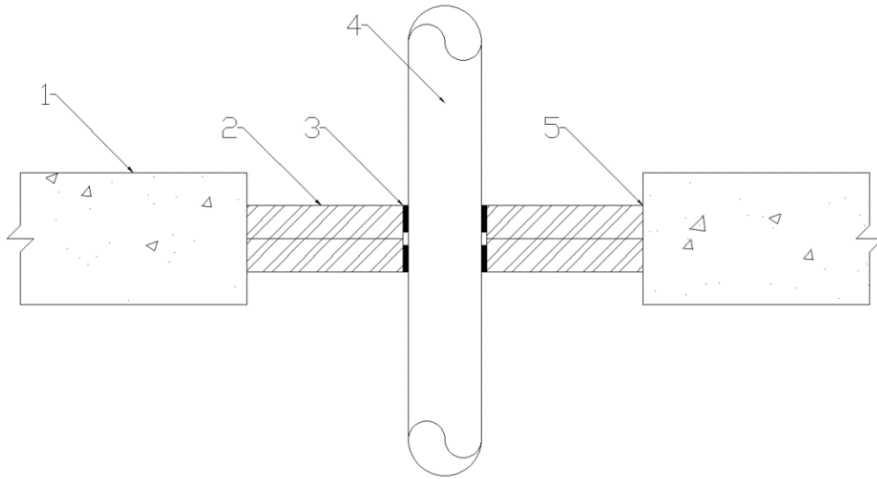
¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating



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Max Aperture 1100mm Wide x 1500mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro X Series CE Pipe Wrap
UL/ Astro X Series CE Pipe Wrap
4. Penetration Service
5. Astro intumescible mastic

Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe up to 125mm Ø, 4.8-7.4mm wall thickness.	2mm thickness	EI 60 U/C
PP Pipe up to 40mm Ø, 3.1-17.1mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 11.4mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 3.1-11.4mm wall thickness.	2mm thickness	

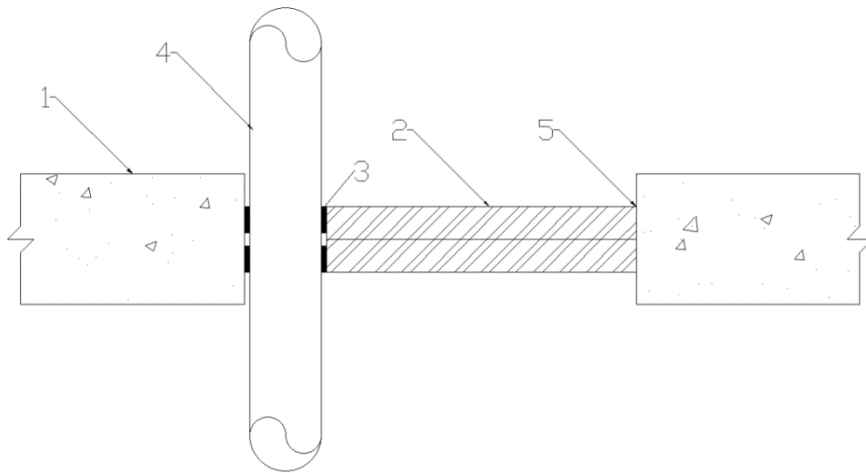
¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating



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Max Aperture 350mm Wide x 1000mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap
4. Penetration Service
5. Astro intu mastic

Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe up to 125mm Ø, 4.8-7.4mm wall thickness.	2mm thickness	EI 120 U/C
PP Pipe up to 40mm Ø, 3.1-17.1mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 11.4mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 3.1-11.4mm wall thickness.	2mm thickness	E 120 U/C EI 90 U/C

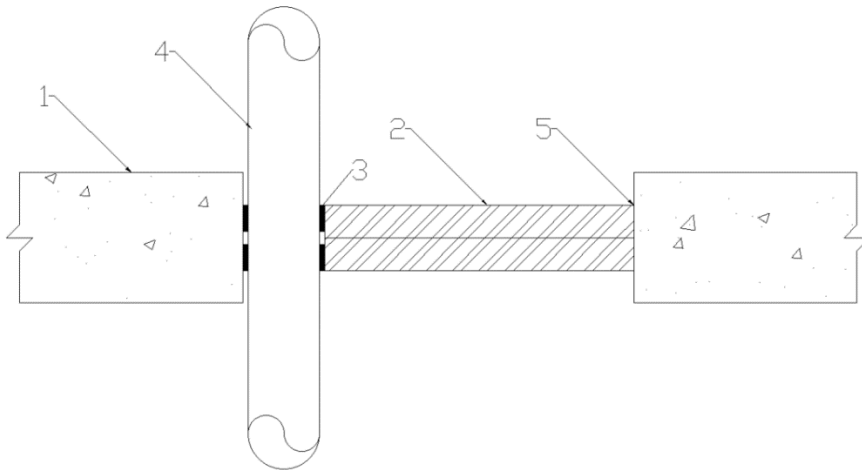
¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating



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Max Aperture 1100mm Wide x 1500mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap
4. Penetration Service
5. Astro intu mastic

Service(s)	Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap Ref	Classification
PVC Pipe up to 125mm Ø, 4.8-7.4mm wall thickness.	2mm thickness	EI 60 U/C
PP Pipe up to 40mm Ø, 3.1-17.1mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 11.4mm wall thickness.	2mm thickness	
PE Pipe up to 125mm Ø, 3.1-11.4mm wall thickness.	2mm thickness	

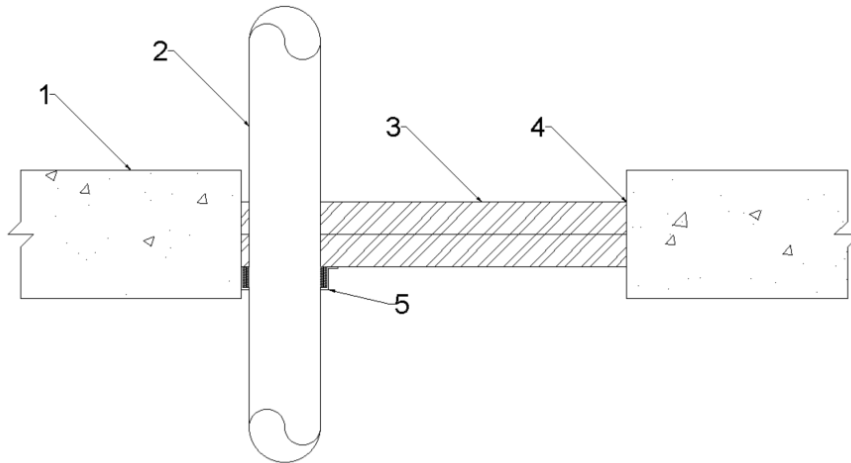
¹Astro X Series CE Pipe Wrap UL/ Astro X Series CE Pipe Wrap secured internally within both faces of the Astro Batt and Coating



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Max Aperture 350mm Wide x 1000mm Long



Key

1. Supporting construction
2. Penetration Service
3. Astro Batt and Coating
4. Astro intu mastic
5. Astro X Series CE Pipe Collar

Penetration Specification	Astro X Series CE Pipe Collars	Classification
Pipe Diameters as below. Zero Distance	Fixed to the underside of the Astro Batt and Coating utilising steel pig tail fixings	EI 120 U/C

Penetration Specification	Collar Reference	Intumescent Material
PVC Pipe 32mm Ø 1.8mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PVC Pipe 40mm Ø 1.8mm wall thickness	40mm Astro X Series CE Pipe Collar	
PVC Pipe 50mm Ø 1.8mm wall thickness	50mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PVC Pipe 55mm Ø 2.3-2.8mm wall thickness	55mm Astro X Series CE Pipe Collar	
PVC Pipe 63mm Ø 2.3-2.8mm wall thickness	63mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PVC Pipe 75mm Ø 3.1-4.4mm wall thickness	75mm Astro X Series CE Pipe Collar	
PVC Pipe 82mm Ø 3.1-4.4mm wall thickness	82mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PVC Pipe 90mm Ø 4.2-6.6mm wall thickness	90mm Astro X Series CE Pipe Collar	
PVC Pipe 100mm Ø 4.2-6.6mm wall thickness	100mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PVC Pipe 110mm Ø 4.2-6.6mm wall thickness	110mm Astro X Series CE Pipe Collar	
PVC Pipe 125mm Ø 6.0mm wall thickness	125mm Astro X Series CE Pipe Collar	
PVC Pipe 140mm Ø 6.1-7.5mm wall thickness	140mm Astro X Series CE Pipe Collar	
PVC Pipe 160mm Ø 6.2-9.5mm wall thickness	160mm Astro X Series CE Pipe Collar	



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Penetration Specification	Collar Reference	Intumescent Material
PP Pipe 32mm Ø 2.9mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PP Pipe 40mm Ø 2.9mm wall thickness	40mm Astro X Series CE Pipe Collar	
PP Pipe 50mm Ø 2.9mm wall thickness	50mm Astro X Series CE Pipe Collar	
PP Pipe 55mm Ø 2.9-4.4mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PP Pipe 63mm Ø 2.9-4.4mm wall thickness	63mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PP Pipe 75mm Ø 2.8-6.7mm wall thickness	75mm Astro X Series CE Pipe Collar	
PP Pipe 82mm Ø 2.8-6.7mm wall thickness	82mm Astro X Series CE Pipe Collar	
PP Pipe 90mm Ø 2.7-10.0mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PP Pipe 100mm Ø 2.7-10.0mm wall thickness	100mm Astro X Series CE Pipe Collar	
PP Pipe 110mm Ø 2.7-10.0mm wall thickness	110mm Astro X Series CE Pipe Collar	
PP Pipe 125mm Ø 3.1mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PP Pipe 140mm Ø 3.5-8.0mm wall thickness	140mm Astro X Series CE Pipe Collar	
PP Pipe 160mm Ø 4.0-14.6mm wall thickness	160mm Astro X Series CE Pipe Collar	

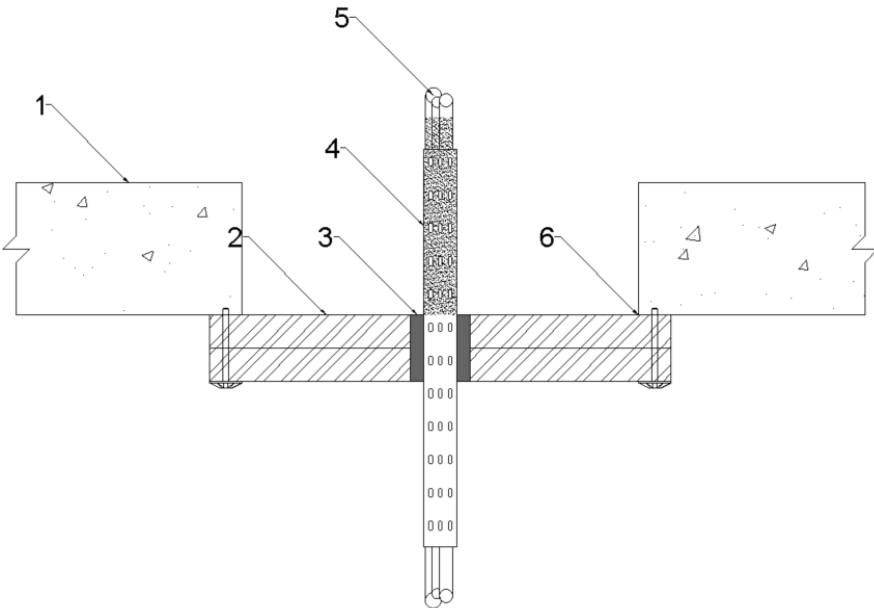
Penetration Specification	Collar Reference	Intumescent Material
PE Pipe 32mm Ø 2.9mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PE Pipe 40mm Ø 2.9mm wall thickness	40mm Astro X Series CE Pipe Collar	
PE Pipe 50mm Ø 2.9mm wall thickness	50mm Astro X Series CE Pipe Collar	
PE Pipe 55mm Ø 2.9-4.4mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PE Pipe 63mm Ø 2.9-4.4mm wall thickness	63mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PE Pipe 75mm Ø 2.8-6.7mm wall thickness	75mm Astro X Series CE Pipe Collar	
PE Pipe 82mm Ø 2.8-6.7mm wall thickness	82mm Astro X Series CE Pipe Collar	
PE Pipe 90mm Ø 2.7-10.0mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PE Pipe 100mm Ø 2.7-10.0mm wall thickness	100mm Astro X Series CE Pipe Collar	
PE Pipe 110mm Ø 2.7-10.0mm wall thickness	110mm Astro X Series CE Pipe Collar	
PE Pipe 125mm Ø 3.1mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PE Pipe 140mm Ø 3.9-5.8mm wall thickness	140mm Astro X Series CE Pipe Collar	
PE Pipe 160mm Ø 4.9-9.5mm wall thickness	160mm Astro X Series CE Pipe Collar	



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Double Layer, Astro Batt and Coating 50mm, Patress Installed Electrical Cables

Max Aperture 1000mm Wide x 1300mm Long	
	Key 1. Supporting construction 2. Astro Batt and Coating 3. Astro HPE Sealant 4. Astro PST Coating 5. Penetration Service 6. Astro intu mastic
Penetration Specification	Classification
*500mm perforated cable tray	EI 60
*Electrical cables up to 21mm ø	
*1 off 'C1' Cable	
*1 off 'C2' Cable	
*1 off 'C3' Cable	

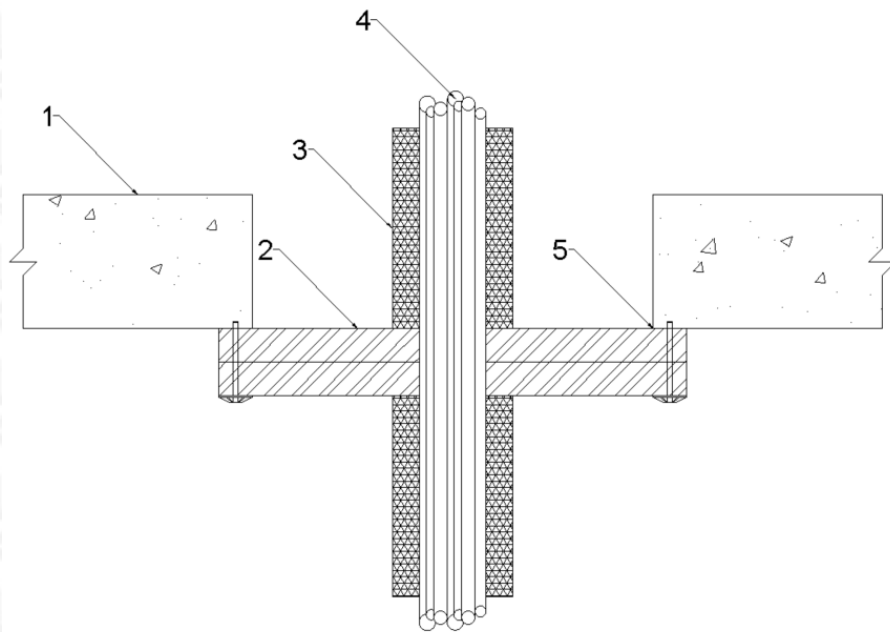
*All cables coated with 2mm DFT Astro PST Coating 300mm along the cables upper side of the seal
 Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



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Max Aperture 1000mm Wide x 1300mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Insulation
4. Penetration Service
5. Astro intumescible mastic

Service(s)

Classification

¹Electrical cables upto 80mm dia

¹Cable Trays and Ladders

¹100 mm diameter bundle telecommunication cable type "F"

¹Unsheathed electrical cables up to 17mm dia

¹Unsheathed electrical cables 18-24mm dia

¹Steel or Copper Conduits up to 16mm

¹Plastic conduits up to 16mm

EI 60

¹Cables and cable trays wrapped with a single layer of 40mm thick stonewool, min 40kg/m³ (L/I 300mm)



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Double Layer, Astro Batt and Coating 50mm, Pattress Installed Insulated Metallic Pipes

Max Aperture 1000mm Wide x 1300mm Long	
	Key 1. Supporting construction 2. Astro Batt and Coating 3. Insulation 4. Penetration Service 5. Astro intu mastic
Service(s)	Classification
Steel or Copper Pipe 42mm Ø, 1.2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	EI 60 C/U
Steel or Copper Pipe 42mm – 159mm Ø, 2mm – 14.2mm wall thickness. (L/I 300mm) 40mm stone wool insulation (min 40Kg/m ³)	E 60 C/U EI 30 C/U



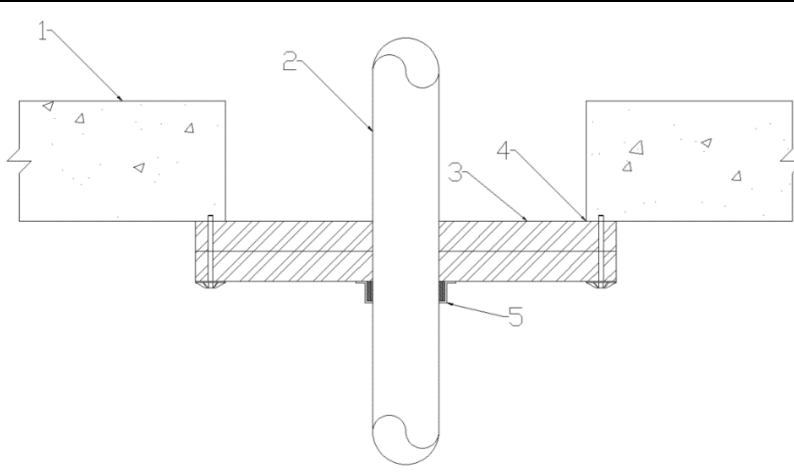
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Double Layer, Astro Batt and Coating 50mm, Pattress Installed Plastic Pipes

Max Aperture 1000mm Wide x 1300mm Long		
		Key 1. Supporting construction 2. Astro Batt and Coating 3. Insulation 4. Penetration Service 5. Astro X Series CE Pipe Collar
Penetration Specification	Astro X Series CE Pipe Collars	Classification
Pipe Diameters as below. Zero Distance	Fixed to the underside of the Astro Batt and Coating utilising steel pig tail fixings	EI 60 U/C

Penetration Specification	Collar Reference	Intumescent Material
PVC Pipe 32mm Ø 1.8mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PVC Pipe 40mm Ø 1.8mm wall thickness	40mm Astro X Series CE Pipe Collar	
PVC Pipe 50mm Ø 1.8mm wall thickness	50mm Astro X Series CE Pipe Collar	
PVC Pipe 55mm Ø 2.3-2.8mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PVC Pipe 63mm Ø 2.3-2.8mm wall thickness	63mm Astro X Series CE Pipe Collar	
PVC Pipe 75mm Ø 3.1-4.4mm wall thickness	75mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PVC Pipe 82mm Ø 3.1-4.4mm wall thickness	82mm Astro X Series CE Pipe Collar	
PVC Pipe 90mm Ø 4.2-6.6mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PVC Pipe 100mm Ø 4.2-6.6mm wall thickness	100mm Astro X Series CE Pipe Collar	
PVC Pipe 110mm Ø 4.2-6.6mm wall thickness	110mm Astro X Series CE Pipe Collar	
PVC Pipe 125mm Ø 6.0mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PVC Pipe 140mm Ø 6.1-7.5mm wall thickness	140mm Astro X Series CE Pipe Collar	
PVC Pipe 160mm Ø 6.2-9.5mm wall thickness	160mm Astro X Series CE Pipe Collar	



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Penetration Specification	Collar Reference	Intumescent Material
PP Pipe 32mm Ø 2.9mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PP Pipe 40mm Ø 2.9mm wall thickness	40mm Astro X Series CE Pipe Collar	
PP Pipe 50mm Ø 2.9mm wall thickness	50mm Astro X Series CE Pipe Collar	
PP Pipe 55mm Ø 2.9-4.4mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PP Pipe 63mm Ø 2.9-4.4mm wall thickness	63mm Astro X Series CE Pipe Collar	
PP Pipe 75mm Ø 2.8-6.7mm wall thickness	75mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PP Pipe 82mm Ø 2.8-6.7mm wall thickness	82mm Astro X Series CE Pipe Collar	
PP Pipe 90mm Ø 2.7-10.0mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PP Pipe 100mm Ø 2.7-10.0mm wall thickness	100mm Astro X Series CE Pipe Collar	
PP Pipe 110mm Ø 2.7-10.0mm wall thickness	110mm Astro X Series CE Pipe Collar	
PP Pipe 125mm Ø 3.1mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PP Pipe 140mm Ø 3.5-8.0mm wall thickness	140mm Astro X Series CE Pipe Collar	
PP Pipe 160mm Ø 4.0-14.6mm wall thickness	160mm Astro X Series CE Pipe Collar	

Penetration Specification	Collar Reference	Intumescent Material
PE Pipe 32mm Ø 2.9mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PE Pipe 40mm Ø 2.9mm wall thickness	40mm Astro X Series CE Pipe Collar	
PE Pipe 50mm Ø 2.9mm wall thickness	50mm Astro X Series CE Pipe Collar	
PE Pipe 55mm Ø 2.9-4.4mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PE Pipe 63mm Ø 2.9-4.4mm wall thickness	63mm Astro X Series CE Pipe Collar	
PE Pipe 75mm Ø 2.8-6.7mm wall thickness	75mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PE Pipe 82mm Ø 2.8-6.7mm wall thickness	82mm Astro X Series CE Pipe Collar	
PE Pipe 90mm Ø 2.7-10.0mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PE Pipe 100mm Ø 2.7-10.0mm wall thickness	100mm Astro X Series CE Pipe Collar	
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PE Pipe 125mm Ø 3.1mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PE Pipe 140mm Ø 3.9-5.8mm wall thickness	140mm Astro X Series CE Pipe Collar	
PE Pipe 160mm Ø 4.9-9.5mm wall thickness	160mm Astro X Series CE Pipe Collar	



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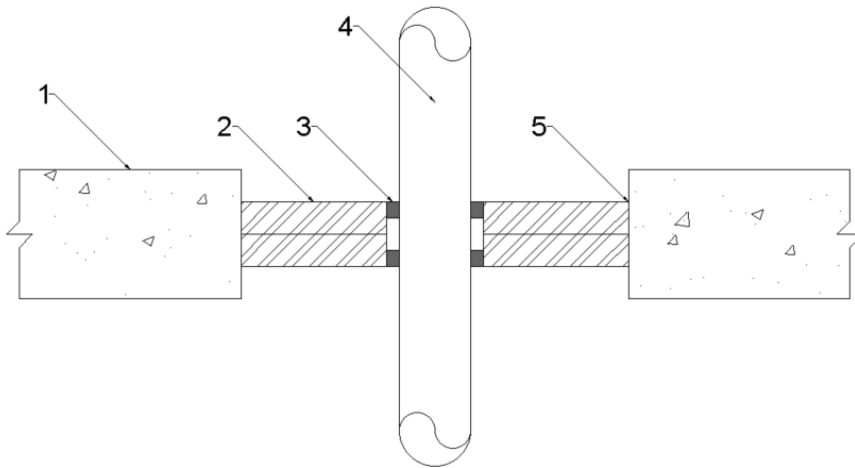
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Double Layer, Astro Batt and Coating 50mm, Plastic Pipes

Max Aperture 1000mm Wide x 1300mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro HPE Sealant
4. Penetration Service
5. Astro intumescible mastic

Penetration Specification

Astro HPE Sealant

Classification

Pipe Diameters as below

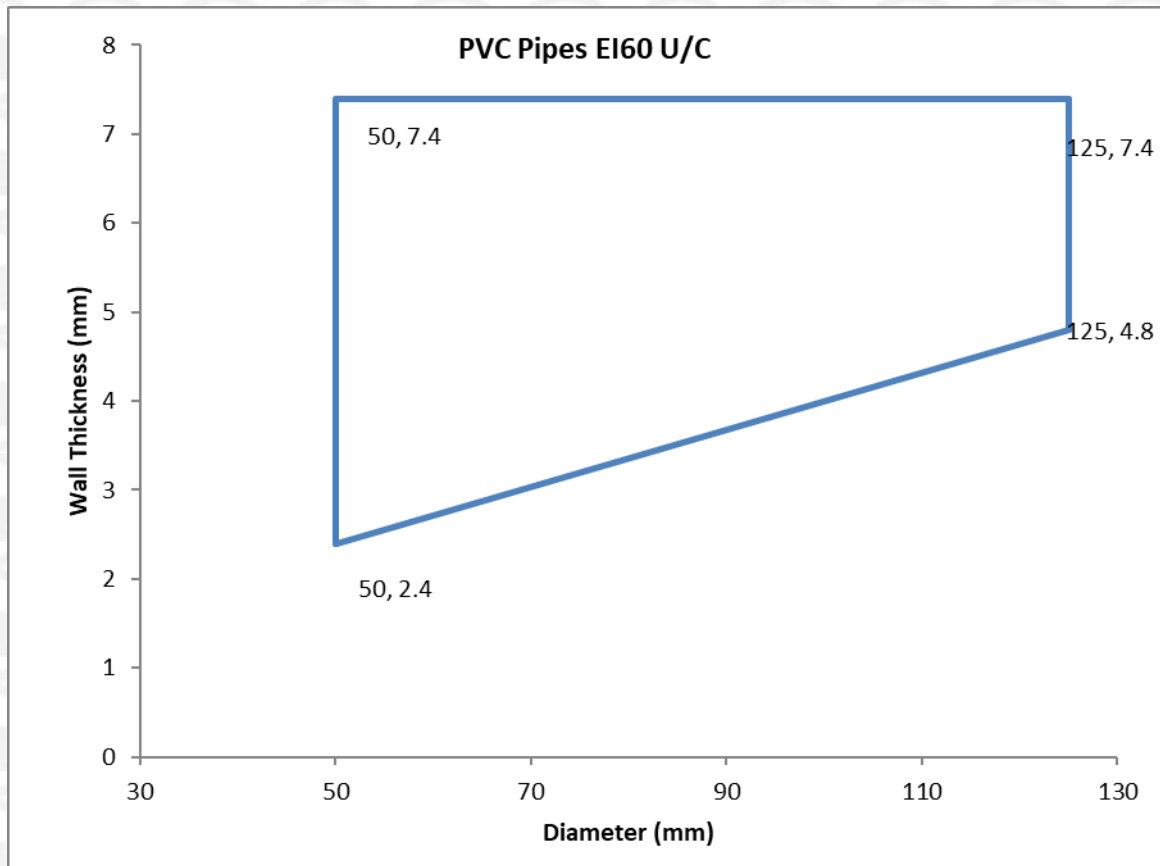
20mm annulus, 25mm deep both faces of the Astro Batt and Coating

See graphs below



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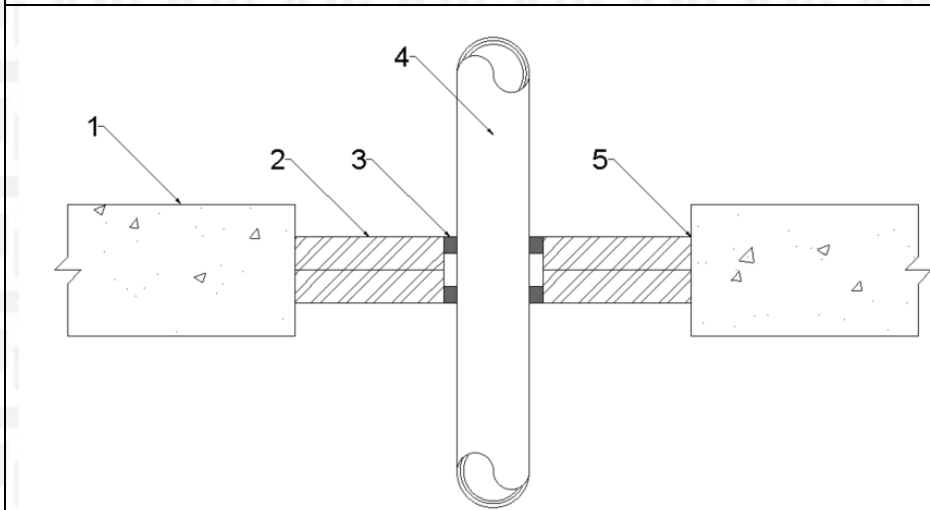
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Max Aperture 1000mm Wide x 1300mm Long



Key

1. Supporting construction
2. Astro Batt and Coating
3. Astro HPE Sealant
4. Penetration Service
5. Astro intu mastic

Penetration Specification

Classification

Uponor MLC (Multi-Layer Composite) Pipe 40mm ø 4mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 50mm ø 4.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 63mm ø 6mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 75mm ø 7.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 90mm ø 8.5mm wall thickness

Uponor MLC (Multi-Layer Composite) Pipe 110mm ø 10mm wall thickness

EI 60 U/C

Astro HPE Sealant 20mm annulus full 50mm depth of the Astro Batt and Coating



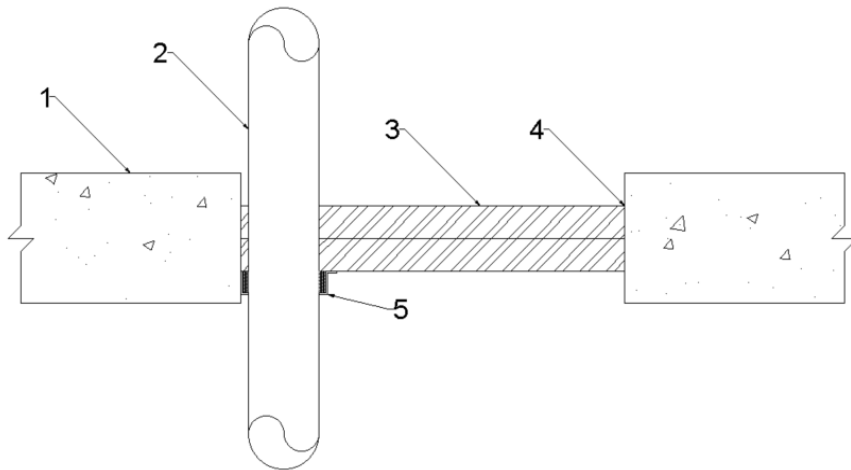
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Max Aperture 1000mm Wide x 1300mm Long



Key

1. Supporting construction
2. Penetration Service
3. Astro Batt and Coating
4. Astro intu mastic
5. Astro X Series CE Pipe Collar

Penetration Specification	Astro X Series CE Pipe Collars	Classification
Pipe Diameters as below. Zero Distance	Fixed to the underside of the Astro Batt and Coating utilising steel pig tail fixings	EI 60 U/C

Penetration Specification	Collar Reference	Intumescent Material
PVC Pipe 32mm Ø 1.8mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PVC Pipe 40mm Ø 1.8mm wall thickness	40mm Astro X Series CE Pipe Collar	
PVC Pipe 50mm Ø 1.8mm wall thickness	50mm Astro X Series CE Pipe Collar	
PVC Pipe 55mm Ø 2.3-2.8mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PVC Pipe 63mm Ø 2.3-2.8mm wall thickness	63mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PVC Pipe 75mm Ø 3.1-4.4mm wall thickness	75mm Astro X Series CE Pipe Collar	
PVC Pipe 82mm Ø 3.1-4.4mm wall thickness	82mm Astro X Series CE Pipe Collar	
PVC Pipe 90mm Ø 4.2-6.6mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PVC Pipe 100mm Ø 4.2-6.6mm wall thickness	100mm Astro X Series CE Pipe Collar	
PVC Pipe 110mm Ø 4.2-6.6mm wall thickness	110mm Astro X Series CE Pipe Collar	
PVC Pipe 125mm Ø 6.0mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PVC Pipe 140mm Ø 6.1-7.5mm wall thickness	140mm Astro X Series CE Pipe Collar	
PVC Pipe 160mm Ø 6.2-9.5mm wall thickness	160mm Astro X Series CE Pipe Collar	



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Penetration Specification	Collar Reference	Intumescent Material
PP Pipe 32mm Ø 2.9mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PP Pipe 40mm Ø 2.9mm wall thickness	40mm Astro X Series CE Pipe Collar	
PP Pipe 50mm Ø 2.9mm wall thickness	50mm Astro X Series CE Pipe Collar	
PP Pipe 55mm Ø 2.9-4.4mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PP Pipe 63mm Ø 2.9-4.4mm wall thickness	63mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PP Pipe 75mm Ø 2.8-6.7mm wall thickness	75mm Astro X Series CE Pipe Collar	
PP Pipe 82mm Ø 2.8-6.7mm wall thickness	82mm Astro X Series CE Pipe Collar	
PP Pipe 90mm Ø 2.7-10.0mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PP Pipe 100mm Ø 2.7-10.0mm wall thickness	100mm Astro X Series CE Pipe Collar	
PP Pipe 110mm Ø 2.7-10.0mm wall thickness	110mm Astro X Series CE Pipe Collar	
PP Pipe 125mm Ø 3.1mm wall thickness	125mm Astro X Series CE Pipe Collar	40mm (W) x 12mm (T)
PP Pipe 140mm Ø 3.5-8.0mm wall thickness	140mm Astro X Series CE Pipe Collar	
PP Pipe 160mm Ø 4.0-14.6mm wall thickness	160mm Astro X Series CE Pipe Collar	

Penetration Specification	Collar Reference	Intumescent Material
PE Pipe 32mm Ø 2.9mm wall thickness	32mm Astro X Series CE Pipe Collar	30mm (W) x 4mm (T)
PE Pipe 40mm Ø 2.9mm wall thickness	40mm Astro X Series CE Pipe Collar	
PE Pipe 50mm Ø 2.9mm wall thickness	50mm Astro X Series CE Pipe Collar	
PE Pipe 55mm Ø 2.9-4.4mm wall thickness	55mm Astro X Series CE Pipe Collar	30mm (W) x 6mm (T)
PE Pipe 63mm Ø 2.9-4.4mm wall thickness	63mm Astro X Series CE Pipe Collar	30mm (W) x 8mm (T)
PE Pipe 75mm Ø 2.8-6.7mm wall thickness	75mm Astro X Series CE Pipe Collar	
PE Pipe 82mm Ø 2.8-6.7mm wall thickness	82mm Astro X Series CE Pipe Collar	
PE Pipe 90mm Ø 2.7-10.0mm wall thickness	90mm Astro X Series CE Pipe Collar	30mm (W) x 10mm (T)
PE Pipe 100mm Ø 2.7-10.0mm wall thickness	100mm Astro X Series CE Pipe Collar	
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Substrate	Minimum Substrate Thickness (mm)	Maximum Seal width (mm)	Minimum Seal Depth (mm)	Duct A / Duct B	Duct Specification (Duct must be classified in accordance with EN 13501-3/4 for the required period)	Fire Resistance (mins.)	
						E	S
Drywall/ Concrete/ Masonry wall	100	100	200*	A	EN 13501-3 - Uninsulated 1.0mm GMS steel, rectangular duct, maximum dimensions 1250 mm wide by 1000 mm high.	60	120
				B		120	-
Concrete floor	150	250	275**	A		120	120
				B		120	-
Drywall/ Concrete/ Masonry wall	100	100	400***	A		60	120
Drywall/ Concrete/ Masonry wall	100	100	200*	B	EN 13501-3 - Uninsulated 1.0mm GMS steel, rectangular duct, maximum dimensions 1250 mm wide by 1000 mm high. Duct insulated with Insulfrax 128 kg/m ³ , 25 mm thick for a length of 400 mm through the penetration seal (100 mm extending from both faces of the seal)	120	-
Drywall/ Concrete/ Masonry wall	100	100	200*	C	EN 13501-4 - Uninsulated 1.0mm GMS steel, rectangular duct, maximum dimensions 1250 mm wide by 1000 mm high. Duct insulated with Insulfrax 128 kg/m ³ , 25 mm thick for a length of 400 mm through the penetration seal (100 mm extending from both faces of the seal)	120	120

* 4 layers, outer layers overlapped

** 50 mm Astro Batt and Coating/100 mm Astro HS Compound /125 mm Astro Batt and Coating

*** 2 layers + 1 layer, 150 mm long fixed (with 75 and 100 mm pigtail screws and bedded on Astro HPE Sealant) around the duct to form a collar on both faces of the main seal.



Appendix UL-EU Certificate

Certification Mark	UL-EU mark
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The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.



The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this UL-EU Certificate.

PROCUREMENT

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at www.ul.com.

Form-ULID-006104 (DCS:27-CP-F0855) 5.0

