AXTER

Ref: PBXXXX
V1 01/12/2025
Bitumen Waterproofing
Single Ply Waterproofing
Hot Melt Waterproofing
Liquid Waterproofing

Product Data Sheet

PENETRATION BOX
Accessories

Standard and modular cabinets for roof penetrations. The Axter Penetration Box is designed to address the problem of bringing service pipes, cables, air intakes, vents and ductwork through the waterproofing system on a roof.
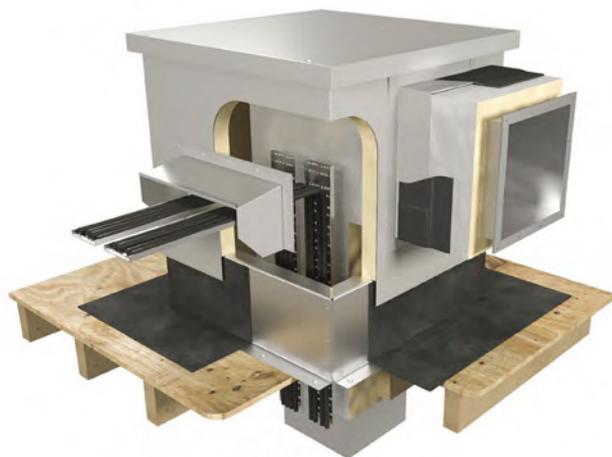
The Penetration Box is an insulated aluminium cabinet and removeable lid finished, as standard, in PCC to RAL 7047 Telegrey 4, that provides a solution to the housing and protection of roof penetrations and openings from the early stages of a project.

Standard sized units supplied by Axter (see below) are insulated internally with 50mm PIR insulation.

The unit can be fitted over a pre-prepared builders kerb or a bespoke size insulated aluminium kerb can be supplied with the unit.

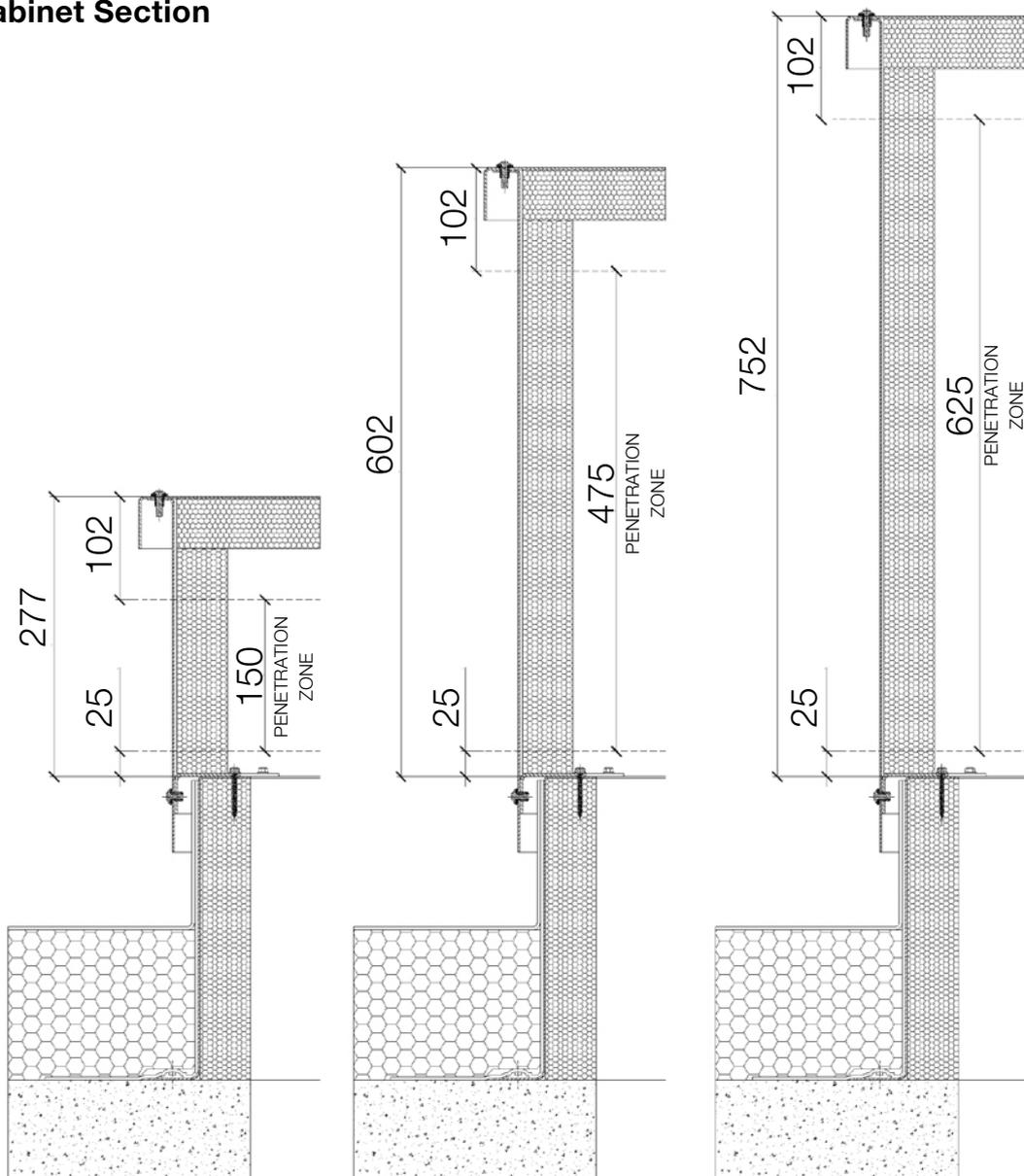A pre-fitted weathering hood protects the point where the services enter the Penetration Box.

A range of weathering accessories and louvres can be added retrospectively if required.

Key benefits

- Provides protection for roof penetrations/openings and eliminates associated water ingress at all stages of a project.

- Compatible with all roof constructions - warm, cold, inverted, green – both UPVC and aluminium kerbs available.

- Compatible with all roof finishes - single ply, bitumen, liquid applied and hot melt applications.

- Insulated internally with PIR insulation to optimise the building's thermal performance at riser position.

- Smart appearance and uniform detailing for multiple service locations.

- Can be powder coated to any RAL colour subject to enquiry.

- Most options can be retro-fitted to existing service penetrations for refurbishment projects.

- Bespoke and custom units available.

Typical Cabinet Section

Material specification

The cabinets have a removable lid facilitating installation of services. A pre-fitted weathering hood protects the point where services enter the cabinet.

	Standard insulation option	/50MW 50mm mineral wool insulation option	/100MW 100mm mineral wool insulation option
Unit & lid construction	2.0mm 5251 grade aluminium PPC to any RAL colour 50mm PIR foil faced insulation Thermal transmittance: 0.41W/m²K	2.0mm 5251 grade aluminium PPC to any RAL colour 50mm foil faced mineral wool insulation Thermal transmittance: 0.65W/m²K	2.0mm 5251 grade aluminium PPC to any RAL colour 100mm foil faced mineral wool insulation Thermal transmittance: 0.34W/m²K
Kerb construction	2.0mm 5251 grade aluminium 50mm PIR foil faced insulation Thermal transmittance: 0.41W/m²K	2.0mm 5251 grade aluminium 50mm foil faced mineral wool insulation Thermal transmittance: 0.65W/m²K	2.0mm 5251 grade aluminium 100mm foil faced mineral wool insulation Thermal transmittance: 0.34W/m²K
Bonded insulation	50mm PIR foil faced insulation Thermal conductivity: 0.022W/m²K CE marked, ISO 9001 and ISO 14001 Fire performance: Class 1 (BS 476, Part 7), Euroclass F (BS EN 13501-1)	100mm foil faced mineral wool insulation Thermal conductivity: 0.036W/m²K Fire performance: Non-combustable, Euroclass A1	
Compressible foam seal	(Where included) Impregnated PUR flexible foam tape with fire resistant polymeric impregnant		
Flashing & weathering details	2.0mm 5251 grade aluminium PPC to any RAL colour		
Flashing fixing screws	A2 stainless steel with self-drilling tip Ultra-low profile head with TX 25 drive TX25 drive aluminium / EPDM bonded sealing washers PPC to match panels and flashings		
Ventilation louvres	Nominal 40-50% open area Standard weather resistance Class C, 94.9-80.0%		
Sizing	Cabinets up to (WxLxH) 1000mm x 1500mm x 750mm		

Penetration Box Standard Sizes
Penetration Box 300 x 300mm.*

*Insulation cabinet only.

Diagram not to scale.

Sold as a kit which includes base, insulated cabinet and lid, and weathering hood.

Cabinet (excluding kerb)	
OA height from the kerb to top of lid	277
OA cabinet width	454
OA cabinet length	454
Lid	
OA lid width	520
OA lid length	520
Kerb options	
Roof opening size	300 x 300
UVPC height available	150
Aluminium heights available	200, 375, 450, 600

Penetration Box 400 x 700mm*

*Insulation cabinet only.

Diagram not to scale.

Sold as a kit which includes base, insulated cabinet and lid, and weathering hood.

Cabinet (excluding kerb)	
OA height from the kerb to top of lid	277
OA cabinet width	554
OA cabinet length	854
Lid	
OA lid width	620
OA lid length	920
Kerb options	
Roof opening size	400 x 700
UVPC height available	150
Aluminium heights available	200, 375, 450, 600

Penetration Box 600 x 900mm*

*Insulation cabinet only.

Diagram not to scale.

Sold as a kit which includes base, insulated cabinet and lid, and weathering hood.

Cabinet (excluding kerb)	
OA height from the kerb to top of lid	277
OA cabinet width	754
OA cabinet length	1054
Lid	
OA lid width	820
OA lid length	1120
Kerb options	
Roof opening size	600 x 900
UVPC height available	150
Aluminium heights available	200, 375, 450, 600

Penetration Box 600 x 600mm*

*Insulation cabinet only.

Diagram not to scale.

Sold as a kit which includes base, insulated cabinet and lid, and weathering hood.

Cabinet (excluding kerb)	
OA height from the kerb to top of lid	602
OA cabinet width	754
OA cabinet length	754
Lid	
OA lid width	820
OA lid length	820
Kerb options	
Roof opening size	600 x 600
Aluminium heights available	200, 375, 450, 600

Penetration Box 750 x 750mm*

*Insulation cabinet only.

Diagram not to scale.

Sold as a kit which includes base, insulated cabinet and lid, and weathering hood.

Cabinet (excluding kerb)	
OA height from the kerb to top of lid	752
OA cabinet width	904
OA cabinet length	904
Lid	
OA lid width	970
OA lid length	970
Kerb options	
Roof opening size	750 x 750
Aluminium heights available	200, 375, 450, 600

Penetration Box 750 x 1500mm*

*Insulation cabinet only.

Diagram not to scale.

Sold as a kit which includes base, insulated cabinet and lid, and weathering hood.

Cabinet (excluding kerb)	
OA height from the kerb to top of lid	752
OA cabinet width	904
OA cabinet length	1654
Lid	
OA lid width	970
OA lid length	1720
Kerb options	
Roof opening size	750 x 1500
Aluminium heights available	200, 375, 450, 600

Using the right penetration box

Select a kerb

Base Material: Axter penetration boxes kerbs are available in either aluminium or UPVC.

Aluminium kerb will normally be used for inverted roofs and hot melt systems.

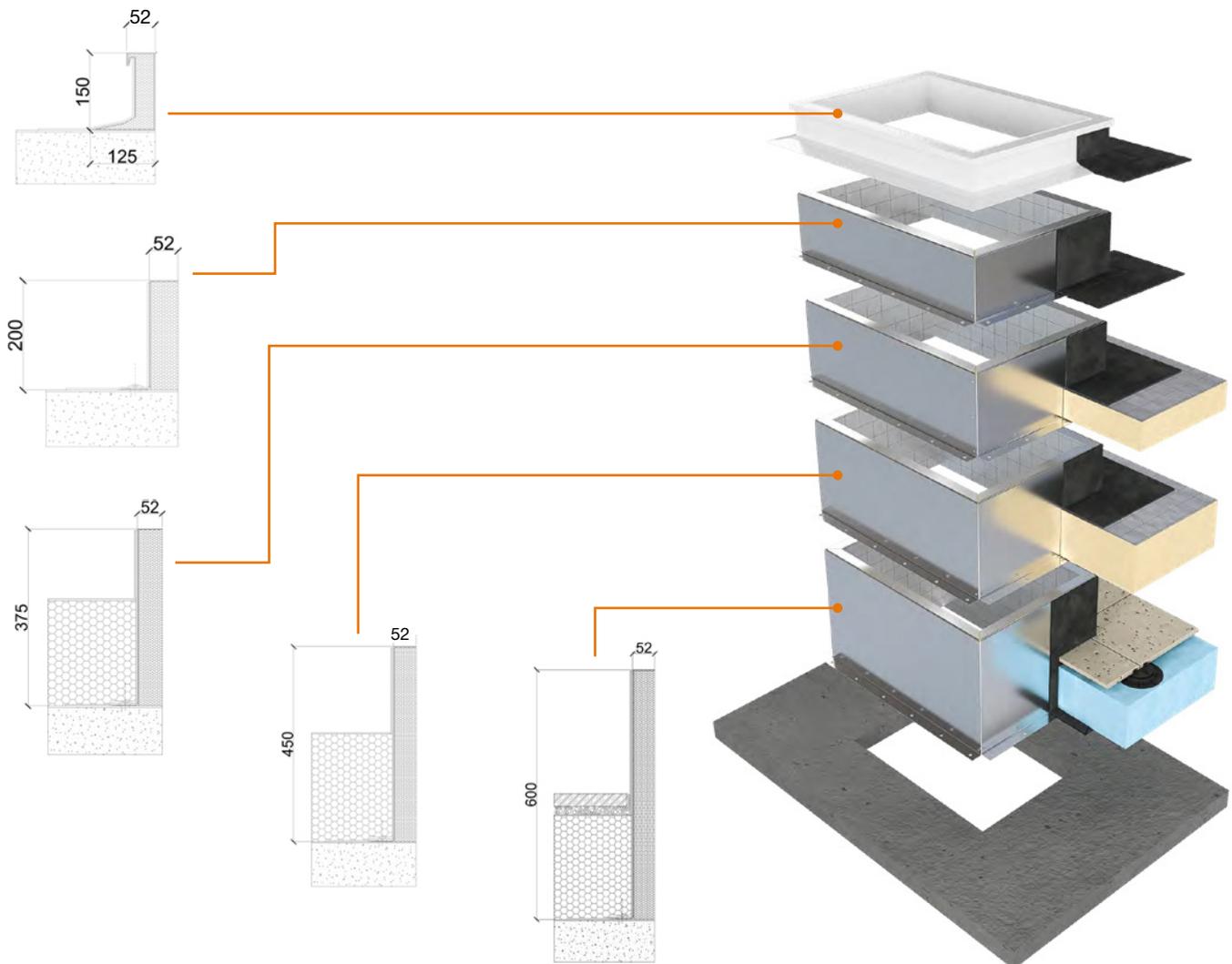UPVC kerbs can be used with most bituminous, single ply and liquid applied systems.

Width and Length: For ease of use, the dimensions used in specifying the width and length are the clear internal dimensions.

Kerbs are available in 300 x 300mm, 400 x 700mm, 600 x 900mm, 600 x 600mm, 750 x 750mm, 750 x 1500mm.

Roof aperture: The roof aperture size required is the same as the internal dimensions.

Powder coating: The aluminium kerbs can be powder coated to any RAL colour subject to enquiry.

Typical kerb sections

Height:

For warm roof constructions, the height of the base required will depend on whether the base sits on the roof deck or on top of the waterproofing. The top of the kerb should be at least 150mm above the finished roof level.
For cold roof constructions, a 150mm high kerb will normally be sufficient.

Insulation: The aluminium kerb are insulated with 50mm insulation and provide a U-value of 0.41W/m^{2}K. Further bespoke insulation options are available to provide enhanced u-values and fire ratings. Please contact Axter Ltd for further information.

Choose a matching cabinet & lid

Material: The cabinets are manufactured from 2mm aluminium and come with a removable lid for easy access into the box.

Width and Length: For ease of use and ordering, the dimensions used will be the same as the base.

Height: Standard heights represent the overall height of the cabinet.

When adding the base and cabinet heights, 75mm should be deducted to allow for the weathering lap between the cabinet and the base.

Insulation: All cabinets are insulated giving a thermal efficiency of $0.41W/m^2K$.

Powder coating: All penetration boxes are finished with polyester powder coated finish in RAL 7047 Telegrey. Other RAL colours are available upon request.