

MATRIX PLUS BOUNDARY BOX



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MATRIX PLUS

The Matrix Plus is the latest generation of the popular Matrix boundary box, incorporating all the benefits of previous models plus new features and improvements. It is a telescopic, self contained chamber system that is used to provide a safe and clean underground environment for concentric water meters. Its small, stable footprint makes it easy to install with minimal excavation. The fully sealed box is height adjustable and comes with a rotatable tilt lid to align with paving material and gradients. It comes with integrated pipe connections, isolating valve and meter carrier.



FEATURES

Now also available with a round guard tube (Matrix Plus R) in order to give more space inside the box to fit the latest automatic meter reading technology.

ADVANTAGES

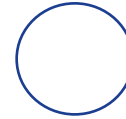
- L **Reduced environmental impact**
 guard tube made from recycled black polypropylene.
- L **Improved ground retention**
 to give greater stability and to give more space for feet to hold it down whilst making telescopic height adjustment.
- L **Integrated holding clips**
 on the surface box for greater reliability.
- L **Optional NRV**
 to eliminate overpressure in the box, to make lid levelling easy.
- L **Optional Grade B surface box**
 with rotatable square trim for installation in paved areas.
- L **Meets relevant aspects of**
 BS 5834-1:2017
- L **Improved point load resistance**
 more ductile material in the guard tube protects against damage from loading from sharp stones in the soil.
- L **Improved design**
 to ensure performance of seals and retention of manifold.

APPLICATIONS



House connection

ROUND PROFILE OPTION



USES

- L **Provides a clean underground environment for concentric water meters**
- L **Enables easy meter reading.**
- L **Allows for water shutoff to the property**



CHARACTERISTICS

- └ **Telescopic chamber-** One single moulding reduces the risk of ground water getting into the system. The telescopic chamber combined with a final height adjustment of up to 50mm in the surface box gives excellent overall height adjustment.
- └ **Ease of installation-** Small, stable footprint makes it easy to install in congested trenches and requires minimal excavation. Now with larger surface area on the base plate to allow more backfill
- material around the base during installation which gives more stability to aid height adjustment. The surface box flange can also be rotated through 360° and the surface box has up to 8° of tilt making alignment with paving materials and gradients simple.
- └ **Ease of operation-** The surface box lid provides excellent visibility and access to the meter and shut off device. The standard shut off device is a ¼ turn ball valve that
- greatly reduces head loss and has a built in stop.
- └ **16 bar pressure rating-** The 16 bar pressure rating not only exceeds the 8-10 bar normal working pressure, it also exceeds the typical 12 bar pressure rating of the pipe.
- └ **Flexible connection system-** Talbot Pushfit inlets and outlets are available in 25mm and 32mm as well as ½" Irish heavy gauge.



TECHNICAL DATA

- └ **Material Guard tube and lid:** PP
- └ **Material Manifold:** Acetal/PP
- └ **Lid loading:** Grade C or Grade B (BS5834-2)
- └ **Nominal Pressure (PN):** Working 16 bar

APPROVALS

- └ WRAS approved
- └ Class 1.N.SBC.T, Class 1.N.SBB.T or Class 2.N.SBB.T (depending on surface box selection)
- └ Compliant to Reg.4



OPTIONS/VARIANTS

- └ Stadium guard tube (Matrix Plus S) or round guard tube (Matrix Plus R)
- └ Different inlet/outlet sizes - 25mm, 32mm, Irish heavy gauge
- └ Full height 470-850mm or short 285-500mm
- └ Standard quarter turn ball valve or 360 degree spherical ball valve
- └ Grade C or Grade B plastic surface boxes, or Grade B ductile iron surface box
- └ Optional NRV to eliminate over pressure in the box, to make lid levelling easy

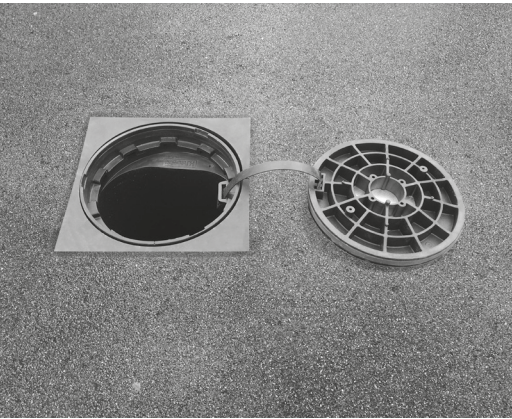


MATRIX TELESCOPIC BOUNDARY BOXES



Chamber

The Matrix chamber consists of two sections, an upper and a lower chamber unit. These units are moulded in one piece so reducing the number of potential leak paths and helping to ensure that ground water is kept out of the chamber system. The chamber units give good visibility of the meter. They combine telescopically giving a height adjustment in the standard Matrix boundary box of between 470mm and 850mm without the need to cut the chamber to length. For shallow installations a short version of Matrix is available, here the two chamber units are both shorter, combining to give an overall height adjustment of between 285mm and 500mm. Matrix Plus R boxes have a round guard tube to give more space inside the box for fitting AMR equipment.



Surface box

The Matrix surface box offers many benefits:

- └ The large lid can be opened clear of the chamber opening providing excellent visibility and access into the chamber for easy meter reading. (Note, meters are not supplied with the Matrix unit).
- └ The surface box is designed in such a way that allows extensive final adjustment. The surface box provides a combination of up to 8° tilt in any plane and a height adjustment of up to 50mm, making final alignment with surface materials and gradients an easy procedure.
- └ The surface box is fitted with a galvanised steel detector plate.
- └ Surface boxes are available in either load bearing Grade C or Grade B plastic, or Grade B ductile iron.



Inlets / Outlets

The Matrix boundary box is available with several different types and sizes of connection to suit a variety of pipe sizes and materials including metric, imperial and Irish heavy gauge PE pipes. Connections can also be supplied in either bent or straight configurations.

Insulation pad - The insulation disk is designed to aid effective protection against freezing to a temperature at ground level of -15°C.



Meter housing & shut off device

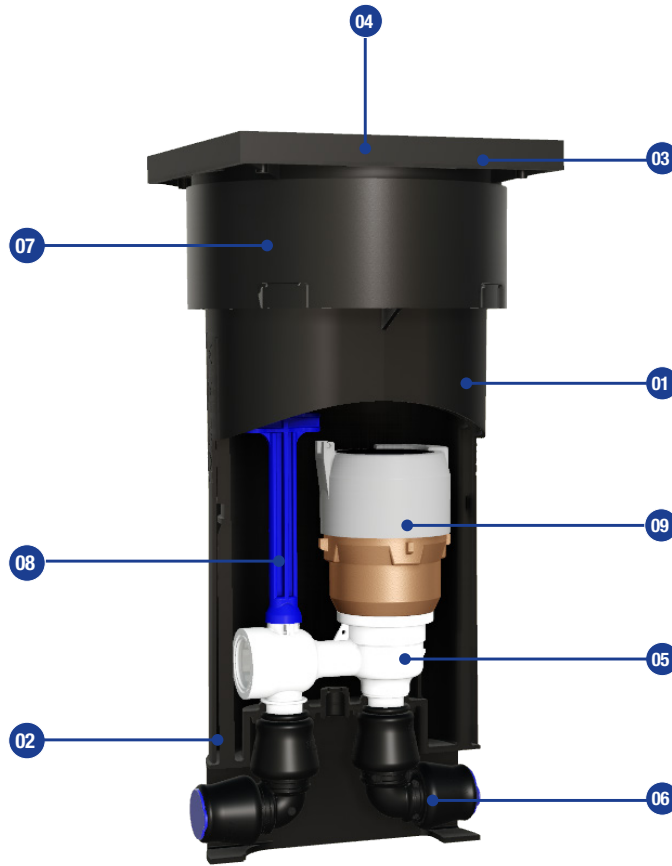
Matrix uses a combined meter housing and shut off device that is moulded as a single unit with an integral, removable single check valve. This single moulding eliminates many potential leak paths. The shut off device is an all plastic quarter turn ball valve with an integral stop. There are also 2 types of key available to suit customer needs, a long and a short version. Both these keys have a built in torque overload feature that reduces the risk of damaging the unit through over tightening. The valve is also designed to provide low head loss. The meter housing accepts industry standard end fitting G 1 1/2" threaded (concentric) meters up to Q3 4.0m³/hour (BS EN ISO 4064). (Note, meters are not supplied with the Matrix unit)



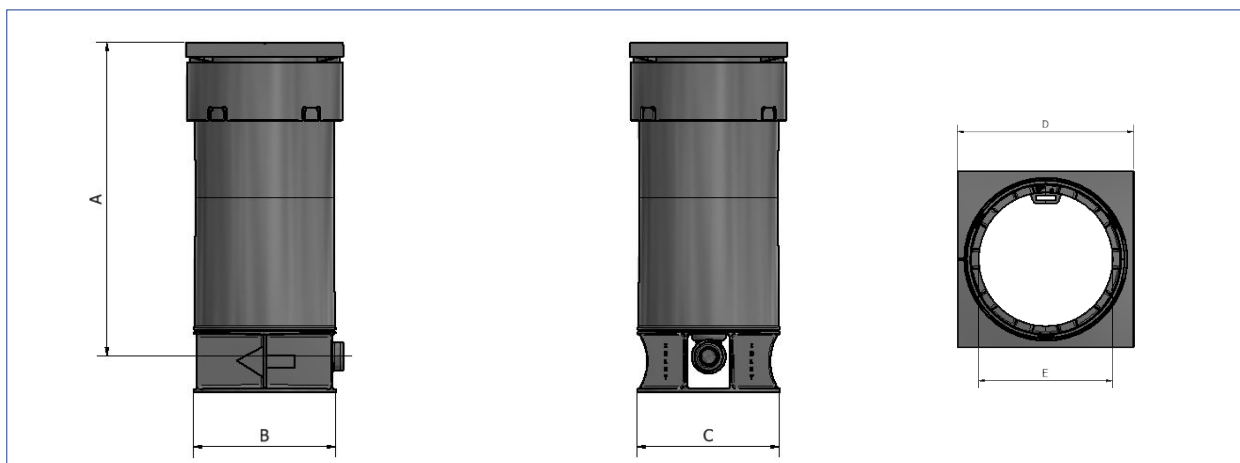
Additional components

- └ Alternative meter plugs: White plastic full flow meter plugs are supplied as standard, red no flow and yellow trickle flow options are also available.
- └ Tools: Tools are available to fit the meter plugs and meters.

MATERIALS & DIMENSIONS



Item	Description	Quantity	Material	Standard
1	Upper guard tube	1	Recycled PP	
2	Lower guard tube	1	Recycled PP	
3	Surface Box Grade C	1	20% Glass Filled PP	
3a	Surface Box Grade B	1	20% Glass Filled PP	
3b	Surface Box Ductile Iron	1	Ductile Iron EN GJS 500-7	BS EN 1563: 2011
4	Lid detector plate	1	Galvanised Steel	
5	Manifold	1	POM	
6	Pushfit bend	2	PP Body, POM grip rings & EPDM seals	
7	Frost insulation pad	1	Closed Cell Polyethylene Foam	
8	Key	1	POM	
9	Meter	1	NOT PROVIDED BY ATPLAS	



CONNECTIONS	GUARD TUBE PROFILE	SHUT OFF	SURFACE BOX	A (MM)	B (MM)	C (MM)	D (MM)	E (MM)
25mm PF	Matrix Plus S - Stadium	¼ Turn	Plastic Grade C	470-850	207	151	227	173
32mm PF	Matrix Plus S - Stadium	¼ Turn	Plastic Grade C	470-850	207	151	227	173
25mm PF	Matrix Plus R - Round	¼ Turn	Plastic Grade C	460-845	206	206	227	173
32mm PF	Matrix Plus R - Round	¼ Turn	Plastic Grade C	460-845	206	206	227	173
25mm PF	Matrix Plus S - Stadium - short box	¼ Turn	Plastic Grade C	285-500	207	151	227	173
25mm PF	Matrix Plus S - Stadium	¼ Turn	Grade B Polymer	510-885	207	151	250	173
32mm PF	Matrix Plus S - Stadium	¼ Turn	Grade B Polymer	510-885	207	151	250	173
25mm PF	Matrix Plus R - Round	¼ Turn	Grade B Polymer	500-880	206	206	250	173
32mm PF	Matrix Plus R - Round	¼ Turn	Grade B Polymer	500-880	206	206	250	173
25mm PF	Matrix Plus S - Stadium - short box	¼ Turn	Grade B Polymer	320-540	207	151	227	173
25mm PF	Matrix Plus S - Stadium	¼ Turn	Grade B Ductile Iron	475-810	207	151	247	183
32mm PF	Matrix Plus S - Stadium	¼ Turn	Grade B Ductile Iron	475-810	207	151	247	183
25mm PF	Matrix Plus R - Round	¼ Turn	Grade B Ductile Iron	470-810	206	206	247	183
32mm PF	Matrix Plus R - Round	¼ Turn	Grade B Ductile Iron	470-810	206	206	247	183
25mm PF	Matrix Plus S - Stadium - short box	¼ Turn	Grade B Ductile Iron	290-465	207	151	247	183

** Available with 360° spherical valve on request

FEATURES	SPECIFICATIONS
Compliance to relevant aspects of BS 5834-1:2017	With surface box Grade C: Class 1.SBC.T With surface box Grade B polymer: Class 1.SBB.T With surface box Grade B Ductile Iron: Class 2.SBB.T
Frame and Cover	Grade C: Glass filled polypropylene. Universal 8° tilt. Pluck lid with square frame. Lid tether as standard. Grade B (polymer): Glass filled polypropylene. Universal 8° tilt. Pluck lid with square swivel plate. Lid tether as standard. Grade B (DI): Ductile iron. Minimal tilt. Square frame. Unsealed & hinge opens over 90° to allow for free standing.
Guard Tube Material	Recycled Polypropylene
Guard Tube Profile	Stadium profile with 173mm x 116mm opening (Matrix Plus S) or round profile with diameter 194mm opening (Matrix Plus R)
Height Adjust (apr)	See above dimension table
Frost Protection	As standard in accordance with BS 5834-1:2017
Water Tightness	Sealed. Class 1 (BS 5834-1:2017). Unsealed Class 2 with DI surface box.
Shut Off Device	360°/ ¼ turn spherical valve
Check Valve	Check valve in accordance with BS EN 13959: 2004 Family E Type B WIS 5-11-01. (Double check valve also available)
Manifold	Raised style in Plastic (Acetyl Co-Polymer)
Meter Connection	1½" BSP concentric meter to BS EN ISO 4064; Q3 4.0 (Qn 2.5)
Head Loss	< 3 metres @ 25 l/min flow rate with meter
Inlet	25/32 mm Pushfit for PE pipe in accordance with WIS 4-32-11
Outlet	25/32 mm Pushfit for PE pipe in accordance with WIS 4-32-11
Blank Plugs	Full Flow (standard), Trickle Flow (optional), No Flow (optional). 27/28 mm tapered A/F hexagonal upstand
Product Weight (apr)	Grade C: Standard 3.7kg. Short: 3kg. Grade B (Polymer): Standard 4.7kg. Short: 4kg. Grade B (DI) Standard: 11.2kg. Short: 10.5kg.
Pallet Quantity	50 per pallet (Matrix Plus S), 40 per pallet (Matrix Plus R)

SURFACE BOXES FOR ATPLAS RANGE SINGLE BOUNDARY BOXES

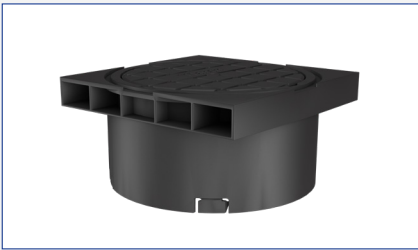
Top loading for boundary boxes in the UK is covered by the standards: BS 5834-1:2017 and BS 5834-2:2011. The former standard WIS 4-37-01 has now been withdrawn. European standard EN 124:2015 can also be applied.

According to BS 5834-1, boxes are defined as:

- Supplied without surface boxes: Grade A, B, C or non-load bearing N
- Boxes supplied with integrated surface boxes: Load bearing, SB: Grade A, B or C in accordance with BS 5834-2

Boxes supplied without surface boxes are classified according to a compression test of the box, whereas boxes supplied with surface boxes are be classified according to the load-bearing of the surface box to BS 5834-2.

The loading grade in accordance with BS 5834-2 is calculated based on the clear opening of the frame and surface area of the lid, and relates to the type of installation. Grade C is for "situations not intended for use by vehicles" and Grade B is for "areas to which vehicles would have only occasional access".



Grade C:

Matrix Surface Box

The Matrix Grade C surface box offers many benefits:

- └ The large lid can be opened clear of the chamber opening providing excellent visibility and access into the chamber for easy meter reading.
- └ The surface box is designed in such a way that allows extensive final adjustment. The surface box provides a combination of up to 8° tilt in any plane and a height adjustment of up to 50mm, making final alignment with surface materials and gradients an easy procedure.
- └ The surface box is fitted with a galvanised steel detector plate.
- └ Fits directly to boundary boxes

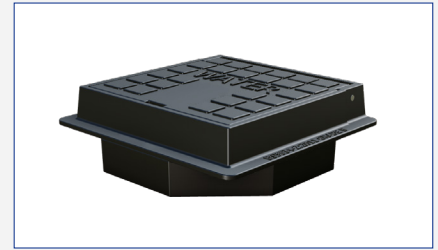


Grade B:

Trafficable Polymer Surface Box

The Grade B polymer surface box is made from high grade engineering polymer to ensure that it is tough and robust enough for a long life expectancy in trafficable areas. At the same time it is lightweight, and due to its surface pattern provides excellent grip.

- └ Robust and tough - for use in areas subject to occasional vehicle access
- └ Lightweight for easier installation and manual handling
- └ Fits directly to boundary boxes
- └ Square flange can be rotated to line up with pavements or removed if a round lid is required.
- └ Grade B: compliant with relevant aspects of BS 5834-2
- └ 8° Frame tilt in order to fit pavement camber
- └ Fully sealed lid provides safe and clean environment for the meter
- └ Provides excellent retention following reinstatement due to its shape
- └ Anti slip lid design to BS 7976-2



Grade B:

Atplas Ductile Iron Surface Box

Grade B ductile iron surface box is suitable for use where ductile iron is specified for trafficable locations. Due to its surface pattern it provides excellent grip.

- └ Robust and tough - for use in areas subject to occasional vehicle access
- └ Fits directly to boundary boxes
- └ Compliant with relevant aspects of BS 5834
- └ Anti slip lid design to BS 7976 Part 2

MANUFACTURING & QUALITY

Atplas has a rich history of serving the water industry both in the UK and around the world from its base in Bridgend, South Wales. It is a recognised and reliable supplier of house connection products for water supply. With an extensive range of boundary boxes for water meters, water fittings and valves for a range of service pipes, Atplas stands for **CERTIFIED QUALITY, PRODUCT INNOVATION** and **YEARS OF KNOW-HOW**.



PROVIDING SUSTAINABLE PRODUCTS

As a leading provider of water fittings and valves from the mains, to your water meter, to your home, Atplas strives to protect one of the world's most vital resources - water. This is achieved through the effective design of all our products supporting the sustainable management of water.

We develop, manufacture and market products of high quality with a long lifespan that are part of a vital infrastructure for water supply.

We have a strong focus on sustainability in our production - both in terms of using recycled materials such as recycled plastic in our black Matrix Plus boundary boxes, but also in terms of using renewable energy. We selected our energy supplier as 100% of its electricity is backed by zero carbon generation.

Atplas is certificated under the Achilles carbon reduction scheme and also proudly meets the requirements for zero waste to landfill.

WORKING FOR HEALTH AND SAFETY

Safety and a healthy work environment for our employees is high on the agenda at Atplas - both physically and mentally. It is very important to us that our employees can work in a safe work environment – no matter what role and job they have.

Over 10% of our colleague have been trained as Mental Health First Aiders and many of our employees have long seniority and high expertise within their field. We continuously work on ensuring that Atplas remains an attractive and safe workplace.

We have a strong focus on the safety of our own employees as well as visitors and others. As some of our employees often work in environments with heavy items and under high safety requirements, all production employees have completed extensive safety training.

CERTIFIED QUALITY

Managing quality is a key priority at Atplas and we are proud to be certificated to ISO 9001:2015 and ISO 14001:2015, as well as being certificated to the Achilles UVDB Verify B2 scheme.

We are committed to providing high quality products and where appropriate, many of our parts that are in contact with drinking water have WRAS or BS 6920 approval. Many of our products hold WRAS or similar approvals to demonstrate compliance with regulation 4 of the UK Water Regulations.

PRODUCT INNOVATION

Innovation has been the foundation of our success and products have evolved to meet our customers' changing needs.

YEARS OF KNOW-HOW

With a history in water fittings going back over 100 years, Atplas is able to offer products which meet the needs of both installers and utility companies.



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