RADIUS Systems

Puriton® Barrier Pipe and Fittings System

Technical Guide W2.5

A complete piping system for protecting potable water lines laid through contaminated land.

Applications

New potable water lines through contaminated ground

Product Attributes

Multi-layer pipe construction PE-AI-PE

Easy to use compression jointing system

Brown stripes to clearly identify pipe as a barrier pipe system

Approvals/Standards

Complies with BS 8588:2017 and WIS 4-32-19

WRAS approved product for plastic mechanical fittings 25 to 63 mm

Quality

ISO9001:2015 Quality Management

ISO14001 Environmental Management

We are the supply partner of choice for New Zealand's civil construction industry, specialising in water and infrastructure based solutions.

HYNDSwater

Puriton® Barrier Pipe & Fittings System

All products are only available by indent quotations and associated quantities of designated coil lengths and pack sizes.

The barrier pipe system of choice for your new or replacement drinking water supply, Puriton® is a cutting edge solution for the safe distribution of drinking water through contaminated land.

Designed to provide a high level of protection against soil contaminants commonly found in brownfield sites, Puriton® is a multi-layer composite structure pipe, which combines the unique characteristics of polyethylene (PE) with the exceptional barrier properties of aluminium (Al).

Lightweight, flexible and corrosion resistant, the Puriton® system is easy to install, without the need to post-wrap the finished joints. The pipe can be joined using most industry standard installation techniques with a comprehensive range of mechanical fittings, which have been specifically developed to give you assurance of a safe and durable solution which provides protection to your drinking water through contaminated land.

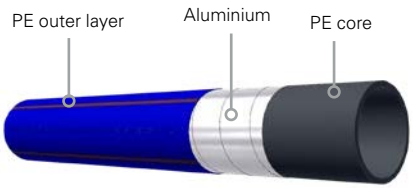


FIG. 1 Puriton Pipe Structure

Features of the Puriton® System

- Multi-layer pipe construction PE-Al-PE
- Brown stripes denote a multi-layer pipe
- Full barrier pipe system
- Combines the flexibility of polyethylene with the barrier properties of aluminium
- Safeguards drinking water quality
- Easy to handle, flexible and lightweight
- End load resistant system
- Installation cost savings - no requirement for thrust blocks
- No requirement to post-wrap the joints
- Suitable for most common installation techniques
- Suitable for new and replacement drinking water supply systems

Approvals and Standards

- WRAS approved material PE80 for pipe 25 to 63 mm
- A 'Type A' pipe, as defined in WIS 4-32-19 and BS 8588
- WRAS approved product for plastic mechanical fittings 25 to 63 mm
- BS 8588:2017 and WIS 4-32-19 Puriton® jointing methods with Puriton® plastic mechanical fittings
- BS 8588:2017 - 25, 32, 63mm Pipe

TABLE 1 **Puriton® range at a glance**

Description	Diameter	Maximum pressure	Material(s)
Service pipe			
	25 to 63 mm	12.5 bar - SDR11	PE80 Aluminium
Mechanical fittings			
	25 to 63 mm	12.5 bar	Polypropylene
Tapping saddles (For Puriton® PE Pipe)			
	63 mm x 25 mm* 63 mm x 32 mm*	12.5 bar 12.5 bar	Gunmetal body Polypropylene outlet

**Tapping saddles to suit other PE pipe sizes available on request (90, 110, 125, 160, 180 mm)*

Puriton® Service Pipe

WIS 4-32-19 'Type A' pipe

Available in diameters 25 to 63 mm, the Puriton® service pipe is manufactured from a black PE80 core, an aluminium barrier layer and a light blue PE80 outer layer with brown stripes.

Available in coils, the Puriton® service pipe is quick and easy to join without surface preparation, using their range of cutting edge mechanical fittings.

TABLE 2 Pipe dimensions

Nominal diameter (mm)	Materials	SDR	Pressure rating bar	Core pipe external diameter (mm)	Core pipe wall thickness (mm)	Internal diameter (mm)	Overall external diameter (mm)	Pipe weight (kg/m)	Coil length (m)
25	PE80/Al	11	12.5	25.0 - 25.3	2.3 - 2.7	19.6 - 20.7	27.0 - 27.6	0.3	50
32	PE80/Al	11	12.5	32.0 - 32.3	3.0 - 3.3	25.4 - 26.3	34.0 - 34.6	0.5	50
63	PE80/Al	11	12.5	63.0 - 63.4	5.8 - 6.5	50.0 - 51.8	64.8 - 65.8	1.5	25 50 100

TABLE 3 Pipe coil dimensions

Nominal diameter (mm)	SDR	Pressure rating bar	Coil inner diameter (mm)	Coil outer diameter (mm)	Coil width (mm)	Coil length (m)	Coil weight (kg)
25	11	12.5	785	965	175	50	14.5
32	11	12.5	785	1015	175	50	22.0
63	11	12.5	1275 1275 1275	1510 1815 1815	230 208 310	25 50 100	36.3 72.5 145.0

Pipe weights are for lifting and handling purposes. They are calculated on a per metre length and are based on a maximum diameter and pipe wall thickness.

To ensure that the barrier properties of the Puriton® system are maintained, Puriton® fittings must be used with Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the system.

Puriton® fittings

Mechanical fittings

Quick and easy to install, the range of Puriton® mechanical fittings for service pipes are manufactured from polypropylene and supplied with integral inserts, grip rings and O-ring seals for maximum contamination protection. The system is easy to construct with no requirement for pipe surface preparation and no need to post-wrap the joint after installation.

Fitting diameter	25 mm	32 mm	63 mm
Grip ring colour	Blue	Blue	Grey
Insert colour	Black	Black	White

Service pipe off-take connections

The Puriton® range includes a dedicated range of gunmetal tapping tee service off-takes, which incorporate a unique stainless steel sleeve. As part of the tapping operation, the sleeve is swaged into the pipe wall, sealing the aluminium barrier layer from contact with the water supply. A 25 or 32 mm mechanical outlet is fitted to enable the service pipe connection.

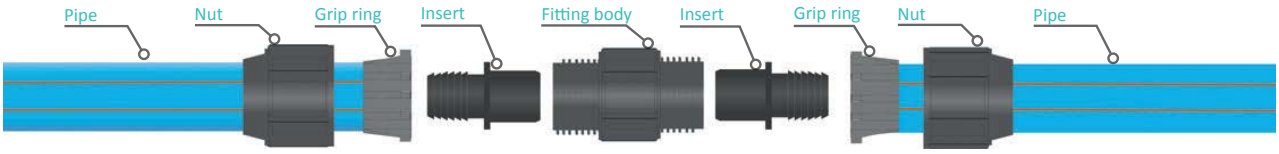
Jointing guidance

The Puriton® pipe system has been developed for ease of jointing with a range of fittings specifically designed to suit the pipe type. Minimal pipe surface preparation is required when using our mechanical fittings.

To ensure that the barrier properties of the Puriton® system are maintained, only Puriton® fittings must be used with Puriton® pipe. The use of non Puriton® fittings may compromise the barrier properties of the system.

Jointing overview

Mechanical fitting - coupler jointing overview



Ensure the pipe is cut square and damage free. Re-round if necessary. Slide the nut and grip ring on the pipe

Using a rubber mallet, gently tap the insert fully into the pipe end

Push the pipe fully into the body of the fitting

Slide the grip ring so it is flush with the pipe end

Hand tighten the nut onto the body of the fitting

Repeat steps 1 to 4 for the second pipe to be joined

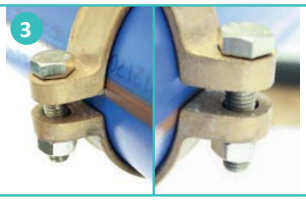
Using C ring wrenches fully tighten the nuts onto the body of the fitting

The joint is complete. Carry out a water industry approved joint pressure test to check for leak-tightness.

Tapping tee jointing overview

Place the O-ring into the recess of the tapping tee base and place the fitting onto the main

Equally tighten the nuts on both sides of the tapping tee



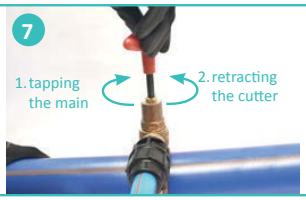
Ensure the distances between the 'lugs' are identical and parallel on both sides

Carry out the service pipe connection to the tapping tee outlet following the jointing overview

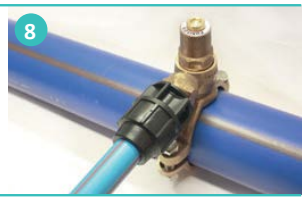
Using C ring wrenches fully tighten the nuts onto the tapping tee outlet.

Carry out a water industry approved joint pressure test to check for leak-tightness.

Using a 3/8" T key, remove the tapping tee dust cap and seal



1. Tapping the main
Use a hexagonal 3/8" T key and turn in a clockwise direction. The cutter must come to a definite stop.
2. Retracting the cutter
Turn the T key in an anti-clockwise direction. The cutter will come to a definite stop at the top of the system



Replace the dust cap and tighten. The connection is complete.

Product Codes

Barrier Pipe

TABLE 4 Service Coil

Product Code	Description	Coil Width (mm)	Weight (kg)
XQ2528	Pipe Coil 25x50m PE-Al-PE BL/BR PE80 SDR11 PN12.5	175	14.5
XQ2535	Pipe Coil 32x50m PE-Al-PE BL/BR PE80 SDR11 PN12.5	175	22.0
XQ2570	Pipe Coil 63x25m PE-Al-PE BL/BR PE80 SDR11 PN12.5	230	36.3
XQ2571	Pipe Coil 63x50m PE-Al-PE BL/BR PE80 SDR11 PN12.5	208	72.5
XQ2572	Pipe Coil 63x100m PE-Al-PE BL/BR PE80 SDR11 PN12.5	310	145.0

Pipe weights are for lifting and handling purposes. They are calculated on a per metre length and are based on a maximum diameter and pipe wall thickness.

Mechanical fittings

TABLE 5 Couplers

Product Code	Description
XR5244	Coupler PP Ø25 16 Bar PE-Al-PE
XR5245	Coupler PP Ø32 16 Bar PE-Al-PE
XR5251	Coupler PP Ø63 16 Bar PE-Al-PE

TABLE 6 90° elbows

Product Code	Description
XR5249	Elbow 90 PP Ø25 12.5 Bar PE-Al-PE
XR5250	Elbow 90 PP Ø32 12.5 Bar PE-Al-PE
XR5252	Elbow 90 PP Ø63 12.5 Bar PE-Al-PE

TABLE 7 Female adaptors

Product Code	Description
XR5240	Female Adaptor PP Ø25x3/4" 12.5 Bar PE-Al-PE
XR5241	Female Adaptor PP Ø32x3/4" 12.5 Bar PE-Al-PE
XR5242	Female Adaptor PP Ø32x1" 12.5 Bar PE-Al-PE
XR5260	Female Adaptor PP Ø63x2" 12.5 Bar PE-Al-PE

Note: *Available by indent*

TABLE 8 Equal tees

Product Code	Description
XR5247	Tee PP Ø25 12.5 Bar PE-Al-PE
XR5248	Tee PP Ø32 12.5 Bar PE-Al-PE
XR5253	Tee PP Ø63 12.5 Bar PE-Al-PE

TABLE 9 Reducers

Product Code	Description
XR5246	Reducing Coupler PP Ø32-25 Reducing 12.5 Bar
XR5257	Reducing Coupler PP Ø63-25 Reducing 12.5 Bar
XR5254	Reducing Coupler PP Ø63-32 Reducing 12.5 Bar

TABLE 10 Male Adaptors

Product Code	Description
XR5235	Male Adaptor PP Ø25x3/4" 12.5 Bar PE-Al-PE
XR5236	Male Adaptor PP Ø32x3/4" 12.5 Bar PE-Al-PE
XR5237	Male Adaptor PP Ø32x1" 12.5 Bar PE-Al-PE
XR5258	Male Adaptor PP Ø63x1 1/2" 12.5 Bar PE-Al-PE
XR5259	Male Adaptor PP Ø63x2" 12.5 Bar PE-Al-PE

TABLE 11 C-Ring wrenches

Product Code	Description
XR4998	C-Ring Wrench 25-32mm PE-Al-PE Fittings
XR4999	C-Ring Wrench 63mm PE-Al-PE Fittings

TABLE 12 Tapping bands

Product Code	Description
XR5111	Tapping Band Ø63x25mm PE-Al-PE Gunmetal
XR5117	Tapping Band Ø63x32mm PE-Al-PE Gunmetal

TABLE 13 Ferrule adaptors

Product Code	Description
XR5055	Ferrule Adapter 25x3/4" PE-Al-PE Gunmetal

TABLE 14 Tapping Ferrule T-Key

Product Code	Description
XR02515	Tapping Ferrule T-Key 3/8"

Note: *Available by indent*

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hynds product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hynds unless expressly stated in any sale and purchase agreement entered into between Hynds and the user.