



# Enviropipes Pty Ltd

## PRODUCT APPRAISAL REPORT PA 1310 Issue 3

Enviropressure® Polyethylene (PE) Pipe

**AS/NZS 4130:2018 Polyethylene (PE) pipes for pressure applications**

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## Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	11 March 2015
WSAA Expert Panel	WSAA	2 March 2015
Leith Forbes, WSAA Consultant	WSAA	19 December 2014
Carl Radford, Product Appraisal Manager	WSAA	12 March 2015
Carl Radford, Product Appraisal Manager	WSAA	9 March 2016
Peter Pittard, WSAA Consultant	WSAA	18 March 2020
Carl Radford, Product Appraisal Manager	WSAA	25 March 2020

## Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body representing the urban water industry. Our members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

Based around our vision of 'customer driven, enriching life', WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues.

WSAA can demonstrate success in the standardisation of industry performance monitoring and benchmarking, as well as many research outcomes of national significance. The WSAA Executive retains strong links with policy makers and legislative bodies and their influencers, to monitor emerging issues of importance to the urban water industry.

WSAA was formed in 1995 as a non-profit organisation to foster the exchange of information between industry, government and the community, and to promote sustainable water resource management.

The urban water industry is committed to anchoring its services to customers' values, and to enrich communities where water services have broad economic, environmental and social values. In line with this our main activities focus on four areas:

1. influencing national and state policies on the provision of urban water services and sustainable water resource management
2. promoting debate on environmentally sustainable development and management of water resources and the community health requirements of public water supplies
3. improving industry performance and establishing benchmarks and industry leading practices for water service processes; and
4. fostering the exchange of information on education, training, research, water and wastewater management and treatment and other matters of common interest.

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## 1 EXECUTIVE SUMMARY

Enviropipes Pty Ltd is an Australian owned business specialising in the manufacture of polyethylene piping systems. The company was established in 2009 and is located in Perth, Western Australia.

This Appraisal is for a range of Series 1 PE100 polyethylene pressure pipes manufactured in compliance with AS/NZS 4130:2018 – *Polyethylene (PE) pipes for pressure applications*.

This Issue 3 is a replacement for the previous version of the appraisal which had reached its 5-year expiry date.

Enviropipes PE100 PE pipes, branded Enviropressure<sup>®</sup>, are available in sizes from DN 20 to DN 2000 with pressure classifications PN4, PN6.3, PN8, PN10, PN12.5, PN16, PN20 and PN25. The pipes are available in straight lengths of 6 or 12 metres or coil lengths of 60 to 200 metres for sizes up to DN 160, depending on size and pressure classification.

PE100 PE pipe is available in solid black, or black with relevant coloured stripes or jackets for drinking and non-drinking water supply and sewerage systems.

Enviropipes has confirmed that their procedures incorporate the recent additional requirements included in the relevant WSAA Specifications regarding the use of recyclates and the frequency of thermal stability testing for batch release tests. See Section 6.2.3.

Enviropipes Pty Ltd has a Quality Management certification to ISO 9001:2015.

The products have ISO Type 5 ApprovalMark Product Certification for its range of PE100 polyethylene pipes to AS/NZS 4130:2018.

Enviropressure Series 1 PE100 polyethylene pipes included in this appraisal meet the requirements of WSA PS-207 – *Polyethylene (PE) Pipes for Pressure Applications – Water Supply and Sewerage* and WSA PS-215 – *Polyethylene (PE) Property Service Pipes for Pressure Applications – Water Supply* and are therefore considered as 'fit for purpose'.

### 1.2 Report Recommendation

It is recommended that WSAA members subject to any specific requirements of the member, accept or authorise Enviropressure PE100 polyethylene pipes as detailed in this report for use in water supply and sewerage networks, provided they are installed and tested in accordance with WSAA Codes and the manufacturer's requirements, where specified.

## 2 THE APPLICANT

The Applicant is Enviropipes Pty Ltd.

### 2.1 The Supplier / Manufacturer

Enviropipes Pty Ltd is an Australian owned business specialising in the manufacture of polyethylene piping systems. The company was established in 2009 and is located in Perth, Western Australia.

Enviropipes has recently undertaken construction of an expanded 80,000 sq. m. manufacturing facility including an in-house laboratory. Its capability includes the ability to manufacture pipes up to DN 4000.

## 3 THE PRODUCT

This product appraisal applies to Enviropressure PE100 pressure pipe manufactured to AS/NZS 4130:2018 *Polyethylene (PE) pipes for pressure applications* for use in drinking and non-drinking water supply and sewerage systems, incorporating the following attributes:

- a) Series 1.
- b) Material Classification: PE100.

- c) Pressure Classifications: PN 4, PN 6.3, PN 8, PN 10, PN 12.5, PN 16, PN 20 and PN25.
- d) Sizes: DN 20 to DN 2000.
- e) Pipe Lengths: 12 m or 20 m (or to special request)
- f) Coil Lengths: DN 20 to DN 160: 60, 100, 150 or 200m depending on size and pressure classification.
- g) Colour: Solid black or black with blue, purple or cream stripes or jackets.

**TABLE 1: ENVIROPRESSURE S1 PE100 PIPE RANGE**

DN	PN	COLOUR
20	12.5, 16, 20, 25	Solid black or black with blue, purple, or cream stripes or jackets. Other colours are available on request.
25, 32	10, 12.5, 16, 20, 25	
40, 50	8, 10, 12.5, 16, 20, 25	
63, 75, 90	6.3, 8, 10, 12.5, 16, 20, 25	
110, 125, 140, 160	4, 6.3, 8, 10, 12.5, 16, 20, 25	
180, 200, 225, 250, 280, 315, 355, 400, 450, 500, 560, 630, 710, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000,	4, 6.3, 8, 10, 12.5, 16, 20, 25	

#### 4 SCOPE OF THE APPRAISAL

The Scope of this appraisal is described in Section 3 and included in the ApprovalMark Product Certification Product Schedule attached in Appendix A.

#### 5 APPRAISAL CRITERIA

##### 5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts polyethylene pipe manufactured in compliance with AS/NZS 4130:2018 and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited Conformity Assessment Body (CAB) or by an equivalent international accreditation system recognised by JAS-ANZ.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with AS/NZS ISO 9001 as a prerequisite to undergoing a product certification audit.

The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-08.

##### 5.2 Performance Requirements

Enviropressure PE100 pipe has been appraised for compliance with the requirements of AS/NZS 4130:2018 *Polyethylene (PE) pipes for pressure applications*.

Appraisal criteria are also determined by the WSAA Product Appraisal Technical Advisory Group and regularly reviewed to ensure that the criteria reflect the requirements of WSAA members.

The following Product Specifications are relevant to this application:

- (a) WSA PS-207 – *Polyethylene (PE) Pipes for Pressure Applications – Water Supply and Sewerage*

(b) WSA PS-215 – *Polyethylene (PE) Property Service Pipes for Pressure Applications – Water Supply*.

Copies of the Product Specifications are available at the following link:

<https://www.wsaa.asn.au/shop/product/35716>

## 6 COMPLIANCE WITH APPRAISAL CRITERIA

### 6.1 Compliance with Quality Assurance Requirements

Enviropipes has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. 28623 issued to Enviropipes Pty Ltd by SAI Global.
- AS/NZS 4130:2018 ApprovalMark ISO Type 5 product certification licence No. AMI 72303 issued to Enviropipes Pty Ltd by ApprovalMark International.

Copies of Quality Assurance and Product Certification licences have been included in Appendix A and are also available for downloading from the WSAA Members Website.

### 6.2 Compliance with Performance Requirements

#### 6.2.1 Polyethylene (PE) compounds

Enviropipe has provided documentation to indicate that the following PE 100 compounds are used in the manufacture of their pipes:

- Qenos - HCR 193B\* and HDF 193B
- LyondellBasell - CRP100 RCD\*
- IRPC - P901BK
- Borouge – HE 3490-LS
- SCG – H1000PC

\* High crack resistant PE100

All of these compounds are listed in POP004 as compliant with AS/NZS 4131 and have current AS/NZS 4020:2005 certification.

#### 6.2.2 Type tests

AS/NZS 4130 specifies performance type tests as shown in Table 2.

**TABLE 2: AS/NZS 4130 TYPE TEST REQUIREMENTS**

Requirement	Clause	Requirement
Dimensions	9.1 – 9.4	Geometrical characteristics for length, outside and inside diameter, wall thickness, out-of-roundness
Resistance to internal pressure at 80°C	10.1	5.4 MPa applied stress at 80°C for 165 h
Resistance to internal pressure at 80°C	10.1	5.0 MPa applied stress at 80°C for 1000 h
Reversion	10.2	≤3% when tested at 110°C
Thermal stability	10.3	Oxidation induction time ≥20 min at 200°C
Slow crack growth resistance PE100 SDR11	10.4	≥500 hours when tested at 920 kPa pressure

Enviropipes provided type test results for DN 110 and DN 180 PN16 pipes for the original appraisal to demonstrate compliance to AS/NZS 4130:2018.

### 6.2.3 Batch release testing

WSAA PE pipe specifications includes a requirement that the Applicants quality plan shall include a requirement in their Batch Release Test procedure that a thermal stability test is undertaken on the first pipe manufactured in a batch of a particular DN and PN and at ongoing frequencies not exceeding 24 hours of production for that batch. The quality plan is also required to include a requirement that use of recyclate in manufactured pipe other than from the manufacturer's own clean in-house production is prohibited.

Enviropipes has provided a copy of their procedures to verify compliance to the thermal stability test requirements and to confirm that no recyclate is used in the production of AS/NZS 4130 pipe production.

### 6.2.4 Suitability for contact with drinking water

The PE100 PE pipe compounds used to produce Enviropressure PE100 pipes are included in PIPA POP004 as having current certification at the time of publication of this report.

It is the responsibility of the pipe manufacturer to ensure current certification for the PE compounds are maintained.

### 6.2.5 Colour coding

Enviropressure PE100 PE pipe complies with the colour coding requirements of AS/NZS 4130 and WSAA specifications as detailed in Table 3 below.

**TABLE 3: COLOUR OF ENVIROPRESSURE PE100 PE PIPE**

Application	Network Element	Colour	WSA Product Specification
Drinking Water	Pressure Main	Solid blue or co-extruded blue jacket or black with blue stripes.	Complies with WSA PS-207
	Property Service Pipes	Black with blue stripes.	Complies with WSA PS-215
Non-drinking Water	Pressure Main	Solid purple or co-extruded purple jacket or black with purple stripes.	Complies with WSA PS-215
	Property Service Pipes	Solid purple or co-extruded purple jacket	Complies with WSA PS-207
Sewerage	Pressure/Vacuum Main	Solid cream or co-extruded cream jacket or black with cream stripes	Complies with WSA PS-207

## 7 FITTING INSTRUCTIONS, TRAINING, STORAGE AND INSTALLATION

Polyethylene pipe systems have been used in the urban water industry for many years. Enviropressure PE100 pipes are compatible with fittings manufactured in accordance with AS/NZS 4129:2020 *Fittings for Polyethylene Pipes for Pressure Applications*. It is recommended to refer to the manufacturers of the electrofusion fittings for the installation instructions as the method may be specific to the fitting geometry.

Electrofusion welding and butt fusion processes may be used for joining pipe-to-pipe or fitting-to-pipe. All welding shall be performed by welders who have successfully completed training by a Registered Training Organisation, endorsed by the Plastics Industry Pipe Association for the relevant welding method(s).

The Plastics Industry Pipe Association provides technical guidelines for electrofusion welding in the following documents.

- a) POP001 Electrofusion Jointing of Pipe and fittings for Pressure Applications
- b) POP003 Butt Fusion Jointing of PE Pipes and Fittings – Recommended Parameters.

POP001 contains recommendations for equipment required, for jointing, maintenance, servicing and calibration procedures, records to be kept and the training program to be respected to produce good fusion joints in polyethylene pipes.

POP003 is a guide to the butt fusion of polyethylene pipe using AS/NZS 4130 material as a basis, recommending the butt fusion procedures and parameters as specified in ISO 21307.

Copies of these documents can be downloaded from the PIPA website [www.pipa.com.au](http://www.pipa.com.au).

Polyethylene pipe systems should be installed in accordance with AS/NZS 2033:2008 *Installation of polyethylene pipe systems*.

PE pipe shall be stored in accordance with the storage requirements of POP005 *Packaging, handling and storage of polyethylene pipe and fittings*.

## 8 PRODUCT MARKING

Enviropressure PE100 pipes are marked in accordance with AS/NZS 4130 as follows:

Manufacturer's name: Enviropipes Pty Ltd

Pipe Series: S1

Dimensions: e.g. DN 160

Pressure rating: e.g. PN16

SDR: e.g. SDR11

Material: PE100

Date and time of manufacture: yyyy-mm-dd hh:mm

Place of manufacture: Perth

Standard: AS/NZS 4130

For non-drinking water applications: RECYCLED WATER-DO NOT DRINK

For pressure sewerage applications: SEWAGE

See Figure 1 for an example of marking.



**FIGURE 1 EXAMPLE OF PIPE MARKING**

## 9 PACKAGING AND TRANSPORTATION

Enviropressure PE pipe is available in 6 or 12 metre lengths or coils.

The method of packaging and transport of PE pipes is dependent on the size of the pipe or coil.

The Plastics Industry Pipe Association also provides technical guidelines for Packaging, Handling and storage of Polyethylene pipe and fittings in POP005 *Packaging, Handling, and Storage of Polyethylene Pipes and Fittings*.

Copies of these documents can be downloaded from the PIPA website [www.pipa.com.au](http://www.pipa.com.au).

Enviropipes have packaging and delivery guidelines for handling and loading pipes of various sizes from their WA manufacturing site. Generally smaller bore pipe is bundled and strapped, loaded onto the freight forwarder trailer and tied down with certified holding straps/gates. Larger bore pipe is loaded loosely with timber gluts in-between layers and supported by the freight forwarder in a secure manner to prevent damage or injury (i.e. bolsters, gates, straps).

Enviropipes project team will work with the client to discuss unloading methods at the delivery point (i.e. pre-slung, stringing out along pipe route, containerisation, etc.) to determine the best and safest method to package and transport product to accommodate site facilities and minimise damage during transport and handling.

For purchase orders which include delivery to site by the manufacturer the client is requested to examine loads upon arrival and prior to unloading to ensure there has been no damage during transportation.

## **10 PRODUCT WARRANTY**

The products are covered by the normal commercial and legal requirements of the Competition and Consumer Act 2010, which covers manufacture to the relevant Standard. and details of Enviropipes warranty is included in their terms and conditions of sale.

## **11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD-TESTING REPORT**

Polyethylene pipe has been in used by the Australian water industry for many years and is regarded as a mature product. When installed in accordance with the manufacturer's instructions and operated within its stated performance capacity, PE pipe has proved to be a low maintenance product over a long service life. Inadequate PE pipeline performance has often been associated with the quality of pipeline joint working and attached appurtenances.

PE pipelines jointed by means of butt and electrofusion welding processes are known to deliver an acceptable pipeline life expectancy when designed by competent experienced designers and installed by qualified experienced welders.

For information on quality installation processes refer to the following WSAA National Codes list.

- a) WSA 01 Polyethylene Pipeline Code of Australia
- b) WSA 02 Sewerage Code of Australia
- c) WSA 03 Water Supply Code of Australia
- d) WSA 04 Sewage Pumping Station Code of Australia
- e) WSA 06 Vacuum Sewerage Code of Australia
- f) WSA 07 Pressure Sewerage Code of Australia

## **12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW**

There are no outstanding queries.

## **13 FUTURE WORKS**

No future works have been identified.

## **14 DISCLAIMERS**

This Product Appraisal Report (Report) is issued by the Water Services Association of Australia Limited on the understanding that:

This Report applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this Report.

To maintain the recommendations of this Report any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

The following information explains a number of very important limits on your ability to rely on the information in this Report. Please read it carefully and take it into account when considering the contents of this Report.

Any enquiries regarding this report should be directed to the Program Manager, Carl Radford, Phone: 03 8605 7601 email [carl.radford@wsaa.asn.au](mailto:carl.radford@wsaa.asn.au).

#### **14.1 Issue of Report**

This Report has been published and/or prepared by the Water Services Association of Australia Limited and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

#### **14.2 Limits on Reliance on Information and Recommendations**

##### **14.2.1 Disclaimer of liability**

Neither the Publisher(s) nor any person involved in the preparation of the Report accept(s) any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do anything) relating in any way to the Report or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Report or any errors or omissions.

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This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it (Product). The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

### **14.3 No Updating**

Neither the Publisher(s) nor any person involved in the preparation of this Report [has] [have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher(s) or the Product or any other matter.

### **14.4 No Warranty**

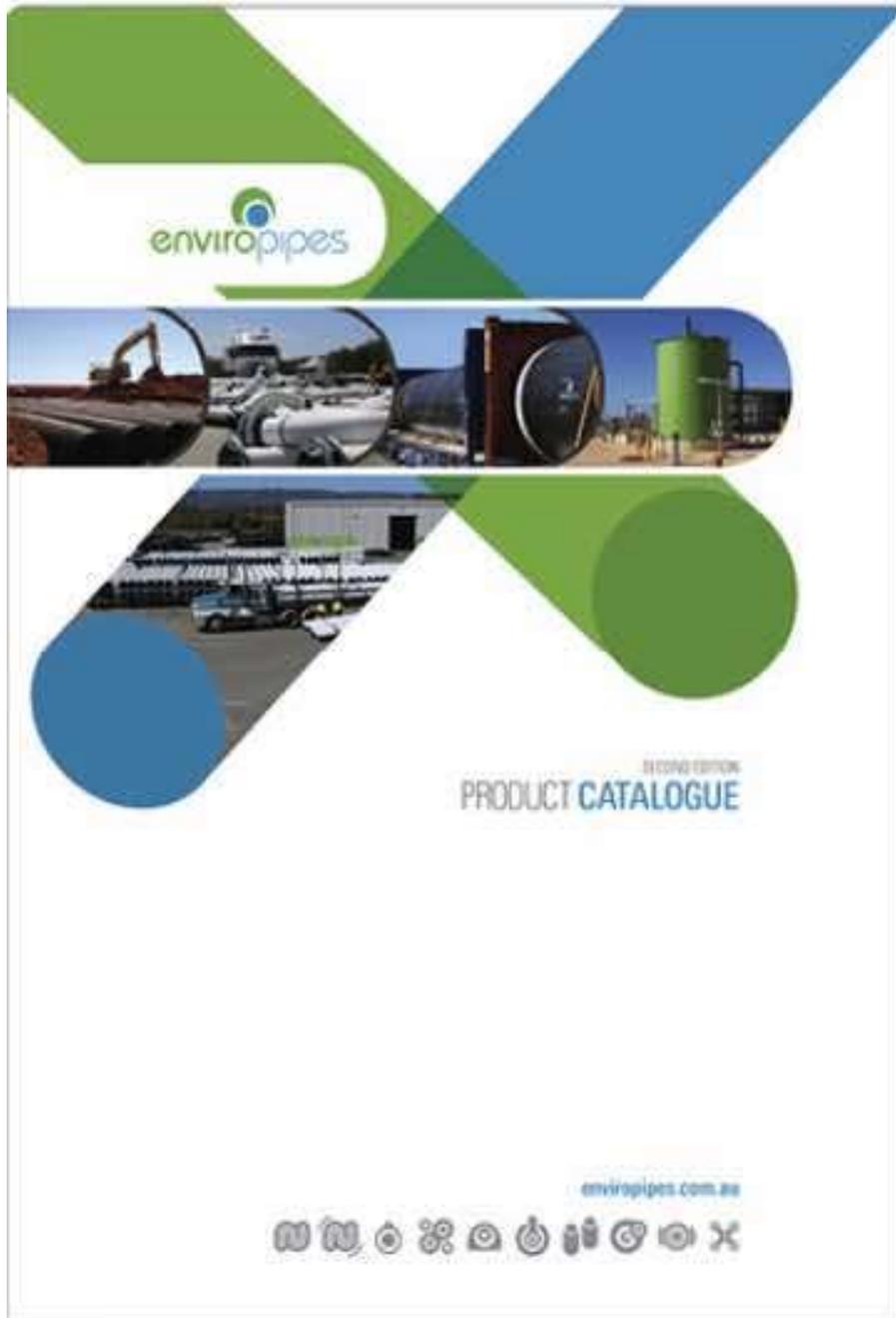
The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

## APPENDIX A – PRODUCT LITERATURE

The Enviropipes full catalogue is available at the following link:

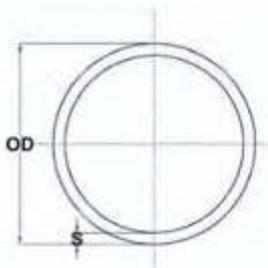
<http://www.enviropipes.com.au/index.php/technical-support-and-catalogues>

Some selected pages are included in this Appendix



## SDR41, SDR26, SDR21 AND SDR17

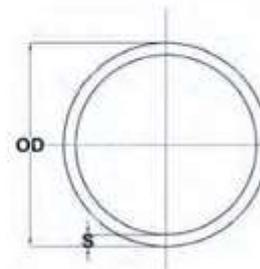
OD	SDR41 PN 4			SDR26 PN 6.3			SDR21 PN 8			SDR17 PN 10		
	S	ID	KG/M	S	ID	KG/M	S	ID	KG/M	S	ID	KG/M
25	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	2.0	28.0	0.16
40	-	-	-	-	-	-	2.0	36.0	0.23	2.5	35.0	0.28
50	-	-	-	-	-	-	2.5	45.0	0.36	3.1	43.8	0.44
63	-	-	-	2.6	57.9	0.47	3.2	56.6	0.57	3.9	55.1	0.70
75	-	-	-	3.1	68.9	0.66	3.8	67.4	0.81	4.7	65.6	0.99
90	-	-	-	3.7	82.7	0.86	4.5	80.9	1.17	5.6	78.8	1.43
110	2.8	104.3	0.92	4.5	101.0	1.43	5.6	98.9	1.75	6.9	96.3	2.13
125	3.2	118.5	1.19	5.1	114.8	1.84	6.3	112.4	2.26	7.8	109.4	2.76
140	3.6	132.8	1.49	5.7	128.6	2.31	7.1	125.9	2.83	8.7	122.5	3.46
160	4.1	151.7	1.94	6.5	147.0	3.02	8.1	143.8	3.70	10.1	140.0	4.51
180	4.7	170.7	2.46	7.3	165.3	3.82	9.1	161.8	4.68	11.2	157.0	5.71
200	5.2	189.7	3.04	8.2	183.7	4.72	10.1	179.8	5.78	12.5	175.1	7.05
225	5.8	213.4	3.85	9.2	206.7	5.97	11.4	202.3	7.32	14.0	196.9	8.93
250	6.5	237.1	4.75	10.2	229.6	7.37	12.6	224.8	9.03	15.6	218.8	11.02
280	7.2	265.5	5.96	11.4	257.2	9.25	14.1	251.7	11.33	17.5	245.1	13.82
315	8.1	298.7	7.54	12.8	289.3	11.70	15.9	283.2	14.34	19.6	275.7	17.50
355	9.2	336.6	9.57	14.5	326.1	14.86	17.9	319.2	18.22	22.1	310.7	22.22
400	10.3	379.3	12.15	16.3	367.4	18.67	20.2	359.6	23.13	24.9	350.1	28.21
450	11.6	426.7	15.38	18.3	413.3	23.88	22.7	404.6	29.27	28.1	393.9	35.71
500	12.9	474.1	18.99	20.4	459.2	29.49	25.2	449.5	36.14	31.2	437.6	44.08
560	14.5	531.0	23.82	22.8	514.3	36.99	28.3	503.5	45.33	34.9	490.2	55.30
630	16.3	597.4	30.15	25.7	578.6	46.81	31.8	566.4	57.37	39.3	551.4	69.98
710	18.4	673.3	38.29	28.9	652.1	59.46	35.8	638.3	72.87	44.3	621.5	88.89
800	20.7	758.6	48.61	32.6	734.8	75.48	40.4	719.2	92.51	49.9	700.2	112.85
900	23.3	853.5	61.53	36.7	826.6	95.54	45.4	809.1	117.08	56.1	787.8	142.82
1000	25.9	948.3	75.96	40.8	918.5	117.94	50.5	899.0	144.55	62.4	875.3	176.33
1200	31.0	1138.0	109.38	48.9	1102.2	169.84	60.6	1078.9	208.15	74.8	1050.4	253.91
1400	36.2	1327.6	148.88	57.1	1285.8	231.17	70.7	1258.7	283.32	87.3	1225.4	345.60
1600	41.4	1517.3	194.45	65.2	1469.5	301.94	80.8	1438.5	370.04	99.8	1400.5	451.40
1800	46.5	1706.9	246.10	73.4	1653.2	382.14	90.9	1618.3	468.34	112.2	1575.5	571.30
2000	51.7	1896.6	303.83	81.5	1836.9	471.78	101.0	1798.1	578.20	124.7	1750.6	705.31



\*Measurements are in millimetres \*Measurements are approximate

## SDR13.6, SDR11, SDR9 AND SDR7.4

OD	SDR13.6 PN 12.5			SDR11 PN 16			SDR9 PN 20			SDR7.4 PN 25		
	S	ID	KG/M	S	ID	KG/M	S	ID	KG/M	S	ID	KG/M
25	1.9	21.1	0.14	2.4	20.2	0.16	2.9	19.1	0.20	3.6	17.8	0.23
32	2.5	27.0	0.22	3.1	25.8	0.27	3.8	24.5	0.32	4.6	22.8	0.38
40	3.1	33.8	0.35	3.9	32.3	0.42	4.7	30.5	0.50	5.7	28.5	0.59
50	3.9	42.2	0.54	4.8	40.4	0.66	5.9	38.2	0.78	7.2	35.7	0.93
63	4.9	53.2	0.85	6.1	50.9	1.04	7.4	48.2	1.24	9.0	45.0	1.47
75	5.8	63.3	1.22	7.2	60.5	1.48	8.8	57.3	1.76	10.7	53.5	2.08
90	7.0	76.0	1.76	8.7	72.7	2.13	10.6	68.8	2.54	12.9	64.2	3.00
110	8.6	92.9	2.62	10.6	88.8	3.18	13.0	84.1	3.79	15.8	78.5	4.48
125	9.7	105.5	3.39	12.0	100.9	4.10	14.7	95.6	4.90	17.9	89.2	5.78
140	10.9	118.2	4.25	13.5	113.0	5.15	16.5	107.0	6.14	20.1	99.9	7.25
160	12.5	135.1	5.55	15.4	129.2	6.72	18.8	122.3	8.02	22.9	114.2	9.48
180	14.0	151.9	7.02	17.3	145.3	8.51	21.2	137.6	10.15	25.8	128.4	11.99
200	15.6	168.8	8.67	19.3	161.5	10.50	23.6	152.9	12.53	28.6	142.7	14.81
225	17.5	189.9	10.97	21.7	181.6	13.30	26.5	172.0	15.86	32.2	160.5	18.74
250	19.5	211.0	13.55	24.1	201.8	16.41	29.4	191.1	19.59	35.8	178.4	23.13
280	21.8	236.4	16.99	27.0	226.0	20.59	33.0	214.0	24.57	40.1	199.8	29.02
315	24.6	265.9	21.51	30.4	254.3	26.08	37.1	240.8	31.09	45.1	224.8	36.73
355	27.7	299.7	27.32	34.2	286.6	33.10	41.8	271.4	39.49	50.9	253.3	46.65
400	31.2	339.6	34.68	38.5	322.9	42.02	47.1	305.8	50.14	57.3	285.4	59.22
450	35.1	379.9	43.89	43.4	363.3	53.18	53.0	344.0	63.46	64.5	321.1	74.95
500	39.0	422.1	54.19	48.2	403.6	65.66	58.9	382.2	78.34	71.6	356.8	92.53
560	43.6	472.7	67.97	54.0	452.1	82.36	66.0	428.1	98.27	80.2	399.6	116.07
630	49.1	531.8	86.03	60.7	508.6	104.23	74.2	481.6	124.38	90.2	449.5	146.90
710	55.3	599.3	109.26	68.4	573.2	132.39	83.6	542.8	157.97	101.7	506.5	186.58
800	62.4	675.3	138.72	77.1	645.8	168.08	94.2	611.6	200.56	-	-	-
900	70.1	759.7	175.56	86.7	726.5	212.72	-	-	-	-	-	-
1000	77.9	844.1	216.74	96.4	807.3	262.62	-	-	-	-	-	-
1200	93.5	1012.9	312.11	115.6	968.7	378.17	-	-	-	-	-	-
1400	109.1	1181.8	424.82	134.9	1130.2	514.74	-	-	-	-	-	-
1600	124.7	1350.6	554.87	-	-	-	-	-	-	-	-	-
1800	140.3	1519.4	702.25	-	-	-	-	-	-	-	-	-
2000	155.9	1688.2	866.98	-	-	-	-	-	-	-	-	-



\*Measurements are in millimetres. \*Measurements are approximate

## APPENDIX B – QUALITY ASSURANCE CERTIFICATES

### TABLE B1: ENVIROPIPES PTY LTD – MANAGEMENT SYSTEMS

1180 Abernethy Road Perth Airport WA	
Quality Systems Standard	AS/NZS ISO 9001:2015
Certification Licence No.	QEC 28623
Certifying Agency	SAI Global
First Date of Certification	22 February 2012
Current Date of Certification	15 December 2017
Expiry Date of Certification	21 February 2021

### TABLE B2: ENVIROPIPES AUSTRALIA PTY LTD – PRODUCT CERTIFICATION

1180 Abernethy Road Perth Airport WA	
Product Standard/Spec.	AS/NZS 4130:2018
Certificate No	AMI 72303
Issuing certification body	ApprovalMark International
First Date of Certification	5 October 2012
Current Date of Certification	4 October 2019
Expiry Date of Certification	5 October 2022



# CERTIFICATE OF REGISTRATION

This is to certify that:

**Enviropipes Pty Ltd**

ABN 84 130 666 518

1180 Abernethy Road Perth Airport WA 6105 AUSTRALIA

operates a

**QUALITY MANAGEMENT SYSTEM**

which complies with the requirements of

**ISO 9001:2015**

for the following scope

The manufacture, sales and supply of plastic piping systems, pipe extrusion of polyethylene and polypropylene piping, fittings and associated components, including the processes of plastic welding and fabrication, plastic forming and machining.

**Certificate No: QEC28623**

Issued: 21 December 2017

Originally Certified: 22 February 2012

Expires: 21 February 2021

Current Certification: 15 December 2017

Nicole Grantham  
General Manager SAI Global Certification Services



**Registered by:**  
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 680 George Street, Sydney NSW 2000 Australia with SAI Global Pty Limited 680 George Street Sydney NSW 2000 Australia ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification register at <http://www.sai-global.com>





# CERTIFICATE OF CONFORMITY



*ApprovalMark International* hereby grants:

**ENVIROPIPES PTY LTD**  
 1180 Abernethy Road  
 Perth Airport, Western Australia 6105  
 AUSTRALIA

Evaluated to:

**AS/NZS 4130:2018 - Polyethylene (PE) pipes for pressure applications**

The ISO Type 5 licensee shall comply with all the terms and conditions as stipulated by the governance of the operating rules of the ISO Type 5 scheme, and shall comply with the standard requirements at all times including when the standard is amended. The ISO Type 5 license only covers the product which is identified in the attached product schedule.

**Certificate No.** AMI 72303

**Issued:** 4th October 2019  
**Expires:** 5th October 2022

**Original Issue:** 5th October 2012

A handwritten signature in black ink, appearing to read 'John Prasad'.

**John PRASAD**  
 Director



**Registered by:** ApprovalMark International Pty Ltd (ABN 69 143 259 974) Unit 20, 33 Holbeche Road, Arndell Park NSW 2148 Australia. The assessment was carried with appropriate skill and assessment by ApprovalMark International Pty Ltd; however it will only accept its responsibility for proven negligence. The certificate remains the property of ApprovalMark International Pty Ltd.

ApprovalMark



# Product Schedule

## ENVIROPIPES PTY LTD

1180 Abernethy Road  
Perth Airport, Western Australia 6105  
AUSTRALIA

### ISO Type 5 Certificate of Conformity

Evaluated to:

**AS/NZS 4130:2018 – Polyethylene (PE) pipes for pressure applications**

Model Id	Model Name	Brand Name	Product Description	Endorsement Date
Enviro Pipes	Black PE Pressure Pipe	EnviroPressurePipe®	Black Pipe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Blue Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Blue Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Red Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Red Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Lilac Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Lilac Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Yellow Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Yellow Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 2	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Cream Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Cream Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with White Jacket PE pressure Pipe	EnviroPressurePipe®	Black Pipe with White Jacket SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Yellow Jacket PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Yellow Jacket SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 2	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Lilac Jacket PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Lilac Jacket SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Aqua Jacket PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Aqua Jacket SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with Cream Jacket PE pressure Pipe	EnviroPressurePipe®	Black Pipe with Cream Jacket SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019



# Product Schedule

Model Id	Model Name	Brand Name	Product Description	Endorsement Date
Enviro Pipes	Black with White Internal Liner PE pressure Pipe	EnviroPressurePipe®	Black with White Internal Liner SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with White Jacket and Blue Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with White Jacket and Blue Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with White Jacket and Red Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with White Jacket and Red Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with White Jacket and Lilac Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with White Jacket and Lilac Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019
Enviro Pipes	Black with White Jacket and Cream Stripe PE pressure Pipe	EnviroPressurePipe®	Black Pipe with White Jacket and Cream Stripe SDR7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41, DN20-DN2000, Series 1	4 <sup>th</sup> October 2019

*End of record*

**Certificate No: AMI 72303**

*The models identified above in the schedule are endorsed for ISO Type 5 application only.*

## APPENDIX C - SUPPLIER CONTACTS

### **Enviropipes Pty Ltd**

1180 Abernethy Road  
Perth Airport  
Western Australia 6015

Phone: (08) 9352 8444

Email: [sales@enviropipes.com.au](mailto:sales@enviropipes.com.au)

Website: [www.enviropipes.com.au](http://www.enviropipes.com.au)



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Docklands VIC 3008

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Sydney NSW 2001

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