

Holman Industries

PRODUCT APPRAISAL REPORT 1905 Issue 3

HolTech Polyethylene (PE) Fabricated Fittings for Non-pressure Sewerage Applications

WSA PS 242 Polyethylene (PE) plain wall pipes and fittings for non-pressure applications-sewerage

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12 May 2021	Issue 3 Publication

Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	26 June 2019
WSAA Expert Panel	WSAA	26 June 2019
Peter Pittard, WSAA Consultant	WSAA	5 June 2019
Carl Radford, Product Appraisal Manager	WSAA	5 August 2019
Peter Pittard, WSAA Consultant	WSAA	6 November 2019
Carl Radford, Product Appraisal Manager	WSAA	6 November 2019
Peter Pittard, WSAA Consultant	WSAA	11 May 2021
Carl Radford, Product Appraisal Manager	WSAA	12 May 2021

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

Holman Industries has been an Australian family-owned business since 1966 operating under new ownership since 1991. The company is a major supplier of products for irrigation, watering and garden lighting. Its plumbing segment offers a comprehensive range of PVC and PE fittings for drainage, waste and vent (DWV), stormwater and pressure applications. Holman Industries acquired Fabfit in January 2017. Fabfit has over 20 years' experience providing PVC-U fabricated and moulded fittings to the water, sewerage, drainage, plumbing, industrial, irrigation, communications, electrical and power markets.

This appraisal is for a range of HolTech polyethylene (PE) fabricated fittings for non-pressure sewerage applications in sizes DN 110 and DN 160. The range includes junctions, adaptors, backdrops, end caps and reducers. See Section 3 for details.

This Issue 3 is to update component sourcing details.

Issue 2 was to update quality assurance certification details.

Fabrication of the HolTec sewerage fittings is carried out at the Fabfit facility in Stapylton Queensland.

The fittings are fabricated from SDR 21 SN8 PN8 polyethylene (PE) pipes and fittings manufactured to AS/NZS 5065 Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications or AS/NZS 4130 Polyethylene (PE) Pipes for pressure applications.

The PE pipe utilised in the fabrication of the fittings is Holman branded and covered by ISO Type 5 product certification to AS/NZS 5065. The PE fittings are sourced from various suppliers and are covered by product certification to AS/NZS 5065 or AS/NZS 4129. A PVC adaptor fitting used in the fabricated PE to PVC adaptor is manufactured by Holman and covered by ISO Type 5 product certification to AS/NZS 1260.

Where PE pipe is sourced from alternative suppliers, Holman will ensure the pipe has ISO Type 5 product certification to AS/NZS 4130.

Holman has a Quality Management System Certification to ISO 9001:2015 (issued in the name of Fabfit T/A Holman Industries).

The HolTech PE fabricated fittings described within this appraisal meet the requirements of WSA PS 242 *Polyethylene (PE) plain wall pipes and fittings for non-pressure applications - Sewerage* and are therefore deemed as 'fit for purpose'.

1.1 Recommendations

It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise the HolTech range of PE fabricated fittings, as detailed in this report, for use in non-pressure sewerage applications, provided they are installed in accordance with any relevant conditions relating to the design, installation, acceptance testing provided in relevant standards, WSAA codes and the manufacturer's requirements.

2 THE APPLICANT

The Applicant is Holman Industries.

2.1 The Supplier

Holman Industries has been an Australian family-owned business since 1966 operating under new ownership since 1991. The company is a major supplier of products for irrigation, watering and garden lighting. Its plumbing segment offers a comprehensive range of PVC and PE fittings for drainage, waste and vent (DWV), stormwater and pressure applications. Holman Industries acquired Fabfit in January 2017. Fabfit has over 20 years' experience providing PVC-U fabricated and moulded fittings to the water, sewerage, drainage, plumbing, industrial, irrigation, communications, electrical and power markets.

3 THE PRODUCT

This appraisal is for a range of HolTech polyethylene (PE) fabricated fittings for non-pressure sewerage applications in sizes DN 110 and DN 160.

The range includes junctions, adaptors, backdrops, end caps and reducers. See Table 1 for details.

The PE pipe utilised in the fabrication is Holman branded and covered by ISO Type 5 product certification to AS/NZS 5065 *Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications*. The PE fittings are sourced from various suppliers and are covered by product certification to AS/NZS 5065 or AS/NZS 4129. A PVC adaptor fitting used in the fabricated PE to PVC adaptor is manufactured by Holman and covered by ISO Type 5 product certification to AS/NZS 1260.

Where PE pipe is sourced from alternative suppliers, Holman will ensure the pipe has ISO Type 5 product certification to AS/NZS 4130.

TABLE 1 PE FITTINGS FOR NON-PRESSURE SEWERAGE APPLICATIONS

Product Code	Description	
HTJ110X110X45	110 x 110 X 45 JUNCTIONS	
HTJ160X110X45	160 x 110 X 45 JUNCTIONS	
HTJ160X160X45	160 x 160 X 45 JUNCTIONS	
HTPF110	110 PUDDLE FLANGES	
HTPF160	160 PUDDLE FLANGES	
HTAD110X100	110 PE x 100 PVC ADAPTORS	
HTAD160X150	160 PE x 150 PVC ADAPTORS	
HTJ110X110X88	110 x 110 x 88 SWEEP JUNCTIONS	
HTJ160X110X88	160 x 110 x 88 SWEEP JUNCTIONS	
HTJ160X160X88	160 x 160 x 88 SWEEP JUNCTIONS	
HTJC110	110 x 110 x 88 SWEEP JUNCTIONS WITH CAP	
HTJC160X100X88	160 x 110 x 88 SWEEP JUNCTIONS WITH CAP	
HTJC160	160 x 160 x 88 SWEEP JUNCTIONS WITH CAP	
HTBDE160EX	160 EXTERNAL BACK DROP BENDS	
HTBDJ160X90EX	160 EXTERNAL 90 DEG BACKDROP JUNCTIONS	
HTBDJ160X90IN	160 INTERNAL 90 DEG BACKDROP JUNCTIONS	
HTJC160	160 x 160 x 88 SWEEP JUNCTIONS WITH CAP	
HTRED160X110	160 X 110 REDUCERS	
HTCAPEXT110	110 END CAPS WITH TAIL	
HTCAPEXT16O	160 END CAPS WITH TAIL	
HTIOJ160x150	160 x 150 PVC I.O. JUNCTIONS	

4 SCOPE OF THE APPRAISAL

The scope of this Appraisal is for a range of DN 110 and DN 160 PE fabricated fittings for non-pressure sewerage applications.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts PE fabricated fittings for non-pressure applications manufactured in compliance with WSA PS 242 *Polyethylene (PE) plain wall pipes and fittings for non-pressure applications – Sewerage* or fabricated fittings utilising AS/NZS 5065 or AS/NZS 4130 PE100 pipe and AS/NZS 4129 or AS/NZS 5065 moulded fittings. Since at the time of writing AS/NZS 4129 and AS/NZS 5065 do not include an option to fabricate fittings, this appraisal is based on WSA PS 242.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with 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

Holman HolTech PE fabricated fittings have been appraised for compliance with WSA PS 242 Polyethylene (PE) plain wall pipes and fittings for non-pressure applications - Sewerage.

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 Specification is relevant to this application:

WSA PS 242 Polyethylene (PE) plain wall pipes and fittings for non-pressure applications – Sewerage.

A copy of the Product Specification is 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

Holman has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. QMS 21388 issued to Fabfit T/A Holman Industries by ApprovalMark International Pty Ltd.
- AS/NZS 5065:2005 ApprovalMark ISO Type 5 Product Certification Licence No. AMI 74871 issued to Holman Industries by ApprovalMark International Pty Ltd.
- AS/NZS 1260:2017 ApprovalMark ISO Type 5 Product Certification Licence No. AMI 21246 issued to Fabfit T/A Holman Industries by ApprovalMark International Pty Ltd.

Copies of the applicable Quality Assurance and Product Certification licences have been included in Appendix B and are also available from WSAA.

6.2 Compliance with Performance Requirements

6.2.1 Materials

The PE pipe utilised in the fabrication of the fittings is Holman branded and covered by ISO Type 5 product certification to AS/NZS 5065 *Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications*. The PE fittings are sourced from various suppliers and are covered by product certification to AS/NZS 5065 or AS/NZS 4129. A PVC

adaptor fitting used in the fabricated PE to PVC adaptor is manufactured by Holman and covered by ISO Type 5 product certification to AS/NZS 1260.

Where pipe is sourced from alternative suppliers, Holman will ensure the pipe has ISO Type 5 product certification to AS/NZS 4130.

6.2.2 Type tests

Type test requirements for the fabricated fittings include dimensional, hydrostatic pressure resistance, liquid infiltration, effect of heating (for fittings incorporating moulded fittings) and mechanical strength and flexibility test (for fittings with junctions).

Holman Industries has provided copies of test reports to demonstrate compliance with these requirements.

Tests to demonstrate contact width and pressure for the elastomeric seal joint in the Holman PVC adaptor fittings have been completed and reported in WSAA Product Appraisal 1301.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Fabricated PE fittings have been utilised in non-pressure PE sewerage applications for many years now and installation practices are well established. Installation procedures are provided in AS/NZS 2566.2 *Buried flexible pipelines Part 2 Installation*. A copy of Holman's Scope of Use and Installation Document is attached in Appendix A. Holman does not provide specific installation training for installers.

8 PRODUCT MARKING

Marking on the fittings includes the following:

Manufacturers Name: Holman
Nominal size: e.g., 110 x 100
Material Class: SDR21 PN8

9 PACKAGING AND TRANSPORTATION

The PE fittings are packed into cardboard boxes with lids to prevent entry of dust and help to prevent unauthorised access. The boxes are packed on to pallets and shrink wrapped.



FIGURE 1 PACKAGING

10 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the Competition and Consumer Act 2010 (Cth), which covers manufacture to the relevant standard, and details of Holman Industry's warranty is included in their terms and conditions of sale.

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

The products covered by this appraisal require a WSAA appraisal to assist in obtaining water agency approvals.

12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

The following queries were raised:

- Q1 Please explain the method of attachment for the puddle flanges.
- A1 The internal bore of a puddle flange is machined to ensure a tight slip-on fit to the PE pipe. The flange is then welded to the pipe around the circumference on both sides.
- Q2 Please provide details of the PE fittings utilised in the PE-PVC fabricated adaptor.
- A2 The PE fitting is a straight piece welded to a PE pipe with an elastomeric seal on the other end to suit connection to a PVC pipe or fitting. See also Section 6.2.1 and 6.2.2.
- Q3 Please provide details of the PVC fitting utilised in the IO junction.
- A3 The PVC fitting is a straight piece with an elastomeric seal joint one end to suit connection to the PE pipe and a socket on the other end to facilitate a solvent cement joint for PVC pipe. See also Section 6.2.1 and 6.2.2.

13 FUTURE WORKS

No future works have been identified.

14 DISCLAIMER

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.

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.

14.2.2 Intellectual Property and other rights

The Water Services Association of Australia Limited does not undertake any assessment of whether the importation, manufacture, sale or use of the Product the subject of this Report infringes the intellectual property rights or proprietary rights of any person. Recipients of the report should undertake their own assessment of whether (as relevant) the importation, manufacture, sale or use of the relevant Products infringe the intellectual property rights or other proprietary rights of any person. If the Product infringes intellectual property rights or other proprietary rights there is potential for the supply of the Products to be interrupted.

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14.2.3 Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith (and subject to the limitations noted in this Report). However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

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 indemnify 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.

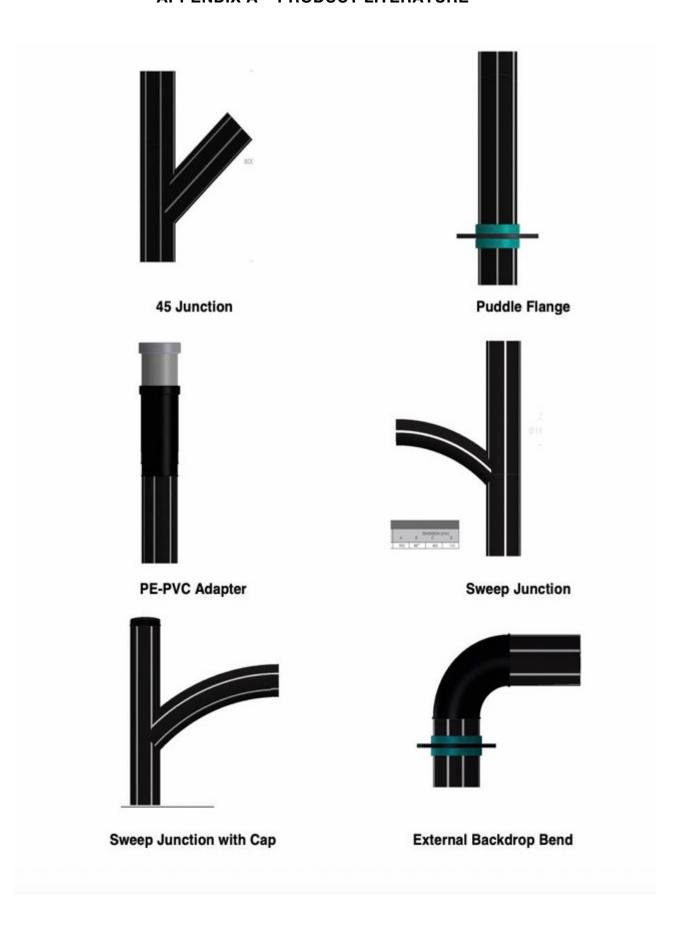
14.3 No Updating

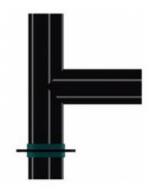
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The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

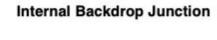
APPENDIX A - PRODUCT LITERATURE







External Backdrop Junction









PE-PVC IO Junction



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HolTech Fittings Scope Of Use and Installation Document

Introduction;

Holman Industries HolTech sewer range are fabricated from PE100 Polyethylene pipe fittings from Australian made PE100 pipe. The PE100 pipes conform to AS/NZS 4130, pipe conforming to AS/NZS4130 are extruded from pre-compounded Polyethylene material that also conforms to AS/NZS 4131. HolTech sewer fittings are fully welded joint fittings that prevents and eliminates any further intrusion from ground water or tree roots system after the correct installation.

Material Properties;

Standard size; **DN110 & DN160 SDR21 & PN8** SDR/ PN Rating;

Material; PE100 Polyethylene AS/NZS 4131

All fittings comply with AS/NZS 4129. Fittings;

- Puddle Flanges
- Sweep junctions
- Sweep bends/junctions
- Housing connections

HolTech PE100 Sewer range fittings are designed to be used in non-pressure sewer applications. This can be identified by the light grey stripes on the outside and the coextruded light grey internal surface for both pipes and fittings. The light grey allows the easy application of camera inspection as part of the compliance.

All welding at fabrication stage are carried out by trained technician in both Butt Welding and Extrusion Welding processes. Our fabrication technicians are qualified and certified in all aspects of Polymer fabrication with relevant credentials are up to date.

Installation of PE pipe and fittings shall be accordance with AS/NZS 2566.2.

We highly recommend all fabrication on site to be carried out in Butt Welding process with qualified and certified technician. Please refer to Design Drawings of site and additionally the above AS/NZS provides detailed information and extensive guidance for installation.

All fittings are stored and transported in Holman Industries cartons on pallets. They should be handled with using standard safe working practices. Fittings must be stored under cover in dry conditions and kept in their packaging, which is intended to keep the weld surfaces clean and ready for use.

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APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are also available from WSAA.

TABLE B1 FABFIT T/A HOLMAN INDUSTRIES - MANAGEMENT SYSTEMS

298A Stapyleton-Jacobs Well Road, Stapyleton, Queensland 4207		
Quality Systems Standard	ISO9001:2015	
Certification licence no.	QMS 21388	
Certifying agency	ApprovalMark International	
Current date of certification	24 July 2019	
Expiry date of certification	1 August 2021	

TABLE B2 HOLMAN INDUSTRIES – PRODUCT CERTIFICATION

11 Walters Drive Osborne Park WA 6017			
Product Standard/Spec.	AS/NZS 5065:2005		
Certificate No.	AMI 74871		
Issuing certification body	ApprovalMark International		
First date of certification	10 May 2021		
Current date of certification	10 May 2021		
Expiry date of certification	10 May 2026		

TABLE B5 FABFIT T/A HOLMAN INDUTRIES - PRODUCT CERTIFICATION

298A Stapyleton-Jacobs Well Road, Stapyleton, Queensland 4207		
Product Standard/Spec.	AS/NZS 1260:2017	
Certificate No.	AMI 21246	
Issuing certification body	ApprovalMark International	
First date of certification	22 July 2019	
Current date of certification	16 March 2021	
Expiry date of certification	26 April 2021	

CERTIFICATE OF REGISTRATION



ApprovalMark International hereby grants

FABFIT

T/A HOLMAN INDUSTRIES 298A Stapylton-Jacobs Well Road Stapylton, 4207 AUSTRALIA

Evaluated to:

ISO 9001: 2015 - QUALITY MANAGEMENT SYSTEMS

THIS COVERS THE FOLLOWING SCOPE:

For the fabrication of PVC plumbing and electrical fittings

Certificate No. QMS 21388

Issued: 24th July 2019 Expires: 1st August 2021

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.



CERTIFICATE OF CONFORMITY



 $Approval Mark\ International\$ hereby grants:

HOLMAN INDUSTRIES

11 Walters Drive Osborne Park, WA 6017 AUSTRALIA

ISO Type 5 Certificate of Conformity

Evaluated to:

AS/NZS 5065:2005 – Polyethylene and Polypropylene pipes and fittings for drainage and sewerage applications

The ISO Type 5 License 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 74871

Issued: 10th May 2021 Expires: 10th May 2026

John PRASAD

Director

ApprovalMark International Pty Ltd 20/33 Holbeche Road, Arndell Park 2148, Australia www.approvalmark.com





Original Issue: 10th May 2021

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Product Schedule

HOLMAN INDUSTRIES

11 Walters Drive Osborne Park, WA 6017 AUSTRALIA

ISO Type 5 Certificate of Conformity

Evaluated to:

AS/NZS 5065:2005 – Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications

ì	Model Id	Model Name	Brand Name	Product Description	Endorsement Date
	PE110X1	PE Holtec Pipe	HOLMAN	SDR21, SN8 110mmx1mt PE Holtech Pipe	10 th May 2021
	PE160X1	PE Holtec Pipe	HOLMAN	SDR21, SN8 160mmx1mt PE Holtech Pipe	10 th May 2021

_____End of record

Certificate No. AMI 74871

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

Approval

Page 1 of 1



CERTIFICATE OF CONFORMITY



ApprovalMark International hereby grants:

FABFIT

T/A Holman Industries 298A Stapylton – Jacobs Well Road Stapylton, QLD 4207 AUSTRALIA

ISO Type 5 Certificate of Conformity

Evaluated to:

AS/NZS 1260:2017 PVC-U pipes and fittings for drain, waste and vent application

The ISO Type 5 License 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 21246

Issued: 16th March 2021 Expires: 26th April 2021

John PRASAD

Director

ApprovalMark International Pty Ltd 20/33 Holbeche Road, Arndell Park 2148, Australia www.approvalmark.com





Original Issue: 22nd July 2019

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.

APPENDIX C - SUPPLIER CONTACTS

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