Holman Industries
PRODUCT APPRAISAL REPORT 1301 Issue 6
FABFIT Fabricated and Moulded PVC-U Fittings for DWV
AS/NZS 1260:2017 PVC-U pipes and fittings for drain, waste and vent application
Published: 12 November 2019
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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 is a family business, based in Perth WA, that was originally established in 1966. The company is currently focused on providing products for irrigation, watering, plumbing, civil, garden lifestyle and garden lighting.

This Appraisal was previously published under the name of Fabfit. Holman acquired the Fabfit business in January 2017 and has rebranded their product range as Holman.

This Issue 6 is to replace the previous Appraisal that had reached its expiry date.

This Appraisal is for a range of PVC-U fabricated and moulded fittings in sizes from DN 100 to DN 375 with solvent cement joints (SCJ) or Rubber Ring Joints (RRJ), manufactured in compliance with AS/NZS 1260:2017 PVC-U pipes and fittings for drain, waste and vent application.

The fittings are intended for applications in either above or below ground installations that operate under gravity flow.

The fabricated range of DWV fittings are manufactured at the Fabfit facility in Stapylton Queensland and the injection moulded fittings are sourced from either the Holman Perth manufacturing facility or a supplier in China.

The DN 100 fittings have a stiffness rating of SN10 while all other sizes are SN8 rated.

See Section 4 for complete details of the fittings range covered by this Appraisal which are also included in the ApprovalMark product schedule included in Appendix B.

Holman has a Quality Management System licence to ISO 9001 and the products are covered by an ApprovalMark ISO Type 5 product certification to AS/NZS 1260. Holman also has an ApprovalMark certification for Best Environmental Practice (BEP).

The Holman PVC-U DWV fittings described within this appraisal meet the requirements of WSA PS WSA PS-230 Polyvinylchloride, Unplasticised (PVC-U) Pipes and Fittings for Non-Pressure Applications – Sewerage and Drainage 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 Holman range of fabricated and injection moulded PVC-U solvent cement and elastomeric seal joint fittings, as detailed in this report, for use in drainage and non-pressure wastewater applications, provided they are installed in accordance with AS/NZS 2032 Installation of PVC-U pipe systems, WSAA Codes and the manufacturer’s requirements.

2 THE APPLICANT
The applicant is Fabfit T/A Holman Industries.

2.1 The Manufacturer and Supplier
Holman Industries is a family business, based in Perth WA that was originally established in 1966. The company is currently focused on providing products for irrigation, watering, plumbing, civil, garden lifestyle and garden lighting.

Fabfit is a leading Australian manufacturer of PVC and PE fabricated fittings with over 20 years’ experience in supplying products and services to the water, sewerage, drainage, plumbing, industrial, irrigation, communications, electrical and power applications.

The Fabfit manufacturing operation is located in Stapylton, Queensland.

Injection moulded fittings are either manufactured at the Holman manufacturing facility located in Perth or sub-sourced from a manufacturer located in China. Holman has requested that the identity of the China based supplier remains “commercial-in confidence”
Holman Industries acquired the Fabfit business in January 2017 and the Fabfit range of products is now Holman branded.

3 THE PRODUCT

This Appraisal is for a range of PVC-U fabricated and moulded fittings in sizes from DN 100 to DN 375 with Solvent Cement Joints (SCJ) or Rubber Ring Joints (RRJ), manufactured in compliance with AS/NZS 1260:2017 PVC-U pipes and fittings for drain, waste and vent application.

The DN 100 fittings have a stiffness rating of SN10 while all other sizes are SN 8 rated.

3.1 PVC-U fabricated fittings

Fabricated PVC-U fittings are manufactured using cut sections of solid wall PVC-U pipe, except for taper sections which are formed by wrapping a heated flat section of PVC in a taper mould. The PVC parts are joined to form the fitting configuration using hot air gun welding. The joins are first tack welded then fully welded using PVC filler rods. Welded joints are reinforced with a wrapping of resin impregnated glass-fibre.

The solid wall PVC-U pipe used to fabricate the fittings is supplied by Australian manufacturers of PVC-U DWV pipe product certified to AS/NZS 1260 and with a current WSAA Product Appraisal.

The resin is required to physically adhere to the PVC. On bends, junctions and tapers the glass-fibre reinforcement is continuous and extends the full length and circumference of the fittings to either the socket root or 35 to 50 mm onto a plain spigot or threaded end.

3.2 PVC-U moulded fittings

Holman PVC-U DWV moulded fittings are manufactured entirely by an injection moulding process.

4 SCOPE OF THE APPRAISAL

The scope of the appraisal is for PVC-U moulded and fabricated fittings for drainage, waste and vent applications in sizes DN 100 to DN 375, as detailed in Table 1 and included in the Type 5 Product Certification ApprovalMark product schedule attached in Appendix B.

### TABLE 1

**HOLMAN PVC-U FITTINGS FOR DRAIN, WASTE AND VENT APPLICATIONS**

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Ends</th>
<th>Size, DN</th>
<th>Joint Type</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Moulded</td>
<td>Fabricated</td>
</tr>
<tr>
<td>Bends (Elbows) 5°, 15°, 30°, 45°, 60°, 88°</td>
<td>F&amp;F, M&amp;F</td>
<td>100,150, 225, 300</td>
<td>100,150, 225, 300, 375</td>
</tr>
<tr>
<td>Drop Bends</td>
<td>F&amp;F, M&amp;F</td>
<td>100, 150, 225, 225x150</td>
<td>SCJ</td>
</tr>
<tr>
<td>Junctions 45°</td>
<td>F&amp;F, M&amp;F</td>
<td>150x100, 150x150, 225x100, 225x150, 225x225, 300x100, 300x150</td>
<td>300x225, 300x300, 375x100, 375x150, 375x225, 375x300, 375x375</td>
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<tr>
<td>Junctions 88°/90°</td>
<td>F&amp;F, M&amp;F</td>
<td>100x100, 150x100, 150x150</td>
<td>150x100x90°, 225x100, 225x150, 225x225, 300x100, 300x150, 300x225, 375x100, 375x150, 375x225, 375x300, 375x375</td>
</tr>
<tr>
<td>End Caps</td>
<td>Push on</td>
<td>100, 150, 225, 300</td>
<td>375</td>
</tr>
<tr>
<td>Screwed Caps</td>
<td>Threaded</td>
<td>100, 150, 225, 300HD</td>
<td>375</td>
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<tr>
<th>Couplings</th>
<th>Threaded</th>
<th>Length (mm)</th>
<th>Type</th>
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<tr>
<td>Level Invert Tapers</td>
<td>M&amp;F</td>
<td>150-100, 225-100, 225-150, 300-225</td>
<td>SCJ</td>
</tr>
<tr>
<td>Tapping Saddles 45° - 90°</td>
<td></td>
<td>150x100, 225x100, 225x150, 300x225</td>
<td>SCJ</td>
</tr>
<tr>
<td>Inspection Openings</td>
<td>F&amp;F, M&amp;F</td>
<td>100, 150, 225, 300, 375</td>
<td>SCJ</td>
</tr>
<tr>
<td>Long Radius Bends, 1m radius, 2° - 45°</td>
<td>F&amp;F</td>
<td>150</td>
<td>SCJ</td>
</tr>
<tr>
<td>Slab Repair Couplings</td>
<td>In-pipe to Male</td>
<td>150</td>
<td>SCJ</td>
</tr>
<tr>
<td>Slip Couplings</td>
<td></td>
<td>100, 150, 225, 300, 375</td>
<td>SCJ</td>
</tr>
<tr>
<td>Elbows 43°, 45°</td>
<td>M&amp;F</td>
<td>100, 150 HD</td>
<td>RRJ</td>
</tr>
<tr>
<td>Elbows, 5° - 90°</td>
<td>F&amp;F, M&amp;F</td>
<td>100, 150, 225, 300, 375</td>
<td>RRJ</td>
</tr>
<tr>
<td>Junctions, 45°, 90°</td>
<td>F&amp;F, M&amp;F</td>
<td>100x100, 150x100, 150x150</td>
<td>RRJ</td>
</tr>
<tr>
<td>Deep Sewer Junctions, 90°</td>
<td>F&amp;F</td>
<td>100x100, 150x100, 150x150, 225x100, 225x150, 225x225, 300x100, 300x150, 300x225, 300x300, 375x100, 375x150, 375x225, 375x300</td>
<td>RRJ</td>
</tr>
<tr>
<td>Inspection Openings</td>
<td>F&amp;F</td>
<td>100</td>
<td>RRJ</td>
</tr>
<tr>
<td>Repair Slip Couplings</td>
<td></td>
<td>100, 150</td>
<td>RRJ</td>
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<tr>
<td>Expansion Joints</td>
<td>F&amp;F</td>
<td>100x100, 150x100, 150x150</td>
<td>RRJ, SWJ</td>
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<td>Manhole Couplings - Sanded</td>
<td>F&amp;F, M&amp;F</td>
<td>100x100, 150x100, 150x150</td>
<td>RRJ</td>
</tr>
<tr>
<td>Manhole Couplings - Sanded Spigot</td>
<td>F&amp;F, M&amp;F</td>
<td>100x100, 150x100, 150x150</td>
<td>RRJ</td>
</tr>
<tr>
<td>Manhole Couplings - Unsanded</td>
<td>M&amp;F</td>
<td>100, 150</td>
<td>RRJ</td>
</tr>
<tr>
<td>Long Radius Bends, 1-3m radius, 2 - 90°</td>
<td>M&amp;F</td>
<td>150, 225, 300</td>
<td>RRJ</td>
</tr>
<tr>
<td>Level Invert Tapers</td>
<td>M&amp;F</td>
<td>150x100, 225x100, 225x150</td>
<td>RRJ</td>
</tr>
<tr>
<td>Drop Junctions</td>
<td>MFM</td>
<td>100, 150, 225, 300</td>
<td>RRJ</td>
</tr>
<tr>
<td>Vertical Backdrop Assembly</td>
<td></td>
<td>100, 150</td>
<td>RRJ</td>
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<tr>
<td>Manhole Couplings - Sanded</td>
<td>M&amp;F</td>
<td>150, 225, 300</td>
<td>RRJ</td>
</tr>
<tr>
<td>Manhole Couplings - Sanded Spigot</td>
<td>M&amp;M</td>
<td>150, 225, 300</td>
<td>RRJ</td>
</tr>
<tr>
<td>Manhole Couplings - Plain</td>
<td>M&amp;F</td>
<td>150, 225, 300</td>
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<tr>
<td>Junctions, Type C 45°, 90°</td>
<td>F&amp;F</td>
<td>100, 150</td>
<td>RRJ</td>
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5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Network accepts PVC fabricated and moulded fittings manufactured in compliance with AS/NZS 1260 PVC-U pipes and fittings for drain, waste and vent application and duly verified by means of an ISO Type 5 product certification scheme undertaken by a Conformity Assessment Body (CAB) or by means of 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

The Holman PVC-U fabricated and moulded fittings have been appraised for compliance with AS/NZS 1260:2017 PVC-U pipes and fittings for drain, waste and vent application and WSA PS-230.

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-230 Polyvinylchloride, Unplasticised (PVC-U) Pipes and Fittings for Non-Pressure Applications – Sewerage and Drainage.

A copy of the above Product Specification can be found in Appendix C or downloaded from the WSAA website.

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.
- AS/NZS 1260:2017 ApprovalMark ISO Type 5 product certification licence No. AMI 21246 issued to Fabfit T/A Holman Industries by ApprovalMark International.
- AS/NZS 1260:2017 Best Environmental Practice certificate No.BEP-AMI 78006 issued to Fabfit T/A Holman Industries by ApprovalMark International.

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

Copies of Quality Assurance certificates have also been supplied for the sub-supplier.

6.2 Compliance with Performance Requirements

6.2.1 Material

Holman has undertaken to source PVC-U DWV pipe for fabrication of their fittings only from suppliers that have their pipe covered by an ISO Type 5 Product Certification to AS/NZ 1260 and a current WSAA Appraisal.
6.2.2 Elastomeric seals

EPDM elastomeric seals for the Rubber Ring Joints (RRJ) are sourced from either Gulf Rubber or Hultec. Both suppliers have ISO Type 5 product certification to AS1646:2007 *Elastomeric seals for waterworks purposes*. Copies of these QA certifications are held on file by WSAA.

6.2.3 Solvent cement

Solvent cements and priming fluids are not supplied by Holman as it is the responsibility of the installer. However solvent cement and priming fluid for use with tapered socketed fittings should be Type N or Type G complying with AS/NZS 3879:2011.

6.2.4 Performance tests

Holman provided copies of test reports for previous issues of this appraisal and has also provided additional reports for this appraisal to demonstrate compliance with the requirements of AS/NZS 1260.

The following material and dimensional related tests have been completed:
- High temperature stress relief test
- Softening temperature (Vicat Test)
- Socket dimensions on moulded fittings
- Wall thickness
- Stiffness

The following performance tests have also been completed for the elastomeric seals joints:
- Hydrostatic pressure test
- Liquid infiltration test
- Contact width and pressure
- Concentricity and parallelism
- Witness marks
- Effective sealing length
- Elastomeric joint design

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

PVC-U DWV pipe has been a commonly used product in the urban water industry for many years and pipe layer training is readily available. Installation, repair and maintenance procedures for PVC pipes are specified in WSA 02 Sewerage Code of Australia and additional information is available on the WSAA web site at [www.wsaa.asn.au](http://www.wsaa.asn.au) including:

- Product Specifications
- Product and Material information and guidance
- Water industry product standards
- Technical notes
- Product appraisal reports

The following standards and guideline also provide information:
- AS/NZS 2032:2006 *Installation of PVC pipe systems*
There is a requirement for installers and repairers to be trained in the installation/repair of PVC pipe systems with specialised products. Holman does not provide any specific training for pipelayers, however there are a number of Registered Training Organisations (RTO’s) who conduct suitable training courses based on AS/NZS 2032 and AS/NZS 2566.2.

The Plastics Industry Pipe Association of Australia Limited (PIPA) has nominated the Flexitec course that covers PVC pipe handling and installation and is delivered nationally either directly by LeHunt and Associates or in conjunction with PARTEC (QLD, NT, NSW), Holmesglen TAFE (VIC) and Regency TAFE (SA). The Civil Contractor’s Federation have their own state-based RTO’s and some of them conduct suitable PVC pipe training courses as well.

8 PRODUCT MARKING

Holman PVC-U DWV moulded fittings are legibly and durably marked and comply with the requirements of AS/NZS 1260 as follows:

- Manufacturer’s name: Holman
- Nominal size: e.g. DN100
- Pipe Material: PVC
- The angle of the fitting: e.g. 45°
- The letter ‘DWV’
- Class identification: SN8 or SN10
- Date of manufacture:
- The number of this Standard: AS/NZS 1260
- The Product Certification mark:

PVC-U fittings shall also be marked ‘BEP PVC’ or the words ‘BEST ENVIRONMENTAL PRACTICE PVC’ [refer WSAA Product Specification WSA PS 230, Clause 230.2 (b)]

Injection moulded fittings have the markings moulded on the fittings while fabricated fittings utilise a sticker.

Figure 1 shows typical markings for Holman PVC-U DWV moulded and fabricated fittings.

![FIGURE 1 TYPICAL MARKINGS FOR HOLMAN PVC-U DWV FITTINGS](image)

9 PACKAGING AND TRANSPORTATION

Holman moulded and fabricated fittings are stored and transported in individual cartons or in cartons on pallets. The pallets are then covered in a shrink wrap and marked with fragile
tape. This method of transporting the fittings ensures no scoring to the body of the fitting or damage to any sealing surfaces.

All fittings are stored under cover in dry conditions with all moulded fittings kept in their 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’s warranty is included in their terms and conditions of sale.

11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT

PVC-U pipes and fittings have been in use by the water industry for many years and are regarded as a mature product. When installed in accordance with the pipe manufacturer’s instructions and operated within its stated performance capacity, PVC-U pipe and fittings have proven to be a low maintenance product over a long service life.

Holman (Fabfit) PVC-U fabricated and moulded fittings have been approved for use by a number of Water Agencies for many years for wastewater applications.

12 DISCUSSION

AS/NZS 1260 covers plain and structured wall pipes and fittings for drain, waste and vent applications in either above or below ground installations that operate under gravity flow.

PVC gravity sewer systems have been in use in Australia since the early 1970s and are the predominant option for collection sewers up to size DN 375. Water industry consensus is that PVC-U gravity systems have performed satisfactorily and that correctly installed PVC-U systems have better resistance to tree root penetration, whether elastomeric sealing ring jointed or solvent cement jointed.

PVC-U systems should not be used where the ground is or may be contaminated by chemicals, especially organic solvents.

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.

From time to time the Water Services Association of Australia Limited and the other Publishers may receive notice of allegations that the importation, manufacture, sale or use of the Product infringes intellectual property rights or other proprietary rights. The Water Services Association of Australia Limited's policy is to not refer to such allegations in its reports or take any other steps to put Recipients on notice of such allegations, unless and until it is aware that the allegations have been admitted or proved in Court. As such, Recipients acknowledge, agree and accept that the Water Services Association of Australia Limited may have information in its possession about intellectual property rights infringement allegations or other infringement allegations in relation to the Product which are not referred to or disclosed in this Report and which are not otherwise communicated to Recipients.

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

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

Holman has two relevant product catalogues relating to the range of fittings included in this appraisal. The front pages are included in this Appendix. Complete copies of the catalogues may be downloaded from the following link: https://www.holmanindustries.com.au/plumbing/
PLUMBING CATALOGUE

DWV // STORMWATER // PVC PRESSURE
PVC VALVES // POLY COMPRESSION
POLY THREADED FITTINGS

PVC & COMPRESSION FITTINGS RANGE
www.holmanindustries.com.au
APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available for downloading from the WSAA members website.

### TABLE B1 FABFIT T/A HOLMAN INDUSTRIES – MANAGEMENT SYSTEMS

<table>
<thead>
<tr>
<th>Quality Systems Standard</th>
<th>Certification licence no.</th>
<th>Certifying agency</th>
<th>Current date of certification</th>
<th>Expiry date of certification</th>
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<tbody>
<tr>
<td>ISO 9001:2015</td>
<td>QMS 21388</td>
<td>ApprovalMark International</td>
<td>24 July 2019</td>
<td>1 August 2021</td>
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### TABLE B2 FABFIT T/A HOLMAN INDUSTRIES – PRODUCT CERTIFICATION

<table>
<thead>
<tr>
<th>Product Standard/Spec.</th>
<th>Certificate No.</th>
<th>Issuing certification body</th>
<th>First date of certification</th>
<th>Current date of certification</th>
<th>Expiry date of certification</th>
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</thead>
</table>

### TABLE B3 FABFIT T/A HOLMAN INDUSTRIES – BEP CERTIFICATION

<table>
<thead>
<tr>
<th>Product Standard/Spec.</th>
<th>Certificate No.</th>
<th>Issuing certification body</th>
<th>First date of certification</th>
<th>Current date of certification</th>
<th>Expiry date of certification</th>
</tr>
</thead>
</table>
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

ApprovalMark International hereby grants:

FABFIT
T/A Holman Industries
298A Stapyton-Jacobs Well Road
Stapyton 4207
AUSTRALIA

Evaluated to:

AS/NZS 1260:2017 - PVC-U Pipes and fittings for drain, waste and vent 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 21246

Issued: 22nd July 2019
Expires: 26th April 2021

Original Issue: 22nd July 2019

John PRASAD
Director

Registered by: ApprovalMark International Pty Ltd (ABN 69 143 250 974) Unit 20, 33 Holmeshe 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.
**Product Schedule**

**FABFIT**
T/A Holman Industries
29A Stapynton – Jacobs Well Road
Stapyton 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**

<table>
<thead>
<tr>
<th>Model Id</th>
<th>Model Name</th>
<th>Brand Name</th>
<th>Product Description</th>
<th>Endorsement Date</th>
</tr>
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<tbody>
<tr>
<td>HolFab.001</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>100MM B.5F MADE FOR DWV SOCKET (F), SW</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.002</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>BOUNDARY TRAP DWV, STD, NO-LOSS, ZERO- LOSS, SN8, 100MM - 375MM (F), SW</td>
<td>22nd July 2019</td>
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<td>HolFab.003</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>BOLTED TRAP SCREW, DWV, SN8, 100MM - 375MM (F), SW</td>
<td>22nd July 2019</td>
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<td>HolFab.004</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN10, COUPLING SLIP, BR, SW, 100MM - 375MM, MOULDED/FABRICATED</td>
<td>22nd July 2019</td>
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<td>HolFab.005</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN10, 1000MM LONG RADIUS BENDS, 250MM, 2.5 DEGREE - 90 DEGREE BENDS, SW</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.006</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN10, ELBOWS, 100MM - 375MM, 2.5 DEGREE - 90 DEGREE, SW, MOULDED/ FABRICATED, SW</td>
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<td>HolFab.007</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN10, ELBOWS, 100MM - 375MM, 2.5 DEGREE - 90 DEGREE, M&amp;B, MOULDED/ FABRICATED, SW</td>
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<td>HolFab.008</td>
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<td>DWV, SN8, FLANGES FIELD D, 100MM - 375MM, MOULDED/FABRICATED, SW</td>
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<td>HolFab.009</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN8, FLAP VALVE MOZIE PROOF, 100MM - 375MM, MOULDED/FABRICATED, SW</td>
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<td>HolFab.010</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN8, FLAP VALVE, 100MM - 375MM, MOULDED/FABRICATED, SW</td>
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<td>HolFab.011</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN10, INSPECTION OPENING (IO), 100MM - 375MM MOULDED/FABRICATED, SW</td>
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<td>HolFab.012</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN8, 100MM - 375MM JUNCTIONS, 45 DEGREE - 90 DEGREE (M&amp;B) MOULDED/ FABRICATED, SW</td>
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<tr>
<td>HolFab.013</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
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<td>HolFab.014</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
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<td>HolFab.015</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
<td>DWV, SN8, 100MM - 375MM REDUCER BUSH/PIPE, MOULDED/FABRICATED, SW</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.016</td>
<td>DWYF, SN8, SN10</td>
<td>Fabfit/ Holman</td>
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## Product Schedule

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<tr>
<th>Model id</th>
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<th>Brand Name</th>
<th>Product Description</th>
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<td>HofFab.017</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
<td>DWY, SN8, SN10, TAPPING SADDLES, 100MM - 175MM, 45 DEGREE - 90 DEGREE, MOULDED/FABRICATED, SWJ</td>
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<td>HofFab.018</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
<td>DWY, SN8 EXPANSION COUPLING, 150MM - 175MM, MOULDED/FABRICATED</td>
<td>22nd July 2019</td>
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<td>HofFab.019</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
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<td>HofFab.022</td>
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<td>HofFab.023</td>
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<tr>
<td>HofFab.024</td>
<td>DWY Fittings, SN8, SN10</td>
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<td>HofFab.025</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
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<td>HofFab.026</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
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<td>HofFab.027</td>
<td>DWY Fittings, SN8, SN10</td>
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<tr>
<td>HofFab.028</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
<td>DWY, SN8, SN10, RR, DEEP SEWER JUNCTION, 100MM - 175MM, 45 DEGREE - 90 DEGREE UNGLASS, MOULDED/FABRICATED</td>
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<tr>
<td>HofFab.029</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
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<td>HofFab.030</td>
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<tr>
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<td>DWY Fittings, SN8, SN10</td>
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<td>HofFab.032</td>
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<td>FabFit/ Holman</td>
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<td>HofFab.033</td>
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<td>FabFit/ Holman</td>
<td>DWY, SN8, SN10, RR, JUNCTION, M&amp;C, 100MM - 175MM, 45 DEGREE - 90 DEGREE, GLASSED, MOULDED/FABRICATED</td>
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<tr>
<td>HofFab.034</td>
<td>DWY Fittings, SN8, SN10</td>
<td>FabFit/ Holman</td>
<td>DWY, SN8, SN10, RR, JUNCTION WITH CAP, 100MM - 175MM, 45 DEGREE - 90 DEGREE, GLASSED, MOULDED/FABRICATED</td>
<td>22nd July 2019</td>
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</tbody>
</table>
## Product Schedule

<table>
<thead>
<tr>
<th>Model Id</th>
<th>Model Name</th>
<th>Brand Name</th>
<th>Product Description</th>
<th>Endorsement Date</th>
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<td>HolFab.035</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DWV, SN8, SNI0, RR, JUNCTION WITH SWJ BRANCH, 100MM - 375MM, 45 DEGREE - 90 DEGREE, GLASSED, MOULDED/ FABRICATED</td>
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<td>HolFab.036</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DWV, SNI0, RR, LEVEL INVERT TAPER (LIT), 100MM - 375MM UGLASSED MOULDED/ FABRICATED</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.037</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DWV, SN8, SNI0, RR, LEVEL INVERT TAPER (LIT), 100MM - 375MM GLASSED, MOULDED/ FABRICATED</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.038</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>PN12, SN8, DWV SOCKET, RR, 150MM - 300MM, SANDED/ UNSAND YED M&amp;B</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.039</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>PN12, SN8, DWV SOCKET, RR, 150MM - 300MM, SANDED/ UNSAND YED F&amp;S</td>
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<td>HolFab.040</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DN150 DWV, SN8, RR, 1000 RADIUS, 2.5 DEGREE - 90 DEGREE BENDS M&amp;B</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.041</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DN150 DWV, SN8, RR, 3000 RADIUS, 2.5 DEGREE - 90 DEGREE BENDS M&amp;B</td>
<td>22nd July 2019</td>
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<tr>
<td>HolFab.042</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DN150 DWV, SN8, RR, 633 RADIUS, 2.5 DEGREE - 90 DEGREE BENDS M&amp;B</td>
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<tr>
<td>HolFab.043</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DWV, SN8, VERTICAL BACK DROP ASSEMBLY, 100MM - 150MM, MOULDED/ FABRICATED</td>
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<tr>
<td>HolFab.044</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DWV, SN8, DROP JUNCTIONS 100MM - 150MM, MOULDED/ FABRICATED, SWJ</td>
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<tr>
<td>HolFab.045</td>
<td>DW Fittings, SN8, SN10</td>
<td>Faafit/ Holman</td>
<td>DWV, SN8, DROP BENDS F&amp;B, M&amp;B 100MM - 150MM, MOULDED/ FABRICATED, SWJ</td>
<td>22nd July 2019</td>
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</tbody>
</table>

---

Certificate No: AMI 21246

The models identified above in the schedule are endorsed for ISO Type 5 application only.
ApprovalMark International hereby grants:

FABFIT
T/A HOLMAN INDUSTRIES
298A JACOB WELL ROAD, STAPLYTON
QLD 4207
AUSTRALIA

Best Environmental Practice - PVC
Evaluated to:
AS/NZS 1260:2017 – PVC-U Pipes and fittings for drain, waste and vent applications

The licensee complies with the requirements of Best Environmental Practice – PVC as per the relevant Australian or International Standard and Section 7 as specified in the Green Building Council of Australia ("the Requirements") Literature Review and Best Practice Guidelines for the Life Cycle of PVC Building Product's using the compliance pathway Number 2 - Manufacturer’s Declaration as measured by the Green Star PVC Credit Auditor Verification Guidance - November 2013 ("the Criteria").

The documentation was reviewed during a product certification audit conducted by ApprovalMark International and found to comply with the following requirements:

- Manufacture of PVC Resin
- Manufacture and end of life management of PVC products
- Use of PVC Recyclate in PVC products

Note - Any changes introduced to the above requirements shall be immediately reported to ApprovalMark International in order to confirm the validity of the certificate.

Certificate No. BEP-AMI 78006

Issued: 24th July 2019
Expires: 10th March 2021

Originally Certified: 10th March 2017
Current Certification: 10th March 2019

John PRASAD
Director
APPENDIX C - WSSA PRODUCT SPECIFICATION

PRODUCT SPECIFICATION

WSA PS - 230 POLYVINYLCHLORIDE, UNPLASTICISED (PVC-U) PIPES AND FITTINGS FOR NON-PRESSURE APPLICATIONS – SEWERAGE AND DRAINAGE

230.1 SCOPE
This specification covers PVC-U non-pressure pipes and fittings, including solvent cements and priming fluids, for use in gravity sewerage and drainage.

230.2 REQUIREMENTS
(a) PVC-U pipes and fittings shall comply with AS/NZS 1260:2017.
(b) PVC-U pipes and fittings shall be marked 'BEP PVC' or the words 'BEST ENVIRONMENTAL PRACTICE PVC'.
(c) Pipes shall be Stiffness Class SN8 (for DN 150 and above) and SN10 (for DN 100).
(d) Fittings shall be Stiffness Class SN8 or higher.
(e) Joints:
   (ii) Solvent cement and priming fluid for use with tapered socketed fittings shall be Type N or Type G complying with AS/NZS 3879:2011.
   (iii) Solvent cement for use with parallel socketed fittings shall comply with manufacturer’s requirements.
   (iv) A threaded spigot and socket joint with an elastomeric sealing ring system that accommodates tensile and compressive loads to manufacturer’s requirements.

230.3 QUALITY ASSURANCE
(a) PVC-U non-pressure pipes and fittings shall have product certification (ISO Type 5) to AS/NZS 1260:2017. The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-09.
(b) Elastomeric joint seals shall have product certification (ISO Type 5) to AS 1646:2007 and AS 581.1:2008 (EN 681-1:1996).
(c) Solvent cements shall have product certification (ISO Type 5) to AS/NZS 3879:2011.
(d) All products shall be marked in accordance with the conformity assessment body’s requirements.

230.4 AGENCY OR PROJECT SPECIFIC REQUIREMENTS

| Limitations on wall construction (plain wall, ribbed, solid core sandwich construction or foam core sandwich construction) |
| Joint type (elastomeric seal or solvent cement or threaded spigot and socket joint) |

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<table>
<thead>
<tr>
<th>WATER SERVICES ASSOCIATION of Australia</th>
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</thead>
<tbody>
<tr>
<td>with an elastomeric seal 3)</td>
</tr>
<tr>
<td>Alternative pipe stiffness Class (e.g. SN 16)</td>
</tr>
<tr>
<td>Alternative elastomeric material for joint seals (e.g. NBR)</td>
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</tbody>
</table>

**NOTES:**

1. Type N is used for jointing PVC pipe systems with tapered/interference fit joints which will not be subjected to internal pressure or other applications where high bond strength is not required.

2. Type G is used for joining PVC and ABS pressure or non-pressure pipes where parallel/no or low interference fit joints are used and where a high bond strength and ability to fill small gaps is required.

3. Restrained joint and seal ring systems are designed to accommodate tensile and compressive loads, installation using trenchless methods where pipes may be “pushed” or “pulled” into place depending on the installation methodology.

APPENDIX D - SUPPLIER CONTACTS

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