



PLASTEC AUSTRALIA PTY LTD

PRODUCT APPRAISAL REPORT 1404 Issue 10

Plastec PVC-U DWV Fittings

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

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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

Plastec Australia Pty Ltd, an Australian owned company, was established in 1992 in Caloundra, Sunshine Coast, Queensland. The company specialises in the manufacture of plumbing products for plumbers, tilers and water proofers and their more than 1000 products are available through all leading plumbing distributors. Plastec maintains warehouse and distribution facilities at Caloundra, Melbourne, Sydney and Perth.

This Appraisal is for a range of injection moulded PVC-U plain wall fittings manufactured to AS/NZS 1260:2017 *PVC-U pipes and fittings for drain, waste and vent applications*.

This Issue 10 is to clarify that some of the additional fittings in Issue 9 were actually heavy duty. The C-Mark certification has been updated. Additional fittings are indicated by red font in Table 2.

Issue 9 was to include additional fittings to the scope of the Appraisal.

The range of fittings includes bends, junctions, tapers, couplings and other associated configurations in sizes DN 100, DN 150 and DN 225, DN 300 and DN 375. The jointing system is predominantly Solvent Weld Joint (SWJ), however there are some Rubber Ring Joint (RRJ) products included.

AS/NZS 1260 nominates a minimum wall thickness for injection moulded fittings and advises that they are suitable for use with pipe up to SN16. However, some water agencies have reported incidents involving mechanical failure of DN 100 and DN 150 injection moulded fittings when used in property service connection assemblies due to ground movement, subsidence and settlement related issues. In response to Water Agency requirements WSA PS 230 has been amended to include an option for Heavy Duty fittings with increased minimum wall thicknesses. See Sections 3 and 11 for further details.

A range of CIVILTEC Heavy Duty PVC-U fittings with additional wall thickness and strengthening ribs is included within the scope of this Appraisal.

See Section 4 for details of the product range.

Plastec has a quality management system certified to ISO 9001:2015.

The fittings are covered by ISO Type 5 product certification to AS/NZS 1260:2017.

The Plastec PVC-U DWV injection moulded fittings included in this appraisal report meets the requirements of 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 Plastec range of injection moulded PVC-U DWV fittings, as detailed in this report, for use in gravity sewerage and drainage applications, provided they are installed in accordance with WSAA Codes and the manufacturer's requirements, where specified.

2 THE APPLICANT

The Applicant is Plastec Australia Pty Ltd.

2.1 The Manufacturer

Plastec Australia Pty Ltd is an Australian owned company established in 1992 in Caloundra, Sunshine Coast, Queensland. The company specializes in the manufacture of plumbing products for plumbers, tilers and water proofers and their more than 1000 products are available through all leading plumbing distributors.

Plastec is equipped with injection moulding equipment located at Caloundra where it manufactures its range of DWV fittings.

Warehouse and distribution facilities are maintained in Caloundra, Melbourne, Sydney and Perth.

3 THE PRODUCT

This Appraisal is for a range of plain wall injection moulded PVC-U fittings manufactured to AS/NZS 1260:2017 *PVC-U pipes and fittings for drain, waste and vent applications*.

The range includes bends, junctions, tapers, couplings and other associated fittings in sizes DN 100, DN 150, DN 225, DN 300 and DN 375. The jointing system is predominantly Solvent Weld Joint (SWJ), however there are also some Rubber Ring Joint (RRJ) products included.

A range of DN 100 and DN 150 manhole access bends is included. The bends have a SWJ male spigot on one end and a SWJ socket on the other end. For the DN 100 bend a male to RRJ or male to threaded end adaptor can be fitted to the SWJ socket. For the DN 150 bend a male to RRJ, male to male or male to threaded end adaptor can be fitted to the SWJ socket.

AS/NZS 1260 nominates a minimum wall thickness for injection moulded fittings and advises that they are suitable for use with pipe up to SN16. However, some water agencies have reported incidents involving mechanical failure of DN 100 and DN 150 injection moulded fittings when used in property service connection assemblies due to ground movement, subsidence and settlement related issues. Fittings manufactured with AS/NZS 1260 minimum wall thicknesses are known to have stiffness ratings between 16 and 60 depending on the size and configuration of the fittings. Clearly the mechanical strength of a fitting is not directly related to its stiffness rating.

In response to Water Agency requirements WSA PS 230 has been amended to include an option for Heavy Duty fittings with increased minimum wall thicknesses.

A range of CIVILTECH Heavy Duty SWJ and RRJ fittings with additional wall thickness and strengthening ribs has been included within the Scope of this Appraisal.

Details of minimum wall thicknesses are provided in Table 1.

TABLE 1
MINIMUM WALL THICKNESSES FOR MOULDED FITTINGS

DN	RRJ				SWJ			
	Standard		Heavy Duty		Standard		Heavy Duty	
	AS/NZS 1260	Plastec	WSA PS 230	Plastec	AS/NZS 1260	Plastec	WSA PS 230	Plastec
100	3	3	4	5	3	3	5	5
150	4	4	5	6	4	4	6	6
225	6.1	-	-	-	6.1	6.1	-	-
300	7.7	-	-	-	7.7	7.7	-	-
375	9.8	-	-	-	9.8	9.8	-	-

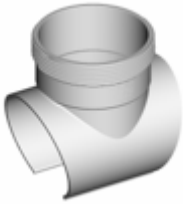




4 SCOPE OF THE APPRAISAL

The range of Plastec PVC-U DWV injection moulded fittings is detailed below in Table 2 and is included in the ISO Type 5 Product Certification schedule attached in Appendix B.

Note that Heavy Duty fittings are shown in **bold**.


TABLE 2: PVC-U DWV INJECTION MOULDED FITTINGS











Product Code	Product Description	Joint Type	Picture
16708	100 Threaded Sockets (Adaptor)	SWJ	A white, cylindrical PVC-U fitting with a threaded top edge, used for connecting pipes.
17246	150 Threaded Sockets (Adaptor)	SWJ	
15001	100 Screw Cap (sealing washer supplied)	RRJ	A white, circular PVC-U screw cap with a flat top and a slightly raised rim.
15002	150 Screw Cap (sealing washer supplied)	RRJ	
14980	100 End Cap Socket	RRJ	A white, circular PVC-U end cap socket with a flat top and a slightly raised rim.
14981	150 End Cap Socket	RRJ	
14982	225 End Cap Socket	RRJ	
15781	300 End Cap Socket	RRJ	
17914	100 Inspection opening F & F	SWJ	A white PVC-U inspection opening fitting with a vertical pipe section and a horizontal side opening.
17915	100 Inspection opening M & F	SWJ	
17924	150 x 100 Level Invert Taper F & F	SWJ	A white PVC-U level invert taper fitting with a vertical pipe section and a horizontal side opening.
17892	100 x 5° Bend F & F	SWJ	A white PVC-U bend fitting with a 5-degree angle, used for changing the direction of a pipe.
17893	100 x 15° Bend F & F	SWJ	
17894	100 x 30° Bend F & F	SWJ	
17895	100 x 45° Bend F & F	SWJ	
17896	100 x 88° Bend F & F	SWJ	
18156	225 Threaded Sockets (Adaptor)	SWJ	A white, cylindrical PVC-U fitting with a threaded top edge, used for connecting pipes.

Product Code	Product Description	Joint Type	Picture
19372	100 x 90° Clip-On Tee with Inspection Opening	SWJ	
19324	100 Inspection opening F & F (Heavy Duty)	SWJ	
19327	150 Inspection opening F & F (Heavy Duty)	SWJ	
19043	225 Inspection opening F & F	SWJ	
18154	100 x 42.5° Elbow Socket x Spigot (Socket to In-pipe)	SWJ	
19330	150 x 100 Level Invert Taper (Heavy Duty)	SWJ	
19046	225 x 100 Level Invert Taper	SWJ	
17307	225 x 150 Level Invert Taper	SWJ	
17911	100 x 45° Junction F & F	SWJ	
19321	100 x 45° Junction F & F (Heavy Duty)	SWJ	
19322	150 x 45° Junction F & F (Heavy Duty)	SWJ	
19323	150 x 100 x 45° Junction F & F (Heavy Duty)	SWJ	
19010	150 x 45° Junction F & F	SWJ	
19011	150 x 100 x 45° Junction F & F	SWJ	
17294	225 x 45° Junction F & F	SWJ	
19056	225 x 100 x 45° Junction F & F	SWJ	
19055	225 x 150 x 45° Junction F & F	SWJ	
19529	300 x 45° Junction F & F	SWJ	
19531	300 x 100 x 45° Junction F & F	SWJ	

Product Code	Product Description	Joint Type	Picture	
19530	300 x 150 x 45° Junction F & F	SWJ		
19547	300 x 225 x 45° Junction F & F	SWJ		
19555	375 x 45° Junction F & F	SWJ		
17300	225 x 88° Junction F & F	SWJ		
19058	225 x 100 x 88° Junction F & F	SWJ		
19057	225 x 150 x 88° Junction F & F	SWJ		
19549	300 x 88° Junction F & F	SWJ		
19634	300 x 100 x 88° Junction F & F	SWJ		
19548	300 x 150 x 88° Junction F & F	SWJ		
19633	300 x 225 x 88° Junction F & F	SWJ		
19556	375 x 88° Junction F & F	SWJ		
19622	150 x 45° Junction Socket x Socket x Spigot Ends	SWJ		
19623	150x150x100 x 45° Junction Socket x Socket x Spigot Ends (Heavy Duty)	SWJ		
19499	100 x 88° Sweep Junction F x F x F with SWJ (Heavy Duty)	SWJ		
19014	150 x 88° Bend F & F	SWJ		
19335	100 x 88° Bend F & F (Heavy Duty)	SWJ		
19332	150 x 88° Bend F & F (Heavy Duty)	SWJ		
17278	225 x 88° Bend F & F	SWJ		
19527	300 x 88° Bend F & F	SWJ		
19554	375 x 88° Bend F & F	SWJ		
19489	100 x 60° Bend F x F (Heavy Duty)	SWJ		
20702	100 x 60° Bend M x F (Heavy Duty)	SWJ		
20095	100 x 60° Bend F x F	SWJ		
20094	100 x 60° Bend M x F	SWJ		
19040	150 x 45° Bend F & F	SWJ		
19630	150 x 45° Bend M & F	SWJ		
18781	100 x 43° Bend M & F (Heavy Duty)	SWJ		
19334	100 x 45° Bend F & F (Heavy Duty)	SWJ		
18842	150 x 43° Bend M & F (Heavy Duty)	SWJ		

Product Code	Product Description	Joint Type	Picture
19331	150 x 45° Bend F & F (Heavy Duty)	SWJ	
17281	225 x 45° Bend F & F	SWJ	
19631	225 x 45° Bend M & F	SWJ	
19528	300 x 45° Bend F & F	SWJ	
19632	300 x 45° Bend M & F	SWJ	
19553	375 x 45° Bend F & F	SWJ	
18215	100 x 42.5° Bend M & F	SWJ	
18019	100 x 30° Bend M & F	SWJ	
19027	150 x 30° Bend F & F	SWJ	
18018	100 x 15° Bend M & F	SWJ	
19015	150 x 15° Bend F & F	SWJ	
19047	225 x 15° Bend F & F	SWJ	
19544	300 x 15° Bend F & F	SWJ	
19551	375 x 15° Bend F & F	SWJ	
18017	100 x 5° Bend M & F	SWJ	
19016	150 x 5° Bend F & F	SWJ	
19048	225 x 5° Bend F & F	SWJ	
19543	300 x 5° Bend F & F	SWJ	
19550	375 x 5° Bend F & F	SWJ	
19712, 20099	DN 100 Manhole Access Bend M x RRJ or M x Threaded (Heavy Duty)	SWJ	
19714, 20041, 20097	DN 150 Manhole Access Bend M x RRJ, M x M or M x Threaded (Heavy Duty)	SWJ	
19994	100 Pipe Adaptor M & F (Heavy Duty)	RRJ	
19996	150 Pipe Adaptor M & F (Heavy Duty)	RRJ	
19998	225 Pipe Adaptor M & F (Heavy Duty)	RRJ	

Product Code	Product Description	Joint Type	Picture
19427	150 Inspection Opening F x F with threaded cap assembly (Heavy Duty)	RRJ	

Product Code	Product Description	Joint Type	Picture
19689	100 Junction 88° (Heavy Duty) (RRJ)	RRJ	
19397	150 x 150 x 45° Y Junction F x F x M (Heavy Duty)	RRJ	
19442	150 x 100 x 45° Y Junction F x F x M (Heavy Duty)	RRJ	
19412	150 x 150 x 45° Y Junction F x F x F (Heavy Duty)	RRJ	
19444	150 x 100 x 45° Y Junction F x F x F (Heavy Duty)	RRJ	
19692	150 Sweep Junction F x F x F (Heavy Duty)	RRJ	
19416	150 x 88° Bend F x F (Heavy Duty)	RRJ	
19400	150 x 88° Bend M x F (Heavy Duty)	RRJ	
19414	150 x 43° Bend F x F (Heavy Duty)	RRJ	
19501	100 x 45° Bend F x F (Heavy Duty)	RRJ	
19656	100x43° Bend M x F (Heavy Duty)	RRJ	
19402	150 x 43° Bend M x F (Heavy Duty)	RRJ	
19418	150 Slip Coupling (no stop) (Heavy Duty)	RRJ	
19420	150 Coupling (with stop) (Heavy Duty)	RRJ	

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts PVC-U moulded fittings manufactured in compliance with AS/NZS 1260:2017 *PVC-U pipes and fittings for drain, waste and vent applications* 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 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 WSAA Technical Note WSA TN-08.

5.2 Performance Requirements

Plastec injection moulded PVC-U fittings have been appraised for compliance with AS/NZS 1260:2017 *PVC-U pipes and fittings for drain, waste and vent application*.

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 also 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 Product Specification is available at the following link:

<https://www.wsaa.asn.au/shop/product/60961>

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

Plastec has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. PLCQ01-CCCQ02 issued to Plastec Australia Pty Ltd by Equal Assurance Pty Ltd.
- AS/NZS 1260:2017 ISO Type 5 CMARK Product Certification Licence No. 23900 issued to Plastec Australia Pty Ltd by Pro Switch Pty Ltd.
- AS/NZS 1260:2017 Best Environmental Practice Certification No 4049 issued to Plastec Australia Pty Ltd by Pro Switch Pty Ltd.

Copies of the 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 Type tests for moulded fittings

Queensland Testing Laboratory Pty Ltd (NATA accreditation number 14783) has completed type testing in accordance with the requirements of AS/NZS 1260 for the complete range of PVC-U fittings. The type tests specified in AS/NZS 1260 are:

Materials: PVC content, TiO₂ content, colour, and softening temperature.

Dimensions: sockets, wall thickness, clear bore, sweep junctions, bends and eccentric tapers, threaded end connections, test openings and access openings.

Performance: hydrostatic pressure (for fittings with IO), high temperature stress relief and stiffness.

All test results complied with AS/NZ 1260.

AS/NZS 1260 only requires stiffness testing for structured and hollow profile wall fittings and not for plain wall injection moulded fittings, however Plastec provided type test reports for a DN 100 SN6 and DN 100 SN8 (Heavy Duty) fitting to demonstrate compliance with the minimum nominated SN rating.

6.2.2 Elastomeric seals

Plastec source their Nitrile rubber ring seals either from Gulf Rubber or Thong Nhat Rubber Company (Hultec) and comply with AS 1646. Both suppliers have ISO Type 5 product certification for their products and WSAA retains copies of their quality assurance documents on file.

6.2.3 Solvent cement

Plastec does not directly supply solvent cement. Solvent cement and priming fluid for use with tapered socketed fittings shall be Type N¹ or Type G² complying with AS/NZS 3879:2011.

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.

6.2.4 Tests on elastomeric seal joints

Queensland Testing Laboratory Pty Ltd has completed type tests on the elastomeric seal joints of a DN 100 and DN 150 Screw Cap in accordance with AS/NZS 1260. The tests include a hydrostatic pressure test, liquid infiltration test and contact width and pressure test.

Gulf Rubber supplied the nitrile elastomeric seals for the above fittings.

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 also available on the WSAA web site.

The following standards and guideline also provide information:

- AS/NZS 2032:2006 Installation of PVC pipe systems
- AS/NZS 2566.1:1998 Buried flexible pipelines Part 1: Structural Design
- AS/NZS 2566.2:2002 Buried flexible pipelines Part 2: Installation
- POP102 Solvent Cement Jointing of PVC Pipe

There is a need for installers and repairers to be trained in the installation/repair of PVC pipe systems. Plastec does not provide any specific training for pipe layers, 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) have nominated the Flexitec course, which 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 also conduct suitable PVC pipe training courses.

8 PRODUCT MARKING

Plastec PVC-U injection moulded fittings are marked in accordance with AS/NZS 1260:2017 as follows:

(a) For fittings with tapered sockets or rubber ring joint sockets the following information is required:

- Manufacturer's name: Plastec
- Nominal size: e.g. 100
- Material: e.g. PVC
- The angle of the fitting: e.g. 42.5
- The letter 'DWV'
- Class identification - only required on SN8 fittings
- The month and year of manufacture: e.g. clock indicator or laser printed
- The number of this Standard: AS/NZS 1260
- the letters 'BEP PVC' or the words 'BEST ENVIRONMENTAL PRACTICE PVC' on either the product or packaging.

Heavy Duty fittings that comply with the specified minimum wall thicknesses in WSA PS 230 are marked HEAVY DUTY.

See Figure 1 for an example of marking.



FIGURE 1 EXAMPLES OF MARKING

9 PACKAGING AND TRANSPORTATION

Plastec PVC-U moulded fittings are stored and transported in individual cartons or in cartons on pallets. The pallets are then covered with 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.

See Figure 2 for example of packaging.



FIGURE 2 EXAMPLES OF 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 Plastec's warranty is included in their terms and conditions of sale.

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

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. However, some mechanical failures of DN 100 and DN 150 moulded fittings have been experienced when utilised in sewer property service connection assemblies.

WSAA has included an option within WSA PS 230 to allow the specification of DN 100 and DN 150 heavy duty fittings with increased wall thicknesses for property service applications where additional mechanical resistance may be required to resist ground movements, subsidence or settlement related issues. Refer to WSA PS 230 for details.

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

12 FUTURE WORKS

There are no future work items.

13 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.

13.1 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.

13.2 Limits on Reliance on Information and Recommendations

13.2.1 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.

13.2.2 Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith. 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 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.

13.3 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.

13.4 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

Plastec's on-line Product Catalogue may be accessed at the following link:

<https://www.plastec.com.au/wp-content/uploads/2023/06/PLASTEC-CATALOGUE-Jan-2018-small.pdf>

B

Drain Waste Vent (DWW)

Fittings	B.2		
Bends - Socket to Socket	B.2	Flap Valves	B.23
Bends - Socket To Pipe	B.3	PVC Rockets	B.23
Bends - Socket to Spigot	B.4	Stack Diverters	B.24
Junctions	B.4	Heavy Duty	B.25
Repair Couplings	B.6	Bends - Socket to Socket	B.25
Couplings & Connectors	B.6	Bends - Socket to Pipe	B.25
Slab Repair Couplings	B.7	Inspection Openings & Expansion Couplings	B.25
Cap & Linings	B.8	Junctions	B.25
Gullies, Risers & Accessories	B.10	Reflux Valves	B.26
Floor Waste Gully Traps	B.12	Reflux Valves	B.26
Inspection Openings	B.13	Accessories	B.26
Reducers	B.14	Surrounds, Grates & Finishing Collars	B.27
End Caps	B.15	Surrounds	B.27
Vent Cowls & Accessories	B.16	Finishing Collars & Grates	B.28
Connectors & Adaptors	B.17	HDPE Suitable	B.31
Connectors & Adaptor Bends	B.18	Bolted Trap Screws	B.31
Bolted Trap Screws & Clear Outs	B.20	Reducers	B.32
Earthenware	B.22		
Frog Mouths	B.23		

APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certificates are available from WSAA.

TABLE B1 PLASTEC AUSTRALIA PTY LTD - MANAGEMENT SYSTEMS -

2 Enterprise Street, Caloundra QLD 4551	
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	PLCQ01-CCCQ02
Certifying Agency	Equal Assurance
First Date of Certification	13 July 2018
Current Date of Certification	13 July 2018
Expiry Date of Certification	12 July 2024

TABLE B2 PLASTEC AUSTRALIA PTY LTD - PRODUCT CERTIFICATION

2 Enterprise Street, Caloundra QLD 4551	
Product Standard/Spec.	AS/NZS 1260:2017
Certificate No.	23900
Issuing Certification Body	Pro Switch
First Date of Certification	24 October 2018
Current Date of Certification	24 October 2023
Expiry Date of Certification	21 October 2028

**TABLE B3 PLASTEC AUSTRALIA PTY LTD –
BEST ENVIRONMENTAL PRACTICE PVC CERTIFICATION**

2 Enterprise Street, Caloundra QLD 4551	
Product Standard/Spec.	AS/NZS 1260:2017
Certificate No.	4049
Issuing Certification Body	Pro Switch
First Date of Certification	16 March 2017
Current Date of Certification	15 March 2023
Expiry Date of Certification	14 March 2028

eQual[®]
assurance

CERTIFICATE OF CONFIDENCE

This is to certify that

Plastec Australia Pty Ltd

2-8 Enterprise Street, Coloundra QLD 4551, Australia

conforms to the requirements of

ISO 9001:2015

Quality management systems

Design, manufacture and distribution of plastic plumbing fittings.

Certificate number:	PLCQ01-CCCQ02	Certified date:	13 July 2018
Approval date:	22 July 2021	Expiry date:	12 July 2024


Robert Howell
DipMgt
Assurance Manager
Equal Assurance



JAS-ANZ



Equal Assurance Pty Ltd as trustee for The Equal Assurance Trust.

21/44 Kings Park Road, West Perth WA 6005, AUSTRALIA

Certificate validity and ownership as per arrangements between the client organization and Equal Assurance partner.

Certificate status can be verified via the QR code or at <https://qdos.equalassurance.com/certificates/PLCQ01>.

Equal Assurance partners are accredited by members of the International Accreditation Forum. Details at www.iaf.nu.

Certificate accredited by Joint Accreditation System of Australia & New Zealand. Details at www.jas-anz.org/register.

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The Product Schedule attached to this certificate is 42 pages and has not been included in this Appendix. A copy may be obtained from Plastec or WSAA.



PRODUCT CONFORMITY SCHEME – FULL CERTIFICATION

Certificate of Conformity

Pro-Switch Pty Ltd hereby certifies that the products as identified on the Product Certification Schedule and manufactured by;

Plastec Australia Pty Ltd

Trading as Plastec Australia Pty Ltd

Have been examined and found to be in conformity with the requirements of the Standard/s referred to below as from time to time amended;

Product Type: Waste Fittings - DWV
 Brand: PLASTEC
 Evaluated to: AS/NZS 1260:2017 PVC pipes and fittings for drain waste and vent application

Issue Date: 22nd October 2023
 Initial Issue Date: 24th October 2018
 Expiry Date: 21st October 2028


 Simon Clarke
 General Manager

Certificate No.: 23900

This certificate remains the property of Pro-Switch Pty Ltd

The Product Conformity Scheme (PCS) – Full Certification is a conformity assessment scheme based on ISO Guide 67 (system 5) and SA HB 18.28.





CERTIFICATE OF CONFORMITY

Product Conformity Scheme (PCS)-Type Test Certification

Pro-Switch Pty Ltd hereby certifies that documentation maintained by;

Plastec Australia Pty Ltd

2-4 Enterprise St, Caloundra Queensland 4551 AUSTRALIA

Has been examined and found to be in conformity with the requirements of the Best Practice Guidelines for PVC in the Built Environment 10/8/2010 Green Star PVC Credit utilising Auditor Verification Guidance Issue 2 20th November 2013. An audit was conducted on 2 March 2023 utilising the Green Star Credit-Auditor Verification Guidance of the product types listed below manufactured by Plastec Australia Pty Ltd 2-4 Enterprise St, Caloundra Queensland 4551 AUSTRALIA, covering and including PVC injection moulded Fittings. Plastec Australia Pty Ltd has been found to specifically comply with the following requirements:

- Section 2.0 of Green Star Credit-Auditor Verification Guidance document pathway 2
- Manufacture of PVC Resin
- Manufacture and End of Life Management of PVC Product
- Use of PVC Recyclate in PVC products

Product Description	Brand
Range of PVC Fittings manufactured to comply with AS/NZS 1260	PLASTEC

Issue Date: 15th March 2023
 Initial Issue Date: 16th March 2017
 Expiry Date: 14th March 2028

Simon Clarke
 General Manager

Certificate No.: 4049

This certificate remains the property of Pro-Switch Pty Ltd.

The Product Conformity Scheme (PCS)-Type Test Certification is a conformity assessment scheme based on ISO Guide 67 (system 1b)



APPENDIX C - SUPPLIER CONTACTS

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