

Vinidex Pty Ltd

PRODUCT APPRAISAL REPORT 2414

PVC-M Series 2 Pressure Pipes

AS/NZS 4765:2017 Modified PVC (PVC-M) pipes for pressure applications

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Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	19 February 2025
WSAA Expert Panel	WSAA	19 February 2025
Peter Pittard, WSAA Consultant	WSAA	5 February 2025
Carl Radford, Product Appraisal Manager	WSAA	20 February 2025

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

Vinidex Pty Ltd, founded in 1960, is a leading manufacturer and distributor of thermoplastic pipeline systems in Australia. Its systems are used in the transportation of fluids for infrastructure development, agriculture, mining and building.

Vinidex is wholly owned by the Aliaxis Group, a leading global manufacturer and distributor of fluid handling systems used in residential and commercial construction, as well as in industrial and public infrastructure applications.

This Appraisal is for a range of Hydro PVC-M Series 2 pipes in sizes DN 100 to DN 450 with pressure classifications PN12 and PN16, manufactured in conformance with AS/NZS 4765:2017 *Modified PVC (PVC-M) pipes for pressure applications* for use in water supply and sewer applications.

The effective length of the pipes is six metres with socket and spigot ends for elastomeric seal jointing. The joints have 1° maximum angular deflection.

Hydro PVC-M pipes are available in solid light blue for drinking water supply, solid purple for non-drinking water supply and solid cream for pressure sewer applications.

Vinidex Pty Ltd holds an ISO 9001:2015 Quality Management System Licence.

Vinidex Hydro PVC-M pipes have ISO Type 5 StandardsMark Product Certification to AS/NZS 4765:2017 *Modified PVC (PVC-M) pipes for pressure applications* for various manufacturing sites.

This Appraisal has determined that Vinidex Hydro PVC-M Series 2 pipes, as detailed in this report, meet the requirements of WSA PS 209 *Polyvinylchloride*, *Modified* (*PVC-M*) *Pressure Pipes for Pressure Applications – Drinking Water*, *Non-Drinking Water Supply and Sewerage* and are considered 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 Vinidex Hydro range of PVC-M pressure pipes, as detailed in this report, for use in water supply and sewerage applications provided the pipeline design, installation, acceptance testing and commissioning are in accordance with relevant WSAA Codes and the manufacturer's requirements.

2 THE APPLICANT

The Applicant is Vinidex Pty Ltd.

2.1 The Manufacturer and Supplier

Vinidex Pty Ltd is a leading Australian manufacturer and distributor of thermoplastic pipe and fittings used in the transportation of fluids for infrastructure development, agriculture, mining and building.

Founded in 1960, Vinidex has pipe manufacturing factories and distribution centres located in Sydney, Melbourne, Brisbane, Toowoomba, Townsville, Launceston, Perth, Adelaide, Darwin and Wagga Wagga. The company also has a significant presence in the Asia-Pacific Rim, with operations in New Zealand.

Vinidex Hydro PVC-M pressure pipe is manufactured at Smithfield NSW, Coopers Plains Queensland, Sunshine Victoria and O'Connor WA.

Vinidex is wholly owned by the Aliaxis Group which is a leading global manufacturer and distributor of fluid handling systems used in residential and commercial construction, as well as in industrial and public infrastructure applications.

Aliaxis is present in over 40 countries, has more than 100 manufacturing and commercial entities and employs over 14,000 people. In addition to the well-established markets of Europe and North America, Aliaxis has operations in Latin and South America, Australasia and Asia.

Further information is available on Vinidex and Aliaxis websites at www.vinidex.com.au or www.aliaxis.com

3 THE PRODUCT

This Appraisal is for a range of Hydro PVC-M Series 2 DIOD pipes in sizes DN 100 to DN 450 with PN12 or PN16 pressure classifications, manufactured in conformance with AS/NZS 4765:2017 *Modified PVC (PVC-M) pipes for pressure applications* for use in water supply, sewer pressure (rising) mains and pressure and vacuum sewer systems.

The pipes are suitable for buried and above ground use where not exposed to direct sunlight.

The outside diameter of the Series 2 pipes align with AS/NZS 2280 ductile iron pipe outside diameters and are compatible for use with standard ductile iron fittings.

The effective length of the pipes is six metres with socket and spigot ends for elastomeric seal jointing. The joints have 1° maximum angular deflection.

Hydro PVC-M pipes are available in solid light blue for drinking water supply, solid purple for non-drinking water supply and solid cream for pressure sewer applications.

PVC-M or modified PVC uses a similar formulation to PVC-U with the addition of a modifier which induces a ductile response i.e. increases the toughness and thus changes the fracture characteristics of the finished product. PVC-M therefore retains the high strength of PVC-U with enhanced toughness.

The use of PVC-M material allows a design factor of 1.4 to be used which facilitates a reduction in wall thickness of PVC-M pipes compared to PVC-U pipes. This provides an increased flow capacity for a given pipe outside diameter.

WSAA specifications do not include minimum required pipe stiffnesses for PVC pipes, however some water agencies specify a minimum of SN10. The initial ring stiffness of PVC-M pipes, based on minimum wall thickness and mean wall thickness respectively, is SN10 and SN14 for PN12 and SN24 and SN32 for PN16.

DN	Pipe OD mm	PN12	PN16
100	122	\checkmark	$\sqrt{}$
150	177	\checkmark	V
200	232	$\sqrt{}$	$\sqrt{}$
225	259	$\sqrt{}$	$\sqrt{}$
250	286	\checkmark	$\sqrt{}$
300	345	$\sqrt{}$	V
375	426		V
450	507	V	V

TABLE 1 VINIDEX HYDRO PVC-M SERIES 2 PIPE RANGE

4 SCOPE OF THE APPRAISAL

The scope of this appraisal applies to Vinidex Hydro PVC-M PN12 and PN16 Series 2 DIOD pipes in sizes DN 100 to DN 450, as detailed in Section 3 and included in the ISO Type 5 StandardsMark Product Certification schedule included in Appendix B.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts PVC-M pipes manufactured in compliance with AS/NZS 4765:2017 *Modified PVC (PVC-M) pipes for pressure*

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 WSA TN-08.

5.2 Performance Requirements

Vinidex Hydro PVC-M pipe has been appraised for compliance with AS/NZS 4765:2017 *Modified PVC (PVC-M) pipes for pressure applications.*

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

The following Product Specification is also relevant to this application:

WSA PS 209 Polyvinylchloride, Modified (PVC-M) Pressure Pipes for Pressure Applications – Drinking Water, Non-Drinking Water Supply and Sewerage

A copy of the Product Specification is available at the following link:

https://wsaa.asn.au/Web/web/shop/ShopSearch.aspx?category=PRODSPECS

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

Vinidex has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. QEC0570 issued to Vinidex Pty Ltd by Intertek SAI Global.
- AS/NZS 4765:2017 StandardsMark ISO Type 5 Product Certification Licence No. SMKP02560 issued to Vinidex Pty Ltd by SAI Global.
- Best Environmental Practice PVC Certificate No. SPROD40047 issued to Vinidex Pty Ltd by Intertek SAI Global.

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

Copies of Quality Assurance certificates have also been supplied for component suppliers.

6.2 Compliance with Performance Requirements

6.2.1 Type tests

Vinidex has submitted type test reports to demonstrate conformance with the requirements of AS/NZS 4765:2017 Appendix A as follows:

- Pipe
- Composition
- Vinyl chloride monomer
- Softening temperature
- Long-term hydrostatic pressure
- Long-term toughness
- Notched pipe internal pressure

Vinidex has advised that they are unable to submit leak-tightness test reports for the elastomeric joints. WSAA has requested that testing be undertaken for each size joint in accordance with

AS/NZS 4441 as follows:

- short term positive pressure with deflection
- short term negative pressure with deflection
- long term positive pressure

A fire at the Vinidex Smithfield NATA laboratory in September 2023 destroyed most of the equipment and rendered the laboratory inoperable. Given that Vinidex PVC-O pipes have been used by the industry since early 2000's and there has been no change in the design of the joints, a Future Work item has been included to complete the tests by August 1 2025. See Section 14.

- short term positive pressure with deflection
- short term negative pressure with deflection
- long term positive pressure

6.2.2 Elastomeric seals

EPDM and SBR elastomeric seals are manufactured by Thai Duong Joint Stock Company and supplied by Hultec Asia Pacific Pty Ltd. The seals are covered by ISO Type 5 product certification to AS 1646. A copy of the licence is held on file by WSAA.

6.2.3 Colour

Hydro PVC-M pipe is available in solid light blue for drinking water supply, solid purple for non-drinking water supply and solid cream for pressure sewer applications.

This meets the requirements of AS/NZS 4765:2017 and WSAA codes.

6.2.4 Suitability for contact with water

Vinidex has submitted a copy of test report No. 395810 dated 18 December 2024 undertaken by AWQC (NATA Accreditation No 1115) on a DN100 PN20 PVC-M pipe to demonstrate compliance with AS/NZS 4020:2018.

Copies of the AS/NZS 4020:2018 test reports (including gap testing for Amendment 1 requirements for monochloramine resistance), undertaken by Eurofins ams (NATA Certification No. 15773) have been submitted for the following compounds:

- Hultec EPDM HT5557 Report dated 14th August 2020, gap report dated 25th May 2021
- Hultec SBR HT627 Report dated 14th August 2020, gap report dated 25th May 2021

7 FITTING INSTRUCTIONS. TRAINING AND INSTALLATION

PVC-M pressure pipe has been a commonly used product in the urban water industry for many years. Vinidex does not provide any specific training for pipe layers, however there are a number of Registered Training Organisations (RTO's) conducting suitable training courses based on AS/NZS 2032 and AS/NZS 2566.2.

Field research has shown conventional drilling and tapping equipment used for PVC-U pipes can also be used for PVC-M pipes.

Type F tapping bands and repair couplings, where a full circle design and positive stop is incorporated, are recommended for use with PVC-M pipes. Pre-tapped connectors are preferred for new property service installations

WSAA WSA 03 Water Supply Code of Australia states that PVC pipes and fittings scored deeper than 10% of the wall thickness to a maximum of 1mm should not be used.

Storage requirements for PVC-M are identical to PVC-U. If the total period of exposed storage outdoors is likely to exceed 12 months, pipes should be covered and stored in a manner that allows ventilation and prevents heat entrapment. Pipes may be stored in this manner indefinitely.

Pipeline repairs can be carried out using standard long barrel mechanical couplings.

Vinidex recommends that suitable anchorage is provided at all tees, valves, tapers, changes in direction and termination points except where restrained elastomeric seal joint fittings are utilised.

Further details are available on the Vinidex website at the following link: https://www.vinidex.com.au/technical-resources/pvc-pressure-pipe/.

8 PRODUCT MARKING

Vinidex PVC-M pipes are marked in accordance with AS/NZS 4765 requirements as follows:

- Manufacturer's name: Vinidex Hydro
- Pipe material and series: e.g., PVC-M S2
- Nominal size: e.g., 100
- Pressure classification: e.g., PN16
- Date of manufacture: e.g., 240210 (10 February 2024)
- Time of manufacture: e.g., 15:43
- Place of manufacture code: e.g., S11
- Standard number: AS/NZS 4765
- Licence number: SMKP002560
- Best Environmental Practice: BEP PVC
- Special application information e.g., RECYCLED WATER DO NOT DRINK

Example:

VINIDEX HYDRO QUALITY BEP PVC S2 100 PVC-M PN16 AS/NZS 4765 Lic. No SMKP02560 S11 240210

Each pipe also has a witness mark on the spigot end to indicate insertion depth.

9 PACKAGING AND TRANSPORTATION

The method of packaging and transport of these pipes is similar to other Vinidex PVC pressure pipes. Scalloped timber bearers are used to provide support and crates are secured with plastic strapping. Refer AS/NZS 2032 for further information.

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 Vinidex's warranty is included in their terms and conditions of sale.

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

Hydro PVC-M pipe has been used by the water industry since the early 2000's with water agency approvals dating back to 2001.

12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

The following queries were raised.

- Q1 Can information be provided in relation to suitability of PVC-M for rising mains due to fatigue issues and resistance to pressure cycles.
- A1 This issue is addressed in PIPA POP 101 *PVC Pressure Pipes Design for Dynamic Stresses* at https://pipa.com.au/wp-content/uploads/2020/10/PIPA-POP101-PVC-Pressure-Pipes-Design-for-Dynamic-Stresses-Issue-1.4.pdf Further information is also available in WSA-03 *Water Supply Code of Australia* and WS-04 Sewage Pumping Station Code of Australia.

- Q2 A maximum joint deflection of 1° seems quite restrictive. Please clarify whether this deflection applies only to pipe to pipe joints or if it also includes pipe to fitting connections.
- A2 The allowable angular deflection at the pipe to pipe joint varies depending on the manufacturing tolerances of the spigot and the socket but for design purposes all Vinidex rubber ring joints should be assumed to have a maximum deflection of 1°. This is approximately equivalent to a 100mm offset for a 6m pipe. See Vinidex website at https://www.vinidex.com.au/resources/technical-resources/pvc-pressure-pipe/pvc-bending-loads/

AS/NZS 2280 nominates minimum joint defections for ductile iron fittings as $3\frac{1}{2}$ ° for DN 100 to DN 250 sizes and $2\frac{1}{2}$ ° for DN 300 to DN 450 sizes.

- Q3 What is the minimum recommended clearance for tappings and their distance from joints on a PVC-M pipes? Is there any specific recommendation for the live tapings and the maximum size of the branch that we need to consider?
- A3 Refer to the Vinidex website at: https://www.vinidex.com.au/resources/technical-resources/pvc-pressure-pipe/service-connections-for-pvc-pipes/
- Q4 Is there any guidance to the chemical resistance of PVC-M pipe?
- A4 Refer to the Vinidex website at: https://www.vinidex.com.au/resources/technical-resources/chemical-resistance-of-pvc-pipes/

13 FUTURE WORKS

Type tests are required to be undertaken, prior to August 2025, for each size elastomeric joint to verify compliance with the performance requirements of AS/NZS 4765.

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, 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

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

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

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

WSAA has not evaluated the extent of the product liability and professional 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.

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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

This Catalogue and other product information is available at the following link: https://www.vinidex.com.au/app/uploads/pdf/Catalogue-VIN186-Hydro-PVC-M.pdf



Vinidex Hydro® PVC-M

Modified PVC for Potable Water & Irrigation Applications Available in Pipe Sizes 100mm to 575mm Series 1 & 2



IMPROVED MATERIAL PERFORMANCE

HYDRAULIC EFFICIENCY

LIGHT WEIGHT

SYSTEM COMPATIBILITY



APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following quality certificates are available from WSAA.

TABLE B1 VINIDEX PTY LTD - MANAGEMENT SYSTEMS

254	4 Woodpark Road Smithfield NSW
Quality Systems Standard	ISO 9001:2015
Certification Licence No.	QEC0570
Certifying Agency	Intertek SAI Global
First Date of Certification	19 February 1991
Current Date of Certification	28 June 2024
Expiry Date of Certification	21 November 2026

TABLE B2 VINIDEX PTY LTD - PRODUCT CERTIFICATION

(Attach all QA	Manufacturing Plant Address (Attach all QA system certificates in full including schedules)						
Product Standard/Spec.	AS/NZS 4765:2017						
Certificate No.	SMKP02560						
Issuing Certification Body	SAI Global						
First Date of Certification	10 August 2011						
Current Date of Certification	14 September 2021						
Expiry Date of Certification	9 August 2026						

TABLE B3 VINIDEX PTY LTD – BEST ENVIRONMENTAL PRACTICE

254	4 Woodpark Road Smithfield NSW
Product Standard/Spec.	AS/NZS 4765
Certificate No.	SPROD40047
Issuing Certification Body	Intertek SAI-Global
Current Date of Certification	22 February 2024
Expiry Date of Certification	21 February 2026



CERTIFICATE OF REGISTRATION

This is to certify that:

Vinidex Pty Ltd ABN 42 000 664 942

Level 4 26 College Street Darlinghurst NSW 2010 AUSTRALIA (Refer to Attachment to Certificate of Registration dated 1 July 2024 for additional certified sites)

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2015

for the following scope

The design, manufacture and distribution of polyethylene, polypropylene, modified PVC, oriented PVC and unplasticised PVC pipes, conduits and associated fittings for the water supply, sewerage, drainage, electrical, mining, gas, rural and communications industries.

Certificate Number:

QEC0570

Originally Certified:

19 February 1991

Current Certification: 28 June 2024

Issue Date:

1 July 2024

Expiry Date:

21 November 2026





Calin Moldovean

President, Business Assurance

SAI Global Certification Services Pty. Ltd. Level 7 Suite 7.01 45 Clarence Street Sydney NSW 2000 Australia

lobal Certification Services Pty Ltd (ACN 108 716 669) Level 7 Suite 7.01 45 Clarence Street Sydney NSW 2000 Australia with SAI Global Pty Limited Level 7 Suite 7.01 45 Clarence Street Sydney NSW 2000 Australia ("SAI Global" and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negli gence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line





SAI Global hereby grants:

Vinidex Pty Ltd

ABN 42 000 664 942

Extrusion, 254 Woodpark Road, Smithfield, NSW 2164, Australia

224 Musgrave Road, Coopers Plains, QLD 4108, Australia

231 - 245 St Albans Road, Sunshine, VIC 3020, Australia And

Sainsbury Road, O'Connor, WA 6163, Australia

StandardsMark Licence

Manufactured to:

AS/NZS 4765:2017 - Modified PVC (PVC-M) pipes for pressure applications

"the StandardsMark Licensee" the right to use the STANDARDSMARK as shown below only in respect of the goods described and detailed in the Schedule which are produced by the Licensee or on behalf of the Licensee* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the STANDARDSMARK and the Terms and Conditions for certification and licence. The Licensee covenants to comply with all the Rules and Terms and Conditions.

Licence No: SMKP02560

Issued: 14 September 2021 Expires: 9 August 2026

Originally Certified: 10 August 2011 Current Certification: 14 September 2021

Frank Camasta Global Head of Technical Services SAI Global Assurance

Standard



* For details of manufacture, refer to the licensee

The STANDARDSMARK is a registered certification trademark of SAI Global Pty Limited (A.C.N. 050 644 642) and is issued under licence by SAI Global Certification Services Pty Limited (ACN 108 716 669) ("SAI Global") 680 George Street, Sydney NSW 2000, GPO Box 5420 Sydney



NSW 2001. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. Refer to www.saiglobal.com, for the list of product models.

SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pipe Series	Classification	Joint Type	Colour	Date Endorsed
MP2_0100_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	12	Rieber Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021
MP2_0100_12.0R5P000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	12	Rubber ring joint 5deg deflection	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0100_12.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	12	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0100_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	16	Rieber Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0100_16.0R5-P000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	16	Rubber ring joint 5deg deflection	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0100_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	16	Rubber ring joint	Light blue, lifac, cream, other colours at customer request	8 Jul 2021
MP2_0100_18.0CP000	0	Vinidex	Pressure pipo	Modified PVC pipe	100	2	18	Rieber Rubber ring joint	Light blue, litac, cream, other colours at customer request	8 Jul 2021
MP2_0100_18.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	18	Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0100_20.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	20	Rieber Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0100_20.0R5P000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	20	Rubber ring joint 5deg deflection	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0100_20.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	100	2	20	Rubber ring joint	Light blue, flac, cream, other colours at customer request	8 Jul 2021
MP2_0150_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	12	Rieber Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0150_12.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	12	Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021
MP2_0150_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	16	Rieber Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021
MP2_0150_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	16	Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021
MP2_0150_18.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	18	Rieber Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0150_18.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	18	Rubber ring joint	Light blue, flac, cream, other colours at customer request	8 Jul 2021
MP2_0150_20.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	20	Rieber Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0150_20.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	150	2	20	Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021
MP2_0200_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	12	Rieber Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0200_12.0R343P000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	12	Rubber ring joint 3.43deg deflection	Light blue, illac, cream, other colours at customer request	8 Jul 2021
MP2_0200_12.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	12	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0200_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	16	Rieber Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021

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^{*} For details of manufacture, refer to the licensee

STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pipe Series	Classification	Joint Type	Colour	Date Endorsed
MP2_0200_16.0R343P000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	16	Rubber ring joint 3.43deg deflection	Light blue, lifac, cream, other colours at customer request	8 Jul 2021
MP2_0200_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	16	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0200_20.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	20	Rieber Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0200_20.0R343P000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	20	Rubber ring joint 3.43deg deflection	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0200_20.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	200	2	20	Rubber ring joint	Light blue, lifac, cream, other colours at customer request	8 Jul 2021
MP2_0225_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	225	2	12	Rieber rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0225_12.0RP000	0	Vinidex	Pressure pipo	Modified PVC pipe	225	2	12	Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0225_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	225	2	16	Rieber rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0225_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	225	2	16	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0250_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	12	Rieber rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0250_12.0R35-P000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	12	Rubber ring joint 3.5deg deflection	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0250_12.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	12	Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0250_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	16	Rieber rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0250_16.0R35-P000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	16	Rubber ring joint 3.5deg deflection	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0250_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	16	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0250_20.0R35-P000	0	Vinidex	Pressure pipe	Modified PVC pipe	250	2	20	Rubber ring joint 3.5deg deflection	Light blue, Iliac, cream, other colours at customer request	8 Jul 2021
MP2_0300_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	300	2	12	Rieber rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0300_12.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	300	2	12	Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0300_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	300	2	16	Rieber rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0300_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	300	2	16	Rubber ring joint	Light blue, lifac, cream, other colours at customer request	8 Jul 2021
MP2_0300_20.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	300	2	20	Rieber rubber ring joint	Light blue, lifac, cream, other colours at customer request	8 Jul 2021
MP2_0375_06.0R3P000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	6	Rubber ring joint 3deg deflection	Light blue, lilac, cream, other colours at customer request	8 Jul 2021

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STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pipe Series	Classification	Joint Type	Colour	Date Endorsed
MP2_0375_06.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	6	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0375_09.0R3P000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	9	Rubber ring joint 3deg deflection	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0375_09.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	9	Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0375_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	12	Rieber Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0375_12.0R3P000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	12	Rubber ring joint 3deg deflection	Light blue, litac, cream, other colours at customer request	8 Jul 2021
MP2_0375_12.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	12	Rubber ring joint	Light blue, lifac, cream, other colours at customer request	8 Jul 2021
MP2_0375_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	16	Rieber Rubber ring joint	Light blue, filac, cream, other colours at oustomer request	8 Jul 2021
MP2_0375_16.0R3P000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	16	Rubber ring joint 3deg deflection	Light blue, litac, cream, other colours at customer request	8 Jul 2021
MP2_0375_16.0RP000	0	Vinidex	Pressure pipe	Modified PVC pipe	375	2	16	Rubber ring joint	Light blue, Illac, cream, other colours at customer request	8 Jul 2021
MP2_0450_06.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	450	2	6	Rieber Rubber ring joint	Light blue, filac, cream, other colours at customer request	8 Jul 2021
MP2_0450_12.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	450	2	12	Rieber Rubber ring joint	Light blue, lilac, cream, other colours at customer request	8 Jul 2021
MP2_0450_16.0CP000	0	Vinidex	Pressure pipe	Modified PVC pipe	450	2	16	Rieber Rubber ring joint	Light blue, lifac, cream, other colours at customer request	8 Jul 2021

End of Record

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CERTIFICATE OF VERIFICATION



Vinidex Pty Ltd

ABN: 42 000 664 942 254 Woodpark Road Smithfield, NSW. Australia Verification to

BEST ENVIRONMENTAL PRACTICE PVC PIPES AND FITTINGS

Type of product: The product types listed below have been independently assessed and comply with the requirements of Best Environmental Practice PVC pipes and fittings as set out in AS/NZS 1254 Appendix B, AS/NZS 1260 Appendix C, AS/NZS 1477 Appendix B, AS/NZS 4765 Appendix G and AS/NZS 4441 Appendix ZB.

Pipe and pipe fittings manufactured in accordance to:

- AS/NZS 1254
- AS/NZS 1260
- AS/NZS 1477
- AS/NZS 4441
- AS/NZS 4765
- AS/NZS 2053.2
 AS/NZS 2053.6

PVC Application type: FP: Finished Product Manufacturer

- R: Resin Producer, C: Compound Producer, FP: Finished Product Manufacturer

Disclaimer: This certificate does not constitute product certification and does not imply the product is certified. This certificate remains valid until the expiry date above or until material change occurs to the PVC and VCM supply and / or process which requires re-validation under the guidelines. The certificate holder is responsible for the preparation and presentation of information about the continuing compliance with the requirements throughout the relevant period, in accordance with compliance pathway number 2 -manufacturer's declaration, as established within the Auditor Verification process. This certificate has been prepared for the purpose of assessing compliance with the requirements as established by the criteria, it is intended for a specific purpose, and we disclaim any responsibility if it's used differently.

Certificate No: SPROD40047

Issued: 22 February 2024 Expires:21 February 2026

Stram

Simon Fraser Head of Operations, Product Services Intertek SAI Global

Certification Body:

SAI Global Certification Services Pty Limited (ACN 108 716 669) Operating as "Intertek & Intertek SAI Global" JAS-ANZ Accreditation No. Z1440295AS Address: Suite 7.01, 45 Clarence St, Sydney Australia Website: www.sal



APPENDIX C - SUPPLIER CONTACTS

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