

# Assessment of ARDEX WPM 157- Waterproofing Membrane to: AS 4654.1:2012 Waterproofing membranes for external above-ground use Part 1: Materials

Report number SW8522-02 Revision B Summary only [This is a private relabel report from CSIRO test report SW8519]

CSIRO job number SW8522

Date of issue 28 March 2024

## Client

ARDEX Australia Pty. Ltd.  
20 Powers Road  
Seven Hills, NSW 2147  
Australia

## TERM OF VALIDITY

This CSIRO Wet Area Membranes 1<sup>st</sup> revalidation report will lapse three years after the date of issue below and assessment unless 2<sup>nd</sup> revalidation has been requested and granted.

**The 1<sup>st</sup> revalidation Report number SW8522-02 valid until 29 January 2027**

## Report Status and Revision History

Revision A	Final	15 February 2024	CSIRO, ARDEX Australia Pty. Ltd.	
Revision B	Final Revision B Summary	28 March 2024	CSIRO, ARDEX Australia Pty. Ltd.	Summary only, please refer to original report for test details

Commercial-in-confidence

## Use of Reports

### Use of Reports – Testing

This report is subject to binding obligations under which it was prepared. In particular, the Report must not be used:

- As a means of endorsement; or,
- In a company prospectus or notification to a Stock Exchange document for capital raising, without the prior written consent of CSIRO.

The Report may be published verbatim and in full, provided that a statement is included on the publication that it is a copy of the Report issued by CSIRO.

Excerpts of the Report may not be published.

### Use of Reports – Consultancy

This report is subject to binding obligations under which it was prepared. In particular, the Report may only be used for the following purposes:

- The information in the Report may be used by the party that commissioned the Report for its internal business operations (but not licensing to third parties);
- The report may be copied for distribution within the organisation that commissioned the Report;
- Copies of the Report (or extracts of the Report) may be distributed to contractors and agents of the organisation that commissioned the Report who have a need for the Report for its internal business operations. Any extracts of the Report distributed for this purpose must clearly note that the extract is part of a larger Report held by the organisation that commissioned the Report and which has been prepared by CSIRO.

The name, trademark or logo of the CSIRO must not be used without the prior written consent of CSIRO.

The Report must not be used as a means of endorsement without the prior written consent of CSIRO.

## Copyright and disclaimer

© 2024 CSIRO To the extent permitted by law, all rights are reserved, and no part of this publication covered by copyright may be reproduced or copied in any form or by any means except with the written permission of CSIRO.

CSIRO advises that the information contained in this publication comprises observations based on test results. The reader is advised and needs to be aware that such information may be incomplete or unable to be used in any specific situation. No reliance or actions must therefore be made on that information without seeking prior expert professional, scientific and technical advice. To the extent permitted by law, CSIRO (including its employees and consultants) excludes all liability to any person for any consequences, including but not limited to all losses, damages, costs, expenses, and any other compensation, arising directly or indirectly from using this publication (in part or in whole) and any information or material contained in it.

The results reported herein relate only to the item(s) tested.

# 1 Summary

**Test Standard:** Testing was conducted on a waterproofing membrane for external above-ground use with fully bonded membrane liquid exposed to assess its performance for: water vapour transmission; water absorption; acceptance of cycle movement; durability; abrasion resistance; bond strength and thickness. The external waterproofing membranes properties were tested in accordance with the Australian Standard AS4654.1:2012.

All methods were carried out according to Tables 2.1 under fully bonded membrane liquid exposed against the performance criteria of Tables A1, A3 and A4.

**Test results:** The waterproofing membrane presented for testing complied with the performance criteria set in AS4654.1:2012 waterproofing membrane for external above-ground, exposed to both pedestrian traffic and non-trafficable. The following table shows the ARDEX WPM 157 - Waterproofing Membrane performance as assessed from testing.

**TABLE 1 SUMMARY OF TEST REQUIREMENTS AND TEST SPECIMEN RESULTS FOR AS4654.1:2012**

TEST	METHOD	REQUIREMENTS	RESULT	STATUS
<b>(a) Moisture Transmission Rate</b>	ASTM E 96 Desiccant method for Determining Water Vapour Transmission (WVT)	Record result	WVT 7.79 g/m <sup>2</sup> /24hrs Permeance 64.17 ng/Pa.s.m <sup>2</sup>	Complied
<b>(b) Acceptance of movement</b>	AS AS4654.1 Appendix B for assessment of cyclic movement of membrane	Pass or fail criteria by observing any cracking, rupture holing or extending through the thickness for more than 1 mm in from the edge of the specimen.	Class III	Complied
<b>(c) Abrasion resistance 2.3.2 Trafficable</b>	AS 1580.403.2.1-2006 Paints and related materials	Pedestrian traffic only – abrasion depth less than 0.2 mm. Occasional service vehicle traffic – abrasion depth less than 0.1 mm. Regular vehicle traffic – abrasion depth less than 0.05 mm.	0.071mm	Occasional service vehicle traffic
<b>(d) Durability</b> 1. Control 2. Water immersion 3. Detergent immersion 4. Heat ageing at 80°C 5. Ultraviolet resistance 6. Temperature resistance at -15°C to +85°C	AS4654.1 Appendix A for assessment of membranes durability AS4654.2 temperature resistance section 2.4.2 (c)	Pass or fail criteria; compared to control samples: elongation at break shall be not less than 25 % for water and detergent immersion. Whereas elongation at break shall be not less than 50 % for heat ageing samples.	1. Class III 2. Class III 3. Class III 4. Class III 5. Class III 6. Class III	Complied
<b>(e) Bond strength to concrete and villa flooring substrate</b>	ASTM C794 Standard test method for adhesion-in-peel of elastomeric joint sealants	Test samples exposed to dry conditions, then tested for adhesion-in-peel strength.	105.02N with 100% adhesive failure loss for concrete.  2.07N with 100% substrate failure loss for fibre-cement sheeting.	Complied
<b>(f) Membrane thickness</b>	AS/NZS 4347.9:1995 (Reconfirmed) 2014 Damp-proof courses and flashings.	The film thickness shall be measured at a minimum of five points and a maximum of 10 points, equally spaced across the strip.	1.206mm	Complied

## 6 Comments.

- ARDEX WPM 157 - Waterproofing Membrane, as described herein, when subjected to the test methods of AS 4654.1:2012 the properties of (a) moisture vapour transmission, (b) water absorption, (c) cyclic movement (Class III), (d) durability, (e) Bond strength to concrete, fibre-cement sheeting substrate and (f) membrane thickness met the performance criteria to AS4654.1:2012 Waterproofing membranes for external above-ground use Part 1: Materials.
- The thickness range for the control specimens of the 1<sup>ST</sup> revalidation report SW8519 is: 0.90 – 1.05mm, which is lesser than the thickness range of the control specimens for the original report, SW8319.2(1.20 – 1.30mm)
- The average result of the 1<sup>ST</sup> revalidation of the Control' specimens for SW8519 is. 378 % ≥ 299%, Class III – High Extensibility, and met the performance criteria to AS4654.1:2012 Waterproofing membranes for external above-ground use Part 1: Materials.

# End of report