# AS 4654.1 test report

# AU5-2.5-4654.1
30 September 2025

**Customer**
PDQ Poly
17/69 Acacia Road
Ferntree Gully 3156

**Specimen**
PDQ Poly sheet membrane (roll form)

## Results summary

| Property | Method | Result | Assessment |
|---|---|---|---|
| Bond strength to plywood | ASTM C794 | 42.7 N | - |
| Bond strength to concrete | ASTM C794 | 22.5 N | - |
| Cyclic-movement | AS 4654.1 App. B | No failures | Class III |
| Dimensional stability MD | ASTM D6207 | No permanent instability | - |
| Dimensional stability CD | ASTM D6207 | No permanent instability | - |
| Elongation at break MD (control) | AS 4654.1 App. A | 309% | Class III |
| Elongation at break CD (control) | AS 4654.1 App. A | 326% | Class III |
| Heat ageing MD | AS 4654.1 App. A | 288% | Pass >50% of control |
| Heat ageing CD | AS 4654.1 App. A | 281% | Pass >50% of control |
| Temperature resistance MD | AS 4654.1 Clause 2.6 | 300% | Pass |
| Temperature resistance CD | AS 4654.1 Clause 2.6 | 299% | Pass |
| Tensile strength MD | AS 4654.1 Table A4 | 33 MPa | - |
| Tensile strength CD | AS 4654.1 Table A4 | 31 MPa | - |
| Thickness | Calliper (mean n=50) | 0.66 mm | - |
| Durability in water | AS 4654.1 Table A4 | 288% | Pass >25% of control |
| Durability in detergent | AS 4654.1 Table A4 | 279% | Pass >25% of control |
| Water vapour transmission rate | ASTM E96 | 1.22 g/m²/day | - |

## Bond strength

Test conducted in accordance with ASTM C794

### Specimens applied to primed plywood

| Sample | Separation Mode | Peel Force (N) |
|---|---|---|
| 1 | Adhesive/substrate | 42.9 |
| 2 | Adhesive/substrate | 42.8 |
| 3 | Adhesive/substrate | 42.4 |
| 4 | Adhesive/substrate | 42.7 |
| Mean | | 42.7 |

| Specimens applied to steel-trowelled concrete | | |
|---|---|---|
| **Sample** | **Separation Mode** | **Peel Force (N)** |
| 1 | Adhesive/substrate | 22.8 |
| 2 | Adhesive/substrate | 22.3 |
| 3 | Adhesive/substrate | 22.6 |
| 4 | Adhesive/substrate | 22.3 |
| Mean | | 22.5 |

## Cyclic movement

Test conducted in accordance with AS 4654.1 Appendix B

| **Parameter** | **Value** |
|---|---|
| Cycles | 50 |
| Cycle time | 2 Hours |
| Cycle extension | 4 mm |
| Cycle extension rate | 3.34 mm/minute |
| Surface crazing | Nil |
| Surface tear | Nil |
| Membrane rupture | Nil |

## Dimensional stability

Test conducted in accordance with ASTM D6207 - 03 (1000 x 150 mm in graduated frame)

| **Specimen 1 (MD)** | **Specimen 2 (CD)** | **Exposure** |
|---|---|---|
| 900 mm | 900 mm | Initial reading |
| 900 mm | 900 mm | Cycle1: 24-hours; 95% RH, 20°C |
| 901 mm | 902 mm | Cycle2: 32-hours; 15% RH, 32°C |
| 900 mm | 901 mm | Cycle3: 48-hours; 95% RH, 20°C |
| 900 mm | 900 mm | Cycle4: 72-hours; 15% RH, 32°C |
| | | No permanent set (maximum dimensional change, 2 mm in CD) |

## Elongation at break MD (control)

Test conducted in accordance with AS 4654.1 Appendix A

| **Sample** | **Mean Thickness (mm)** | **Maximum Extension (mm)** | **Maximum Stress (MPa)** | **Elongation at Break (%)** |
|---|---|---|---|---|
| 1-6 | 0.66 | 77.5 | 33.0 | 309.0 |

## Elongation at break CD (control)

Test conducted in accordance with AS 4654.1 Appendix A

| **Sample** | **Mean Thickness (mm)** | **Maximum Extension (mm)** | **Maximum Stress (MPa)** | **Elongation at Break (%)** |
|---|---|---|---|---|
| 1-6 | 0.66 | 73.6 | 31.0 | 326.2 |

## Heat ageing MD
Test conducted in accordance with AS 4654.1 Appendix A

| Sample | Mean Thickness (mm) | Maximum Extension (mm) | Tensile strength (MPa) | Elongation at break (%) |
|---|---|---|---|---|
| 1-6 | 0.66 | 75.3 | 32.2 | 287.9 |

## Heat ageing CD
Test conducted in accordance with AS 4654.1 Appendix A

| Sample | Mean Thickness (mm) | Maximum Extension (mm) | Tensile strength (MPa) | Elongation at break (%) |
|---|---|---|---|---|
| 1-6 | 0.66 | 73.2 | 30.9 | 281.4 |

## Temperature resistance MD
Test conducted in accordance with AS 4654.1 Clause 2.6

| Sample | Mean Thickness (mm) | Maximum Extension (mm) | Tensile strength (MPa) | Elongation at break (%) |
|---|---|---|---|---|
| 1-5 | 0.65 | 75.75 | 32.22 | 300.21 |

## Temperature resistance CD
Test conducted in accordance with AS 4654.1 Clause 2.6

| Sample | Mean Thickness (mm) | Maximum Extension (mm) | Tensile strength (MPa) | Elongation at break (%) |
|---|---|---|---|---|
| 1-5 | 0.66 | 72.92 | 30.71 | 299.08 |

## Durability
Test conducted in accordance with AS 4654.1 Appendix A

### Water immersion

| Sample & Duration | Mean sample thickness (mm) | Maximum Extension (mm) | Tensile strength (MPa) | Elongation at break (%) |
|---|---|---|---|---|
| 1-3; 7 Days | 0.66 | 74.33 | 27.03 | 291.88 |
| 4-6; 28 Days | 0.65 | 75.97 | 25.14 | 287.84 |
| 7-9; 56 Days | 0.66 | 76.92 | 25.42 | 289.93 |

### Detergent immersion

| Sample & Duration | Mean sample thickness (mm) | Maximum Extension (mm) | Tensile strength (MPa) | Elongation at break (%) |
|---|---|---|---|---|
| 1-3; 7 Days | 0.66 | 75.33 | 24.69 | 299.65 |
| 4-6; 28 Days | 0.66 | 71.64 | 21.76 | 279.35 |
| 7-9; 56 Days | 0.65 | 69.82 | 20.99 | 295.54 |

## Water vapour transmission rate

Test conducted in accordance with ASTM E96 (desiccant method)

| Sample | Thickness (mm) | WVTR (g/m²/day) |
|---|---|---|
| 1 | 0.66 | 1.220 |
| 2 | 0.65 | 1.221 |
| 3 | 0.67 | 1.219 |
| Mean | | 1.220 |

**Statement of Compliance**

PDQ Poly meets AS 4654.1–2012 pursuant to the requirements of:

☑ 2.2 Conformance Conditions.

☑ Appendix A; A1 General.

☑ Appendix B; B1 Scope.

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END OF REPORT

**Testing facility**
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**Reviewer**
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**Compliance**

ISO 17025

**Apparatus**

Constant climate chamber – Binder KBF 720.
Cyclic movement tester – Admet eXpert 4000.
Expanded temperature chamber – Binder KBF Pro 260.
Universal testing machine – Mecmesin MultiTest-dV 2500.