

ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution



BUTYNOL® SYSTEM SPECIFICATION

A synthetic rubber with properties which resist ageing from heat, sunlight and ozone. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Butynol® is manufactured by combining the petroleum gases isobutylene and isoprene at the extremely low temperature of -100°C . (Rubber Technology–Morton)

Butynol® is marketed by Ardex as a warranted roofing, decking and tanking product and fixed by their trained and experienced approved Applicators.

BUTYNOL® MATERIAL SPECIFICATIONS

Our requirements for long term warranty necessitate that Butynol® meets these typical technical requirements:

Specific Gravity to ASTM D297	1.20±0.05
Hardness IRHD to ASTM D1415	65±5
Tensile Strength to ASTM D412	8.3 MPa min
Modulus at 300% elongation to ASTM D412	4.15 MPa min
Elongation at break to ASTM D412	300% min
Heat Ageing (7 days at 115°C)	
Tensile Retention to ASTM D412	70% min
Elongation Retention to ASTM D412	70% min
Tear Strength to ASTM D624	26kN/m
Ozone Resistance to ASTM D1149 (7 days at 40°C in 50pphm ozone)	No visible cracks
Water Absorption to ASTM D471	
1.65% (by mass) 0.72% (by volume)	
Water Permeability to ASTM E96-92	
Vapour Flow Resistance (MNs/g)	12414
Vapour Flow Rate ($\text{g}/\text{m}^2\text{d}$)	0.013

Note: Interesting comparable figures for water permeability are –
Polythene 156, Asphalt 1830, P.V.C. 4900.

K Values on 1mm Butynol sheeting

K Value (Thermal Conductivity) 7.4×10^3
Cal/cm/sec/deg C.

Conductivity Data on 1mm Butynol sheeting

Resistance/ m^2 $\Omega/\text{m}^2 = 0.6816$ on 9.3 volts.

SEAM TAPE PERFORMANCE

Tests on the seam tape bonding method, by an

independent testing laboratory, have shown average values equivalent to 90% of unwelded material. It is considered impossible for the test methods used to be duplicated in normal service ie. 400% elongation.

BUTYNOL® PROTECTION

Butynol® protects against water, moisture vapour, gases, sun, ozone, frost, acids, chemicals and bacteria.

BUTYNOL® RESISTANCE

Butynol® resists tearing, flex cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

STAINING OF LIGHT COLOURED BUTYNOL®

To avoid staining care must be taken during design stage to ensure that water running off unpainted treated timber and some metals (eg copper) do not run over light coloured Butynol®.

BUTYNOL® GAUGES

Standard 1.0mm and 1.2mm–For roofs, gutters and decks with protection.

1.2mm–For roofs.

1.5mm–For roofs, gutters and walk out decks.

2.25mm Heavy Duty

Factory welded panels in all gauges can be custom made.

BUTYNOL® IS PACKAGED

In rolls of nominal 1.4m width and 17.86m long. Each roll is packed in polythene wrapper trademarked Butynol® with thickness identified. Coverage 25m^2 except 2.25mm gauge which is 12m^2

Gauges available are:

1.0mm black. Weight: nominal 30kg

1.5mm black. Weight: nominal 45kg

2.25mm black. Weight: nominal 32kg

1.2mm dove grey. Weight: nominal 32kg

1.5mm all colours. Weight: nominal 47kg

ADHESIVES AND SOLVENTS

Specially formulated for all Butynol® applications. Available in solvent and water based. Supplied in 20L steel/plastic pails (approx. 20kg). 4 and 1 litre cans.

BUTYNOL® SEALANT

Available in tubes for caulking guns.

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SEAM PRIMER

Seam Primer is specially formulated for use with Seam Tape. Applied with scrubber pads. Available in 4 and 1 litre cans.

SEAM TAPE

Recommended for all Butynol® laps.

Supplied by Ardex in 50mm x 30.5m rolls (6 to a carton).

DETAIL TAPE (uncured)

A malleable exterior tape for flashing exterior corners etc. 150mm x 30.5m rolls.

FLASHING TAPE

A malleable tape for moulding in gussets, pipe flashings and awkward situations. Supplied in 100mm x 5m rolls. Flashing tape must not be left exposed. A cover strip of Butynol® or detail tape must be applied over flashing tape to finish.

PLYWOOD TREATMENT

To be in accordance with Acceptable Solution E2/AS1 plywood substrate must be treated to H3.2 with Waterborne CCA treatment and kiln dried after treatment. All plywood joints should be taped with Ardex Release tape.

Plywood must not be LOSP treated.

DURABILITY

Butynol® when fixed according to Ardex instruction will meet the NZBC requirements of B2.3.1(b) 15 years. Refer BRANZ Appraisal Certificate No 436 (2011).

EXTERNAL MOISTURE

New Zealand Building Code Acceptable Solution E2/AS1 requirements recommend membrane clad roofs have a minimum pitch of 2° (1:30).

BUILDING TO NZBC ACCEPTABLE SOLUTION E2/AS1

NZBC Acceptable Solution E2/AS1 limits the size of decks to 40m² as covered by the scope of Appraisal No. 436 (2011). Butynol® Roofing Membrane is suitable for use on decks larger than 40m². These decks are the subject of specific design and are outside the scope of E2/AS1.

CLEANING WEATHERED BUTYNOL®

Use sugar soap to remove oxidation and restore surface. Wind blown dirt is more noticeable on low slope roofs, particularly on black Butynol®.

DAMP AND WEATHERPROOFING

The Building Code of Australia Deemed-to-Satisfy Provisions F1.9 and F1.10 are met by Butynol as an acceptable damp-proof course.

Butynol® when used as described in ABSAC Technical Opinion 188 August 1994 complies with the Building Code of Australia Deemed-to-Satisfy Provision F1.7(b) and Acceptable Construction Manual Part 3.8.1.0, or AS 3740 for "Water Proofing of Wet Areas in Buildings".

PAINTING OVER BUTYNOL®

Use Ardex WPM 908. Wash with Sugar Soap. Beware of using non Ardex primers as this may effect your Butynol® Warranty.

FIRE RATING

The Butynol® roofing system must be considered combustible but may be used on buildings for all purpose groups, subject to the requirements of NZBC Acceptable Solution C/AS1 Part 7, Paragraph 7.11.1.

When used for roofs in Purpose Groups SC and SD a non-combustible substrate or timber 18mm thick is acceptable. Refer 7.11.1.

Building Code of Australia allows use in all building types under Specification C1.10, Clause 7(e), except in bush fire prone areas.

PRODUCT WARRANTY

When laid by an approved Applicator in accordance with Ardex's specifications, a material warranty for up to 20 years (covering the Membrane, adhesive and tape) is available.

WORKMANSHIP

A warranty for workmanship shall be provided directly by the approved Applicator. The period and terms of the workmanship warranty shall be determined by the conditions of contract or the approved Applicator.

ADHESIVES AND SOLVENTS FOR USE WITH BUTYNOL®

- WA98 - The Standard contact brushing, spray grade and rolling adhesive for fixing to the substrate and for laps not subject to periodic ponding.
(Pitch 5° and above)
- WA98S - Solvent for clean up of WA98 adhesive.
- WPM 09A - Solvent free spray/brush adhesive.
(for use with Eco Butynol®)
- WPM 09C - Solvent free catalyst used in conjunction with WPM 09A
(for use with Eco Butynol®)
- Seam Primer - A water resistant primer, used with seam tape for general lap bonding.

Note: Temperature and Humidity

The evaporation of any solvent adhesive system causes a drop in temperature at the interface. At times of high humidity this can result in a micro molecular water layer at the interface which will result in a failure to bond, falsely attributed to Adhesive failure. Fixing should not proceed under these circumstances.

NOTES

1. In cases of extreme absorbency, a priming coat of 50/50 WA98 adhesive and solvent may assist water shedding and absorption. However, a follow up of full strength adhesive for full bonding should not be proceeded with under four hours, thus allowing full evaporation of solvents absorbed into the substrate. Primers must be time dried not touch dried.
2. As new substrate materials continually appear on the market, consult Ardex for approval of their use with Butynol®.
3. Seam tape and seam primer must be used for all Butynol® joints.
4. Do not use in temperatures less than 6°C.