



# ARDEX LIVING ROOF SYSTEMS

Light Weight Environmental Green Roof Solutions



ARDEX BUTYNOL OR  
TPO SYSTEMS



# ... alive with ecological benefits

## ARDEX Living Roof Systems

Light-weight, environmental green roof solutions

Forty years ago, ARDEX Butynol pioneered living roof systems in New Zealand with a green roof completed on Takaro Lodge, Te Anau. A living roof is a roof first and foremost, and ARDEX has been a market leader in membrane roofing since the early seventies. ARDEX New Zealand Ltd has decades of experience in manufacturing and installing membrane roofs.

Buildings that blend with, instead of disrupting the natural landscape are seen in communities around the world and are being specified now in New Zealand more than ever before. Living roofs achieve a natural synergy with the environment, creating a new functionality particularly for buildings in developed urban areas.

Low slope roofs with ARDEX membranes provide the perfect substrate for a 100% waterproof living roof. Choose from a custom designed ARDEX Butynol Living Roof or an ARDEX TPO Living Roof that is welded on-site. Quick to install, single ply and light weight, ARDEX Living Roof Systems are a cost effective alternative to a bitumen system. They also give a substantial weight saving compared to a bitumen system (two layers of torch on membrane), reducing the load requirements for a building significantly.

**Roofing Experts** ARDEX have been in the roofing industry for over 50 years

**Living Roof Expertise** Pioneered 40 years ago

**Number of Options** Loose laid, mechanically fixed or ballasted

**Fast Installation** Single ply systems, can be loose laid

**Cost Effective** Compared with a bitumen green roof system

**Light-Weight Roof** Costs reduced due to lower load requirements of roof

**Specialist Systems** Applicators require training in ARDEX Green Roof Systems

**Green Star Building** VOC compliant for Green Star Building

**Non-Carcinogenic** Compared to bitumen – what's green about a roof with carcinogens?



The chalets at Takaro Lodge, Te Anau are an early example of living roofs using ARDEX Butynol as a waterproofing membrane. Completed in 1970.



## COMPONENTS OF A LIVING ROOF SYSTEM



**PLANT LIFE** A variety of plants will thrive in a living roof environment. Aggressive flaxes, rizons and bamboo are to be avoided however.

**SOIL & GROWING MEDIUM** Soil is either taken from surrounding areas or obtained from plant life suppliers.

**SAND** Sand is optional in a living roof system. It depends upon the needs of the plant life.

**GEOTEXTILE** A geotextile is used to stop fines clogging the drainage layer.

**VERSICELL DRAINAGE SYSTEM** The VersiCell drainage system is recommended by ARDEX due to superior load support capabilities and free flow construction. The drainage layer ensures collected rain or irrigation water is flows promptly to roof outlets.

**WATERPROOFING MEMBRANE** ARDEX recommends ARDEX TPO and ARDEX Butynol for Living Roof systems. Both membranes have welded seams and there is no risk of adhesive failure due to constant immersion.





## ARDEX BUTYNOL LIVING ROOF SYSTEM



ARDEX Butynol Roofing Membrane is manufactured in Christchurch, New Zealand made, for New Zealand conditions, Butynol is a flexible rubber roofing membrane that is renowned for its strength, versatility and watertightness. In the waterproofing industry, Butynol has an unmatched track record of success.

Choose a custom living roof system. Butynol is welded in the factory and on-site to meet the requirements of individual projects. A proven quality product, an ARDEX Butynol Living Roof System comes with a 20 year materials warranty.



The McGregor House in Wanaka, by Richard Wilden Design Dunedin, has a unique bell shaped green roof.

### Projects of any size

Large commercial buildings or residential homes.

### Quality Assurance

Decades of experience manufacturing Butynol, technical assistance on site.

### Fast track system

Quick to install, Butynol can also be applied on green concrete.

### System Options

Loose laid or fully adhered system available.

### Water permeability

Better water permeability resistance than other types of membrane.

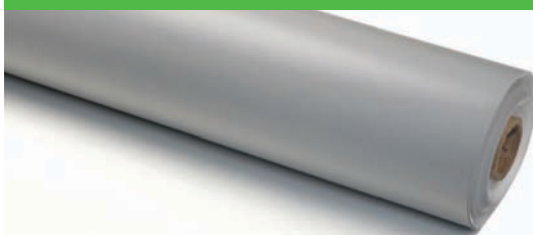
### Potable Water Quality

Butynol is suitable for roofs which are used for collecting water supplies, and therefore the plants in a green roof are growing in a non-toxic environment.

### Resistant to fertilisers

Butynol is resistant to commonly used fertilisers and chemicals, meaning the membrane remains unaffected.

## ARDEX TPO LIVING ROOF SYSTEM



### Best suited to large projects

Cost effective for commercial installations.

### Oversize rolls

Less welds per metre of roof area due to wide sheet lengths.

### Quality Assurance

Decades of experience manufacturing Butynol, technical assistance on site.

### System Options

Fully bonded, ballasted or mechanically fastened roofing system.

### Root Penetration Resistance

Successfully passed the FLL test for root penetration resistance for green roofs.

### Additions, alterations or repairs made easy

No need for adhesives or sealants on patches. Additions or accidental damage can be welded to restore the membrane.

A lightweight, flexible, scrim-reinforced membrane, ARDEX TPO is engineered to provide dependable performance in most commercial roofing applications. An ARDEX TPO Living Roof is an excellent choice as the system can be installed and welded on site, ensuring absolute weathertightness of the substrate. The scrim-reinforced membrane combines the durability of rubber with the heat weldability of a thermoplastic in a flexible sheet with excellent installed characteristics.

Below: Membrane seams are welded on-site with an automatic Varimat Leister  
Below Right: A variety of plant life can grow on an ARDEX TPO Living Roof



## ENVIRONMENTAL BENEFITS



### Reduce heat gain in summer and heat loss in winter

Plants reduce the heat released by buildings into the environment, reducing the overall heat absorption of the building. Living roofs also act as insulation to keep heat within the building during cooler months.

### Reduction of energy costs

Excellent natural insulation properties to help to keep the cold out in winter and the heat out in summer.

### Storm water management

Through water retention and increased evaporation.

### New habitats for plants & animals

Green roofs create a natural habitat for local wildlife.

### Improved air quality

Purification of the air by filtering dusts and pollutants and converting CO<sup>2</sup> into oxygen.

### Reduction of noise pollution

Excellent sound insulators reducing the noise pollution external sources.

Above (and front cover): Takaro Lodge, Te Anau

Right: The Sans Souci Inn at Pohara, Golden Bay. The green roof blends into the subtropical landscape emphasising the ecological architecture.

## CHOOSE A LIGHT WEIGHT LIVING ROOF SYSTEM

Reduce costs by choosing a light weight living roof system. Whichever ARDEX membrane used, either ARDEX TPO or ARDEX Butynol, you can be sure you are choosing a light weight roofing membrane. This reduces the load requirement of the roof, which cuts down on structural costs. Considering the membrane is then going to be covered by soil, stones and plants, it makes sense to reduce the weight of the roof where possible.



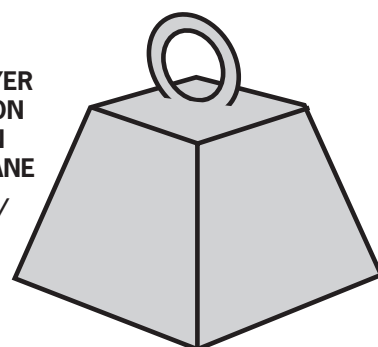
**ARDEX BUTYNOL**  
= 1.2kg / square metre

**VS**



**ARDEX TPO**  
= 1.6 kg / square metre

**TWO LAYER TORCH-ON BITUMEN MEMBRANE**  
= 8.7kg / square metre



## TURN A LIVING ROOF INTO A WARM ROOF

Due to the superior waterproofing of ARDEX Butynol and ARDEX TPO, a living roof system can also be turned into a warm roof. By adding a layer of insulation under the membrane the living roof can be completely isolated from the substrate. This adds substantial heat retention to the building, or in warmer climates, reduces the effect of solar gain.

ARDEX works in conjunction with New Zealand's leading supplier of extruded insulation boards (XPS or PIR) to supply a full and complete warrantable system for warm and living roofs. Contact an ARDEX technical representative for a complete specification for your project.



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