Crommelin

Waterproofing

Liquid Applied
Membrane Technology

Performance Through Experience

Established in 1958, Crommelin is Australian owned with over 50 years experience in engineering and manufacturing innovative, user-friendly, waterproofing and sealing systems for the construction industry.

Crommelin's proven project history in Australia and throughout Asia, together with our innovation places the company at the head of our industry.

R&D Leadership

Crommelin are proven industry leaders in the development of waterproofing technology.

The company has received the Australian Government Industry R&D Award for 'Waterborne Liquid Applied Waterproofing Technology'.

Advantages of Liquid Applied Membranes

Crommelin liquid applied membranes dry to form a permanent highly flexible barrier that enables construction joints and penetrations to be detailed, allowing for extensive movement.

As seamless tanking systems, Crommelin membranes are more reliable than sheet membranes by overcoming the problem of overlap breaks that can occur between lapping areas of sheet membranes.

Liquid membrane technology avoids the difficulty in detailing of sheet membrane around complicated construction profiles.

Crommelin liquid membrane technology provides a complete and intimate bond to substrates, eliminating the ability of water to migrate between the membrane and substrate.

Importance of Standards

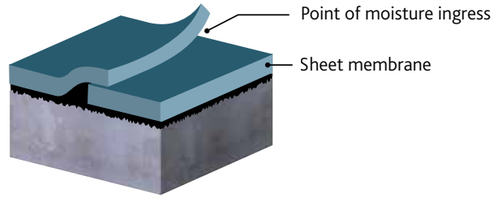
Australia has developed a number of key design and performance-based standards for waterproofing, namely:

- AS 4654 – Waterproofing Membrane Systems for Exterior Use
- AS 3740 – Waterproofing of Domestic Wet Areas
- AS 4858 – Wet Area Membranes
- AS 4020 – Products for Use in Contact with Drinking Water

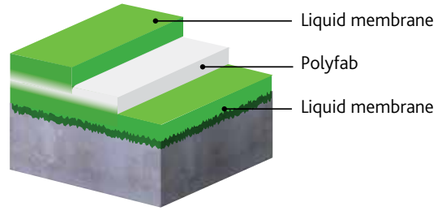
Furthermore, AS 3740 is incorporated as a requirement of the Building Code of Australia.

Crommelin are committed to independently testing and ensuring all relevant waterproofing systems meet these and other key internationally recognised standards.

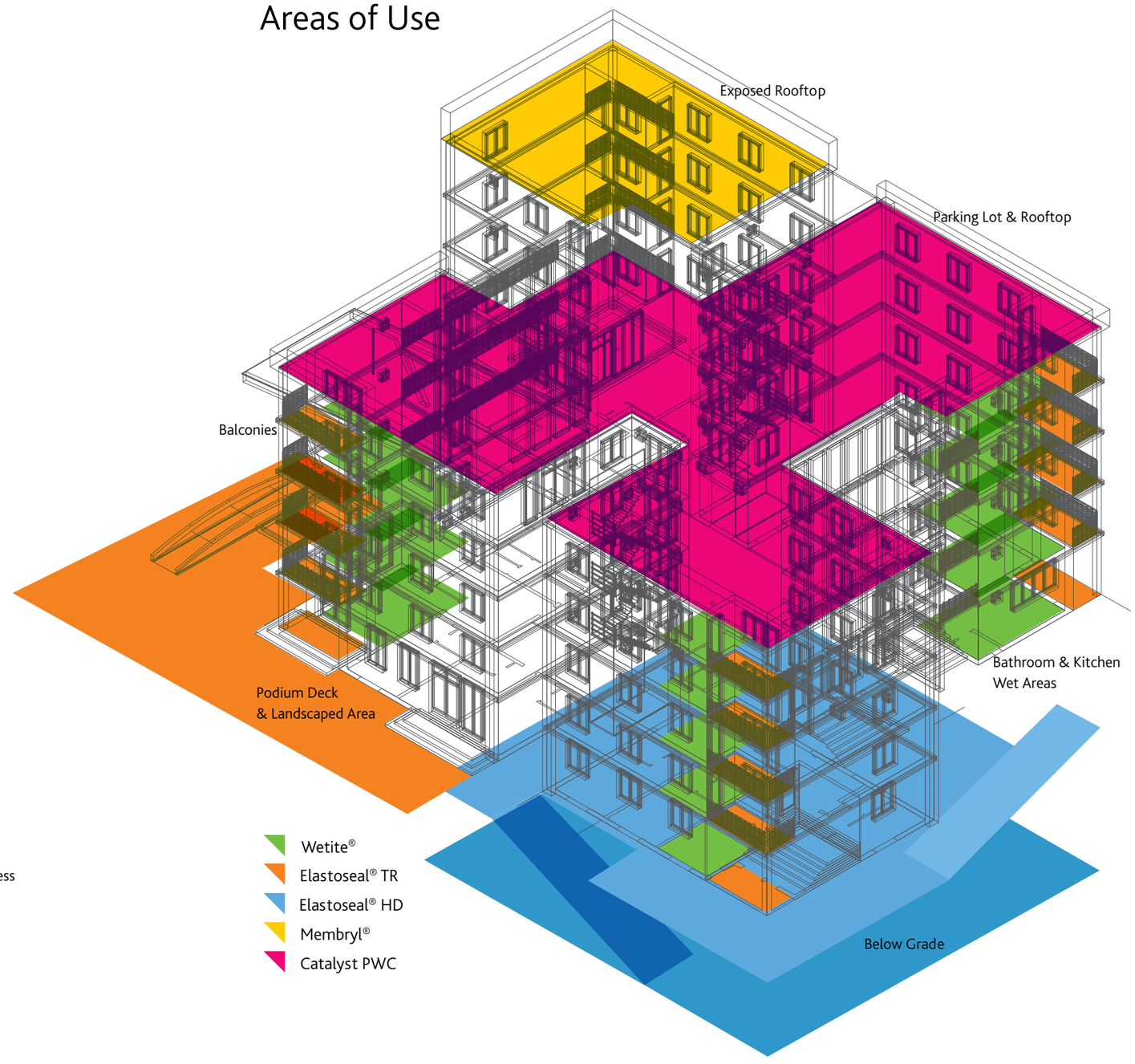
Typical sheet membrane



Liquid applied membrane



Areas of Use



The increasing complexity of building and construction has resulted in a wide variety of different materials and interfaces.

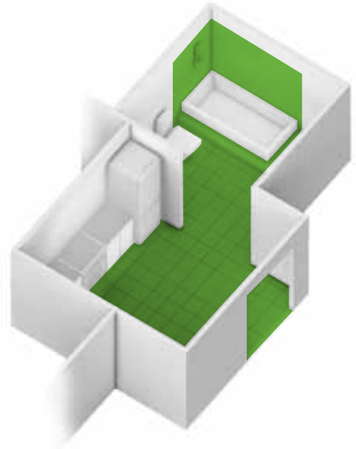
Crommelin waterproofing systems are engineered to accommodate most designs and construction details in the key risk area in any building.

- Exposed areas (roof areas, building facades, etc)
- External protected areas (balconies, plaza decks, roof gardens, etc)
- Internal wet areas (bathrooms, showers, laundries, etc)
- Below grade areas (basements, car parks, retaining walls, etc)

Wetite®

Wet area membrane

Engineered for use under tiled finishes or screeds in wet areas. A waterborne synthetic rubber membrane incorporating a rough keyed finish to promote strong bonds to all subsequent toppings.



Areas of Use

- Bathrooms
- Shower recesses
- Balconies
- Water bodies (i.e. tiled pool areas)
- Laundries and kitchens
- Concrete, cement render, plaster
- Wet area wall lining board
- Fibre cement sheet / flooring
- Brick
- Light weight aggregate block
- Plasterboard, Gyproc
- Plywood / particle board flooring

Features and Benefits

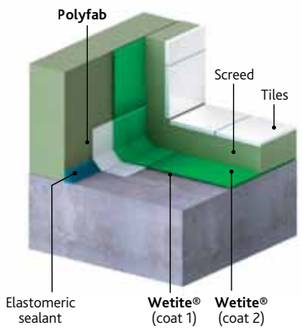
- Tested as Class III membrane to AS 4858
- Complies with Building Code of Australia FP1.4 and FP1.7 and P2.2.2 and P.2.4.1
- CSIRO accreditation to AS 3740
- Low VOC content
- High permanent flexibility – accommodates cracking in substrates
- Excellent adhesion to a wide variety of substrates
- Dries to a keyed finish to promote adhesion with tile adhesives
- Single pack
- Quick drying
- Safe and easy to use
- Designed for use with a bond breaker
- Excellent chemical resistance

Technical Data

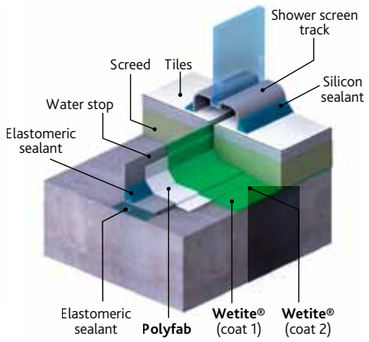
Number of coats	2
Spreading rate per coat	2m²/L
Curing time	48 hours
Colour	Green
Wet film per coat	500 microns
Recoat @25ºC	2–4 hours
Thinner	Water
Shelf life	12 months

Wetite® Project Reference: Waterfront Apartments, India

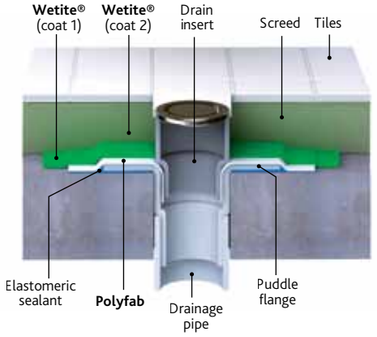
Wall & Floor Junction



Hobless Shower



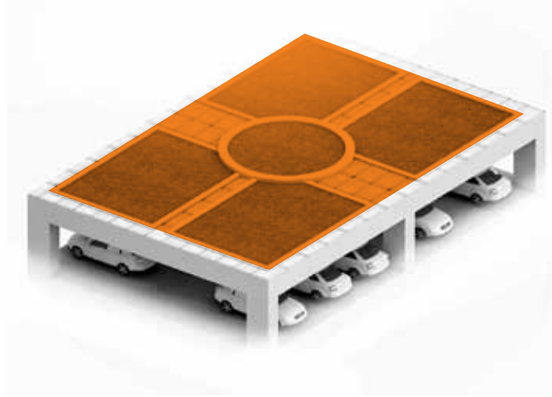
Drainage Termination



Elastoseal® TR

Podium deck, landscape areas and roof terrace membrane

Elastoseal® TR is a high performance waterborne synthetic rubber membrane, designed to offer permanent waterproofing to protected areas subject to ponding and immersion.



Areas of Use

- Podium deck areas
- Roof gardens
- Roof terrace areas
- Balconies
- Gutters
- Concrete, cement render
- Plywood & cement fibreboard
- Brick & light weight aggregate block
- Steel and aluminium

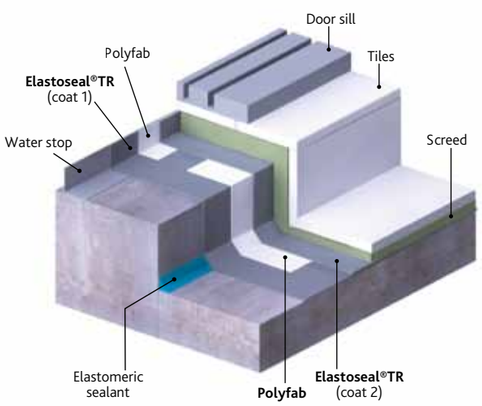
Features and Benefits

- Tested as Class III membrane to AS 4654.1
- High permanent adhesion strength and elongation (>330%)to accommodate thermal and structural movement
- Tested as suitable for pedestrian traffic AS 4654.1
- Tested as suitable for collection & storage of drinking water AS 4020
- Excellent chemical and biological resistance
- May be reinforced with Polyfab for increased puncture resistance
- Safe and easy to use
- Quick drying
- Excellent crack bridging properties
- Easy to repair
- Low VOC

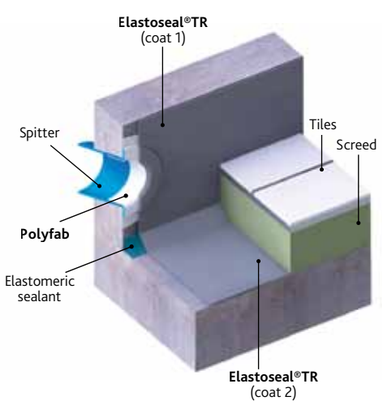
Technical Data

Number of coats	2
Spreading rate per coat	1.5m²/L
Curing time	48 hours
Colour	Light Grey
Wet film per coat	667 microns
Recoat @25ºC	2 hours
Thinner	Water
Shelf life	12 months

Balcony Door Sill



Flashing of Penetrations

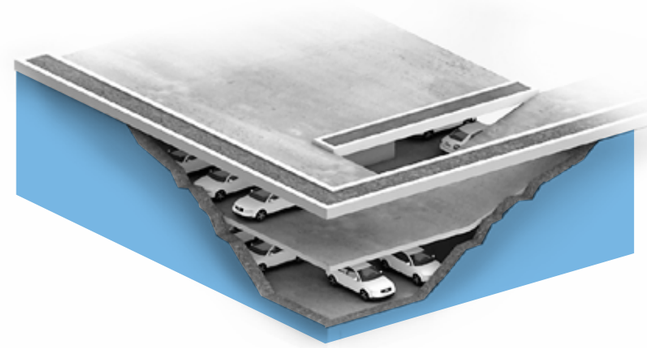


Elastoseal® TR Project Reference: EON Knowledge Park. India

Elastoseal® HD

Below grade membrane

Elastoseal® HD is an ultra high elongation waterborne neoprene membrane with extremely low water permeability. Engineered for below grade waterproofing to accommodate significant structural movement.



Areas of Use

- Below grade car parks
- Basements
- Retaining walls
- Landscaped decks
- Planter boxes
- Grey water & sewerage tanks

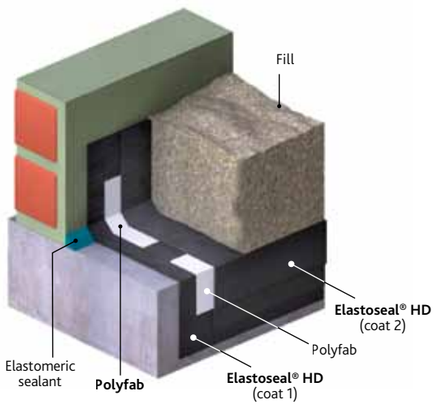
Features and Benefits

- 1300% elongation to accommodate structural movement
- Excellent adhesion to substrates
- Good chemical resistance
- Easy to repair
- Can be reinforced with Polyfab for mechanical strength & puncture resistance
- Suitable for permanent contact with drinking water to AS 4020
- Resistant up to 100m head of hydrostatic pressure
- Safe and easy to use
- Low VOC

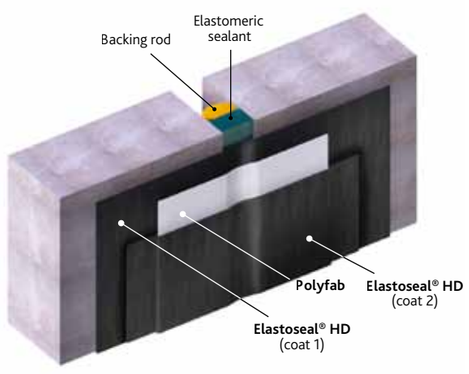
Technical Data

Number of coats	2
Spreading rate per coat	1m²/L
Curing time	72 hours
Colour	Black
Wet film per coat	500 microns
Recoat @25ºC	2–4 hours
Thinner	Water
Shelf life	12 months

Below Grade Footing



Vertical Slab Joints

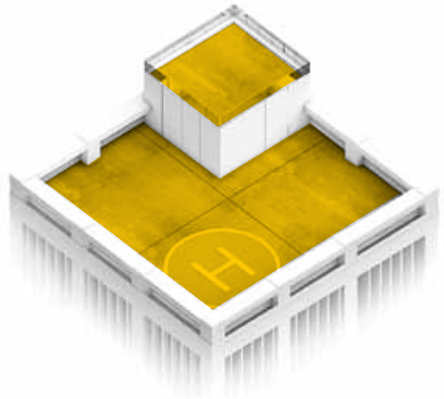


Elastoseal® HD Project Reference: Sukhothai Hotel, Thailand

Membryl®

Long term UV exposure membrane

Membryl® is a high-build waterborne acrylic membrane designed to provide reliable crack bridging and anti-carbonation protection of concrete.



Areas of Use

- Concrete roof areas
- External walls – concrete, concrete block, brick and other masonry surfaces
- Internal walls

Features and Benefits

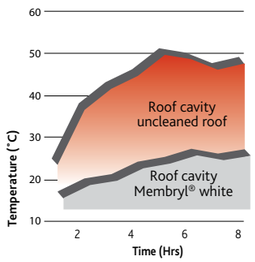
- Very high adhesive strength – no primer required on most surfaces
- High build - bridges fine cracks
- Resistive to impact and traffic damage
- Provides anti-carbonation protection of concrete
- Tough – high tensile strength and hardness
- Allows substrate to breathe
- Fungal and algal resistive – an extended life and clean appearance in high humidity environments
- Fire and flame resistive
- Chemical attack resistive
- Decorative – available in a wide range of durable colours
- Excellent resistance to dirt pick up

Technical Data

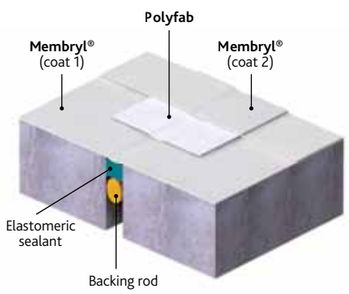
Number of coats	2 – 3
Spreading rate per coat	1.6 – 4.8
Curing time	48 hours
Colour	Range of colours
Wet film per coat	675 – 210
Recoat @25ºC	4–6 hours
Thinner	Water
Shelf life	12 months

CoolRoof™ Technology

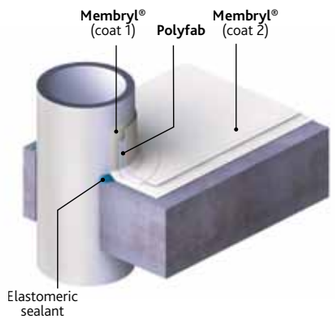
The heat reflective technologies incorporated in Membryl® aid in reducing internal air temperature of treated building by 20%. This in turn reduces energy consumption required for cooling.



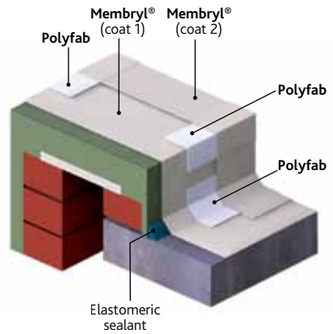
Expansion joint



Exposed Rooftops



Parapet Wall



Membryl® Project Reference: Fremantle Maritime Museum, Australia

Catalyst PWC

Penetrating crystalisation treatment

Catalyst PWC is a biochemical modified silicate solution that provides long-term waterproofing and durability benefits to concrete. It penetrates into concrete and reacts with free calcium and water to form a water insoluble calcium silicate hydrate gel complex in cracks, pores and capillaries.

Areas of Use

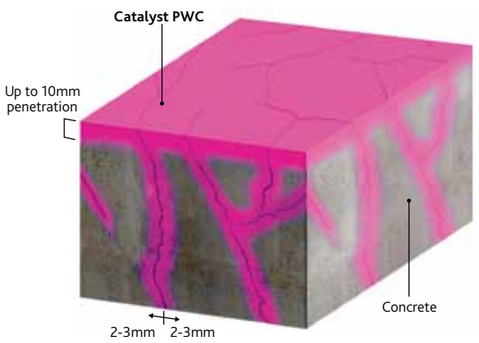
- Car parks
- Bridge decks
- Wharf decks
- Airport runways, taxiways & aprons
- Potable water tanks
- Viaducts
- Water treatment works
- Cut and cover tunnels
- Precast elements & panels

Features and Benefits

- Long term performance. No re-application or future maintenance required
- 100% trafficable after the first watering. Minimal risk of damage during construction or thereafter
- Suitability for tanking applications (positive hydrostatic pressure)
- Fault finding. If stubborn cracks are present they are easy to find and fix. No lifting of membranes required
- Permanently seals existing cracks to 2.00mm
- Reseals future hairline cracking
- Increases surface hardness
- Allows moisture vapour permeability

Technical Data

Number of coats	1 treatment
Spreading rate per coat:	
Normal	5m²/L
Smooth, dense surfaces	6m²/L
Rough, dense surfaces	4m²/L
Cracked areas	5m (lineal)/L
Curing time	48 hours
Colour	Clear
Thinner	Water
Shelf life	12 months



Technical Data

Properties	Test Method	Test Results	
Water Permeability (.5 N/mm 72 hrs)	Testech Sdn Bhd 3/6/01 SETSCO 28/6/02	40-50% reduction 50% reduction	
Crack Sealing	Testech S/B 28/8/02	1.5 – 2.0 mm in whole of block crack. Unable to test enclosed crack	
Resealing after forced failure	Testech S/B 28/8/02	Block reclamped after first failure; water only applied, a seal was achieved and the clamp removed.	
pH	Warnock Hersey 26/1/89	11.9 Resistant to acids at 2.4 and alkalis at 11.5	
		Untreated	Treated
Chloride Ion Penetration	Testech S/B 28/4/00 Warnock Hersey 26/1/89	0.433 0.459	0.036 0.199
Compressive Strength	Testech S/B 14/6/01 12/7/01 SETSCO 28/6/02	35.0 38.5 43.5	43.5 45.0 49.0
Hardness (Moh Scale using James Scratch Test)	Testech S/B 28/4/00 Grade 25 20/8/00 Screed 3:1 Screed 4:1 Screed 5:1 14/6/01 Grade 25 (With Nylon fibre) Warnock Hersey 26/1/89 Grade 40	4.5 4.3 3.5 3.1 4.9 6.0	6.3 6.0 4.9 4.3 6.1 6.8
Water Absorption	Testech S/B 31/7/01 SETSCO 28/6/02	0.67% 0.6	0.22% 0.4
Water Penetration	SETSCO 28/6/02	51.1	13.8

Catalyst PWC Project Reference: Multi-story car park, Australia

Polyfab

Reinforcement for all membranes

Polyfab is a non woven, rot proof polyester fabric for use in conjunction with liquid waterproofing membranes. It is easier to wet out and possesses superior flexibility to materials such as fibreglass.

Features and Benefits

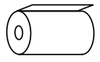
- Bridges gaps
- Strengthens membranes by increasing tensile strength and puncture resistance
- Flexible
- Outstanding conformability
- High grab tensile strength

Areas of Use

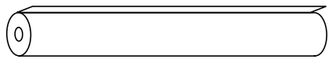
- Plaza decks
- Roof areas
- Flashings
- Balconies and terrace areas

Polyfab
100mm width
50m length

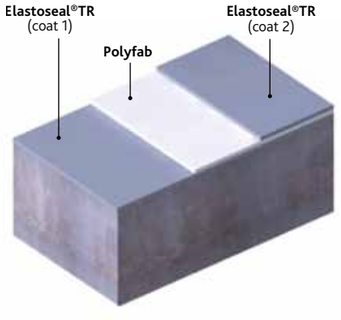
Polyfab
200mm width
50m length



Polyfab
1200mm width
50m length



Polyfab Application



Polyfab BB

Bond breaking reinforcement for all membranes

Polyfab BB is a 100mm wide self-adhesive non-woven polyester fabric. It incorporates a self-adhesive portion that acts as a bond-breaker over joints, cracks or other areas of movement.

Features and Benefits

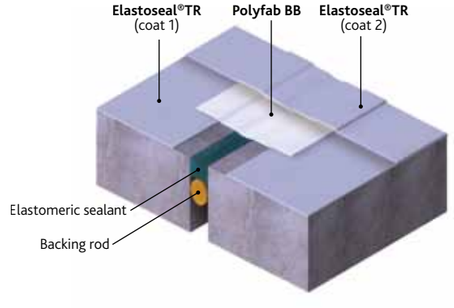
- Breaks bond of membrane system to allow movement at joints
- Bridges gaps
- Strengthens membranes by increasing tensile strength and puncture resistance
- Outstanding conformability
- High grab tensile strength
- Rot proof when buried
- Flexible

Areas of Use

- Expansion joints
- Wall/floor junctions
- Penetrations
- Cracks in substrates

Polyfab BB
with bond breaker
100mm width
50m length

Polyfab BB Application



Technical Data

Test	Test Method / Standard	Wetite®	Elastoseal® TR	Elastoseal® HD	Membryl®
Abrasion Resistance	ASTM D1242		0.17mm – Pass for Pedestrian traffic		0.18mm – Pass for Pedestrian traffic
Biological Resistance Fungal 1 month (accelerated) Algal 6 months (accelerated)	Thor In house Accelerated Testing				Protected Protected
Chemical Resistance Test strips immersed for 7 days before visual examination: Dilute Acids Dilute Alkali Salt Solutions	Immersion for 7 days, Taywood In house test method	 < 10% < 10% Good	 <10% <10% Good		 3 hours – no change 3 hours – no change
Cyclic Movement	CSIRO Moving Joint Test	PASS – 50 cycles @ 130% elongation	PASS – 50 cycles @ 130% elongation		Pass – 50 cycles @ 70% elongation
Diffusion Coefficient (H20)	ASTM E96-80			5.8 x 10^{-5} cm^2 sec^{-1}	4.3 x 10^{-5} cm^2 sec^{-1}
Diffusion Resistance Coefficient (μ)	ASTM E96-80			4000	5920
Direct Tension Adhesion Strength	ASTM D45-41	2.0N/mm^2	1.4N/mm^2	1.8N/mm^2	2.0N/mm^2
Durability (Water Immersion / Chemical Resistance)	AS 4654.1	PASS	PASS		
Dynamic Crack Bridging	BAN 2VT BEL – OS BEL -OS			5000 cycles at 10 cycles per minute. Displacement 0.15mm, no visible failure	
Elongation	ASTM D412-87	317%	350%	1295%	140%
Equivalent Air Layer Thickness (Sd)	ASTM E96-80			2.8m	1.21m
Fire Propagation Surface Spread of Flame	B.S. 476: Part 6 B.S. 476: Part 7				3.3 Fire Prop. Index Class 1
Hardness	ASTM D2240	29A			78A
Hydrostatic Head of Water: 25m 50m 100m	Taywood Engineering Ltd. Test Method 5.1 of 014H/90/4683			 2.4 x 10^{-13}m sec^{-1} 2.3 x 10^{-13}m sec^{-1} 1.1 x 10^{-12}m sec^{-1}	
Mandrel Bend Test	AS 1580.402 ISO 1519	Pass – no failure	Pass – no failure		Pass – no failure
Oxygen Diffusion Coefficient Carbon Dioxide Diffusion Coefficient Diffusion Resistance Coefficient (μ) Equivalent Air Layer Thickness (R) Equivalent Thickness of Concrete (Sc)	Taywood in-house test method Section 5.4 (Gas Dispersion Test)				2.9 x 10^{-7}cm2 sec^{-1} 4.9 x 10^{-7}cm2 sec^{-1} 305800 64m 16cm
Resistance to Boiling Water	8 hour periodic immersion in boiling water	Pass – No effect on physical properties			
Resistance to Puncture	ASTM E154-88			24.2N Extension 300mm+	
Temperature Resistance (5°C – 85°C)	AS 4654.1	PASS	PASS		
Tensile Strength	ASTM D412-87	3-4N/mm^2	3.2MPa	25.7N, 0.8MPa, 111 1b/$inch^2$	20N or 3.66MPa
UV Resistance	AS 1580.483.2		3500Hrs (7 years)		>4000Hrs
VOC	SCAQMD 304-91	28 g/L	26g/L	4g/L	14g/L
Water Absorption	AS 3558.1	2.73%	2.73%		
Water Permeability	ASTM E96				1.47 x 10^{-7}g/Pasm^2
Water Permeability (32MPa concrete substrate)	Taywood Engineering Ltd. Test Method 5.1 of 014H/90/4683			5.4 x 10^{-11}m sec^{-1}	
Water Vapour Transmission	ASTM E96	1g/m^2/24hr	1.8g/m^2/24hrs	15.7g/m^2/24 hours	35.6g/m^2/24 hours

Warranty

Consistent with the 50 year history of Crommelin, our management team is committed to providing all customers with sound technical advice, innovative products and acceptance of the responsibilities associated with our specifications and systems. Warranties of up to 15 years are issued following Quality Assurance procedures. They consist of tailored specifications, maintenance schedules and on-site support. Please contact Crommelin for further information.

Crommelin

Authorised Distributor

While the information contained herein is to the best of our knowledge, true and correct at the time of press, no warranty is given or implied in connection with and recommendation of or suggestion made by us or our representatives, as the conditions of use and any labour involved in application are beyond our control. Furthermore, the accuracy of the information contained herein may alter with any technical improvements.

Quality System
Quality Endorsed Company
ISO 9001
QEC 2115

Waterproofing & Sealing

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