AMCHEM
PRODUCTS PVT.LTD

With the perfect waterproofing...
Imagine the possibilities!

DRYTHANE®

Solvent Free, Thick Film, Liquid Applied, Polyurethane Waterproofing Membrane

Revision 06

OVERVIEW

Solvent Free Aromatic Polyurethane, Chemical Cure, ASTM D 16, Type V. Drythane® is a 100% Solids, two component Polyurethane Coating system that contains no solvents, noxious smells and is non-flammable. It has been formulated specifically as a high performance waterproofing membrane.

Drythane® provides lifelong protection to concrete and other masonry. Once coated, the surface is completely impervious to water. With Drythane®, you can create green and cool roofs of your dreams, with gardens, vegetation, water bodies, swimming pools etc.

Applied as a thick film (1.20 - 2.00 mm), this premium, high performance product has an expected service life of 30 years and more.

PRODUCT FEATURES

SEAMLESS MEMBRANE, EASY TO APPLY

Liquid polyurethane applied as a seamless, monolithic membrane to a thickness of 1.20 – 2.00 mm. Simply mix the two components, pour and spread using paint roller to specified thickness in one or two coats. Special two component 100% Solids Damp Tolerant Polyurethane Primer will seal concrete prior to application of Drythane® main coat. Can be applied even in high humidity environments.

IMPERMEABLE TO WATER, GOOD CHEMICAL RESISTANCE

Drythane® is completely impermeable to water and has very low water absorption in continuous immersion. Saturated weight gain < 0.60% as per Procedure 7.4 (Long Term Immersion) of ASTM D 570. This unique property allows it to be used for continuously damp or wet applications such as rooftop gardens, ponds, storage tanks, swimming pools etc. Drythane® is also highly resistant to a wide variety of Acid, Alkalis, Salts etc.

TOUGH, DURABLE FILM

Cured Drythane® film is a very tough, durable, elastomeric membrane with tensile strength of approx. 2,800 Psi and hardness of 65 Shore D! Cannot be damaged during normal use – hence no need for reinforcement or protection covering with masonry. Resists degradation from sunlight (UV), rain, heat & cold weather. Provides a long service life of 30 years and more. The coating is impervious to penetration by roots and puncture in normal usage. Liquid water cannot penetrate the coating, even at pressure of 100,000 N/m^2 (34 ft head) or more.

ELASTIC NATURE, CRACK SPANNING

Elastic membrane with > 90% elongation. It is unaffected by temperature cycling and will span cracks in concrete up to 2.50 mm. Using 0.50 mm Drythane® Plus as a base coat with 1.00 mm Drythane® as the top coat will increase the crack spanning of the combination to 10.0 mm+.

HIGH ADHESION

Bonds strongly to the substrate. In pull off tests, break takes place within the concrete and not at the interface. Unlike sheet applied materials, liquid water cannot intrude under the coating.

OPTIONAL REFLECTIVE TOP COAT

Heat insulation can be achieved by greening (with drainboard, soil and grass) the roof after installing Drythane®! If you do not want a green roof and want to reduce indoor temperatures, simply apply optional aliphatic, colour fast, heat reflective top coat over the Drythane® main coat. Drythane Aliphatic® has a Solar Reflective Index (SRI) of 110 and reduces roof temperature by 12-15°C in peak summers.

TYPICAL APPLICATIONS

- Roof Top, Podium, Terrace
- Basement Foundation and Walls
- Tunnels, Inspection Pits, Bridges
- Bathroom & Kitchen Foundation
- Water Storage Tanks (incl. Potable)
- Sewage Treatment Plants
- Swimming Pools
- Bridges, Inverted Roofs
- Car Decks, Balconies, Patios

PERFORMANCE PROPERTIES - MAIN COAT

Property	ASTM Standard	KTA* Test Result	
		Average	Best
Tensile Strength	D 412	2,487 Psi	2,908 Psi
Elongation @ Break	D 412	> 90.00%	123.80%
Crack Bridging 1.50 mm DFT	BS EN 1062-7	2.13 mm	2.57 mm
Crack Bridging 0.50 mm Drythane Plus and 1.00 mm Drythane	BS EN 1062-7	11.54 mm	9.96 mm
Hardness, Shore D	D 2240	64.2	
Water Absorption	D570, Para 7.4	0.59%	
Chemical Resistance	D 543 30 Days Weight Gain	10% H_2SO_4 = 0.26% 30% NaOH = 0.62% 30% NaCl = 0.19% Diesel = 10.8%	
Water Vapour Permeability	E 96	1.85 gms/M2/ Day	0.85 gms/M2/ Day
		0.208 Metric Perms	0.045 Metric Perms
		0.0138 Perm Inch	0.0066 Perm Inch
Flexibility	D 522	1.50 mm film passes 12 mm mandrel	
Abrasion Resistance CS-17, 1000 gm, 1000 cyl	D 4060	< 100 mg	
Adhesion to Concrete	D 4541	> Tensile Strength Of Concrete	

***KTA-TATOR Inc., USA, Report 330380-1, 390631 and 390850-R1**

P-IV PRIMER

A 100% solids damp tolerant, two component polyurethane primer with excellent adhesion to damp and dry concrete. Penetrates and reinforces concrete surface. Seals and prevents outgassing and pin-holing. Reacts with moisture present in the concrete.

PERFORMANCE PROPERTIES - REFLECTIVE COAT

Property	ASTM Standard	Test Result
Tensile Strength	D 638	> 2,550 Psi (17.6 MPa)
Elongation @ Break	D 638	> 85%
Tear Strength	D 624, Die C	> 300 Lbf/in (52.5 N/mm)
Hardness, Shore D	D 2240	> 60 Shore D
Abrasion Resistance CS-17, 1000 gm, 1000 cycles	D 4060	< 50 mgs.
Flexibility	D 522	1.50 mm film passes 12 mm mandrel
Water Absorption	D570, Para 7.4	< 1.50% Saturation Water Absorption

APPLICATION

CONCRETE :
Drythane® can be used directly over concrete with PIV primer. Allow new concrete to fully cure for a minimum of 28 days (a concrete dryness test should be performed before application). Remove defective concrete, honeycombs, cavities, joint cracks, voids and other defects by routing to sound material.

SURFACE PREPARATION:
Broom clean existing substrate. Clean substrate of contaminants such as laitance, dirt, debris, oil, and grease that can affect adhesion of Drythane® by water jet at minimum 3,000 psi. Remove existing coatings if any. Allow to dry thoroughly. Verify that existing substrate is dry before proceeding with application of Drythane®.

MIXING OF MATERIALS:
Use a heavy duty power drill with Jiffy Mixer attachment. Mix Resin for 1 minute before adding Activator. After adding Activator mix the combined materials for a minimum of 2 minutes moving the mix blade from top to bottom. Make sure to mix areas around side walls and bottom of pail. Improper mixing will result in non-curing material. Never fully invert empty pails in attempt to drain material. This will result in non-curing material. Do not break down kits into smaller quantities. MIX ENTIRE KIT. Do not keep main coat in bucket after mixing - pour onto the surface immediately and spread.

SAFETY:
100% Solids Polyurethane systems are solvent free eliminating solvent health hazards and flammability concerns. All safety precautions warranted by good industrial hygiene practices and regulated by local, state or central laws must be taken into consideration while applying these coatings.

PRIMING:
Substrate must be free of laitance, dust, oils and grease. Divide the surface to be coated into grids of 8 Sq.M each. Spread mixed materials using roller @ 1 Kit (0.80 L Resin + 0.80 L Activator)/ 8 Sq.m grid for 0.20 mm thickness. Protect primed area from rain and moisture.

COATING:
Divide the surface to be coated into grids of 8 Sq.M each. Spread mixed materials using notched trowel and then roller @ 1 Kit (6.22 Resin + 1.78L Activator)/ 8 Sq.m grid for 1.00 mm thickness. Before beginning application measure the dew point using a digital psychrometer and the surface temperature using non-contact IR thermometer. Avoid applying if the air dew point is less than 3°C below the ambient temperature. Avoid applying during times of rapidly rising temperatures (forenoon) or if inclement weather is imminent.

REINFORCEMENT: Drythane® normally requires NO reinforcement. However, if the surface is very rough or has voids Glass Mat/ Industrial Nylon Fabric reinforcement can be used. Fully embed reinforcement into wet base coat using a brush or roller until free of voids, wrinkles, air pockets, standing fibres, etc. Apply a second layer of base coat over the surface.

MATERIAL CHARACTERISTICS

SOLIDS VOLUME **100 percent**

MIX RATIO (Resin : Activator)	
Primer	1.0 : 1.0 By Volume
Main Coat	3.5 : 1.0 By Volume (or weight)
Reflective Coat White	2.5 : 1.0 By Volume

RECOMMENDED DRY FILM THICKNESS	
Primer	0.15 to 0.20 mm (single coat)
Main Coat	1.00 to 2.00 mm (1 or 2 coats)
Reflective Coat	0.30 to 0.50 mm (single coat)

COVERAGE (THEORETICAL)	
Primer	1 Sq.M @ 0.20 mm = 0.20 Litre
Main Coat	1 Sq.M @ 1.00 mm = 1.00 Litre
Reflective Coat	1 Sq.M @ 0.30 mm = 0.30 Litre

SPECIFIC GRAVITY (Kgs / Litre; Resin / Activator / Mixed)	
Primer	0.96 / 1.24 / 1.10
Main Coat	1.23 / 1.23 / 1.23
Reflective Coat White	1.44 / 1.15 / 1.36

CURE TIME (Temperature Dependent)	**Gel Time**	**Tack Free**
Primer	30-60 Mins.	90-150 Mins
Main Coat	30-60 Mins.	90-150 Mins
Reflective Coat	30-60 Mins.	90-150 Mins

COLOUR	
Primer	Clear Dark Brown.
Main Coat	Yellow, Green, Red, Brown, Cream, Grey
Reflective Coat	White. Other colours on request.

PACKING (Can Size / Contents) Litres: For retail sales only	
Primer	Resin (2.0/0.8), Activator (1.0/0.8)
Main Coat	Resin (10.0/6.22), Activator (2.0/1.78)
Reflective Coat	Resin (5.0/2.57), Activator (1.03/1.03)

STORAGE & SHELF LIFE
Temperature: Min. 4°C, Max. 50°C
Containers must be kept sealed in a dry environment.
12 months unopened drums. Roll Resin drums for 30 mins.

Distributor: