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With the perfect waterproofing...
Imagine the possibilities!

***DRYTHANE*[®] 400HE**

**Solvent Free, Thick Film, Liquid Applied,
Polyurethane-Polyurea Hybrid Waterproofing Membrane**

Revision 05



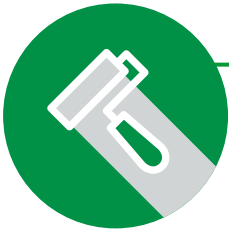
OVERVIEW

Drythane® 400HE is a 100% Solids (Solvent Free) two component hybrid coating system that contains no solvents, noxious smells and is non-flammable. It has been formulated specifically as high performance waterproofing membrane, either as a stand alone coat or base coat underneath Drythane standard. It 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 (0.50 - 1.50 mm), this premium, high performance product has an expected service life of 30 years and more.

PRODUCT FEATURES



SEAMLESS MEMBRANE, EASY TO APPLY

Liquid applied as a seamless, monolithic membrane to a thickness of 0.50 – 2.00 mm. Simply mix the two components, pour and spread using paint roller to specified thickness in one or two coats. Available in standard, vertical and spray variants. 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 < 0.80% 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 tough, durable, elastomeric membrane with tensile strength of >880 Psi and hardness of > 75 Shore A. Cannot be easily damaged during normal use – hence no need for reinforcement or protection covering with masonry in most cases. 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/m² (34 ft head) or more.

ELASTIC NATURE, CRACK SPANNING

Elastic membrane with 400% (+/-)10% elongation. It is unaffected by temperature cycling and will span cracks in concrete of 4.50 mm. Using 0.50 mm Drythane® 400 HE as a base coat with 1.00 mm Drythane® standard 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
- Bathroom & Kitchen Foundation
- Swimming Pools
- Basement Foundation and Walls
- Water Storage Tanks (incl. Potable)
- Bridges, Inverted Roofs
- Tunnels, Inspection Pits
- Sewage Treatment Plants
- Car Decks, Balconies, Patios

PERFORMANCE PROPERTIES - MAIN COAT

Property	ASTM Standard	Test Result - Typical		
		400 HE	Vertical Variant	Spray Variant
Hardness	D 2240	85 Shore A	85 Shore A	85 Shore A
Tensile Strength	D 638, Type IV, 500 mm/min	> 6 N/mm ²	> 6 N/mm ²	> 6 N/mm ²
Elongation @ Break	D 638, Type IV, 500 mm/min	400% (+/-) 10%	380% (+/-) 10%	360% (+/-) 10%
Crack Bridging Static ^{1.50 mm DFT}	BS EN 1062-7	4.50 mm (+/-) 10%		
Crack Bridging Dynamic	ASTM C 1305	-		
Tear Strength	D 624, Die C	> 15 N/mm		
Puncture Resistance	E 154	> 300 N		
Adhesion to Concrete	D 4541	Greater Than Tensile Strength Of Concrete		
Abrasion Resist. ^{CS-17,1000gm,1000 cyl}	D 4060	< 2 mg		
Water Absorption, ^{Long term}	D570, Para 7.4	0.72%		
Depth Of Water Penetration	EN 12390-8	Nil		
Resistance Hydrostatic ^{Head 7 Bar}	ASTM D 5385	Pass		
Chemical Resistance	D 543 30 Days Weight Gain	10% H ₂ SO ₄ = 0.58%		
		30% NaOH = 0.62%		
		30% NaCl = 0.48%		
Water Vapour Transmission Permeance Permeability	F 1249 50% RH, 23°C MOCON	1.25 gms/M ² / Day		
		0.105 Metric Perms		
		0.009 Perm Inch		

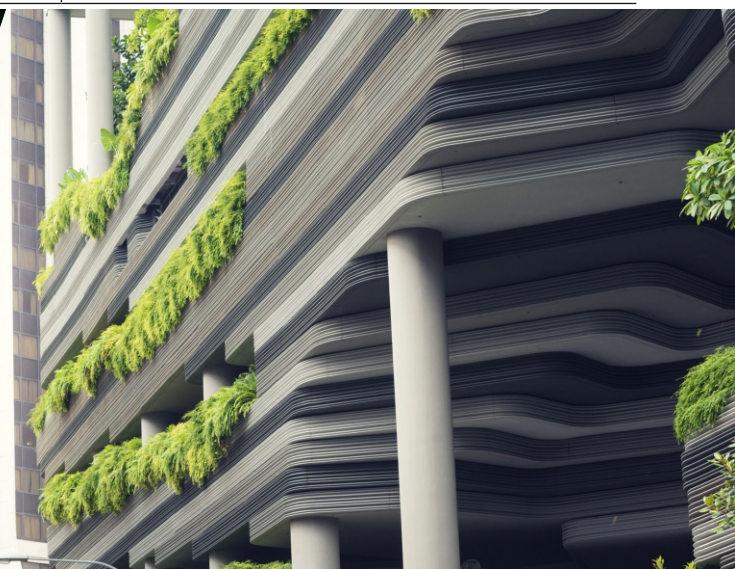
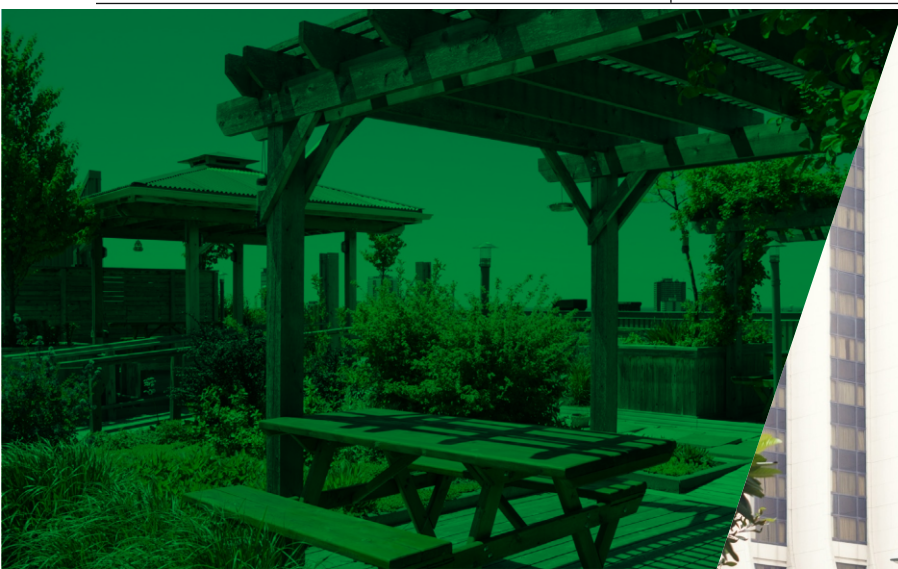
P-IV PRIMER

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



ABOUT AMCHEM

Amchem is the pioneering manufacturer of two component solvent free polyurethane coatings. We have a 30 year track record and have executed some of the largest Polyurethane coating projects in the world. We ship our coatings worldwide from our ISO 9001, 14001 and 45001 certified plants in NOIDA, a suburb of New Delhi India. To learn more about our company please scan the adjacent QR code or visit <https://bit.ly/3JP0ipR>



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.

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.

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®.

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 single coat for moisture level of up to 4%. For 4-8% moisture level apply another coat after 3 hour minimum interval. If the primed area is exposed to rain, dry with a clean cloth and apply a coat of 100 microns.

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 (3.24 Resin + 0.76L Activator)/ 8 Sq.m grid for 0.50 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. In case of rainfall after first coat, dry with a clean cloth and apply a primer coat of 75 microns. Allow to dry before applying second coat.

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

	Primer	Standard	Vertical Variant	Spray Variant
Solids Volume	100%	100%	100%	100%
Mix Ratio By Vol. (Resin : Act.)	1.00 : 1.0	4.25 : 1.0	4.25 : 1.0	4.00 : 1.0
Sp. Gravity Resin (Varies with colour)	0.96	1.08	1.08	1.08
Sp. Gravity Activator	1.24	1.22	1.22	1.22
Sp. Gravity Mixed (Varies with colour)	1.10	1.11	1.11	1.11
Recommended DFT	0.20 mm	0.50 - 1.50 mm	0.50 - 1.50 mm	0.50 - 1.50 mm
Coverage Litres/M2 (at recomm. DFT)	0.20	0.50 - 1.50	0.50 - 1.50	0.50 - 1.50
Recommended DFT (as base coat)	N.A	N.A	N.A	N.A
Coverage Litres/M2 (as base coat)	N.A	N.A	N.A	N.A
Can Size Resin (Gross, Litres)	2.00	5.00	5.00	200.00
Can Content Resin (Nett., Litres)	0.80	3.24	3.24	200.00
Can Size Activator (Gross, Litres)	1.00	1.00	1.00	200.00
Can Content Activator (Nett., Litres)	0.80	0.76	0.76	200.00
Gel Time (Temperature Dependent)	30-60 mins.	30-60 mins.	30-60 mins.	6-8 mins. (Customizable)
Tack Free Time (Temp. Dependent)	90-150 mins.	90-150 mins.	90-150 mins.	45-60 mins.
Storage & Shelf Life	Temperature: Min. 4 C, Max. 50 C. Keep sealed cans indoors and dry. Shelf life of unopened cans is 12 months.			

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