

## Acrylic-Modified Adhesive and Base Coat

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### Description

Primus is a 100% acrylic-modified product, which is field mixed in a 1 to 1 ratio by weight with Portland cement to produce the Primus mixture.

### Uses

The Primus mixture is used to adhere insulation board to an acceptable substrate and to embed Dryvit reinforcing mesh as part of the base coat for Dryvit systems. The Primus mixture can also be used as a skim coat to produce a smooth level surface on masonry or concrete.

### Coverage

Approximately 110 ft<sup>2</sup> (10 m<sup>2</sup>) of surface area per 60 lb (27 kg) pail. This includes adhesive and base coat layers.

### Properties

**Working Time** - After mixing, the working time of the Primus mixture is approximately 1 to 3 hours depending on ambient conditions.

**Drying Time** - When used to bond expanded polystyrene insulation board to an acceptable substrate, a period of 24 hours must elapse to allow the Primus mixture to form a positive bond. The installed insulation board should not be worked on while the Primus mixture is curing.

Drying time of the Primus mixture is dependent on the air temperature and relative humidity. Under average drying conditions [70 °F (21 °C), 55% R.H.], the Primus mixture will dry in 24 hours. Protect work from rain for at least 24 hours. Being a cementitious product, the Primus mixture develops full strength in 28 days.

### Testing Information

For individual test data on this product's properties, refer to the chart included with this document.

### Application Procedure

FOR COMPLETE APPLICATION INSTRUCTIONS, REFER TO THE APPROPRIATE DRYVIT SYSTEM APPLICATION INSTRUCTIONS.

**Job Conditions** - Air and surface temperature for application of the Primus mixture must be 40 °F (4 °C) or higher and must remain so for a minimum of 24 hours.

**Temporary Protection** - Shall be provided at all times until the adhesive, base coat, finish, and installation of permanent flashings, sealants, etc. are completed to protect the wall from inclement weather and other sources of damage.

### Acceptable Substrates

- Exterior grade gypsum sheathing meeting ASTM C 1396 (formerly C 79) requirements for water-resistant core or Type X core
- Exterior sheathing having a water-resistant core with fiberglass mat facers meeting ASTM C 1177
- Exterior fiber reinforced cement or calcium silicate boards
- Unglazed brick, cement plaster, concrete or masonry
- Galvanized expanded metal lath 2.5 or 3.4 lbs/yd<sup>2</sup> (1.4 or 1.8 kg/m<sup>2</sup>) installed over a solid substrate

### Surface Preparation

- Surfaces must be above 40 °F (4 °C) and must be clean, dry, structurally sound and free of efflorescence, grease, oil, form release agents and curing compounds.
- The substrate shall be flat within 1/4 in (6.4 mm) in any 4 ft (1.2 m) radius.

**Mixing** - Thoroughly mix the Primus material with Type I or Type II Portland cement at a 1 to 1 ratio by weight. Allow the mixture to set for 5 minutes. Retemper, adding a small amount of water to achieve the desired workability.

### Application

**Adhesive** - For application over **sheathing substrates**, use a stainless steel notched-trowel with notches measuring 3/8 in (9.5 mm) wide, 1/2 in (12.7 mm) deep spaced 1 1/2 in (38 mm) apart. Apply the Primus mixture on the back side of the insulation board and scrape the excess adhesive from between the adhesive beads. The adhesive beads shall be applied so that they run vertically when the insulation board is placed on the wall.

For application over **non-sheathing substrates**, the notched-trowel application as described previously is acceptable or a ribbon and dab application may be used. With a stainless steel trowel apply a ribbon of the Primus mixture 2 in (51 mm) wide x 3/8 in (9.5 mm) thick around the entire perimeter of the insulation board. Place eight dabs of the Primus mixture 3/8 in (9.5 mm) thick by 4 in (102 mm) in diameter approximately 8 in (203 mm) on center to the interior area.

**CAUTION: Do not install the Primus mixture directly on the substrate.** Immediately place the insulation board on the substrate, ensuring that no Primus mixture gets into board joints. Do not allow the Primus mixture to form a skin before positioning the insulation board on the substrate as it will affect the bond strength.

**Base Coat** - For base coat application, all insulation board irregularities greater than 1/16 in (1.6 mm) must be sanded flush. Apply the Primus mixture to the entire surface of the insulation board. Fully embed the Dryvit reinforcing mesh in the wet base coat troweling from the center to the edge of the reinforcing mesh so as to avoid wrinkles. The reinforcing mesh shall be continuous at all corners and lapped or butted in accordance with Dryvit's recommendations.

The overall minimum base coat thickness shall be sufficient to fully embed the reinforcing mesh. The recommended method is to apply the base coat in two applications. All areas requiring higher impact resistance shall be detailed on the plans and described in the contract documents. The application shall be in accordance with Dryvit's recommendations.

**Clean Up** - Clean tools with water while the Primus mixture is still wet.

**Storage**

Primus must be stored at a minimum of 40 °F (4 °C) and a maximum of 100 °F (38 °C) in tightly sealed containers protected from weather and out of direct sunlight.

**Cautions and Limitations**

- Clean potable water may be added to adjust workability. Do not add water until after the cement is thoroughly mixed. Do not overwater.
- Use only Type I or Type II gray or white Portland cement.
- The Primus mixture shall not be used to adhere EPS directly to wood based substrates.
- Avoid applying Primus in direct sunlight. Always work on the shady side of the wall or protect the area with appropriate shading material.
- For base coat applications over EPS, do not apply the Primus mixture in thicknesses exceeding 1/8 in (3.2 mm).

**Technical and Field Services**

Available on request.

Primus® Testing			
Test	Test Method	Criteria	Results
Surface Burning Characteristics	ASTM E 84	ICC and ANSI/EIMA 99-A-2001 Flame Spread <25 Smoke Developed <450	Passed
Water Vapor Transmission	ASTM E 96 Procedure B	ICC: Vapor Permeable No ANSI/EIMA Criteria	26 Perms
Accelerated Weathering	ASTM G 154 Cycle 1 (QUV)	ANSI/EIMA 99-A-2001 2000 hours: No deleterious effects <sup>1</sup>	5000 hours: No deleterious effects <sup>1</sup>
	ASTM G 155 Cycle 1 (Xenon Arc)	ICC: 2000 hours: No deleterious effects <sup>1</sup>	2000 hours: No deleterious effects <sup>1</sup>
Freeze-Thaw Resistance	ASTM E 2485 (formerly EIMA 101.01)	ANSI/EIMA 99-A-2001 60 cycles: No deleterious effects <sup>1</sup>	90 cycles: No deleterious effects <sup>1</sup>
Water Resistance	ASTM D 2247	ICC and ANSI/EIMA 99-A-2001 14 days: No deleterious effects <sup>1</sup>	42 days: No deleterious effects <sup>1</sup>
Tensile Bond <sup>2</sup>	ASTM C 297/E 2134 (formerly EIMA 101.03)	ICC and ANSI/EIMA 99-A-2001 Minimum 15 psi (104 kPa)– substrate or insulation failure	>15 psi (104 kPa)
Transverse Wind Load	ASTM E 330	Wall assembly shall withstand positive and negative wind loads as specified by the building code	Minimum 90 psf (4.3 kPa) <sup>3</sup> 16 inch o.c. framing, 1/2 in sheathing screws attached at 8 in (203 mm) o.c.
Water Penetration	ASTM E 331	No water penetration beyond the inner-most plane of the wall after 2 hours at 6.24 psf (299 Pa)	Passed
Fire Resistance	ASTM E 119	No effect on the fire resistance of a rated wall assembly	Passed 1 hour Passed 2 hour
Ignitability	NFPA 268	No ignition at 12.5 kw/m <sup>2</sup> at 20 minutes	Passed
Full Scale Multi-Story Fire Test	UBC Std. 26-4 (formerly 17-6)	1. Resist vertical spread of flame within the core of the panel from one story to the next 2. Resist flame propagation over the exterior surface 3. Resist spread of vertical flame over the interior surface from one story to the next 4. Resist significant lateral spread of flame from the compartment of fire origin to adjacent spaces	Passed
Intermediate Multi-Story Fire Test	NFPA 285 (UBC 26-9)	1. Resist flame propagation over the exterior surface 2. Resist vertical spread of flame within combustible core/component of panel from one story to the next 3. Resist vertical spread of flame over the interior surface from one story to the next 4. Resist lateral spread of flame from the compartment of fire origin to adjacent spaces	Passed

1. No cracking, checking, rusting, crazing, erosion, blistering, peeling, or delamination when viewed under 5x magnification.

2. Sample consists of 1" EPS adhered to various substrates

3. All Dryvit components remain intact – for higher wind loads contact Dryvit Systems, Inc.

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