



## DEFENDAIR™ 200C Air and Weather Barrier Coating

Silicone liquid applied air and weather barrier

### Features & Benefits

- UV resistant – long term resistance
- Offers long-term air and water protection properties even when exposed to sunlight, rain, snow, or temperature extremes
- Excellent weatherability – temperature extremes of -15°F to 300°F
- Meets National Fire Protection Association (NFPA) Class A Fire rating
- NFPA 285 – Pass<sup>1</sup>
- Ease of installation – one coat installation
- Air tight – exceeds industry requirements
- Primerless adhesion on most substrates
- Solventless
- Elastomeric – accommodates building movement
- Seamless – cured membrane is continuous and does not form seams or laps
- Nail sealability
- Low VOC
- Compatibility – compatible with DOWSIL™ sealants, DOWSIL™ 123 Silicone Seal, DOWSIL™ Transition Strips, and DOWSIL™ Molded Corners

<sup>1</sup>NFPA 285, Standard Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Loading Bearing Wall Assemblies Containing Combustible Components, 2012 Edition – Passed in assembly tested.

### Applications

- Permeable air barrier used for new construction and renovation applications on many substrates including concrete, OSB, exterior sheathing, preformed panels, plywood, wood or steel stud walls.

### Typical Properties

Specification Writers: These values are not intended for use in preparing specifications. Values are based on 15 mil dry film thickness.

Test	Property	Unit	Result
ASTM <sup>1</sup> E2178	Air Permeance	cfm/ft <sup>2</sup>	< 0.0003 at 1.57 psf
		L/(s-m <sup>2</sup> )	< 0.0016 at 75 Pa
CAN/ULC <sup>2</sup> - S741	Air Permeance	L/(s-m <sup>2</sup> )	< 0.0019 at 75 Pa after UV exposure and conditioning (pass)

1. ASTM: American Society of Testing and Materials
2. CAN/ULC: Canadian/Unlimited Liability Corporation

## Typical Properties (Cont.)

Test	Property	Unit	Result
ASTM E2357	Assembly Air Leakage	cfm/ft <sup>2</sup>	< 0.000007 at 1.57 psf
CAN/ULC- S742	Assembly Air Leakage	L/(s-m <sup>2</sup> )	< 0.00003 at 75 Pa Class 1A
ASTM E283	Assembly Air Infiltration	cfm/ft <sup>2</sup>	< 0.01 at 1.57 psf
ASTM E331	Assembly Water Infiltration	Tested to 15 PSF	Pass - no leakage
ASTM E330	Assembly Structural Loading	Tested to 30 PSF and 45 PSF	Pass - no damage to air barrier
ASTM E96	Water Vapor Permeance Desiccant (Method A)	US Perms (ng/(m <sup>2</sup> -Pa-s))	10.1 (578)
	Water (Method B)	US Perms (ng/(m <sup>2</sup> -Pa-s))	26.6 (1521)
ASTM D1970, Section 8.9	Nail Sealability (Head of Water Test)		Pass
ASTM 1970, Section 8.6	Low Temperature Flexibility		Pass
ASTM E 84	Flame Spread		5
ASTM E 84	Smoke Develop		115 NFPA Class A, UBC Class 1
ASTM C1305	Crack Bridging		Pass
ASTM D 2369	Solids Content	% by volume	50
		% by weight	59
EPA <sup>3</sup> Method 24	Volatile Organic Content (VOC)	(g/L)	< 19
ASTM D4541	Pull Adhesion		
	Concrete	psi	> 120
	Fiberglass Mat Gypsum Sheathing	psi	> 40 (substrate failure)
ASTM D 412	Tensile Strength	psi (MPa)	> 200 (1.38)
ASTM D 412	Elongation	%	650
ASTM D2243	Freeze-thaw Resistance		No change
	UV Exposure/Resistance 5000 Hour Exposure: 8 Hour UV at 60°C – 4 Hour Water at 50°C, UVA 340 Bulbs		No change
	Color		Charcoal gray

3. EPA: Environmental Protection Agency

## Description

DEFENDAIR™ 200C Air and Weather Barrier Coating is a 100% silicone liquid applied air and weather barrier designed to protect against air infiltration and water penetration. The vapor permeable, one-part, water-based coating cures to form a flexible membrane that is impervious to water but has the ability to “breathe,” allowing water vapor to escape from inside the substrate.

**Description (Cont.)**

The coating offers long-term protection from air and water infiltration; normal movement imposed by seasonal thermal contraction and expansion; ultraviolet radiation; and the elements. The coating maintains its water protection properties even when exposed to sunlight, rain, snow, or temperature extremes. There is not a limit on exposure time before being covered by the exterior cladding.

DEFENDAIR™ 200C Air and Weather Barrier Coating can be applied between -6°C (20°F) and 38°C (100°F) to a clean, dry surface.

**How to Use**

When properly applied and cured, DEFENDAIR™ 200C Air and Weather Barrier Coating provides a fast, easy, and effective method of providing protection from air and water infiltration. This product may settle during prolonged storage, therefore, it is recommended to mix well before using. Do not dilute.

**Surface Preparation**

All surfaces to be coated with DEFENDAIR™ 200C Air and Weather Barrier Coating must be prepared as described in the most recent Air and Weather Barrier Application Guide (Form No 62-1723). The following is a short reference guide for surface preparations.

All surfaces must be clean and free of dirt, frost, dust, oil, grease, mold, fungus, efflorescence, laitance, peeling coating, chalking coating, and any other foreign material. Green concrete must be allowed to cure 28 days before application of DEFENDAIR™ 200C Air and Weather Barrier Coating (see "Limitations"). Repair cracks larger than 1/16 inch (1.6 mm) with a material that is compatible with the substrate and DEFENDAIR™ 200C Air and Weather Barrier Coating. DOWSIL™ 790 Silicone Building Sealant, DOWSIL™ 795 Silicone Building Sealant, DOWSIL™ 791 Silicone Perimeter Sealant, DOWSIL™ 756 SMS Building Sealant, and DOWSIL™ 758 Silicone Weather Barrier Sealant can be used for crack repairs.

All joints between exterior grade sheathing which are greater than 1/16 inch (1.6 mm) must be sealed using one of the above silicone sealants and struck flush prior to installing the coating. In addition, any unused nail holes or screws that missed the stud must be sealed.

**Coating**

Apply the coating in a 30–32 mils (0.76–0.81 mm) wet thickness (a job-specific mockup is recommended to determine actual usage which will result in the required 15 mil (0.38 mm) dry coating thickness. On occasion, a second coat may be necessary on porous or rough surfaces to achieve the minimum dry film thickness.

Apply using a ¾ to 1½ inch (19 to 38 mm) nap, polyester, or 50/50 polyester/wool blend roller cover, nylon bristle brush, or airless sprayer. When applying the coating with a roller, apply it in a fan pattern to achieve uniform thickness. When applying the coating with a sprayer, a minimum 0.019 inch tip must be used. Sufficient pump pressure should be used to obtain an even spray pattern. Back rolling is not required.

## **How to Use (Cont.)**

Allow the coating to dry (typically 2 to 4 hours) before applying additional coats if needed. After the additional coat has been applied, the average drying time is 4 to 12 hours, depending upon temperature, humidity, and wind conditions. If the temperature drops below -6°C (20°F) after the air barrier is applied, the average drying time will increase. DEFENDAIR™ 200C Air and Weather Barrier Coating requires temperatures higher than -6°C (20°F) for a cumulative total of 24 hours to dry. DEFENDAIR™ 200C Air and Weather Barrier Coating will attain full adhesion and physical properties in 7 to 14 days.

DEFENDAIR™ 200C Air and Weather Barrier Coating was developed to obtain good adhesion to the substrate without the need of a primer. Refer to the Air and Weather Barrier Application Guide to determine if adhesion testing or a primer is required for your specific substrate.

### **Low Temperature Application**

If temperatures drop below 20°F, the coating will freeze on the surface until the temperature increases. This will not affect the cured properties of the air barrier but will extend the drying time.

Roller application of the air barrier at low temperature will require 2 coats. The air barrier should dry to touch, not simply freeze, between coats. Application equipment such as rollers and the tips of spraying equipment should be kept above 0°C (32°F) when not in use.

Allow the air barrier to fully dry prior to adhering other materials to the surface of the air barrier. For more information on cold temperature application, refer to the Air and Weather Barrier Application Guide.

## **Handling Precautions**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

## **Usable Life and Storage**

Protect DEFENDAIR™ 200C Air and Weather Barrier Coating and DEFENDAIR™ 200 Primer from freezing. Store in a cool, dry place out of the weather. When properly stored in its original, unopened container above 1°C (34°F) and below 32°C (90°F), DEFENDAIR™ 200C Air and Weather Barrier Coating and DEFENDAIR™ 200 Primer have shelf lives from date of manufacture of 12 months and 18 months, respectively. Refer to product packaging for Use by Date.

If DEFENDAIR™ 200C Air and Weather Barrier Coating is stored at temperatures below -6°C (20°F) for longer than 8 hours, the air barrier will start to freeze. Allow the DEFENDAIR™ 200C Air and Weather Barrier Coating to sit at temperatures greater than 20°F for at least 8 hours or until the material thaws before application.

## **Packaging Information**

DEFENDAIR™ 200C Air and Weather Barrier Coating is available in 5 gal (18.9 L) pails (44 lb [20 kg]) and 51.5 gal (195 L) drums (507 lb [230 kg]).

## **Limitations**

DEFENDAIR™ 200C Air and Weather Barrier Coating should not be applied:

- When there is a threat of rain within the next 8 hours or the relative humidity is in excess of 90 percent (because conditions would not permit complete surface drying)
- On below-grade applications
- On newly applied or green cementitious materials; industry guidelines recommend at least 28 days cure before painting or coating the substrates (see SSPC, 2010 Painting Manual, Chapter 3.1. Concrete Surface Preparation)

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

## **Health and Environmental Information**

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, [dow.com](http://dow.com) or consult your local Dow representative.

## **Disposal Considerations**

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

## **Product Stewardship**

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

## **Customer Notice**

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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