

The Facts:

Dryvit Outsulation is unequalled for proven integrity and quality.

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OUTSULATION

THE FACTS: Testing

As the pioneer and acknowledged leader of the EIFS industry, Dryvit Systems, Inc. has always considered stringent testing of key importance to quality performance. Outsulation has been subjected to testing well beyond code minimums at national testing laboratories as well as at Dryvit's own research, technology and manufacturing facilities – unparalleled in the industry. The data provided on the following pages will convince you that Dryvit Systems demonstrates a full commitment to excellence in both product and performance. Such a commitment offers extraordinary peace of mind to the architect and developer specifying Outsulation. And only Dryvit Outsulation can show over 30 years of proven application results in North America – over 350,000 buildings, both new and retrofit construction. Dryvit products are designed to minimize upkeep. However, as with all building products, normal maintenance and cleaning are required.

TEST	METHOD	RESULTS
STRUCTURAL TESTING		
Positive and Negative Windloads	ASTM E330	Tested to pressures in excess of 180 psf without loss of bond to the substrate.
ASTM		
Salt Spray Resistance	ASTM B117	300 hours. No deleterious effects.
Freeze/Thaw	ASTM C67	60 cycles. No checking, cracking or splitting.
Tensile Bond	ASTM C297	Substrate failure.
Water Resistance	ASTM D2247	No deleterious effects after 14-day exposure.
Mildew/Fungus Resistance	ASTM D3273	Passes.
Abrasion Resistance	ASTM D968	500 liters. No deleterious effects.
Water Penetration	ASTM E331	No water penetration to the innermost plane of the wall.
Impact Resistance	EIMA Test Standard 101.86	Standard™ Mesh > 25 in.-lbs. Standard Plus™ Mesh > 50 in.-lbs. Intermediate® Mesh > 90 in.-lbs. Panzer 15 or 20 and Standard Mesh > 150 in.-lbs.
Sound Transmission	ASTM E90	Min. STC rating of 45 using 1" EPS.
Water Vapor Transmission	ASTM E96 Water Method Procedure "B"	Permeable to moisture vapor.
Accelerated Weathering	ASTM G53	2000 hours. No deterioration.

Outsulation

THE FACTS: Testing

TEST	METHOD	RESULTS
FEDERAL TEST METHOD STANDARD 141A		
Absorption – Freeze/Thaw	Panels soaked in water @ 20 °C for 4 days, then placed at –10 °C for 2 hours and +20 °C for 2 hours.	60 cycles. Total weight gain of 7.9 grams. No checking, cracking or splitting.
INSULATION BOARD		
Thermal Conductivity	ASTM C177	“R” Value – 3.85 maximum at 40 °F 3.57 maximum at 75 °F
Water Absorption	ASTM C272	By volume—2.5% maximum
Compressive Strength	ASTM D1621	10 psi at 10% offset
Average Density	ASTM D1622	1.0 lb./cu. ft. average
Oxygen Index	ASTM D2863	24.0 minimum
Coefficient of Expansion	ASTM D696	3.5×10^{-5} in./in./Degree F
Fire Hazard Classification	ASTM E84	Flame spread $\leq 25^*$
Water Vapor Transmission	ASTM E96	1.6 perm – inch minimum

FIRE TESTING* - SUMMARY

(See further details on pages 4 and 5)

“Tunnel Test” (Components) (Underwriter’s Laboratories, Inc.)	UL-723 (ASTM E84)	Flame spread $\leq 25^*$ Smoke developed $\leq 450^*$
Fire Endurance Test	ULC-S 101-1977	System remained in place during a 15-minute fire exposure test.
Diversified Fire Test	Modified ASTM E108	Zero fire hazard.
Standard Fire Exposure Test	ASTM E119	Fire resistance rating of one-hour and two-hour wall assemblies was not reduced by the addition of the Dryvit Outsulation System.
Full Scale Multi-Story Fire Test	UBC 26-4 (formerly UBC 17-6)	No lateral spread of flame from compartment of fire origin to adjacent spaces.
Intermediate Scale Multi-Story Fire Test	UBC 26-9 (NFPA 285)	
Radiant Heat Exposure Test	NFPA 268	Meets requirement for unrestricted fire separation distance. No flaming at 12.5 KW/m ² heat flux exposure.

*These numerical flame spread and smoke development ratings do not necessarily reflect the performance of this or any other material under actual fire conditions.

Outsulation

THE FACTS: Fire Testing

TEST	DESCRIPTION
TUNNEL TEST ASTM E84	The Outsulation coating system has been tested by National Laboratory in accordance with UL-723 (ASTM E84) test procedure. The coating system demonstrated resistance to flame spread, achieving a flame spread of less than 25*. Further, the expanded polystyrene insulation used within the Outsulation System has a flame spread rating of less than 25* when tested in accordance with the ASTM E84 procedure.
FIRE ENDURANCE TEST ULC-S 101-1977	The Dryvit Outsulation exterior wall insulation and finish system remained in place during a 15-minute fire exposure test conducted in conformance with ULC-S 101-1977 (ASTM E119) "Standard Methods of Fire Endurance Tests of Building Construction and Materials."
DIVERSIFIED FIRE TEST UNIVERSITY OF CALIFORNIA MODIFIED ASTM E108	A series of fire tests involving a modified ASTM E108 procedure have been conducted at the University of California. The tests were conducted on Outsulation panels having expanded polystyrene insulation ranging from 2 ½" to 8" thickness. The tests were conducted to simulate the exposure delivered to the exterior face of a building resulting from a fully developed room fire, which "vents" to the outside through a window. In Paragraph 7.4 of the Analysis and Conclusions of the report, it is noted, "there was very little evidence to indicate that any significant burning or flaming had occurred beneath the protective coating." Subsequent to test, Dr. Robert Brady Williamson offered additional observations in a letter dated September 16, 1976. The letter indicates smoke production during tests of Outsulation panels was limited.
STANDARD FIRE EXPOSURE TEST ASTM E119	The Dryvit Outsulation System has been evaluated by ASTM E119 testing with one-hour and two-hour wall assemblies. The test exposes a test specimen to a standard fire exposure controlled to achieve specified temperatures throughout a specified time period and measures its response to the exposure in terms of the transmission of temperature and hot gases through the assembly. The fire resistance rating, as determined by ASTM E119 of listed one-hour and two-hour wall assemblies, was not reduced by the addition of the Dryvit exterior wall insulation system. The wall assembly was tested with both the exterior and interior face exposed to the fire.

Outsulation

THE FACTS: Fire Testing

TEST	DESCRIPTION
UBC 26-4 (FORMERLY UBC 17-6) FULL SCALE MULTI-STORY FIRE TEST 1250 POUND CRIB	<p>The flammability characteristics of Outsulation panels using 4" of expanded polystyrene were evaluated in a full-scale fire test involving a two-story structure. The test was conducted at an independent research laboratory in San Antonio, Texas.</p> <p>The panels were subjected to a fire exposure from a 1250-pound crib, which was designed to simulate the ASTM E119 standard time/temperature curve for a minimum of 30 minutes. The crib was allowed to burn freely for approximately 40 minutes. Temperatures exceeded 900 °F on the face of the panels for the majority of the test.</p> <p>In spite of this severe fire exposure, the Outsulation panels demonstrated significant resistance to flame propagation. Test conclusions show that there was no flame penetration into the second floor area during the test. There was no significant flame propagation over the exterior face of the panels. There was no lateral spread of flame from the compartment of fire origin to adjacent spaces during the test exposure.</p>
UBC 26-9 (NFPA 285) INTERMEDIATE SCALE MULTI-STORY FIRE TEST	<p>The intermediate multi-story fire test is a smaller scale version of the UBC 26-4 (17-6) that is performed in controlled environmental conditions with gas burners positioned on the interior and exterior of the test specimen. The results of the intermediate scale fire test mirror those of the UBC 26-4 (17-6).</p>
NFPA 268 RADIANT HEAT IGNITION	<p>This test is designed to simulate a thermal radiation exposure to an exterior wall from a radiant panel heated to 1600 °F providing an exposure of 125 KW/m² heat flux to the surface of the panel. The panel is considered as passing if no surface flaming is observed for longer than 5 seconds.</p>
CONCLUSION	<p>"Outsulation has been fire tested in configurations reflecting an end-use condition. Both fire tests and actual fire experience confirm Outsulation will not affect building fire safety.</p> <p>"The possibility of vertical flame spread has been carefully studied. Available data shows Outsulation using up to 8" of EPS will not spread flame.</p> <p>"The use of Outsulation outside the building automatically minimizes concerns regarding smoke generation. Subjective analysis of smoke generated by tests conducted indoors have been made. Smoke production is limited."</p>

OUTSULATION

THE FACTS: Codes and Approvals

<p>CODES</p>	<p>ICBO UNIFORM BUILDING CODE</p> <p>THE BOCA BASIC/NATIONAL BUILDING CODE</p> <p>SBCCI STANDARD BUILDING CODE</p>	<p>Building code authorities are charged with developing and administering guidelines for systems and products to ensure the protection of public health, safety and welfare.</p> <p>Regulations affecting the Dryvit Outsulation System are found in various sections referencing building usage, type of construction, structural loads and fire performance. The insulation component of Outsulation is addressed specifically by each code as noted in the listing.</p>
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APPROVALS

- HUD - U.S. Dept. of Housing and Urban Development
- Dept. of Health and Human Services
- Canada Mortgage and Housing Corporation #11421
- California State Fire Marshal's Office
- New York State
- State of Connecticut
- State of Rhode Island
- Texas State Board of Insurance
- State of Wisconsin
- Metropolitan Dade County, Florida
- City and County of San Francisco, California
- City and County of Denver, Colorado
- City of Phoenix, Arizona
- City of Mobile, Alabama
- Zoning Code of the City of Coral Gables, Florida
- City of Jacksonville, Florida
- City of Baltimore, Maryland
- City of New York, MEA #67-87-M
- City of Los Angeles, California

Outsulation

THE FACTS: Fire Testing

NATIONAL ACCOUNT LISTING (PARTIAL)

HOTEL/MOTEL	MEDICAL & CORPORATE
Chalet Susse International Doubletree Inns Hilton Hotels Hilton Inns Holiday Inns Howard Johnsons Hyatt Hotels Marriott Corporation Promus Companies Quality International Ramada Inns Sheraton Hotels Westin Hotels	American Medical International Boeing Aerospace Charter Medical Corporation Chrysler Coca-Cola Ford Motor Co. Hospital Corporation of America Humana IBM Kaiser Medical Toyota/Lexus
RESTAURANT & RETAIL	REAL ESTATE DEVELOPERS
Arby's Inc. Dayton Hudson Corporation Dillards Hardee's Food Systems Kentucky Fried Chicken Kmart McDonalds Montgomery Ward Nordstroms Sears Roebuck & Co. Shoney's Inc. Taco John's Walgreens	Edward J. DeBartolo Co. Homart Development Corp. Kravco Co. Melvin Simon Corp. Opus Corp. Pyramid Companies The Rouse Co. Trammell Crow
INSURANCE & FINANCIAL	GOVERNMENT
AETNA All-State Equitable Assurance Co. Mass Mutual Prudential Insurance Co. Security Pacific Bank State Farm Teachers Insurance Co. Travelers Insurance Co.	Army Corp of Engineers Federal Bureau of Prisons HUD & FHA U.S. Armed Forces
GENERAL CONTRACTORS GROUP	
Gilbane Building Co. Inland Construction Co. McDevitt & Street Morrison-Knudsen Pepper Construction Tishman Realty and Construction Co. Turner Construction Co.	

OUTSULATION

Exterior Insulation and Finish System

The Services:

- Corporate Research and Technology Department, which provides state-of-the-art testing and development.
- Corporate assistance in technical and site problems.
- Expert staff assistance in handling code compliance requests at federal, state and local levels.
- Nationwide network of distributors and field service advisors on call to provide technical assistance on request.
- Color matching, custom color mixing and local tinting capabilities.
- Construction consultation available through field service advisors located throughout North America and abroad.
- Design assistance by Engineering Services Department.
- Review of drawings and specifications for projects on request.
- Prefabrication professionals on call to assist with panelized buildings.

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