



**OUTSULATION<sup>®</sup>**  
SYSTEMS

BY **dryvit<sup>®</sup>** 

*original*  
THE CONTINUOUS INSULATION™

Southeast Georgia Health System, Brunswick, GA





St. Rose Hospital, Las Vegas, NV



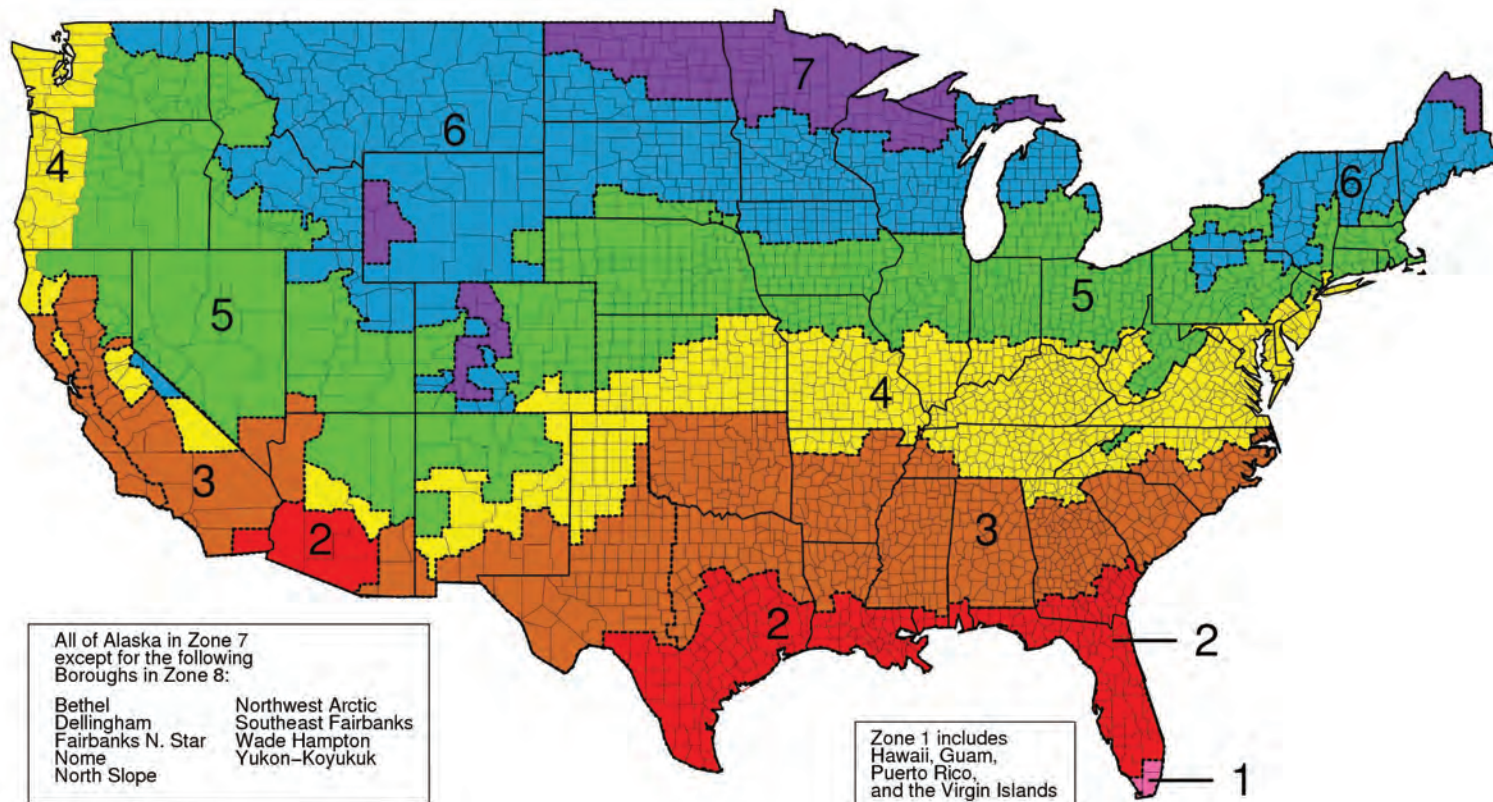
## Welcome to Outsulation, by Dryvit.

As the name suggests, Outsulation systems place insulation on the outside of the building, and are the most effective solution for meeting today's energy code requirements for continuous insulation (CI). But there is much more to Outsulation than continuous insulation alone. Outsulation systems with moisture drainage are engineered to include an air- and water-resistive barrier as well as durable, aesthetically diverse finish options, which work together to form a single, seamless and sustainable cladding. Outsulation systems have been rigorously tested to perform in all climates, and since 1969 have been used on over 450,000 projects of all shapes and sizes around the world. Whether for new construction or renovation, commercial or residential, Dryvit offers a proven solution suited to meet the needs of your next project. Read on to learn more about the parts and pieces that make Outsulation systems the simplest and most cost-effective solution for CI, and how an Oklahoma construction team maximized the benefits available from Outsulation.



# ENERGY CODES AND CONTINUOUS INSULATION REQUIREMENTS

The Department of Energy (DOE) has mandated that all states comply with the ASHRAE 90.1-2010 design standard by October 18, 2013, which requires the use of continuous insulation (CI) on commercial buildings in over 90 percent of the United States. Other design standards and codes — such as ASHRAE 189.1, IECC 2012, IgCC 2012 and CALGreen — will also influence the use of continuous insulation, as well as air barriers, as they become adopted. The bottom line is that nearly all new commercial projects in the U.S. will soon require the use of an air barrier and CI as an integral part of exterior wall construction.



IECC Climate Zone Map

With this in mind, you must:

1. Identify the climate zone for the location of your project.\*
2. Determine what energy code is currently adopted for the state in which the project is located.\*
3. Based on the type of construction and code requirement, determine the amount of continuous insulation required.\*

Exterior continuous insulation is much more efficient than the use of insulation in the wall cavity, and 2 inches of CI can have the effective R-value of 8 inches of cavity (batt type) insulation! As such, you should consider eliminating the use of cavity insulation altogether by using the right amount of CI to meet your total exterior wall insulation goals. An empty wall cavity improves airflow and reduces the dirt and moisture retention associated with batt insulation.

Rigid insulation, such as Expanded Polystyrene (EPS), can also be easily cut and shaped to provide dramatic architectural details and design effects, such as reveals, quoins, cornices and trim, that are much more difficult and expensive to achieve with heavier materials. Using an Outsulation system to combine the design flexibility and continuous insulation benefits of EPS is unique and extremely cost-effective.



Retail Center, Sioux Falls, SD



Sarkis & Siran Gabriellian Child Care Learning Center, Hackensack, NJ



Royal Private Residences, Kelowna, BC

# SYSTEM OPTIONS

All Outsulation systems include adhesive, rigid insulation, fiberglass mesh embedded in base coat, and finish, which are installed sequentially by a trained professional contractor as specified by the design team, and as required by code. Some Outsulation systems protect the underlying wall with an air- and water-resistive barrier under the rigid insulation, which maximizes the continuous insulation benefit. Outsulation systems can be installed in either “barrier,” “moisture drainage” or “pressure equalized” configurations, and these systems are engineered to perform in all climates and on all types of structures. On certain types of construction (high-rise) and in certain job conditions (cold weather), a prefabricated assembly method may be preferred.

## How It Works

Outsulation systems typically consist of the following components, as determined by code and performance requirements.

### 2. Backstop NT® Air- and Water-Resistive Barrier:

Seamlessly protects sheathing or substrate from incidental moisture and eliminates air infiltration

- Liquid applied by trowel or roller
- Meets code requirements for air- and moisture-resistive barriers
- Meets ASHRAE 189.1-2009 and ABAA requirements for air barriers
- Far more effective than “sheet good” barriers
- Easier to apply and less costly than “peel and stick” membranes

### 4. Insulation Board:

Absorbs expected building movement and enhances energy efficiency

- Eliminates thermal bridging in framed construction
- Meets continuous insulation requirements for all zones per ASHRAE 90.1-2010
- Available in both EPS (expanded polystyrene) and XPS (extruded polystyrene)
- Available in various thicknesses and can fully meet wall insulation requirements

### 1. AquaFlash® Flashing System:

Seamlessly protects openings in the building envelope from moisture

- Liquid-applied coating and mesh
- Easier to apply and less costly than “peel and stick” membranes

### 3. Adhesive / Drainage Medium:

Vertical notches allow drainage of incidental moisture

- Adheres insulation board to the Backstop NT® Air- and Water-Resistive Barrier

### 6. Finish Coat:

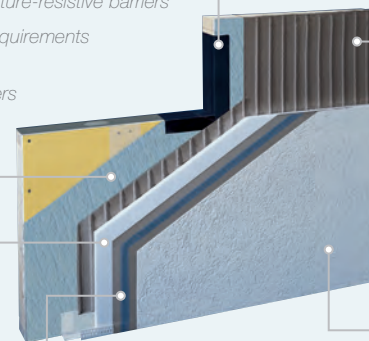
Blend of 100 percent acrylic copolymers, natural aggregates and UV resistant pigments

- Easy to maintain
- Available in many textures and limitless color options
- Offer multiple aesthetic options
- Options for increased hydrophobicity, flexibility and mildew and fade resistance

### 5. Base Coat and Reinforcing Mesh:

Combine to provide the primary weather barrier and impact resistance

- Mesh embedded in base coat
- Various weights of mesh available, depending on impact resistance required





## SUSTAINABLE SOLUTIONS

Outsulation systems have been evaluated by the National Institute for Standards and Technology (NIST) and have less environmental impact than other common claddings. They can also contribute toward achieving LEED credits, depending upon project design and location.

Outsulation systems are more cost-effective throughout their lifecycle because the manufacturing process requires less energy than other common claddings, and the lightweight composition reduces fuel costs associated with transport. After application, the continuous insulation benefits of Outsulation systems continue to keep heating and cooling costs low for the life of the building. Visit [www.dryvit.com/sustainability](http://www.dryvit.com/sustainability) for more information.

*All Dryvit North American manufacturing facilities are ISO 9001:2008 and ISO 14001:2004 certified.*

### **OUTSULATION PLUS MD SYSTEM®**

- Qualifies for all construction types
- Incorporates a liquid-applied, air- and water-resistive barrier
- Vertical adhesive beads facilitate moisture drainage
- Corrugated strip or track is incorporated at the base of the wall
- Passive drainage

### **OUTSULATION MD SYSTEM**

- Qualifies for all construction types
- Incorporates a liquid-applied, air- and water-resistive barrier
- Grooved insulation board facilitates moisture drainage
- Vent track and vent assembly are incorporated at the base of the wall
- Engineered drainage

### **OUTSULATION X™ SYSTEM**

- Qualifies for all construction types
- Features DOW® XENERGY™ Extruded Polystyrene (XPS) insulation board
- Incorporates a liquid-applied, air- and water-resistive barrier
- Vertical adhesive beads facilitate moisture drainage
- Supplemental fasteners required
- Drainage strip is incorporated at the base of the wall
- Passive drainage

### **OUTSULATION PE SYSTEM**

- Qualifies for all construction types
- Incorporates a liquid-applied, air- and water-resistive barrier
- Closure blocks are configured to “compartmentalize” the wall for pressure equalization
- Vent track and vent assembly are incorporated at the base of the wall
- Engineered moisture drainage and pressure equalization

### **OUTSULATION LCMD SYSTEM**

- Qualifies for all construction types
- Mechanically fastened over sheet type water-resistive barriers (by others)
- Corrugated strip or track incorporated at the base of the wall
- Multiple drainage and attachment options available

### **OUTSULATION RMD SYSTEM**

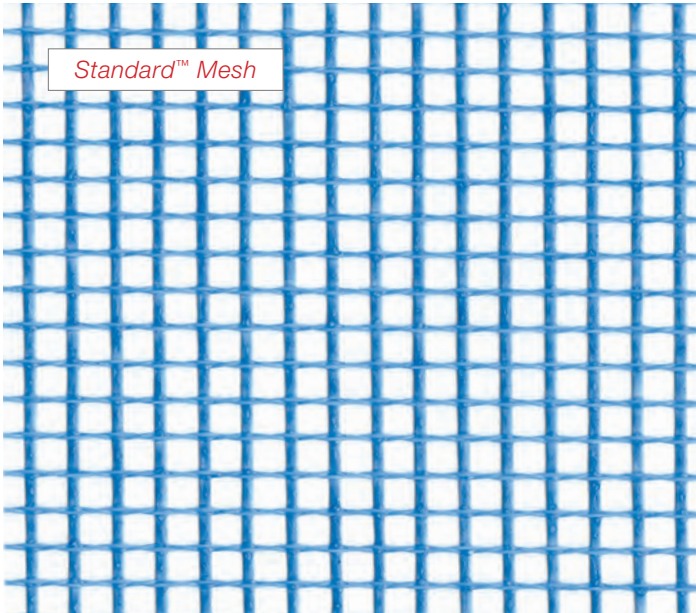
- Intended for residential, wood framed (one and two family) construction
- Can incorporate a liquid applied air- and water-resistive barrier or sheet membrane and drainage mat
- Drainage strips or track incorporated at the base of the wall
- Multiple drainage and attachment options available

### **OUTSULATION**

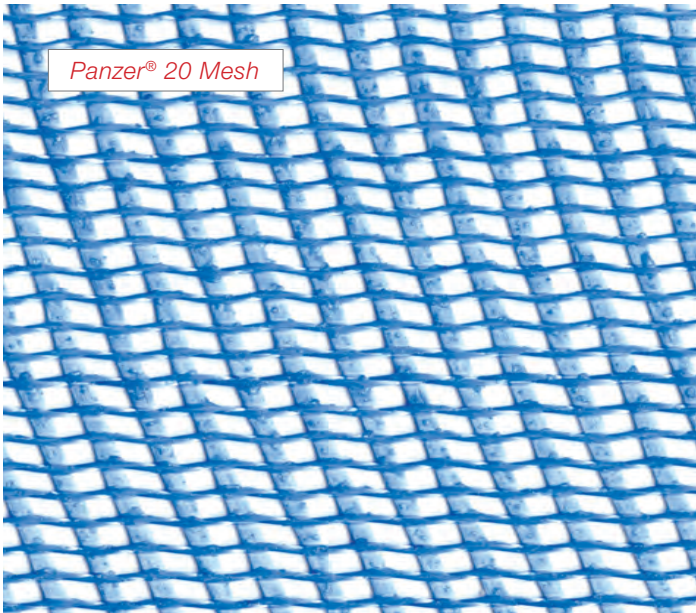
- Intended for use in commercial construction or over masonry
- Insulation adhered directly to substrate
- Designed as a barrier system

## DURABILITY

*Standard™ Mesh*



*Panzer® 20 Mesh*



*Panzer® 20 Mesh provides 10 times (1000%)  
better impact resistance than Standard™ Mesh!*

All Outsulation systems incorporate alkali and fire-resistant fiberglass mesh that is embedded into the base coat over the entire surface of the insulation board.

This combination provides the primary weather barrier, as well as tensile strength and impact resistance for the system, and these factors all play a critical role in protecting the physical integrity and beauty of the building exterior. The mesh is available in several weights and is specified according to the anticipated level of exposure to potentially damaging impact.

The heaviest and strongest — Panzer® 20 Mesh — is intended for use at all ground floor locations and high-traffic areas such as balconies. Hurricane-prone regions may have building codes that require assemblies reinforced with Panzer Mesh. Consult Dryvit's Engineering Department or your local Dryvit representative for more information on these special circumstances.

### Dryvit **Reinforcing Mesh** comes in four primary types:

*Standard™ Mesh:* Recommended for normal-wear applications on the second story and above

*Corner Mesh:* Used to reinforce corners and recommended on all ground-floor applications

*Intermediate™ Mesh:* Recommended for medium-level traffic and impact requirements on the second story and above

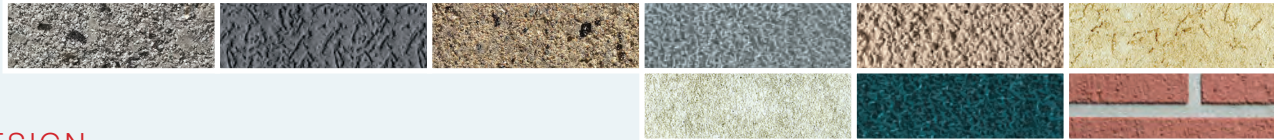
*Panzer® 20 Mesh:* Recommended for all high-traffic areas



# AESTHETICS



Bellagio, Las Vegas, NV



## THE PERFECT SOLUTION FOR ANY DESIGN.

Dryvit Outsulation systems offer unlimited design flexibility to suit any architectural style, and are available with a wide range of finishes that can be customized to meet virtually any color or texture desired.

The ability to easily create a vast array of architectural designs using decorative shapes and reveals is one of the hallmarks of an Outsulation system.



Belmont University, Nashville, TN



Brown Street Station Condos, Chicago, IL

## Custom Brick™

Look closely. It looks like brick. It feels like brick. But it's so much more.

Custom Brick finish is created using a simple, four-step procedure. First, a colored grout coat is applied to the base coat and allowed to dry. Next, stencils — which are available in three thicknesses and standard or custom patterns — are adhered to the grout coat. Then, the finish coat is applied to the thickness of the stencil and, finally, the stencil is removed, revealing the desired stone pattern and grout color.

An Outsulation system with Custom Brick finish provides an environmentally superior, simpler, cost-effective alternative to energy-intensive and heavier masonry. Best of all, with Custom Bricks' infinite selection of colors, textures, and shading techniques, your building can look exactly the way you want!

**AVAILABLE IN UNLIMITED COLORS, TEXTURES AND PATTERNS**



Palazzo di Bocce, Lake Orion, MI

## TerraNeo®

Like clay brick, granite is heavy and energy-intensive to find, produce and transport, and it can take months to get materials from the quarry to the jobsite. Made from a blend of quartz, minerals, and mica, TerraNeo finish offers a 21st century alternative to granite that meets energy codes and continuous insulation requirements, is environmentally sustainable, readily available, easy to apply and, best of all, looks fantastic!

**AVAILABLE IN 10 STANDARD COLORS**

*Custom matches to an existing building or granite sample can be developed.*





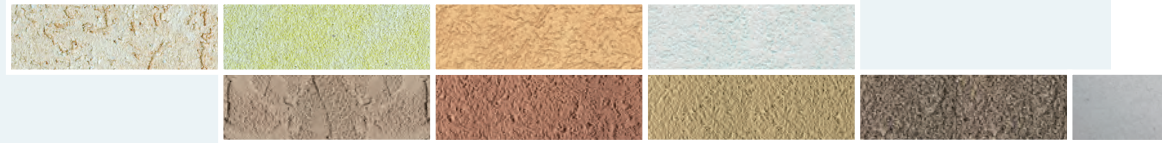
Southeast Georgia Health System, Brunswick, GA



## Reflectit™

Reflectit finish offers a rich, pearlescent look that can be used to coat other textured Dryvit finishes, or to achieve a smooth, sophisticated look. With Reflectit, you can make your next project literally shine!

AVAILABLE IN 12 STANDARD COLORS  
*Custom colors are available upon request.*



## Textured Finishes

Dryvit also offers numerous finish textures more commonly associated with the look of stucco, concrete and limestone. Made from a blend of 100 percent acrylic polymers, high-performance pigments, natural aggregates and utilizing DPR (Dirt Pickup Resistant) chemistry, they are beautiful, durable, and can be stained after drying to provide a dazzling old-world or antique look.

AVAILABLE IN A WIDE VARIETY OF STANDARD TEXTURES



Retail Center, Sioux Falls, SD

# PERFORMANCE ENHANCEMENTS



Eagle River High School, Anchorage, AK

## HIGH STYLE MEETS HIGH PERFORMANCE.



All Dryvit finishes are formulated with superior quality raw materials and have been thoroughly tested to perform in a wide range of expected conditions, but options exist to further enhance performance in particularly harsh or challenging environments.

### **These include:**

***Fade resistance*** – High-performance pigments are used to formulate vivid colors that would otherwise be prone to rapid UV breakdown. This state-of-the-art technology is also VOC and APEO free.

***Elasticity*** – Special elastomeric and proprietary “V Rock” technology is used to provide increased flexibility, which performs exceptionally well when used in finishes applied directly to stucco or other rigid surfaces.





Private Residence, Tucson, AZ



*Hydrophobicity* – Advanced water-repellent technology minimizes dirt accumulation and helps keep the wall looking like new.

*Mildew resistance* – Dryvit's "PMR" technology utilizes advanced biocides for use in damp or shady environments where algae or mildew growth is likely.



Douglas County Jail, Lawrence, KS

## REAL-WORLD BENEFITS



### MULTIPLE BENEFITS OF USING OUTSULATION SYSTEMS

Not only can using Outsulation systems achieve energy code and continuous insulation requirements, it can also reduce material use, shorten construction time, and lower building operating costs. Architects, contractors and building owners enjoy these measurable benefits every day. Fred Quinn is one such architect. He chose the Outsulation Plus MD system for the [Metro Career Academy](#) in Oklahoma City, and exceeded the expectations of the project stakeholders by using the energy efficient, design-flexible, single-source cladding.

Brick is so common in Oklahoma City that a section of the city is actually nicknamed “Bricktown,” so it was logical that the original design of the Metro Career Academy building specified 24,000 square feet of clay brick and 13,000 square feet of cast stone. Knowing the high price for both these materials and their installation, Quinn was open to considering a more cost-effective and sustainable solution, as long as his aesthetic intent could be maintained. Dryvit’s Outsulation Plus MD System with Custom Brick™ and Limestone™ finish fully met both objectives.

*Material Savings* – Outsulation Plus MD (using 4 inches of EPS continuous insulation) allowed Quinn to achieve the performance R-values required of the exterior wall, and eliminate the use of cavity insulation entirely. Substituting the 1.5-pound per square foot Outsulation Plus MD system for the 40-plus pounds per square foot masonry reduced the amount of concrete and structural steel needed to support the weight of the wall, and overall, 1.4 million pounds of materials — 96 percent of the original cladding weight — were eliminated from use!

*Labor Savings* – All components of the Outsulation Plus MD System were installed by a single trained subcontractor, simplifying the construction schedule.





**Construction Time Savings** – Using less structural material and a single contractor for the Outsulation Plus MD system reduced overall construction time by 15 weeks, which saved money and enabled the owner to move into his building ahead of schedule.

**Single Warranty** – Outsulation systems are engineered, tested and fully-warranted by Dryvit, whereas a brick wall is composed of a variety of materials supplied by different manufacturers.

**LEED Certification** – The Outsulation Plus MD system contributed to earning maximum EA category credits and LEED Gold certification.

**Energy Savings** – Measured against the modeled performance of an identical structure built to meet local building and energy codes, this building was predicted to have an energy savings of 34.8 percent and an energy cost reduction of 42.8 percent annually. After one full year, the actual energy cost reduction was 52.6 percent — more than the modeled expectation!

By choosing Dryvit's Outsulation Plus MD system, the design and construction team were able to meet the owner's aesthetic and performance goals ahead of time, and under budget. With numerous challenges to overcome and ambitious goals to meet, Outsulation by Dryvit delivered measurable results above and beyond expectation, and will continue to do so for the lifetime of the building.

## BUILDING ENERGY CODES ARE CHANGING.

The movement to improve energy performance and lower environmental impact is dramatically affecting the way buildings must be designed and built, particularly with the requirements for air barriers and continuous insulation. Outsulation by Dryvit is a tested and proven solution to this challenge.

Best of all, with Outsulation systems, performance and aesthetics aren't mutually exclusive. The wide variety of finishes, textures and colors can make nearly any architectural vision a reality.

The benefits of Outsulation have been realized in hundreds of thousands of projects around the world, and the systems provide a single-source, seamless and sustainable cladding solution for buildings of any shape, size and type.

Simply put, Outsulation systems provide everything you need from a building code and continuous insulation perspective, and everything you want from a performance and aesthetic standpoint.

Visit [www.dryvit.com](http://www.dryvit.com) or call 800-556-7752 to learn more about Outsulation by Dryvit.





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