

**SECOND CHOICE, SHOULD THE VARIANCE COMMITTEE  
REJECT OUR PREFERRED NON-MASONRY MATERIAL FOR  
AREAS KEYNOTED AS 13.03.2 - REF: 230926 Variance  
Committee Submission**



## **OUTSULATION<sup>®</sup> SOLUTIONS FROM DRYVIT**





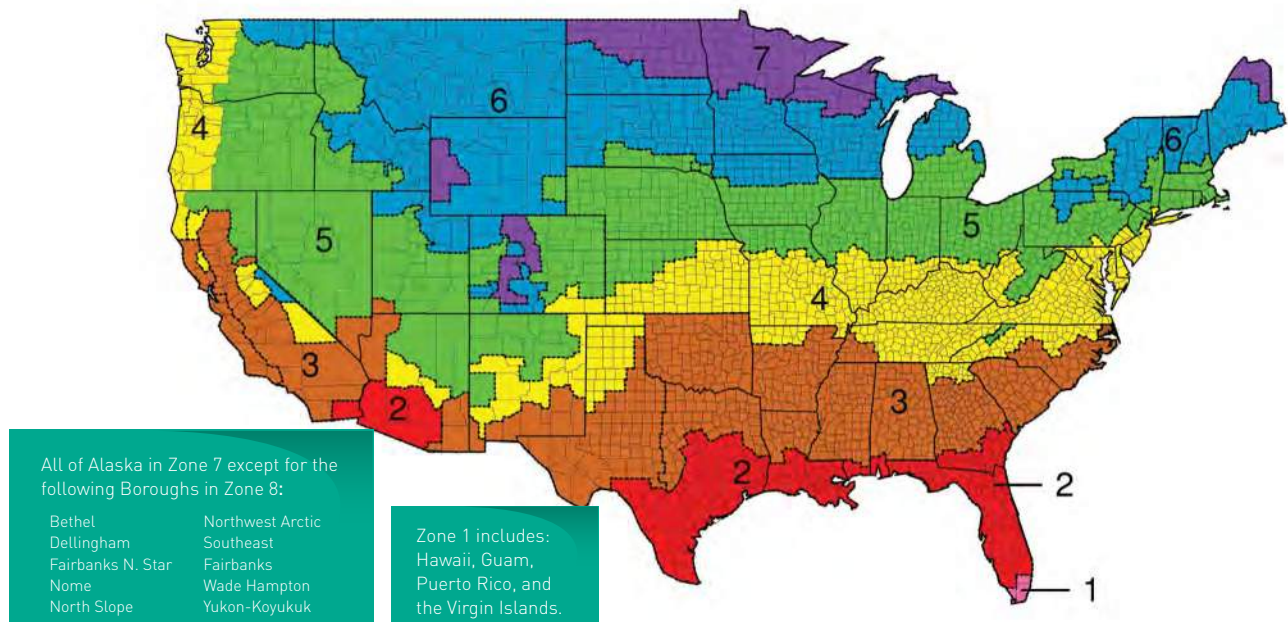
Liberty Center  
Columbus, OH

## 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 CI alone. Outsulation systems deliver the latest in building science solutions for building envelopes, resulting in operational energy efficient, cost effective construction, low maintenance, low embodied energy building solution. Outsulation delivers:

- Engineered moisture drainage for incidental moisture
- Air & water resistive barrier membrane
- Anti-crack, impact resistant scrim
- High R-value with continuous insulation
- Durable and seamless finish veneer that provides a range of aesthetically appealing results



## ENERGY CODES AND CI REQUIREMENTS

The Department of Energy (DOE) has mandated that all states comply with the ASHRAE 90.1-2010 design standard by September 26, 2016, 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; Title 24, (Section 6) and CALGreen — will also require the use of CI, 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.

CI 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, 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 CI benefits of EPS is unique and extremely cost-effective.



Ronald McDonald House  
Salt Lake City, UT



Sarkis & Siran Gabrellian  
Child Care Learning  
Center  
Hackensack, NJ



## HOW IT WORKS

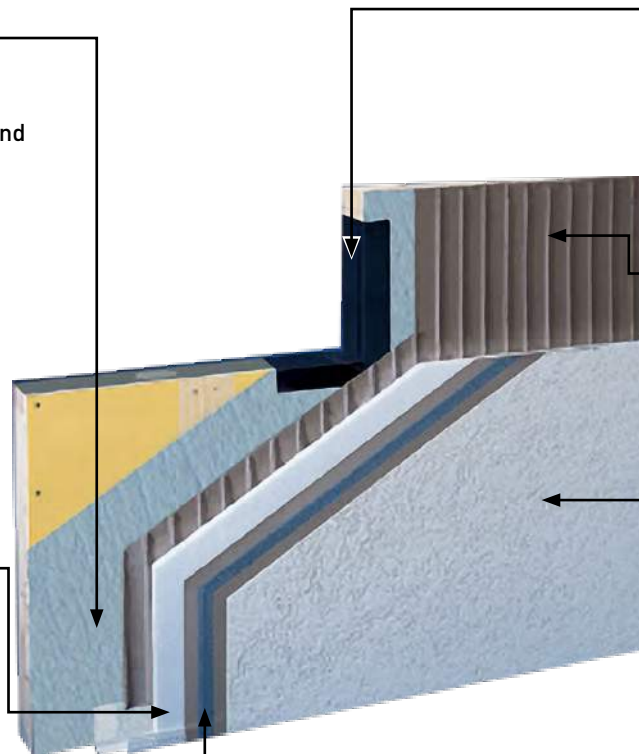
Outsulation systems typically consist of the following components, as determined by code and performance requirements.

**DRYVIT/TREMCO APPROVED WATER-RESISTIVE BARRIER:**  
Seamlessly protects sheathing or substrate from incidental moisture and eliminates air infiltration

- Liquid-applied
- Continuous or monolithic
- Includes Backstop NTX®, Backstop NTX-VB, Securock® ExoAir® 430, ExoAir® 230

**CONTINUOUS INSULATION:**  
Absorbs expected building movement and enhances energy efficiency

- Eliminates thermal bridging in framed construction
- Meets CI 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



**DRYVIT/TREMCO APPROVED FLASHING SYSTEM:**  
Seamlessly protects openings in the building envelope from moisture

- Includes AquaFlash® or Dymonic® 100

**ADHESIVE / DRAINAGE MEDIUM:**  
Vertical notches allow drainage of incidental moisture

- Adheres insulation board to the Air- and Water-Resistive Barrier

**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

**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

## SYSTEM OPTIONS:

All Outsulation systems include adhesive, continuous insulation (CI), 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 CI, which maximizes the energy efficiency. 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), lift-in-place, prefabricated wall sections may provide certain benefits.

## 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, Outsulation systems continue to keep heating and cooling costs low for the life of the building. Visit [dryvit.com](http://dryvit.com) for more information.

### OUTSULATION

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

### 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 HDCI™

- Provides a 20-year warranty on puncture resistance
- Incorporates a liquid-applied, air- and water-resistive barrier
- Corrugated strip or track is incorporated at the base of the wall
- Qualifies for commercial construction
- Provides a 20-year warranty on puncture resistance
- Passive drainage

### OUTSULATION X™ SYSTEM

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

### 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 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 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 SYSTEMS WITH SE430

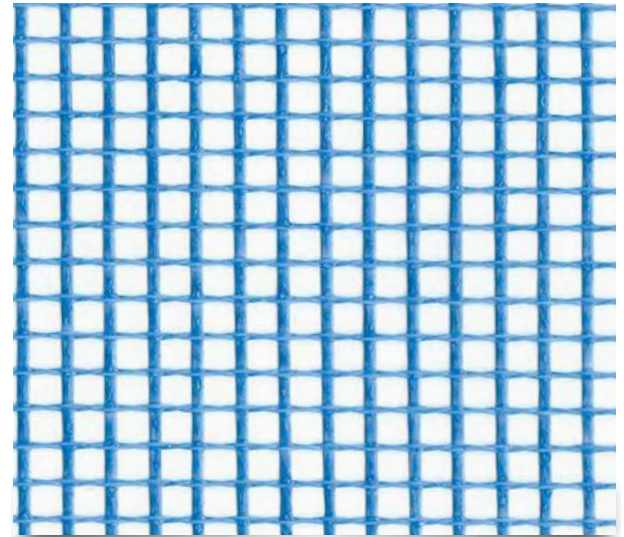
- Outsulation MD Securock ExoAir 430
- Outsulation Plus MD Securock ExoAir 430
- Outsulation HDCI Securock ExoAir 430
- Outsulation PE Securock ExoAir 430
- Outsulation X Securock ExoAir 430

# DURABILITY

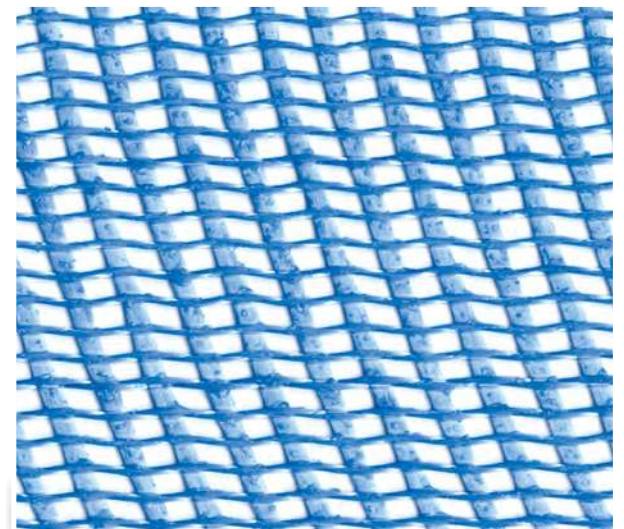
All Outsulation systems incorporate alkali and fire-resistant fiberglass mesh that is embedded into the base coat over the entire surface of the insulation board

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. Panzer 20 is also the required mesh in Dryvit's Outsulation HDCI system, which comes with a 20-year puncture resistance warranty. Consult Dryvit's Engineering Department or your local Dryvit representative for more information on these circumstances.



*Standard™ Mesh*



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

## DRYVIT REINFORCING MESH OPTIONS:

**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

The perfect solutions 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.

## VENEERS



Seamless Stone



Traditional Plaster Renders



Old World or "Aged" Plaster



Metal Panel Effects



Limestone



Brick



Bellagio  
*Las Vegas, NV*



The Stratford  
*Cincinnati, OH*

# FINISHES

## 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.



Retail Center  
*Sioux Falls, SD*

## AVAILABLE IN A WIDE VARIETY OF STANDARD TEXTURES



Sandpebble™



Sandpebble Fine™



Quarzputz®



Freestyle®



Sandblast®



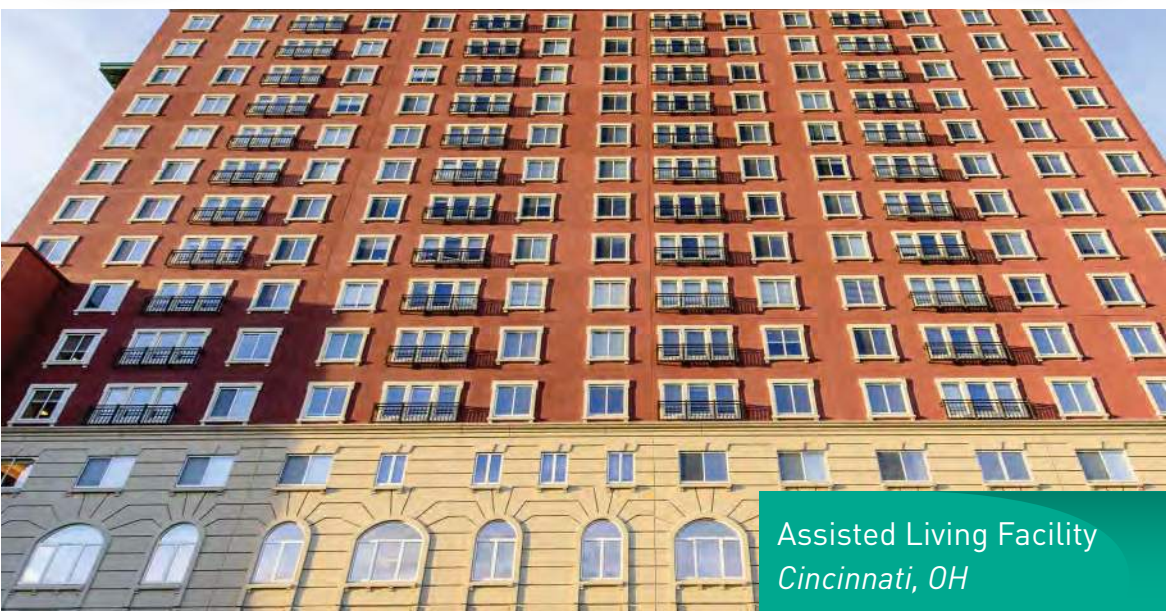


# PERFORMANCE ENHANCEMENTS

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## 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. Refer to DS269.

**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. Refer to DS249.

**Hydrophobicity:** Advanced water-repellent technology minimizes dirt accumulation and helps keep the wall looking like new. Refer to DS267.

**Mildew resistance:** Dryvit’s “PMR” technology utilizes advanced biocides for use in damp or shady environments where algae or mildew growth is likely. Refer to DS223.



Shopping Center  
Phoenix, AZ



# PERFORMANCE ENHANCEMENTS

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## MULTIPLE BENEFITS OF USING OUTSULATION SYSTEMS

Using Outsulation Systems can reduce material use, shorten construction time, and lower building operating costs, and architects, contractors and building owners enjoy these measurable benefits every day. Fred Quinn of Quinn & Associates 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.



*Find out more and watch a video case study*

**Architect:**  
Quinn & Associates  
Oklahoma City, OK

**General Contractor:**  
CMS Willowbrook  
Oklahoma City, OK

**Dryvit Applicator:**  
DMG Masonry  
Arlington, TX



## PROJECT HIGHLIGHTS

### MATERIAL SAVINGS

Otsulation Plus MD (using 4 inches of EPS) allowed the construction team 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 Otsulation 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 Otsulation 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 Otsulation 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

Otsulation 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 Otsulation 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 Otsulation 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, Otsulation 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 international 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 nishes, 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 perspective, and everything you want from a performance and aesthetic standpoint.

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

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