

# RESPONSIBILITY

## ICYNENE'S CORPORATE SUSTAINABILITY PHILOSOPHY

ICYNENE believes that being a good corporate neighbor and a responsible steward of the world's resources means providing innovative solutions that help address issues such as energy consumption and global warming. As one of the foremost manufacturers of spray foam insulation for the North American construction market, ICYNENE is leading the insulation industry to a new level of sustainability through its commitment to environmentally-preferable, spray foam technology that provides superior energy efficiency. Visit [ICYNENE.com](http://ICYNENE.com) for more information on point carrier opportunities with the U.S. Green Building Council® (USGBC) LEED®<sup>1</sup> program.

ICYNENE is also dedicated to reducing its own environmental footprint and educating our employees on conservation issues, teaching them how to be greener, and directing them to additional environmental resources. The ICYNENE Go Green initiative is an all-inclusive environmentally friendly green program that allows all staff the opportunity to actively participate.

We are proud to have our Company and products associated with sustainable groups and non-government organizations such as USGBC, Earth Craft House®<sup>2</sup>, Energy Star®<sup>3</sup>, Collaborative for High Performance Schools (CHPS)<sup>4</sup>, ICC-SAVE<sup>5</sup> and more.

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<sup>1</sup>LEED is a trademark owned by the U.S. Green Building Council  
<sup>2</sup>Earth Craft House is trademark owned by the Greater Atlanta Home Builders Association, Inc.  
<sup>3</sup>ENERGY STAR is a U.S. registered mark of the United States Environmental Protection Agency  
<sup>4</sup>Collaborative for High Performance Schools is a trademark owned by Collaborative for High Performance Schools, Inc.  
<sup>5</sup>ICC Save is a registered trademark owned by the International Code Council

## THE FIRST NAME IN SPRAY FOAM INSULATION

NOW FEATURING CONTINUOUS INSULATION SOLUTIONS  
COMPLIANT WITH ASHRAE 90.1-2010

SL-320-02 MAY 2012

2012 COMMERCIAL PRODUCTS



**ICYNENE**

# EXPLORE GEOMETRY AND SPACE

## WITHOUT COMPROMISING BUILDING ENVELOPE PERFORMANCE

Commercial design considerations come with very specific challenges that can't be addressed with just any type of insulation. Intensive use, acoustic considerations, HVAC, and aesthetic qualities barely scratch the surface. What about concealed condensation, corrosion, moisture build-up, and inefficient heating and cooling systems?

Icynene® insulation products let you design without compromise. Ideal for both wood or steel-framed construction, Icynene delivers a perfect fit for any shaped cavity. Unlike batts, Icynene conforms to unusual geometry and provides a continuous, protective barrier that significantly reduces air leakage, minimizes airborne moisture transfer, and optimizes energy efficiency.

Icynene spray foam is sprayed into walls, ceilings, and floors, then expands up to 100 times its initial volume and cures within seconds. Icynene's Light Density products remain soft and flexible enough to move with the building substrate, leaving no gaps or seams that can compromise air-tightness.

An insulation material that fails to control air leakage will be inadequate in resolving the associated health and economic concerns. Thermal performance, air quality, energy consumption, sound attenuation, and building durability are all negatively affected by uncontrolled air leakage. Integrating Icynene as part of a sustainable design strategy has proven to be an effective tool that allows design professionals to provide their clients with the advantage that comes from a controlled environment.

**ICYNENE** is sprayed into walls, ceilings, and floors, then expands up to 100 times its initial volume and cures within seconds.

## OPEN CELL OR CLOSED CELL SPRAY FOAM INSULATION

Architects and building owners selecting energy efficient spray foam insulation for their projects have a choice between specifying a 0.5 lb per cubic foot light density open cell product, or a 2.0 lb per cubic foot medium density closed cell product. Both product types are suitable for commercial construction. The decision to specify either one will make a difference in the finished cost, product performance, and application requirements.

### Light Density Open Cell:

- Spray in place insulation and air barrier
- Vapor permeable
- Breathes
- Will accommodate long term creep and seasonal movements
- Does not sustain mold
- Rejects bulk water (floats)
- Drains water through
- Typical Industry R-Value of 3.6 per inch
- Water commonly used for blowing agent
- Suitable for interior applications only

### Key Advantages of Open Cell:

- Soft, flexible and highly adhesive texture allows the product to retain a tight air seal during the normal structural movement/shifting over the life time of the building
- Vapor permeable permits bi-directional drying of assemblies
- When applied to the underside of a roof deck, will allow for bulk water to pass through and visibly expose the location of an exterior roof leak
- Soft open cell structure allows for greater sound absorption versus closed cell structure
- Using a water based blowing agent instead of a synthetic blowing agent reduces the environmental impact
- Lower cost

### Medium Density Closed Cell:

- Spray in place insulation and air barrier
- Low vapor permeance
- Vapor retarder (class II VDR)
- Rigid design adds structural reinforcement
- Does not sustain mold
- Rejects bulk water (even submerged)
- Deflects water path
- Typical Industry R-Value of 6.0 per inch
- Blowing agent increases R value
- Suitable for both interior and exterior applications

### Key Advantages of Closed Cell:

- Higher R-value per inch, easier to accommodate higher R requirement in narrow spaces or thinner wall capacity
- Hard, rigid texture provides increased wall racking strength (if necessary)
- Also suitable for exterior applications.
- Lower vapor permeance, can be a class II VDR
- Impact resistance





## OPEN CELL **ICYNENE** HIGH PERFORMANCE 100% WATER BLOWN PRODUCT

### **ICYNENE LD-C-50® CLASSIC**

- Approved for commercial building types I, II, III, IV, and V construction
- Light density, open-cell structure
- R-Value = 3.7 per inch
- Original Icynene formulation of 25+ years
- Vapor permeable, supports bi-directional drying of assemblies
- Not a food source for mold
- Soft, flexible composition maintains an air seal even after seasonal expansion/contraction of building assembly
- Air impermeable material resists convective heat and moisture flow
- Suitable for interior cavity fill applications
- Rejects bulk water
- Lower cost compared to closed-cell products
- Low global warming potential (GWP of 1)
- Superior cold temperature adhesion to multiple substrates

### PROVEN PERFORMANCE – THE LIGHT DENSITY LEADER

Icynene LD-C-50® is the product that made the Icynene name synonymous with superior quality, open-celled, 0.5 lb., light density spray foam insulation. Icynene LD-C-50® has been used in thousands of residential and commercial projects for over 25 years and is the industry benchmark for quality and innovation by which all other light density insulation products should be judged.

## 100% WATER BLOWN TECHNOLOGY

**ICYNENE LD-C-50®** foam insulation products are 100% water-blown meaning they use no synthetic blowing agents or ozone depleting substances. The reaction used to create these products generates Carbon Dioxide to expand the foam. Carbon Dioxide has the lowest Global Warming Potential (GWP of 1)<sup>1</sup>



To quickly access Icynene's 3-part CSI Specifications for **LD-C-50** scan the above code with your smart-phone or visit <http://www.icynene.com/technical-data-and-specifications/>

## CLOSED CELL **ICYNENE** HIGH PERFORMANCE INSULATION, NON-OZONE DEPLETING BLOWING AGENT PRODUCT

### **ICYNENE MD-C-200™**

- Approved for commercial building types I, II, III, IV, and V construction
- Medium density closed cell structure
- R-Value = 6.0 per inch
- Not a food source for mold
- Rigid composition contributes to added wall racking strength
- Air impermeable material resists convective heat and moisture flow
- Class II vapor retarder at 1.5"
- Rejects bulk water (even submerged)
- 96% closed cell content
- Suitable for both cavity fill and continuous exterior applications
- Summer and winter formulations for all Climate Zones and Altitudes
- Low odor



To quickly access Icynene's 3-part CSI Specifications for **MD-C-200** scan the above code with your smart-phone or visit <http://www.icynene.com/technical-data-and-specifications/>

**ICYNENE.com**

<sup>1</sup>All measure of GWP are given to carbon dioxide, the most well-known gas with global warming potential, which has a GWP of 1.

## ICYNENE'S COST-EFFECTIVE THERMAL BARRIER SOLUTION

The International Building Code requires the installation of an approved thermal barrier over all foam plastics (including spray foam insulation) separating the foam insulation from the interior space of the building. The IBC lists 1/2" gypsum wallboard as an acceptable thermal barrier material. However, most recently new technology has emerged for more cost effective thermal barrier solutions such as a spray applied intumescent coating. Icynene has tested and qualified an intumescent coating,

DC-315 as an approved spray applied thermal barrier over our open-cell LD-C-50® and closed-cell MD-C-200™. This provides architects, designers, and commercial building owners with a cost effective option for exposed applications such as acoustical ceiling plenums, exposed roof assemblies, and attics connected to habitable space. For immediate assistance on technical inquiries, contact Icynene at: **1-800-758-7325**

## FIRE RATED WALL ASSEMBLIES

- Icynene LD-C-50® and MD-C-200™ pass NFPA 285 Fire Test
- Complies with Chapter 26 of the IBC for installation in exterior walls of many types I, II, III, IV, and V multi-storey buildings

### U.S. COMMERCIAL FIRE TESTING

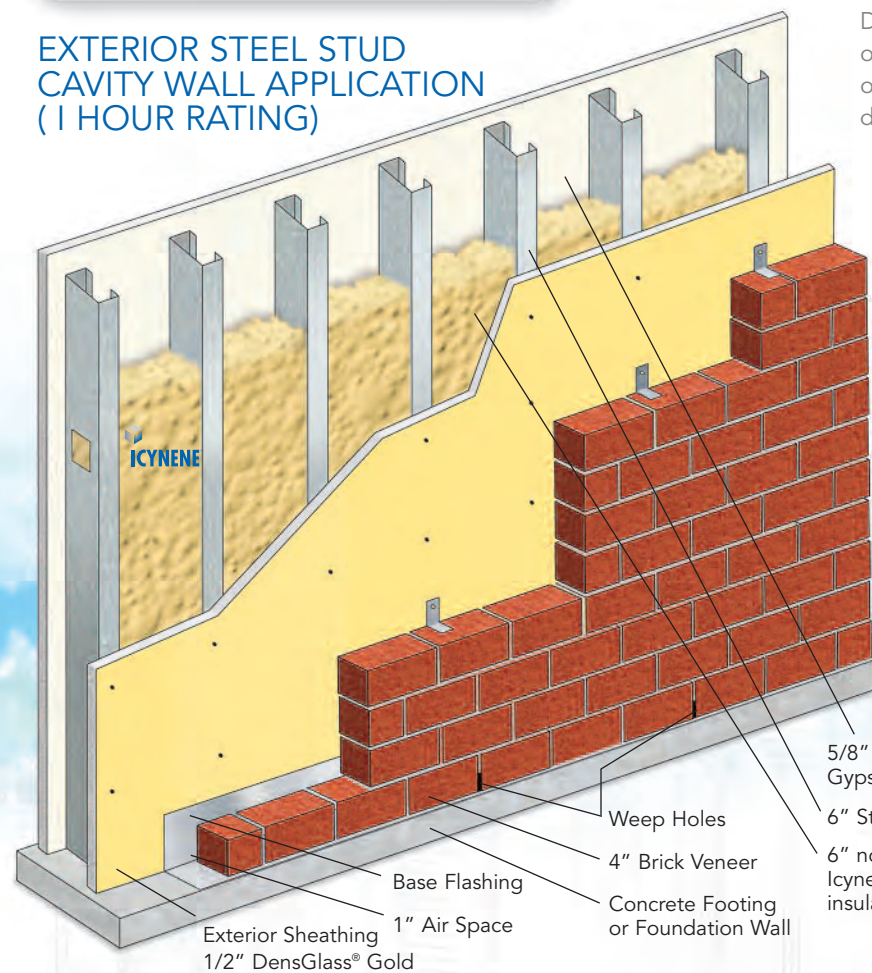
NFPA 285	PASS ✓
NFPA 286	PASS ✓
ASTM E-119	PASS ✓

In addition to the brick veneer featured in Icynene's Type I and II code compliant exterior wall assembly pictured on the lower-left, ICYNENE LD-C-50® and MD-C-200™ products may also be installed with many other claddings compliant with ASTM E-136 as detailed below:

- Minimum 4" thick block masonry
- Stucco over fiber cement board or 5/8" DensGlass® sheathing
- Glass reinforced concrete panels
- James Hardie® board siding panels

Details of the exterior wall covering for claddings other than masonry should be provided to the code official by the designer, or specifier with an analysis demonstrating that:

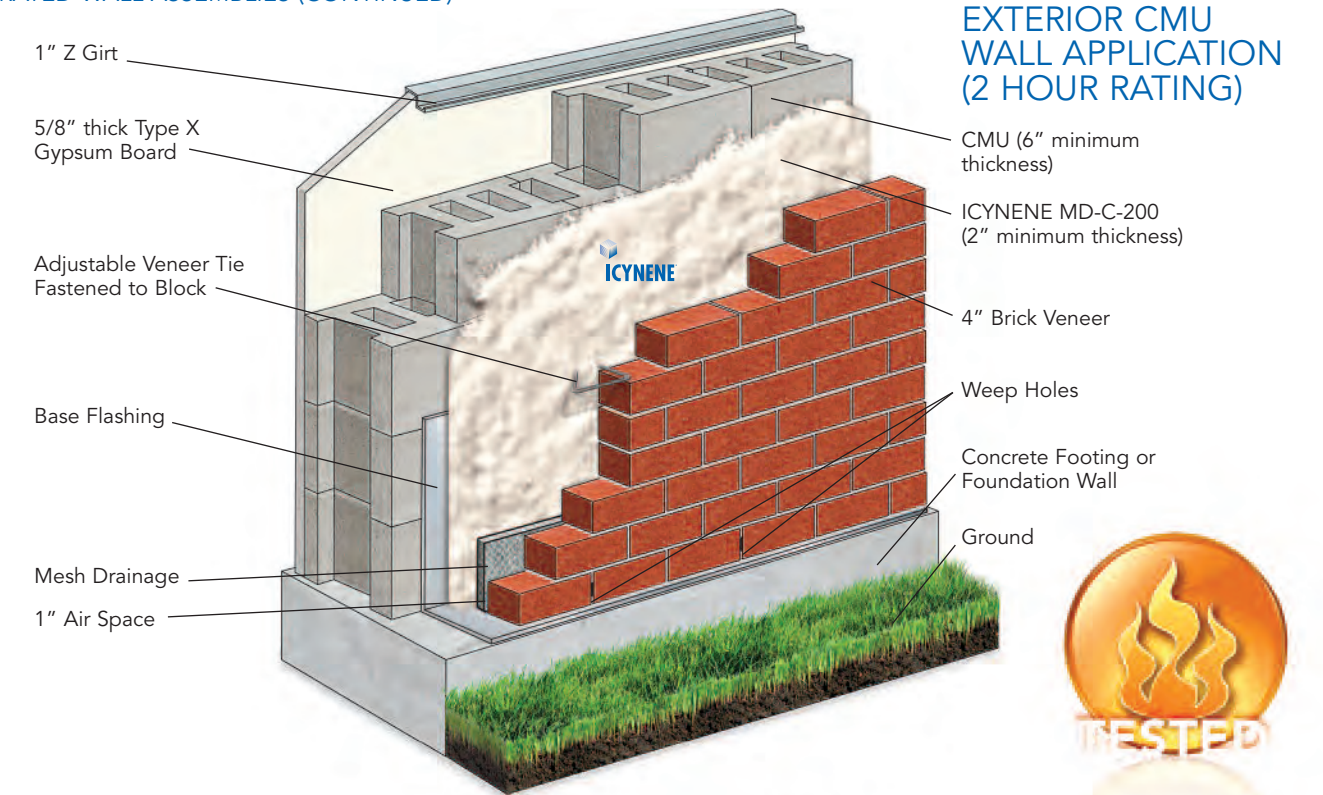
- 1) The wall covering conforms to ASTM E-136
- 2) The addition of the wall covering to the assembly described in Icynene's current ICC-ES Evaluation report for LD-C-50® and MD-C-200™ does not negatively affect conformance of the assembly with the requirements of IBC section 2603.5 per NFPA-285



- 5/8" thick Type X Gypsum Board
- 6" Steel stud
- 6" nominal thickness Icynene Spray foam insulation

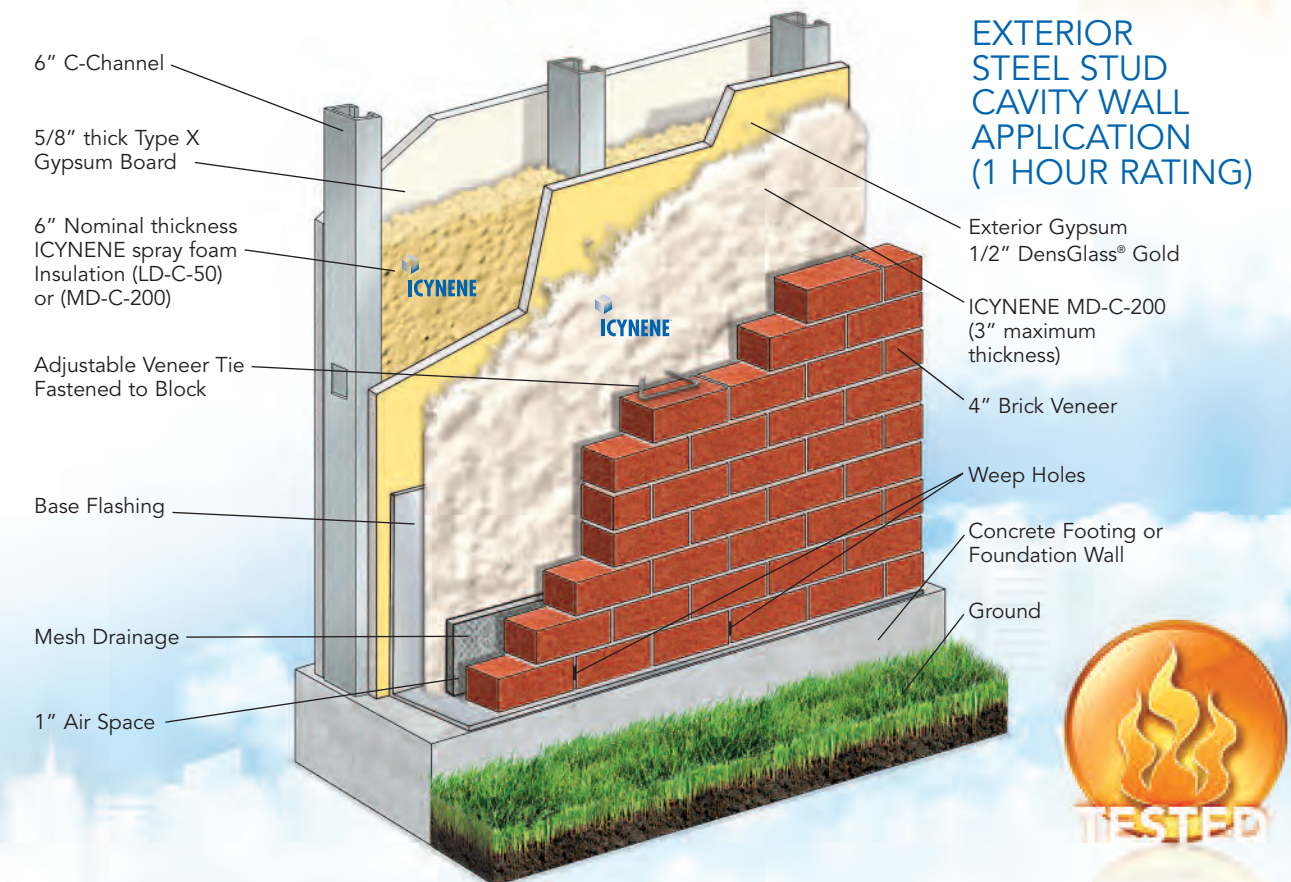
- Exterior Sheathing 1/2" DensGlass® Gold
- 1" Air Space
- Base Flashing
- 4" Brick Veneer
- Weep Holes
- Concrete Footing or Foundation Wall

## ICYNENE CONTINUOUS INSULATION SOLUTIONS COMPLIANT WITH ASHRAE 90.1 – 2010 FIRE RATED WALL ASSEMBLIES (CONTINUED)



### EXTERIOR CMU WALL APPLICATION (2 HOUR RATING)

- 1" Z Girt
- 5/8" thick Type X Gypsum Board
- Adjustable Veneer Tie Fastened to Block
- Base Flashing
- Mesh Drainage
- 1" Air Space
- CMU (6" minimum thickness)
- ICYNENE MD-C-200 (2" minimum thickness)
- 4" Brick Veneer
- Weep Holes
- Concrete Footing or Foundation Wall
- Ground



### EXTERIOR STEEL STUD CAVITY WALL APPLICATION (1 HOUR RATING)

- 6" C-Channel
- 5/8" thick Type X Gypsum Board
- 6" Nominal thickness ICYNENE spray foam Insulation (LD-C-50) or (MD-C-200)
- Adjustable Veneer Tie Fastened to Block
- Base Flashing
- Mesh Drainage
- 1" Air Space
- Exterior Gypsum 1/2" DensGlass® Gold
- ICYNENE MD-C-200 (3" maximum thickness)
- 4" Brick Veneer
- Weep Holes
- Concrete Footing or Foundation Wall
- Ground



<sup>1</sup>DensGlass is a trademark owned by Georgia-Pacific Gypsum LLC.  
<sup>2</sup>James Hardie is a trademark owned by James Hardie Building Products, Inc.