



**ICYNENE**<sup>TM</sup>  
HEALTHIER, QUIETER, MORE ENERGY EFFICIENT\*

# THE ICYNENE<sup>®</sup> ADVANTAGE

## APPLICATION CASE STUDY: COMMERCIAL BUILDING INSULATION – Condensation Control with ICYNENE LD-C-50<sup>TM†</sup>



### **Synopsis:**

- ✓ Icynene solved the condensation and moisture problem
- ✓ Icynene was the most cost effective and least disruptive solution
- ✓ Icynene eliminated the need to clean the application surface





### **The Challenge:**

Boulineau's is a quality grocery and department store located in the resort area of North Myrtle Beach, South Carolina. In this hot, humid climate the design cooling temperature is 92°F and summer relative humidity levels often reach 90% and higher.

The walk-in freezers and chillers for Boulineau's are located on the second floor of the store, directly above the shopping area. The second story floor area under the chillers and walk-in freezers was not insulated, thereby causing the first floor ceiling area under the chillers and walk-in freezers to be extremely cold. Condensation then formed as the ambient air came into contact with the cold area located under the chillers and walk-in freezers.



*Condensation on the ceiling area below the chillers on the second floor and above the first floor drop ceiling.*



*Discolored ceiling tiles were constantly being replaced by Boulineau's who pride themselves on a neat and clean retail environment.*

The condensation would then drip down on to the suspended ceiling tiles located below causing stains and discoloration. The management of the store were also concerned about the possibility that water could eventually end up on the floor, causing one of their customers to slip and fall.

### **The Solution – Insulate with Icynene:**

The local Icynene Licensed Dealer, Sprayseal Insulation, was contacted to review the situation and design an insulation solution that would correct the problem.

Sprayseal concluded that to prevent the formation of condensation on the metal ceiling deck, 3 inches of Icynene would be applied directly to the affected area. One ceiling tile at a time was removed to provide access to the area between the dropped ceiling and the metal decking. Icynene insulation was then applied directly to the metal decking, with the area below protected from over spray by the remaining ceiling tiles. This spraying process was repeated until the entire area that had been producing condensation was covered.



Why Icynene?:

1. The key to preventing the formation of condensation in the affected area was to stop the warm moist ambient air from coming into contact with the cold ceiling surface. Icynene was selected because it is both a conductive insulator and air barrier.
2. The limited access through the single ceiling tile would make it difficult and time consuming to dry and clean the surface of the metal decking. Because of its tenacious adhesion characteristics, Icynene could be applied directly to the untreated and wet metal surface.
3. The movement of store inventory would cause the second level floor / first floor ceiling deck to vibrate and move. The flexible characteristic of Icynene allows for movement in the roof deck and eliminates any concerns of de-lamination that is usually associated with other types of insulation.
4. If there were a leak in the chillers or walk-in freezers that infiltrated through the second floor, gravity will eventually pull the water directly through the Icynene foam. Icynene would remain attached to the metal ceiling deck throughout the duration of the leak and return to peak performance once it had dried.
5. Application of Icynene provided the management of Boulineau's with an effective solution to their problem and minimized the disruption to store operations.



*Area of application for Icynene included the footprint of the chillers and walk-in freezers plus a perimeter area extending 10 feet beyond.*



*One year after the Icynene insulation had been installed above these ceiling tiles – no more water damage.*

**The Results:**

There has been no condensation in the area under the chillers and walk-in freezers where Icynene had been applied.

*“We are very pleased and want to say that this product really works”*

*-Mark Clemons  
Store Manager*



### **Icynene in a Commercial Application:**

- ✓ Solved a condensation and moisture problem
- ✓ Did not require cleaning of the metal decking prior to installation
- ✓ Minimized disruption to on-going operations

### **Icynene Insulation**

Icynene foam insulation products are sprayed into/onto walls, crawlspaces, underside of roofs, attics and ceilings by Icynene Licensed Dealers. They expand in seconds to create superior insulating and air-sealing results. Every crevice, crack, electrical box, duct and exterior penetration is effortlessly sealed to reduce energy-robbing random air leakage. Icynene products adhere to the construction material and remain flexible so that the integrity of the building envelope seal remains intact over time.

Icynene is ideal for residential, commercial, industrial and institutional indoor applications. The products are:

**Healthier:** Icynene spray foam products are CHPS (Collaborative for High Performance Schools) EQ 2.2 Section 01350 Compliant, meeting nationally recognized requirements as Low-Emitting Materials (LEM) and Environmentally Preferable Products (EPP). Icynene spray foam products are 100% water-blown and contain no HFCs or PBDEs. Icynene seals out dust, pollen and other allergens from entering the structure. As air barriers, Icynene products minimize the potential for airborne moisture build-up and related problems such as mold and mildew.

**Quieter:** By air-sealing the building envelope, Icynene effectively minimizes airborne sounds. Icynene is perfect for reducing unwanted noises from home theaters, plumbing runs and playrooms.

**More Energy Efficient:** Icynene delivers up to 50% more energy savings versus traditional insulation.

Information about Icynene insulation can be obtained by calling Icynene Inc. (800-758-7325), visiting the website [Icynene.com](http://Icynene.com), or contacting your local Icynene Licensed Dealer.

† The Icynene product installed and addressed in this project example is Icynene's classic formula, ICYNENE LD-C-50<sup>™</sup>.



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