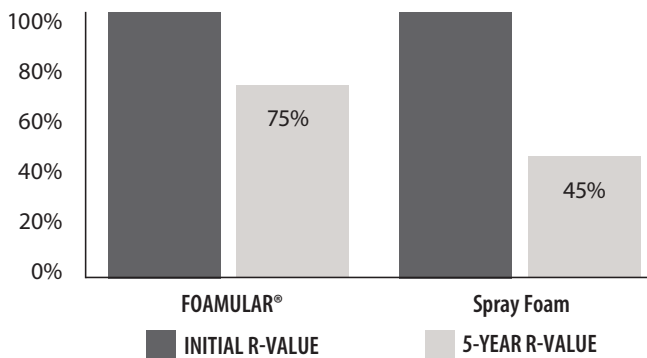**OWENS CORNING®**

INNOVATIONS FOR LIVING®

FOAMULAR®
Extruded Polystyrene Insulation for Walk-in Coolers and Freezers

MAINTAINS A HIGHER R-VALUE THAN SPRAY FOAM

Important news—Owens Corning FOAMULAR® extruded polystyrene meets the requirements of the Energy Independence and Security Act of 2007 and upcoming federal regulations. It achieves recommended R-values—both initially and over time—for virtually all walk-in cooler and freezer insulating needs including walls, ceilings and doors. Each product is manufactured to comply with ASTM C 578.

5-YEAR R-VALUE RETENTION

FOAMULAR®: INITIAL R-VALUE 100%, 5-YEAR R-VALUE 75%
Spray Foam: INITIAL R-VALUE 100%, 5-YEAR R-VALUE 45%

INITIAL R-VALUE | 5-YEAR R-VALUE

Testing conducted by the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory.

OFFERS EXCEPTIONAL MOISTURE RESISTANCE, HELPS PREVENT MOLD GROWTH
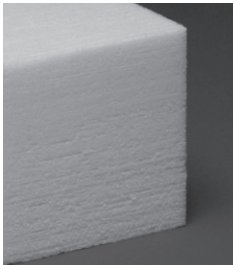
FOAMULAR extruded polystyrene insulation is a closed-cell insulation made using the exclusive Owens Corning HYDROVAC® manufacturing process. FOAMULAR insulation's resistance to water absorption and water vapor transmission allows it to maintain a high thermal resistance through the life of the walk-in cooler or freezer unit.

FOAMULAR is hydrophobic; the closed-cell structure and lack of voids in FOAMULAR increases the foam's resistance to moisture penetration compared to other types of insulation materials such as spray foam and EPS. This minimizes one of the items required for mold growth—water.

IMPROVES ENERGY EFFICIENCY

The ultimate objective of the insulation in walk-in coolers and freezers is to improve energy efficiency. Obtaining and maintaining the highest possible R-value at a given thickness is key to achieving the designed energy efficiency over the life of the unit. The HYDROVAC process ensures a consistent closed-cell structure that is free of voids, maintains R-value, and is hydrophobic—all keys in maintaining R-value for the 20+ years of operation.

MEETS CURRENT AND FUTURE ENERGY STANDARDS

According to the Energy Independence and Security Act of 2007: *"Each walk-in cooler or walk-in freezer manufactured on or after January 1, 2009, shall contain wall, ceiling, and door insulation of at least R-25 for coolers and R-32 for freezers, except…"*

In a typical "walk-in" manufacturing process, which utilizes 4" walls in freezers and coolers, Owens Corning FOAMULAR extruded polystyrene insulation meets the federal regulations noted above.

In addition to these standards, the Energy Independence and Security Act of 2007 also mandates energy consumption levels:

"No later than January 1, 2012, the Secretary shall publish performance-based standards for walk-in coolers and walk-in freezers that achieve the maximum improvement in energy that the Secretary determines is technologically feasible and economically justified."

Owens Corning's HYDROVAC manufacturing process ensures that FOAMULAR extruded polystyrene insulation maintains its peak R-value, resulting in energy savings which can help walk-in coolers and freezers meet future federal requirements.

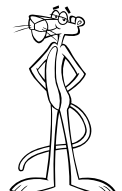| FOAMULAR® INSULATION PHYSICAL PROPERTIES TABLE		
	ASTM METHOD	
"FRESH" R-VALUE @ 20°F (°F x ft²x h/btu)	C 518	8.1 PER INCH
"FRESH" R-VALUE @ 55°F (°F x ft²x h/btu)	C 518	7.2 PER INCH
180-DAY R-VALUE @ 20°F (°F x ft²x h/btu)	C 518	5.7 PER INCH
180-DAY R-VALUE @ 55°F (°F x ft²x h/btu)	C 518	5.3 PER INCH
COMPRESSIVE STRENGTH, MIN. (LB/IN²)+	D 1621	25
WATER ABSORPTION, MAX. (% BY VOLUME)++	C 272	0.10
WATER VAPOR PERMEANCE, MAX. (PERM)*	E 96	1.1
WATER AFFINITY	–	HYDROPHOBIC
WATER CAPILLARITY	–	NONE

+ Value at yield or 10%, whichever occurs first.
++ Properties shown are representative values for 1" thick material.
* Actual water vapor permeance for 1" thick material, value decreases as thickness increases.

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GREENGUARD® Indoor Air Quality Certified

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