STYROFOAM™ Brand Spray Polyurethane Foam Insulation (CM Series)

1. PRODUCT NAME
STYROFOAM™ Brand Spray Polyurethane Foam (SPF) Insulation (CM Series)

2. MANUFACTURER
The Dow Chemical Company
Dow Building Solutions
200 Larkin Center, 1605 Joseph Drive
Midland, MI 48674
1-866-583-BLUE (2583)
Fax 1-989-832-1465

dowbuildingsolutions.com

3. PRODUCT DESCRIPTION
STYROFOAM™ Brand SPF Insulation (CM Series) is a professionally applied two-component, polyurethane foam that creates a seamless, monolithic barrier for protection against water vapor and air on the interior of steel stud walls. This closed-cell, 2-pcf spray foam successfully incorporates an advanced blowing agent with zero ozone depleting potential.

STYROFOAM™ Brand SPF Insulation (CM Series) is available in two formulas:

CM 2030
30°F – 70°F Ambient Processing
30°F – 60°F Substrate Processing

CM 2045
45°F – 95°F Ambient Processing
45°F – 100°F Substrate Processing

BASIC USE
STYROFOAM™ Brand SPF Insulation (CM Series) is designed as a water vapor and air barrier for the THERMAX™ Wall System., STYROFOAM™ Brand SPF Insulation (CM Series) expands during installation to fill cavities, cracks and penetrations, preventing uncontrolled air leakage in steel stud cavity walls. The spray foam also also provides insulation to a wall system.

SIZES
STYROFOAM™ Brand SPF Insulation (CM Series) is sold in sets of 55 gallon drums (one A isocyanate and one B polyol blend). Contact your Dow sales representative with questions.

4. TECHNICAL DATA
Applicable Standards

Applicable test methods include:

- ASTM C1029 – Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation
- ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM D1621 – Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- ASTM D1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics
- ASTM D6226 – Standard Test Method for Open Cell Content of Rigid Cellular Plastics

Code Compliances
STYROFOAM™ Brand SPF Insulation (CM Series) complies with the following codes:

- ICC ESR-2670
- INTERTEK, Classified Class A (ASTM E84)
- Southwest Research Institute (SWRI), Classified Class A (ASTM E84)
- ICC ES AC377 Appendix X modified NFPA 286: Being exposed in attics and ceilings
- ASTM E2178 Standard Test Method for Air Permeance for Building Materials
- IBC/IRC requirements for foam plastic insulation

Table 1: Typical Physical Properties(1) of STYROFOAM™ Brand SPF Insulation (CM Series)

Property and Test Method	Value	
	CM 2030	CM 2045
Ambient (Substrate) Temperature Range, °F	30-70 (30-60)	45-95 (45-100)
Core Density, ASTM D1622, lb/ft^3	2.5	2.3
Compressive Strength, ASTM D1621, lb/in^2, parallel	25	21.7
Closed-cell Content, ASTM D6226, Minimum 90%	Pass	Pass
Thermal Resistance, ASTM C518, 75°F mean temp., aged R-value(2) ft^2•h•°F/Btu, Aged Value @ 1” @ 4”	 6.0 25	 6.5 25
Water Vapor Permeability, ASTM E96, perm-inch	2.2	2.7
Water Absorption, ASTM D2842, 5% max. volume	Pass	Pass
Dimensional Stability, ASTM D2126, max. % linear change @ -20°F, ambient R.H., 7 days @ -40°F, ambient R.H., 7 days @ 158°F, ambient R.H., 7 days @ 158°F, 97% R.H., 7 days	 -0.1 – -2.0 Pass(3)	 – 0.2 0.1 Pass(3)
Surface Burning Characteristics(4), ASTM E84	Class A	Class A

(1) Not to be considered sales specifications.
(2) R means resistance to heat flow. The higher the R-value the greater the insulating value.
(3) Pass AC377.
(4) Flammability values for this or any other material are not intended to represent hazards that may be present under actual fire conditions.

When used in conjunction with the THERMAX™ Wall System, STYROFOAM™ Brand SPF Insulation (CM Series)complies with the following codes:

- NFPA 285-[06]: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components, Using the Intermediate-Scale, Multistory Test Apparatus
- ASTM E331-[00]: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E2357-[05]: Standard Test Method for Determining Air Leakage of Air Barrier Assemblies

Contact your Dow sales representative or local authorities for state and local building code requirements and related acceptances.

Physical Properties
STYROFOAM™ Brand SPF Insulation (CM Series) exhibits typical physical properties indicated in Table 1 when tested as represented.

Environmental Data
STYROFOAM™ Brand SPF Insulation (CM Series) is chlorofluorocarbon (CFC) free and uses the Enovate 3000 blowing agent from Honeywell, which is a zero-ozone depleting product.

Fire information
STYROFOAM™ Brand SPF Insulation is combustible and may constitute a fire hazard. Do not expose foam to flame or temperatures above 240°F.

5. INSTALLATION

SAFETY AND CONDITIONS OF USE

- STYROFOAM™ Brand SPF Insulation products are available to trained professional applicators only. Application certification is also recommended.
- Read all instructions and (Material) Safety Data Sheets carefully before use. ((M)SDS) for STYROFOAM™ Brand SPF Insulation products are available at: www.dowbuildingsolutions.com/na. Visit www.spraypolyurethane.com for further details and supporting information covering a wide range of topics including an overview of SPF health and safety guidelines, suggested personal protective equipment (PPE), typical first-aid treatment, and regulations and information about “green” marketing.
- STYROFOAM™ Brand SPF Insulation contains isocyanate, hydrofluorocarbon blowing agent and polyol. Do not breathe vapor or spray. Use only with a NIOSH-approved supplied air respirator (SAR) in accordance with your company’s respiratory protection program. Supplied air respirator or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter (P100) is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure, air-supplying respirator (air line or self-contained breathing apparatus).
- Provide cross ventilation in the spray zone during spraying at a minimum of 30 Air Changes per Hour (ACH) and for a minimum of 24 hours post-spray at a minimum of 3 ACH. Restrict access to the spray site to those with proper PPE, including respiratory protection, until at least 24 hours post-spray.
- Isocyanate is irritating to the eyes, skin and respiratory system and may cause sensitization by inhalation or skin contact. Sensitization, or the development of asthma, can lead to permanent respiratory problems.
- STYROFOAM™ Brand SPF Insulation will adhere to most surfaces and skin. Do not get foam on skin. When spraying polyurethane foam, wear MDI-resistant chemical gloves (e.g., nitrile) or fabric gloves coated in nitrile, neoprene, butyl or PVC. Spray applicators should wear chemically resistant coveralls or full body suits with hoods and Methylene diphenyl diisocyanate (MDI) resistant fitted boots or booties. Professional judgment is necessary to determine the appropriate PPE necessary for secondary activities such as cleaning and trimming of the cured foam. Cured foam must be mechanically removed or allowed to wear off in time.

- The contents are under pressure. Ambient and substrate temperatures should be within the range stated in Table 1. Substrate must be at least 5 degrees above dew point, with best processing results when ambient humidity is below 80 percent. Substrate must also be free of moisture (dew or frost), grease, oil, solvents and other materials that would adversely affect the adhesion of the spray polyurethane foam.

Spray equipment must be capable of delivering the proper ratio (1:1 by volume) of polymeric isocyanate and polyol blend at adequate temperatures and spray pressures. Primary and hose heaters should be set between 115°F and 130°F. Dynamic pressures should range between 800 psi and 1200 psi, and should not exceed a difference of 200 psi between the isocyanate and the polyol sides.

It is recommended that STYROFOAM™ Brand SPF Insulation (CM Series) be applied to the stud cavity once all insulation board and veneer fasteners have been installed. Apply spray polyurethane foam in the stud cavity and the inside of the stud flanges to ensure that all fastener penetrations are covered. Apply in consecutive layers of no less than 1/2" and no more than 2". If multiple layers are used, allow foam to cool completely before applying successive layers.

6. AVAILABILITY

STYROFOAM™ Brand Spray SPF Insulation (CM Series) is distributed through an extensive network. For more information, call 1-800-232-2436.

7. WARRANTY

See THERMAX™ Wall System Limited Warranties for details.

8. MAINTENANCE

STYROFOAM™ Brand SPF Insulation (CM Series) has a shelf life of six months when stored dry between 60°F and 90°F. Artificial warming of drums is not recommended. Caution should be exercised when opening containers as pressure may be present when material has been exposed to elevated temperatures. Ensure drums are capped after use. Empty drums are nonreturnable and should be disposed of by using current industrial practices in accordance with federal, state or local regulations.

9. TECHNICAL SERVICES

Dow can provide technical information to help address questions when using STYROFOAM™ Brand SPF Insulation (CM Series). Technical personnel are available to assist with any insulation project. Call 1-866-583-BLUE (2583).

10. FILING SYSTEMS

- www.thermaxwallsystem.com
- www.dowbuildingsolutions.com

The Dow Chemical Company
Building Solutions
200 Larkin • Midland, MI 48674

US
Technical Information: 1-866-583-BLUE (2583)
Sales Information: 1-800-232-2436

dowbuildingsolutions.com
thermaxwallsystem.com

Dow Polyurethane Foam Insulation and Sealants
CAUTION: When cured, these products are combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult (Material) Safety Data Sheet ((M)SDS) call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada. When air sealing buildings, ensure that combustion appliances, such as furnaces, water heaters, wood burning stoves, gas stoves and gas dryers are properly vented to the outside. See website: http://www.epa.gov/iaq/homes/hip-ventilation.html. In Canada visit: http://archive.nrc-cnrc.gc.ca/eng/ibp/irc/bsi/83-house-ventilation.html.

STYROFOAM™ Brand Spray Polyurethane Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read all the instructions and (M)SDS carefully before use. Wear protective clothing (including long sleeves), gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a P100 particulate filter is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure. STYROFOAM™ Brand SPF should be installed by a trained SPF applicator.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

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