

TECHNICAL DATA SHEET

Material Specification Criteria | Project Submittal Data

foamsulate™

FOAMSULATE™ 50 HY

OPEN CELL FOAM

Foamsulate 50 HY is a two component, light density, one to one by volume spray applied polyurethane foam. To produce Foamsulate 50 HY requires the use of an "A" component (ISO) and a blended "B" component (RESIN), which contains ZERO ozone depleting blowing agents, catalysts, polyols and fire retarding materials. Foamsulate 50 HY is an insulation system designed for use in residential, commercial and industrial applications. Use in lieu of more traditional forms of insulating materials such as fiberglass, cellulose or other loose fill products. Typical areas where spray polyurethane foam is applied are exterior walls, interior walls, vented attics, unvented attic assemblies, between floors, and ceilings.

TYPICAL PHYSICAL PROPERTIES:

| PROPERTY | FOAMSULATE 50 HY | TEST |
|--------------------------------------|-------------------------------------|-------------|
| R-VALUE | 3.7 @ 1" 13 @ 3.5" | ASTM C-518 |
| CORE DENSITY | 0.5 LB / Cubic Foot | ASTM D-1622 |
| OPEN CELL CONTENT | > 90% | ASTM D-2856 |
| WATER VAPOR TRANSMISSION - PERMEANCE | 21 perms at 1" | ASTM E-96 |
| AIR IMPERMEABLE | < 0.02 (L/s-m ²) @ 3.5" | ASTM E-283 |
| TENSILE STRENGTH | > 3.0 psi | ASTM D-1623 |
| DIMENSIONAL STABILITY | < 15% | ASTM D-2126 |

BUILDING CODE CERTIFICATIONS / FIRE TEST DATA

| | | |
|------------------------------|---|--|
| EVALUATION SERVICE REPORT | INTERTEK UVA IAPMO | CCRR - 1110 UES - 0540 |
| BUILDING TYPES | Approved | I, II, III, IV, V-B: Nonstructural Insulation material |
| FLAME SPREAD | ASTM E84 | Class I < 25 |
| SMOKE DEVELOPMENT | ASTM E84 | Class I < 450 |
| NFPA 259 | Pass: Standard fire test method for evaluation of fire propagation characteristics of exterior nonload bearing wall assemblies containing combustible components. | |
| NFPA 285 | Pass: Standard fire test method for evaluation of fire propagation characteristics of exterior nonload bearing wall assemblies containing combustible components. | |
| NFPA 286 | Pass: Can be used without a 15-minute thermal barrier when covered with one of the approved intumescent coatings as shown on page 2. | |
| NFPA 286 AC377 APPENDIX X | Pass: Complies with the applicable requirements of ICC-ES AC377 Appendix X for use in attics and crawlspaces when covered with one of the approved intumescent coatings as shown on page 2. | |

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THERMAL BARRIER: Current International Building Code (IBC) and International Residential Code (IRC) require that spray polyurethane foam be separated from the building interior by a code prescribed 15-minute thermal barrier or a code-approved alternative. Gypsum board at a minimum thickness of ½" is a code prescribed 15-minute thermal barrier. The following intumescent coatings when installed per manufacturer specifications are approved as thermal barrier alternatives for Foamsulate 50 HY:

APPROVED INTUMESCENT COATINGS:

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| DC315™ manufactured by: International Fireproof Technology, Inc | Application Rates: 14 Wet Mils - 9 Dry Mils |
| Fireshell TB manufactured by: TPR2 Corporation | Application Rates: 20 Wet Mils - 12 Dry Mils |
| Plus ThB manufactured by: No Burn Inc. | Application Rates: 14 Wet Mils - 9 Dry Mils |

IGNITION BARRIER: Foamsulate 50 HY meets the requirements of ICC- ES AC377 Appendix X for use in attics and crawlspace without a prescriptive ignition barrier when covered with one of the following approved intumescent coatings and the following conditions are met:

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| a | Entry is only to service utilities in the attic or crawlspace and no storage is permitted. |
| b | Attic or crawlspace areas cannot be connected. |
| c | Air from the attic or crawlspace cannot be circulated to other parts of the building. |
| d | In accordance with IBC Section 1203.3 or IRC Section R408.1, under floor (crawlspace) ventilation is provided as applicable. |
| e | In accordance with IBC 1203.2 or IRC Section R806, attic ventilation is provided as applicable. |
| f | In accordance with 2012 and 2009 IMC (International Mechanical Code®) Section 701, or 2006 IMC Sections 701 and 703, combustion air is provided. |
| g | The foam plastic insulation is limited to the maximum thickness and density tested. |
| h | The installed coverage rate of coatings, if part of the insulation system shall be equal or greater than that tested. |

APPROVED INTUMESCENT COATINGS:

| | |
|--|---|
| DC315™ manufactured by: International Fireproof Technology, Inc | Application Rates: 4 Wet Mils - 3 Dry Mils |
| Fireshell IB manufactured by: TPR2 Corporation | Application Rates: 7 Wet Mils - 4 Dry Mils |
| Flame Seal FS-IB manufactured by: Flame Seal Products, INC | Application Rates: 7.5 Wet Mils - 4 Dry Mils |
| Plus, Plus XD or Plus ThB manufactured by: No Burn Inc. | Application Rates: 6 Wet Mils - 4 Dry Mils |

GENERAL PROPERTIES: Foamsulate 50 HY is a low viscosity, 0.5 pcf density open cell insulating material. Foamsulate 50 HY is designed to provide significant control of air infiltration along with a high R-value per inch. When properly installed by a professional application company Foamsulate 50 HY quickly expands to fill the cracks, crevices, gaps and voids that exist in every structure. In addition, Foamsulate 50 HY will conform to the curves, irregular surfaces and spaces to form a superior thermal envelope around your entire structure.

EQUIPMENT AND COMPONENT RATIOS: The mix ratio is 1 to 1 by volume. The pre-heater temperatures should be set between 115°F - 140°F and able to maintain +/- 5°F.

VAPOR RETARDER: Open cell foam insulation is vapor permeable and will allow some diffusion of moisture through the product. Consult local building code officials for specific requirements. Climate zone tables are available in current IBC and IRC publications.

APPLICATION GUIDELINES: Polyurethane foam systems should be processed through commercially available spray equipment designed for that purpose by a qualified professional applicator. Consult the current Carlisle Spray Foam Insulation application guidelines for Foamsulate 50 HY prior to installation. It is the responsibility of the professional applicator to thoroughly understand all equipment technical information and safe operating procedures that pertain to a spray polyurethane foam application.

MATERIAL HANDLING: Due to the reactive nature of these components respiratory protection is mandatory. The vapors and liquid aerosols present during application and for a short period thereafter must be considered – and appropriate protective measures taken – to minimize potential risks from overexposure through inhalation, skin, or eye contact. These protective measures include: adequate ventilation, safety training for installers and other workers, use of appropriate personal protective equipment, and a medical surveillance program. It is imperative that the applicator read and become familiar with all available information on proper use and handling of spray polyurethane foam. Additional Information is available at carlisesfi.com or by contacting the Technical Services department of Carlisle Spray Foam Insulation.

PROPER STORAGE OF RAW MATERIALS: Shelf life is Six (6) months from date of manufacture when stored indoors, in the original unopened containers and between the temperatures of 50°–80°F.

TECHNICAL ASSISTANCE: For additional assistance please contact the Technical Services department of Carlisle Spray Foam Insulation at (844) 922-2355.

DISCLAIMER: To the best of our knowledge, all technical data contained herein is true and accurate as of the date of issuance and subject to change without prior notice. User must contact Carlisle Spray Foam Insulation to verify correctness before specifying or ordering. We guarantee our products to conform to the quality control standards established by Carlisle Spray Foam Insulation. We assume no responsibility for coverage, performance or injuries resulting from use. Liability, if any, is limited to replacement of the product. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARLISLE SPRAY FOAM INSULATION EXPRESSED OR IMPLIED; STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

