

NCFI
POLYURETHANES
TECHNICAL DATA SHEET

NCFI POLYURETHANES
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NCFI SPRAY FOAM SYSTEM 10-011 3.0

DESCRIPTION:

NCFI 10-011 3.0 is a two component, HFC-245fa blown, all PMDI based spray polyurethane foam system designed for use as a self-adhering, seamless, high insulating, spray applied rigid polyurethane foam roofing system. NCFI 10-011 3.0 will be available in multiple speeds for use in varying temperature conditions. NCFI 10-011 3.0 complies with ASTM D7425 and has been formulated to spray at a 3 pound density, depending on lift thickness, and may be used in applications of the EnduraTech™ roofing systems.

DISTINGUISHING CHARACTERISTICS:

- Excellent Cure and Overlap Adhesion
- High Yields
- High Closed Cell Content
- Good Dimensional Stability

TYPICAL PHYSICAL PROPERTIES:		
Core Density	ASTM D1622	3.0 pcf
Compressive Strength	ASTM D1621	62 psi
Tensile Strength	ASTM D1623	60 lbf/ft ²
Closed Cell Content	ASTM D2856	>93%
Maximum Service Temperature		180°F
Flame Spread @ 2"	ASTM E84	<75
Note: The above values are average values obtained from a laboratory and should serve only as a guide.		
R-Values* ASTM C518		
Thickness (inches)	R-Value (°F·hr·ft ² / Btu)	Moisture Vapor Perm
1	6.3	0.92
1 ½	9.5	0.61
2	13	0.46
4	27	0.23
*Note: As with all insulating materials, the R-value will vary with age and use conditions.		

APPROVALS:

ICC-Evaluation Services - ESR-3392

This system is classified per UL Standards.

This system is Approved by Factory Mutual.

This system is Approved per Miami Dade and Florida Product Approval.



For specific roof assembly approvals refer to the NCFI Application Information or contact NCFI for additional details. The building code and listed guides provide additional information:

- International Building Code (IBC) Section 2603
- CPI *Fire Safety Guidelines for Use of Rigid Polyurethanes and Polyisocyanurate Foam Insulation in Building Construction*
- CPI Bulletin AX 151: *Guidelines for the Re-sponsible disposal of Waste and Containers from Polyurethane Processing*
- CPI Bulletin AX 205: *Guidance for Working with MDI and Polymeric MDI: Things You Should Know*

ADDITIONAL PRODUCT INFORMATION:

NCFI provides a Product Stewardship Manual with additional information regarding the shipping, handling and application of spray polyurethane foam systems. SPF applicators should ensure they are familiar with the information in the latest issue of the NCFI Product Stewardship Manual.

Polyurethane products manufactured or produced from this liquid system may present a serious fire hazard if improperly used or allowed to remain exposed or unprotected. The character and magnitude of any such hazard will depend on a broad range of factors, which are controlled and influenced by the manufacturing and production process, by the mode of application or installation and by the function and usage of the particular product. **Any flammability rating contained in this literature is not intended to reflect hazards presented by this or any other material under actual fire conditions. These ratings are used solely to measure and describe the product's response to heat and flame under controlled laboratory conditions.** Each person, firm or corporation engaged in the manufacture, production, application, installation or use of any polyurethane product should carefully determine whether there is a potential fire hazard associated with such product in a specific usage, and utilize all appropriate precautionary and safety measures.

NCFI 10-011 3.0 APPLICATION INFORMATION

EQUIPMENT AND COMPONENT RATIOS:

The 10-011 system is formulated for spraying with a two component pump specifically designed for spray polyurethane foam systems. The 10-011R drum is connected to the resin pump and the 10-011A drum is connected to the isocyanate pumps. The proportioning pump ratio is 1:1. The dispensing temperature should be set at 130°F for automatically controlled machinery to give a good pattern. For additional assistance contact NCFI.

PROPER TEMPERATURE AND OPTIMUM FOAM REACTIVITY:

Below are the recommended air temperatures with the proper version of 10-011 for roof work.

<u>50°F to 60°F</u>	<u>60°F & above</u>	<u>75°F & above</u>
Fast	Regular	Slow

Care in selecting the proper reactivity version of 10-011 is needed for the combination of adequate curing on the overlap edges and reasonable texture of the foam surface. For temperatures below 50°F contact NCFI for specific recommendations.

STORAGE AND USE OF CHEMICALS:

Keep the temperature of the chemicals above 70°F for several days before use. Cold chemicals can cause poor mixing, pump cavitation or other process problems due to higher viscosity at lower temperatures. The storage temperature should not exceed 85°F. Do not store in direct sunlight. Keep drums tightly closed when not in use. The R side drum must be kept under dry air or nitrogen pressure of 2-3 psi after opening and during use. The shelf life of NCFI 10-011 is six months.

SAFE HANDLING OF LIQUID COMPONENTS:

Use caution in removing bungs from the container. Loosen the small bung first and let any built up gas escape before completely removing. Avoid prolonged breathing of vapors. In case of chemical contact with eyes, flush with water for at least 15 minutes and get medical attention. For further information refer to www.spraypolyurethanes.org Health and Safety Product Stewardship Workbook for High-Pressure Application of SPF.

PREPARATION OF SURFACE TO BE SPRAYED:

All surfaces to be sprayed should be clean, dry, and free of dew or frost. All metal to which foam is to be applied must be free of oil, grease, etc. Primers should be used where necessary. Please refer to NCFI's "Special Bulletin on Recommended Procedures for Applying NCFI Spray Foam Systems on Exterior Roof Surfaces."

PROPER TEMPERATURE FOR OPTIMUM ADHESION:

When the surface temperature will have a service temperature between 120°F and 180°F (#6 oil and resin tanks), the surface to be sprayed should be 120°F or above at the time of spraying. For temperatures over 180°F please contact NCFI for specific recommendations.

WEATHER PROTECTION OF FINISHED FOAM:

The finished surface of sprayed polyurethane foam should be protected from adverse effects of ultraviolet rays of direct sunlight, which can cause dusting and discoloration. Protective coatings designed for use with polyurethane foam are available.

VAPOR BARRIER PROTECTION ON COLD STORAGE WORK:

When sprayed polyurethane foam is used on exterior roofs of freezer or cooler buildings, the exterior coating on the foam should be a vapor barrier. This is because of severe vapor drive from the hot roof to the cold interior.

PREDICTION OF FIRE HAZARD IN CONSTRUCTION:

NCFI 10-011 is designed for use as an exterior roof membrane. NCFI 10-011 is not designed for interior use. NCFI has many other systems designed for interior use; however, where any foam is sprayed in building interiors its exposed surface should be protected from fire hazard by ½" Portland cement plaster or ½" gypsum board or equivalent per applicable building code.

FOR ANY QUESTIONS REGARDING THE ABOVE RECOMMENDATIONS CONTACT NCFI

The information on our data sheets is to assist customers in determining whether our products are suitable for their applications. The customers must satisfy themselves as to the suitability for specific cases. NCFI Polyurethanes warrants only that the material shall meet its specifications. This warranty is in lieu of all other written or unwritten, expressed or implied warranties, and NCFI Polyurethanes expressly disclaims any warranty of merchantability, fitness for a particular purpose, or freedom from patent infringement. Accordingly, buyer assumes all risks whatsoever as to the use of the material. Buyer's exclusive remedy as to any breach of warranty, negligence or other claim shall be limited to the purchase price of the material. Failure to adhere strictly to any recommended procedures shall relieve NCFI Polyurethanes of all liability with respect to the material or the use thereof.