



Barnhardt Manufacturing Company  
dba NCFI Polyurethanes  
PO Box 1528 • Mount Airy, NC 27030  
800-346-8229 www.NCFI.com

## NCFI SPRAY FOAM SYSTEM 10-016 3.0 Ib. TECHNICAL DATA SHEET

### DESCRIPTION:

NCFI 10-016 3.0 is a two component, HFO blown spray polyurethane foam system designed for use as a self-adhering, seamless, high insulating, spray applied rigid polyurethane foam roofing system. 10-016 is available in multiple speeds for use in varying temperature conditions. 10-016 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
- Class II Vapor Retarder @ 1"

### APPROVALS:

This system is classified per UL Standards.



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
- International Building Code (IBC) Section 1507.13
- CPI Fire Safety Guidelines for Use of Rigid Polyurethanes and Polyisocyanurate Foam Insulation in Building Construction
- CPI Bulletin AX 151: Guidelines for the Responsible 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.

### TYPICAL PHYSICAL PROPERTIES\*:

|                                                                                                         |                        |         |
|---------------------------------------------------------------------------------------------------------|------------------------|---------|
| Core Density                                                                                            | ASTM D1622             | 3.0 pcf |
| Compressive Strength                                                                                    | ASTM D1621             | 64 psi  |
| Tensile Strength                                                                                        | ASTM D1623             | 82 psi  |
| Closed Cell Content                                                                                     | ASTM D2856             | >90%    |
| Maximum Service Temperature                                                                             |                        | 180°F   |
| Flame Spread @ 4"                                                                                       | ASTM E84               | <75     |
| Shear Strength                                                                                          | ASTM C273              | 46 psi  |
| R- Value @ 1"                                                                                           | ASTM C518<br>@180 days | 6.7     |
| *Note: The above values are average values obtained from a laboratory and should serve only as a guide. |                        |         |

| R-Values*                                                                                   |                           | ASTM E96          |
|---------------------------------------------------------------------------------------------|---------------------------|-------------------|
| Thickness (inches)                                                                          | R-Value (°F·hr·ft² / Btu) | Vapor Perm (perm) |
| 1                                                                                           | 6.7                       | 0.87              |
| 1 ½                                                                                         | 10                        | 0.58              |
| 2                                                                                           | 13                        | 0.44              |
| 4                                                                                           | 27                        | 0.22              |
| 6                                                                                           | 40                        | 0.15              |
| 8                                                                                           | 54                        | 0.11              |
| 10                                                                                          | 67                        | 0.09              |
| 12                                                                                          | 80                        | 0.07              |
| *Note: As with all insulating materials, the R-value will vary with age and use conditions. |                           |                   |

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 10-016 3.0 APPLICATION INFORMATION

### APPLICATION GUIDELINE:

10-016 3.0 is designed for application on the exterior of a roof. It is not designed for interior applications. NCFI has other systems designed for interior use.

### 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 B-side drum must be kept under dry air or nitrogen pressure of 2-3 psi after opening and during use. The shelf life of unopened A2-000 is 24 months and the B-10-016 is six months.

### SAFE HANDLING OF LIQUID COMPONENTS:

Use caution in removing bungs from the container. Partially loosen the small bung first allowing any built up gas pressure to escape before completely removing it. 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](http://www.spraypolyurethanes.org) Health and Safety Product Stewardship Workbook for High-Pressure Application of SPF.

### EQUIPMENT AND COMPONENT RATIOS:

The 10-016 3.0 system, consisting of the A2-000 and B-10-016 components, is formulated for spraying with a two component pump specifically designed for spray polyurethane foam systems. The B-drum is connected to the resin pump and the A-drum is connected to the isocyanate pumps. The proportioning pump ratio is 1:1. The dispensing temperature should be set at 130°F and adjusted accordingly to give a good spray pattern. For additional assistance contact NCFI.

### PROPER TEMPERATURE AND OPTIMUM FOAM REACTIVITY:

Below are the recommended ambient air temperatures for the different speeds of 10-016.

| 10-016 3.0 Systems | Temperature Range Guideline |
|--------------------|-----------------------------|
| SLOW               | 75°F & above                |
| REG                | 60°-80°F                    |
| FAST               | 40°-60°F                    |

Care in selecting the proper speed of 10-016 is needed for the combination of adequate curing on the overlap edges and an acceptable texture of the foam surface. For temperatures below 40°F contact NCFI for specific recommendations.

### 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.

### 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 warm exterior to the cold interior.

### 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.

### 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.