VOLATILEFREE INC®
MANUFACTURER OF HIGH PERFORMANCE POLYMERS

Sustainability
Durability
Flexibility

VFI-716 OPEN CELL POLYURETHANE SPRAY INSULATION FOAM

Overview

Description
VFI-716 is a open-cell, spray applied polyurethane foam. It is a two component, low density, semi-rigid, water blown, non-structural insulation system. This low density system will provide a high yield of Class 1 tested foam providing better air quality and increased comfort inside the structure.

Usage
VFI-716 is a low density; spray applied polyurethane foam insulation used in walls, floors, ceilings, attics and ducts and as an air barrier building envelope insulation system. Maximum service temperature is 180°F.

Physical Properties

Nominal Density, Sprayed
ASTM D-1622

PCF	0.45-0.5

Compressive Strength
ASTM D-1621

Parallel (psi):	0.6

Open Cell Content

ASTM D-2856	>90%

Thermal Conductivity
BTU/hr ft^2 F/in Factor @ 77°F
ASTM C-518

Aged:	0. 26

Thermal Resistance
BTU/hr ft^2 F/in Factor @ 77°F
ASTM C 518

Aged:	3.9

Humid Aging % Volume Change, 158°F (70°C), 100% RH
ASTM D-2126

6 days	+1.5%

Cold Aging % Volume Change, -20°F (-29°C)
ASTM D-2126

6 days:	-1.5 %

Dry Aging % Volume Change, 158°F (70°C)
ASTM D-2126

6 days:	+2.3%

Weather & Environmental Performance

Toxicity
Skin contact or inhalation of Isocyanate can cause sensitization. Individuals with asthma, respiratory disease or allergies should not work with sprayed polyurethanes. Please see Safety Data sheet for appropriate PPE.

Fire Testing
Complies with Class I ASTM E-84

Foam thickness:	4”
Flame Spread Index:	25
Smoke Development Index	300

Liquid Component Properties

Viscosity @ 20°C
ASTM D-1638

“A” side:	100-150 cps
“B” side:	600-700 cps

Mixing Ratio
By volume

% “A”	50
% “B”	50

- **Spray Reactivity**

Cream time:	1 second
Tack free:	On rise
Cure:	4 hours

- **Density @ 20°C**

ASTM D-1638

“A” side:	10.3 lb/gal (S.G. 1.23)
“B” side:	9.6 lb/gal (S.G. 1.15)

Application

- **Equipment**

A 1:1 ratio machine capable of dynamic pressures at 1100 psi minimum and 2:1 transfer pump is required. Hose heat and component heaters must maintain 130°F. (Pressure and temperature will depend on hose length and equipment capabilities).

- **Surface Preparation**

Substrate must be clean and dry. Moisture in any form, excessive humidity (>85%R.H.) rain, fog, or ice will react adversely thus affecting the system performance and corresponding physical properties. Application temperatures are between 50ºF -120ºF and should not take place when the ambient temperature is within 5ºF of the dew point. Wind speeds in excess of 15 miles per hour may result in excessive loss of exotherm and interfere with the mixing efficiency of the spray gun affecting foam surface texture, cure, and physical properties and will cause overspray issues.

- **Mixing Requirements**

Mixing is not required.

- **Spray Tips**
  - VFI-716 should be sprayed in one pass up to 6” thick. Do not flash coat or spray multiple passes.
  - This is an open cell foam and should not be combined with other higher density closed cell foam systems.

- **Application Parameters**

Store at 65º to 85ºF in a dry and well-ventilated area. Heated trailers, hotboxes, or heated tank storage may be necessary. Material temperature should be confirmed with a thermometer or IR gun. Some equipment may require you to heat drums to achieve optimum material temperature. Apply in 6” lifts. If applying a second pass, wait 60 minutes for the sprayed foam to cure and cool. Foam sprayed too thick and at too quick of a rate can get to hot and char or self ignite.

- **Precautions**

Welding or hot work should be completed before application of foam. Spray crews must wear appropriate personal protective equipment. Dispose of empty drums properly.

- **Warning!**

Do Not Leave Foam Exposed or Unprotected
Polyurethane foam is a serious fire hazard if improperly used. Each person, or company engaged in the manufacture, production, application, installation of polyurethane foam 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 as outlined in local, State and Federal guidelines.

These physical property results are typical for this material as applied at our development facility under controlled conditions. The resultant properties can vary with changes in the application parameters; i.e., temperatures, thickness, metal embossment, processing equipment, mix head variations, throughout, etc. As a result, these published properties are useful for evaluation guidelines. Physical property specifications should be determined from actual production processed material.

Polyurethane foam utilized as an interior insulation system, must be protected by an approved 15 minute, fire rated thermal barrier and meet Federal, Local & State Building Code approvals.