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**INSULSTAR® & INSULBLOC® SPRAY  
 APPLIED POLYURETHANE FOAM  
 SYSTEMS**

**CSI Section: 07 10 00 Dampproofing and Waterproofing**

**1.0 RECOGNITION**

InsulStar® and InsulBloc® spray-applied polyurethane foam systems have been evaluated for dampproofing, waterproofing, and fire performance characteristics, and comply with the intent of the following codes and regulations:

- 2021, 2018, 2015, and 2012 International Building Code® (IBC)
- 2021, 2018, 2015, and 2012 International Residential Code® (IRC)

**2.0 LIMITATIONS**

Use of InsulStar® and InsulBloc® spray-applied polyurethane foam systems recognized in this report is subject to the following limitations:

**2.1** InsulStar® and InsulBloc® spray-applied polyurethane foam shall be installed in accordance with the manufacturer’s installation instructions, this evaluation report, and the applicable code, and if there are any conflicts between the manufacturer’s published installation instructions and this report, this report governs.

**2.2** A copy of this report shall be available on the job site at all times during installation.

**2.3** InsulStar® and InsulBloc® shall be separated from the interior of the building by an approved thermal barrier, or a minimum of 1-inch (25 mm) thickness of masonry or concrete, in accordance with IBC Section 2603.4.

**2.4** InsulStar® and InsulBloc® shall not be left exposed for more than 3 months prior to backfilling. The backfill material shall be clean soil, free of rocks or other deleterious materials. Placement of backfill shall be in lifts and compacted in a manner that does not damage the foundation or the insulation material, in accordance with IBC Section 1804.3 in the 2021, 2018, and 2015 editions, Section 1804.2 in the 2012 edition

as applicable. Where foundation walls extend above the backfill grade line, the foam shall be covered with an approved wall covering or protected from ultraviolet (UV) light exposure in accordance with NCFI’s written instructions.

**2.5** InsulStar® and InsulBloc® shall not be installed in areas where the probability of termite infestation is very heavy, in accordance with Section 2603.8 in the 2021, 2018, and 2015 editions, and Figure 2603.9 in the 2012 edition of the IBC, or IRC Section R318.4, as applicable, except where the building’s walls, floors, ceilings, and roofs are entirely of noncombustible materials or preservative-treated wood, or an approved method of protecting the foam plastic and structure from subterranean termite damage is provided,

**2.6** Jobsite labeling and certification of the waterproofing shall comply with IBC Section 2603.2 or IRC Section R316.2, as applicable.

**2.7** Manufacturer’s installation instructions shall be provided to the building official upon request for inspection purposes.

**2.8** InsulStar® and InsulBloc® shall be installed in accordance with the applicable code, the manufacturer’s published installation instructions, and this report. Where there is a conflict, the most restrictive requirements shall govern.

**2.9** The InsulStar® and InsulBloc® spray-applied polyurethane foam systems recognized in this report are produced by NCFI in Mount Airy, North Carolina, and Missouri City, Texas.

**3.0 PRODUCT USE**

**3.1 General:** InsulStar® and InsulBloc® spray-applied polyurethane foam systems are used as dampproofing or waterproofing on the exterior face of below-grade concrete or masonry foundation walls. The foam system is an alternative to the dampproofing materials specified in IBC Section 1805.2.2 or IRC Section R406.1, and the waterproofing materials specified in IBC Section 1805.3.2 or IRC Section R406.2.

**3.2 Installation:**

**3.2.1 General:** InsulStar® and InsulBloc® spray-applied foam waterproofing systems shall be installed in accordance with the manufacturer’s installation instructions and this report. Concrete or masonry below-grade walls to be waterproofed shall be designed and constructed to withstand the hydrostatic pressures and other lateral loads to which the walls will be subjected, in accordance with IBC Section

*The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provisions of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.*





1805.3.2 or IRC Section R404 as applicable. The InsulStar® and InsulBloc® insulation shall be applied from the bottom of the wall to not less than 12 inches (305 mm) above the maximum elevation of the ground-water table.

**3.2.2 Application:** InsulStar® and InsulBloc® shall be applied using spray equipment, approved by NCFI Polyurethanes, using a volumetric positive displacement pump with a 1:1 ratio (Part “A”: Part “B”) and properly sized spray nozzle.

**3.2.3 Waterproofing:** InsulStar® and InsulBloc® shall be applied to below-grade walls of concrete or masonry. Both InsulStar® and InsulBloc® are applied in a minimum of two passes with a minimum thickness of 0.75 inches (19 mm) per pass. The maximum thickness of each pass shall not exceed 2 inches (51 mm). Multiple passes are used to achieve the required thickness for insulation purposes.

**3.2.4 Insulation Value:** Reporting of the R-value of the InsulStar® and InsulBloc® foam is outside of the scope of this report. Use of the InsulStar® and InsulBloc® as insulations shall be in accordance with a valid evaluation report from an approved and accredited evaluation report provider verifying compliance with IBC Section 2603.5.

**3.2.5 Above Grade Applications:** Use of InsulStar® and InsulBloc® installed on above-grade exterior walls is outside of the scope of this report. Qualified wall coverings and ultraviolet (UV) protective coatings shall be provided by the manufacturer, based on the type of construction for the application.

## 4.0 PRODUCT DESCRIPTION

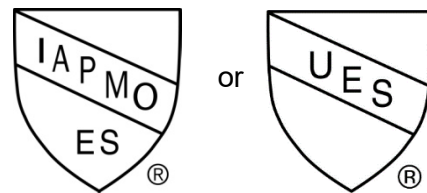
**4.1 General:** InsulStar® and InsulBloc® are two-component, spray-applied, closed-cell polyurethane foam plastic waterproofing and dampproofing systems having a nominal density of 2.0 pounds per cubic foot (32 kg/m<sup>3</sup>). InsulStar® and InsulBloc® have a maximum allowable resistance to hydrostatic pressure of 7.5 psi (52 kPa) when tested over a 1/8-inch wide (3.2 mm) crack in accordance with ASTM C5385. The products are normally packaged in 55-gallon drums (208 L), labeled Part “A” and Part “B”. InsulStar® and InsulBloc® have a moisture vapor permeance of less than 1 perm at a thickness of 1.5 inches (38 mm). When tested in accordance with the EPA 537 method, these foams returned No Detections for PFAS.

**4.2 Surface Burning Characteristics:** InsulStar® and InsulBloc®, when tested in accordance with ASTM E84 at a maximum thickness of 4 inches (102 mm) and a nominal density of 2.0 pounds per cubic foot (32 kg/m<sup>3</sup>), exhibited a flame spread index of 25 or less and a smoke-developed index of 450 or less.

## 5.0 IDENTIFICATION

InsulStar® and InsulBloc® spray-applied polyurethane foam components are identified with the manufacturer’s name (NCFI Polyurethanes), address, product name (InsulStar® or InsulBloc®), use and application instructions, density, flame spread and smoke-development index, and the IAPMO UES Evaluation Report number (ER-340).

Either one of the IAPMO UES Marks of Conformity, as shown below, may also be used.



IAPMO UES ER-340

## 6.0 SUBSTANTIATING DATA

**6.1** Test reports are from laboratories in compliance with ISO/IEC 17025.

**6.2** Data in accordance with applicable portions of ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), approved April 2020 (Editorially revised July 2020).

**6.3** Applicable sections of ICC-ES Acceptance Criteria for Cold, Liquid-applied, Below-grade, Exterior Dampproofing and Waterproofing Materials (AC29), approved June 2011 (Editorially Revised August 2020).

**6.4** Testing of PFAS in polyurethane foam in accordance with EPA 537-2018.

## 7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on InsulStar® and InsulBloc® spray-applied polyurethane foam systems to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification. Products are manufactured at locations noted in Section 2.9 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)