



## EVALUATION SUBJECT: INSULSTAR®/INSULBLOC® SPRAY APPLIED POLYURETHANE FOAM SYSTEM

### REPORT HOLDER:

NCFI Polyurethanes  
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CSI Division: 07 THERMAL AND MOISTURE  
PROTECTION

CSI Section: 071000 Dampproofing and Waterproofing

### 1.0 SCOPE OF EVALUATION

#### 1.1 Compliance to the following codes & regulations:

- 2012 International Building Code® (2012 IBC)
- 2009 International Building Code® (2009 IBC)
- 2012 International Residential Code® (2012 IRC)
- 2009 International Residential Code® (2009 IRC)

#### 1.2 Evaluated in accordance with:

- ICC-ES AC377, dated November 2012
- Applicable sections of ICC-ES AC29, dated June 2011 (editorially revised October 2014)

#### 1.3 Properties assessed:

- Physical properties
- Foundation dampproofing/waterproofing
- Surface-burning characteristics
- Hydrostatic resistance
- Impact resistance

### 2.0 PRODUCT USE

The InsulStar® and InsulBloc® spray-applied polyurethane foam systems are used as exterior waterproofing on 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.

### 3.0 PRODUCT DESCRIPTION

**3.1 General:** InsulStar® and InsulBloc® are two-component, spray-applied, closed cell polyurethane foam plastic waterproofing and dampproofing 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 the ASTM C5385. The products are normally packaged in 55 gallon drums (208 L), labeled Part “A” and Part “R”. InsulStar® and InsulBloc® have a moisture vapor permeance of less than 1 perm at a thickness of 1.5 inches (38 mm).

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

### 4.0 INSTALLATION

**4.1 General:** InsulStar® and InsulBloc® spray-applied foam waterproofing 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 1805.3.2. 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.

**4.2 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 “R”) and properly sized spray nozzle.

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

**4.2.2 Insulation:** Reporting of the R-value of the InsulStar® and InsulBloc® foam when used as insulation is outside of the scope of this report. Use and installation of the InsulStar® and InsulBloc® as insulation on below grade walls shall be in accordance with a valid evaluation report from an approved and accredited evaluation report provider.

**4.3 Above Grade Applications:** Use of InsulStar® and InsulBloc® installed on above grade exterior walls is outside of the scope of this report. Use and installation of InsulStar® and InsulBloc® on above grade exterior walls in approved construction assemblies shall be in accordance with a valid evaluation report from an accredited evaluation report provider verifying compliance with IBC Section 2603.5. Qualified wall coverings and ultraviolet (UV) protective coatings shall be provided by the manufacturer, based on the type of construction for the application.

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 provision 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.

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### 5.0 LIMITATIONS

The InsulStar® and InsulBloc® spray-applied polyurethane foam systems described in this report are a suitable alternative to those codes listed in Section 1.1 of this report, and are subject to the following conditions:

**5.1** 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 manufacturers’ published installation instructions and this report, this report governs.

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

**5.3** 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.

**5.4** 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 1804.2. 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.

**5.5** InsulStar® and InsulBloc® shall not be installed in areas where the probability of termite infestation is very heavy in accordance with Figure 2603.9 of the IBC, except where the buildings 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, in accordance with IBC Section 2603.9 or IRC Section R318.4, as applicable.

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

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

**5.8** InsulStar® and InsulBloc® are produced in Mount Airy, North Carolina and Clearfield, Utah under a quality control program with inspections by UL LLC.

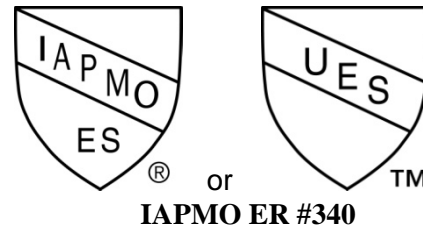
### 6.0 SUBSTANTIATING DATA

**6.1** Data in accordance with ICC-ES Acceptance Criteria for Spray-applied Foam Plastic Insulation (AC377), dated June 2011.

**6.2** Applicable sections of ICC-ES Acceptance Criteria for Cold, Liquid-applied, Below-grade, Exterior Dampproofing and Waterproofing Materials (AC29), dated June 2011, editorially revised October 2014.

### 7.0 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, the name of the approved inspection agency (UL LLC), the IAPMO UES Uniform Evaluation Service mark of conformity and Uniform Evaluation Report number (ER-340).



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