

## Product Specification

### 1. PRODUCT NAME

NU-WOOL Premium Cellulose and WALLSEAL are registered trademarks for NU-WOOL Co. Inc.

### 2. MANUFACTURER

NU-WOOL Premium Cellulose is made from recycled paper (85%) and is packaged in 26 pound bags. Installation is done by factory trained installers. NU-WOOL WALLSEAL Cellulose Insulation is a spray-in-place cellulose insulation made from recycled paper, primarily newspaper. It is installed in both attics and walls of residential and commercial buildings because of its superior thermal and air infiltration properties. WALLSEAL is an energy-saving material that has an R-Value of 3.8 per inch, and will last for the life of the structure. NU-WOOL uses borate chemicals as a fire retardant, making NU-WOOL WALLSEAL Cellulose Insulation one of the most environmentally friendly materials used in home construction.

### 3. PRODUCT DESCRIPTION

NU-WOOL Insulation is an energy-saving insulation made from recycled newspapers. NU-WOOL Insulation, with its superior thermal and air infiltration properties, is installed in both attics and walls of residential and commercial buildings. This environmentally friendly, "green" insulation provides up to 40% savings on energy bills when compared to conventional insulation materials. NU-WOOL Insulation also contains an E.P.A. registered fungicide making it resistant to the growth of mold.

WALLSEAL is applied by a spray-on method that insures the correct density to prevent settling while making the wall resistant to air movement and achieving maximum thermal performance.

NU-WOOL Attic insulation is applied with air to open spaces at a density of 1.6 pounds per cubic

foot. The manufacturers' coverage chart has reflects the settling after application in open blow situations.

### 4. TECHNICAL DATA

- 4.1 All cellulose insulation must conform to the CPSC standard 16 CFR Part 1209 and 1404. NU-WOOL also meets ASTM C-739. Also refer to UL R-8078 and R-13173.
- 4.2 Density is measured using ASTM C-739 standards and is 1.6 lb/ft<sup>3</sup>.
- 4.3 Thermal resistance was measured by test method ASTM C-518 (4 in. thick) and is 3.8 (R-value/in.)
- 4.4 Surface Burning Characteristics: Surface burning characteristics are determined using two methods. Critical radiant flux using test method ASTM E 970 and ASTM E 84.
  - ASTM E 970 Greater than 0.12 watts/cm<sup>2</sup>
  - ASTM E 84 Less than 25, Class 1
- 4.5 Moisture Vapor Sorption: NU-WOOL meets the requirements of ASTM C 739 of less than 15% maximum weight gain under test conditions. Variations in relative humidity will not affect the thermal properties of the insulation.
- 4.6 Corrosiveness: NU-WOOL is tested for contact against copper, steel and aluminum under the test conditions of ASTM C 739 and is not corrosive to these metals.
- 4.7 Building Codes: NU-WOOL meets all the current building codes.
- 4.8 Sound Transmission Loss (STC) Ratings: NU-WOOL has been tested for numerous wall assemblies at Riverbank Laboratories using ASTM E 90. Specific wall assemblies are listed in this book.
- 4.9 Other Test Properties: Under ASTM C 739, there are tests for fungi resistance, odor and smolder resistance.



## CSI 3-PART SPECIFICATION

### 1. General

**1.1** This specification provides information regarding the pneumatic application of Nu-Wool Premium Cellulose Insulation in attics and walls. Nu-Wool Insulation (attics and floors) and Nu-Wool WALLSEAL Insulation (walls) provide superior R-value (resistance to heat flow) for thermal applications, sound control for acoustical treatments, and fire control in attics, floors and walls of residential and commercial construction.

### 2. Materials

**2.1 Cellulose Insulation.** Nu-Wool Premium Cellulose Insulation is manufactured from recycled newspapers. Each pound of Nu-Wool Insulation and Nu-Wool WALLSEAL Insulation contains at least 85% paper fiber content. The fibers are treated with boric acid and sodium polyborate to create permanent flame resistance. Nu-Wool Premium Cellulose Insulation contains an E.P.A. registered fungicide, making it resistant to mold growth. The additives are non-toxic, non-corrosive, will not irritate normal skin, will not give off odor during or after installation, will not attract vermin or insects and will not adversely affect other building materials.

**2.1.1 Thermal Performance.** Nu-Wool Premium Cellulose Insulation resists the flow of heat. R-value is 3.8 per inch. Air infiltration through the material is limited because of the density of the material and methods used to install it.

**2.1.2 Sound Control.** The density of Nu-Wool Insulation provides significant noise reduction in walls, ceilings, and floors. Wall assemblies insulated with Nu-Wool WALLSEAL Insulation are tested at Riverbank Acoustical Laboratories. STC ratings are available upon request.

**2.1.3 Fire Resistance.** Nu-Wool WALLSEAL Insulation has been successfully tested in load-bearing, two-hour firewall tests (ASTM E-119) using 3 and 4 layers of 5/8" type X drywall at Underwriters Laboratories (UL Designs U360 and U369). Nu-Wool WALLSEAL Insulation is also approved for use in 44 other UL-approved firewall designs.

**2.2 Standards.** All cellulose insulation sold in the U.S. must conform to the CPSC standard 16 CFR Parts 1209 and 1404. In addition, Nu-Wool Premium Cellulose Insulation meets all of the test requirements of ASTM C-739, E-84 (UL-723), and E-119.

**2.3 Material Characteristics.** The following properties were tested by Underwriters Laboratories (R-8078):

**2.3.1 Settled Density.** The maximum density after long-term settling of dry application: 1.6<sub>lb</sub>/ft<sup>3</sup>.

**2.3.2 Thermal Resistance.** The average thermal resistance per inch: 3.8 (R-value/in).

**2.3.3 Flammability Characteristics.** Critical Radiant Flux: greater than or equal to 0.12 watts/cm<sup>2</sup>. Smoldering Combustion: less than or equal to 15%.

**2.3.4 Moisture Vapor Sorption.** Nu-Wool Premium Cellulose Insulation meets the requirements of less than 15% for maximum weight gain under the specified test conditions. This requirement assures that normal variations in relative humidity will not adversely affect thermal resistance.

**2.3.5 Environmental Characteristics.** When in contact with steel, copper, aluminum, or galvanized materials, Nu-Wool Premium Cellulose Insulation is non-corrosive. Nu-Wool Premium Cellulose Insulation passes all required tests demonstrating that it does not support fungal growth.

**2.3.6 Surface Burning Characteristics.** Nu-Wool WALLSEAL Insulation was tested by Underwriters Laboratories (R-13173) for the following properties:

**2.3.6.1 Flame Spread:** 15

**2.3.6.2 Smoke Developed:** 5

**2.4 Sound Transmission Classification.** Numerous wood and steel stud wall assemblies insulated with Nu-Wool WALLSEAL Insulation, including firewall assemblies, have been tested according to ASTM E-90 and E-413 by Riverbank Acoustical Laboratories for STC ratings. Results are available upon request.

**2.5 Building Codes.** Properly installed Nu-Wool Premium Cellulose Insulation meets the requirements for thermal insulating materials set forth in IBC, CABO, ICC (BOCA, ICBO, SBCCI), and the Model Energy Code.

### 3. Execution

**3.1 Nu-Wool Cellulose Insulation** is pneumatically blown dry into attics and floor assemblies after all mechanical, plumbing and electrical and other utility installations have been completed. Information on recommended blowing equipment and coverage charts are available upon request.

**3.2 Nu-Wool WALLSEAL Insulation** is pneumatically sprayed with a controlled water fog for adhesion into open wall cavities after all mechanical, plumbing and electrical and other utility installations have been completed. Drywall may be installed 24 hours after application. Total drying time is approximately 30 days. Installation must be made only by Nu-Wool factory-certified WALLSEAL contractors using approved equipment. Product warranties void if not installed by certified Wallseal contractor.

## **DIVISION 7.0 THERMAL and MOISTURE PROTECTION**

The Instructions to Bidders and General Requirements, including the General Conditions are a part of this division.

### 7.01 Insulation

#### A. MATERIALS

1. Sprayed-in-place insulation manufactured by NU-WOOL Co. Inc. Insulation material is UL classified and all test specifications are clearly marked on the package. Each insulation package is also date coded for purposes of tracing the material to a manufacture date.
2. Spray insulation for sidewalls shall be applied with a minimum density of 3.2 pound per cubic foot to prevent settling in the walls. The coverage based on this density is marked on the package and the manufacturer intends for material to be installed by weight rather than inches in attic applications, refer to FTC Insulation Rules.
3. Exterior Building Walls: All exterior wood stud walls should have minimum wall insulation "R" value of 13.0. Insulation shall have a flame spread of 15, smoke developed of 5. When NU-WOOL insulation is specified, insulation shall meet ASTM-C-739, ASTM-E-84, ASTM-E-119 and UL-723 standards.
4. Install sound insulation in all corridor walls between units, party walls, mechanical rooms, and utility/laundry rooms. Insulation shall be equal to STC ratings of NU-WOOL WALLSEAL INSULATION.
5. Sidewall insulation should be applied with a level of moisture that assures bonding and proper density (3.2 pcf).
6. Pump pressure should be maintained at 700-900 psi. Water must be

supplied from a self-renewing source, or from a tank large enough to provide uninterrupted service.

7. Walls (2X4) should be left exposed for twenty-four hours, 2X6 walls may need additional drying time before covering with drywall. Vapor barriers are not needed with this product.

#### B. ATTIC INSULATION

Insulation shall consist of NU-WOOL loose-fill insulation using pneumatic blowing machines. Insulation shall meet ASTM-C-739. Provide fiberboard or polystyrene insulation baffles at each truss space. Insulation shall meet the standards of ASTM-E-84 with a flame spread of 15 and a smoke developed of 5. Verify alternates with owner.

#### C. INSTALLATION

1. Insulation shall be blown in to the attic spaces with a pneumatic blowing machine approved for such product application by the manufacturer of the insulation product.
2. Insulation shall be applied in consistent depths throughout the attic area to achieve the specified R-value. Insure air sealing around pipes and other items penetrating the insulated plane using caulks and foam sealants.
3. Insulation should be applied according to the manufacturer's coverage chart listed on the package. This insures that coverage is dependent on weight rather than inches.



## SECTION 072100 - THERMAL INSULATION

### 1.1 SUMMARY

- A. Applications:
  - 1. Cavity-wall insulation.
  - 2. Concealed building insulation.
  - 3. Exposed building insulation.
  - 4. Loose-fill building insulation.
  - 5. Self-supported, spray-applied cellulosic insulation.
  - 6. Vapor retarders.
  - 7. Sound attenuation insulation.

### 1.2 PERFORMANCE REQUIREMENTS

- A. Product meets ASTM E 84 for surface burning characteristics.
- B. Product is tested for ASTM E 90 for STC ratings.
- C. Product is tested to ASTM C 739 standards.
- D. Product is tested to ASTM E 119 standards.

### 1.3 MATERIALS

- A. Insulation:
  - 1. Cellulose Spray-on Insulation: Installed Density 3.2 lb/cu. ft. (51 kg/cu. m)
  - 2. Cellulose Attic Insulation: Installed Density 1.60 lb/cu. ft. (26 kg/cu.)
- B. Vapor Retarders: [Polyethylene] [Reinforced polyethylene] [Fire-retardant, reinforced polyethylene] [Foil-polyester film]. Vapor barriers needed for high humidity areas only.
- C. Auxiliary Insulating Materials:
  - 1. Eave ventilation troughs.
  - 2. Insulation fabric.

END OF SECTION 072100

