Cotton Armor™ Insulation: Specifications

1: Scope

This document covers the composition and physical properties of Applegate's Cotton Armor Blanket Insulation. This information is relevant to the specification of Applegate's Cotton Armor Insulation in enclosed ceilings, attics, walls, floors and other uses. Cotton Armor insulation delivers superb R-value per inch and excellent sound control qualities.

2: Components

Cotton Armor insulation contains 85% recycled content and is primarily composed of cotton. A proprietary fire retardant penetrates and strengthens the fibers while providing permanent flame resistance. When installed properly and under normal conditions of use, these materials are nontoxic to humans and will not adversely affect other building components. See product installation instructions for details on its use.

3: Purpose

3.1: Thermal Insulation

Cotton Armor insulation helps buildings stay warmer in the winter and cooler in the summer by effectively controlling all 3 methods of heat transfer: convective, conductive and radiant, helping your building be more comfortable and lowering your heating and cooling bills.

3.2: Acoustical Insulation

Cotton Armor insulation provides superior sound attenuation compared to conventional batts, in large part, because it is press fit and has a strong rebound. Both the press fit and strong rebound help to ensure a better seal of the building envelope that minimizes the acoustical shortcuts that are often created by less rigid batt insulations.

4: Performance Standards

Cotton Armor blanket insulations are third-party tested to conform to the requirements of AC-81.

4.1: Thermal Resistance

Thermal resistance R-values for finished products from R-2 to R-30 calculated per ASTM C-518.

4.2: Thickness and Density

Thickness and density determined by tests conducted in accordance with ASTM C-167.

4.3: Non-Corrosive

When tested in accordance with ASTM C-739, Cotton Armor was found to be non-corrosive to aluminum, steel and copper.

4.4: Fire Safety

Cotton Armor meets:

1. ASTM E-84

- Flame spread: ≤ 25
- Smoke developed: ≤ 450

2. UL 723

Cotton Armor insulation up to 2" thickness and up to 3.5 lb./ft^3 density has the following Surface Burning Characteristics per UL723:

- Flame spread: Class A
- Smoke developed: Class A

4.5: Fire Rated Assembly

R-13 / 3.5" Cotton Amor used in UL Design No. U344 listing assembly has exterior non-load bearing: 1 hour rating.

Interior load bearing: 1 hour rating with structural members described by UL Design No. U344 restricted to 80% of the maximum allowable load derived from ASTM D 6513-08.

4.6: Moisture Absorption

Cotton Armor has less than 15% weight gain under test conditions in accordance with ASTM C-739. Normal relative humidity variations do not adversely affect the insulation.

4.7: Health and Indoor Air Quality

Cotton Armor is not known to contain fiberglass, formaldehyde or other known chemical irritants.

OSHA or CAL OSHA carcinogen warning? : No
Contains respirable glass fibers? : No
Contains formaldehyde? : No
Fiberglass itch? : No

4.8: Environmental

Life Cycle Analysis (LCA) revealed that Cotton Armor uses 54% less energy, releases 53% less CO^2 equivalent into the environment and consumes 29% less water than fiberglass during production.

4.9: Other Properties

Cotton Armor passed ASTM C-1338 for fungi growth.

5: Sound Control

Cotton Armor is an excellent choice for reducing sound transmission through walls, ceilings and floors. The following Sound Transmission Class (STC) ratings demonstrate its effectiveness in attenuating noise. The higher the STC number, the greater the reduction in sound:

- R-21 Cotton Armor insulated wall: 54 STC
- R-19 Cotton Armor insulated wall: 53 STC
- R-13 Cotton Armor insulated wall: 52 STC

(Above STC ratings were calculated according to ASTM E-90 testing for sound transmission loss in 24" o.c. steel stud walls and one 5/8th inch layer of type X gypsum on each side.)

For party walls:

- R-19 Cotton Armor insulated wall: 59 STC
  with two layers of Cotton Armor: 62 STC
- R-13 Cotton Armor insulated wall: 57 STC
  with two layers of Cotton Armor: 60 STC

(Party Wall STC ratings were calculated according to ASTM E-90 testing for sound transmission loss in double 24" o.c. wood stud walls with one 5/8th inch layer type X gypsum on each side.)

INSULATION PERFORMANCE PRODUCTS AND TECHNOLOGIES
applegate® insulation

ACOUSTICAL & THERMAL
COTTON ARMOR™
Cotton Insulation

And be bath put a new song in my mouth, even praise unto our God: many shall see it, and fear, and shall trust in the LORD. – Psalm 40:3

CLASSIFIED UL

ETL Intertek
CODE COMPLIANCE
CCRR-0220