Celbar® Technical Data

Wall Spray Insulation

January 2008

General Information

Celbar is a blend of specially prepared cellulose fibers, organic in nature, treated with adhesive and fire resistant chemicals. When sprayed in place, the interlocking fibers result in a mass that produces excellent sound and thermal properties.

Celbar is pneumatically spray-applied in wall and floor/ceiling cavities to form a monolithic coating. This process seals cracks and holes in the wallboard, around plumbing and electrical outlets, vent ducts and other irregularities. There are no compressed areas or voids to allow sound leaks, R-value reduction, or air infiltration.

Additional product information on K-13 and other ICC products is available in Sweet's Catalog (07210/ICC). Product specifications and information are available on the internet @ www.spray-on.com or by contacting ICC.

Sound Performance

Celbar provides superior sound transfer control demanded by building designers, owners and occupants. Celbar assemblies perform closer to lab tested STC ratings in the field than do other conventional batt and sound board systems. This is due to the complete coverage and the sealing action of Celbar. The performance of Celbar compared to other identically constructed wall systems, as documented by laboratory tests, is shown below.

2-1/2" Metal Studs with ½" Gypsum Wallboard – both sides:

Test Result

A. No sound control material used 31 STC
B. 2-1/2" sound barrier batt 33 STC
C. 2-1/2" sound barrier batt & ½" cellutex board 37 STC
D. 1-1/2" Celbar Spray 49 STC

Metal Stud Construction

STC RATING	
55	2 ½" metal studs, 2 layers 5/8" gypsum board on one side, 1 layer 5/8" gypsum board on the opposite side: 2 ½ celbar spray.
53	3" metal studs, 1 layer 5/8" gypsum board on each side: 2" celbar spray.
51	2 ½" metal stud 24" O.C. faced both sides with 5/8" gypsum wallboard: 1 ½" celbar spray.

Wood Stud Assemblies

51	2" x 4" wood studs, 1 layer 5/8" gypsum board on each side: 3½" celbar spray.
50	2" x 4" wood studs, 1 layer 5/8" gypsum board on each side: 2" celbar spray.

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LEED™ Contribution Points

Strong emphasis has been placed lately on a construction products contribution to the overall LEED rating of a project. International Cellulose's products can contribute in the following areas.

Credit EA1 – Optimize Energy Performance

Contribution: K-13 and Celbar, due to seamless installation techniques are outstanding insulation materials. In a series of tests, five identical buildings were monitored for KWH usage over an eleventh-month period. One building was insulated with sprayed cellulose (Celbar) in the walls, and the other four with fiberglass batt. Upon conclusion of the tests, the cellulose-insulated building saved 32% of the KWH usage of the other buildings. Thousands of projects worldwide utilize K-13 as insulation under occupied space in parking garages and as interior roof insulation. SonaSpray "fc", due to its high light reflectivity characteristics, reduces the amount of power consumption for lighting required in occupied space.

Credit MR4 – Recycled Content

Contribution: Celbar have a recycled content of 75% or more.

Recycled Content:

Celbar WallSpray	80% Post-consumer
Celbar LooseFill	80% Post-consumer

Credit MR5 – Local/Regional Materials

Requirement: A Minimum of 20% of the building materials are manufactured within a 500 mile radius of the project site.

Contribution: Celbar components are manufactured in Houston, Texas.

Credit EQ4.4 – Low Emitting Materials (1 Point)

Contribution: Celbar do not contain any added urea-formaldehyde resins.

Mold & Mildew Resistant

- SGS U.S. Testing Company Inc. – Test Report No: 337856-3R
- Aerobiology Laboratory Analysis - Test Report No: 20 0275-01
- Consulting Materials Engineers – Test Report No: CO1-392

Fire Performance Ratings

Surface Burning Characteristics

Celbar has a Class 1, Class A flame spread rating per ASTM E-84, and UL-723 tested at a minimum of 4" thickness. Flame Spread 15 Smoke Developed 0 Underwriters' Laboratories Ref #R5499

ASTM E-119 Fire Rating – One Hour

Celbar has been tested in accordance with ASTM E-119 including hose stream test and is accepted for use in fire-rated wall assemblies as a one hour wall.

Physical Properties

Thermal Properties

R- Values 3.8/inch

Thickness	1.0"	2.5"	3.5"
R-Value	3.8	9.5	13.3

Listings:

ICBO – Approval Number 2262 Southern Building Code – Approval Number 9566 HUD-FHA-VA-

Permits the use of Celbar in project they finance based on Celbar's compliance with UMB-80.

ES Report ESR-2110 ICC Evaluation Service, Inc.
Compliance with the following codes:

- 2006 International Building Code (IBC)
- 2006 International Resident Code (IRC)

Certificate of Registration – ISO 9001:2000

Celbar Uses:

Party Walls	Exterior Walls	Corridor Walls
Between Floors	Around Baths	Plumbing Chases

Typical Structures:

Homes	Hotels/Motels	Theaters
Condominiums	Apartments	Restaurants
Townhomes	Shopping Malls	Office Buildings

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Celbar® Loosefill Specification

This specification provides data pertinent to the pneumatic application of Celbar Loosefill cellulose insulation in attics and walls. Celbar Loosefill provides outstanding resistance to heat flow for thermal applications of residential and commercial construction.

Material Characteristics

Density

The maximum density anticipated after long-term settling of dry applications was determined by the following specifications:

- ASTM C-739 – 1.6 lb/ft^3

Thermal Resistance

The average thermal resistance per inch was determined by test methods:

- ASTM C-518 – (4 in. thick)
- ASTM C-739 – 3.40 (R-Value/in)

Surface Burning Characteristics

Two surface burning characteristics are evaluated.
They are:

- Critical Radiant Flux: using test method ASTM E-970
- Flame Spread: using ASTM E-84

Celbar Loosefill insulation meets or exceeds the specified requirements for each test as follows:

- ASTM E-970 greater than 0.12 watts/cm
- ASTM E-84 less than 25

Building Codes

Property installed Celbar Loosefill insulation meets the requirements for thermal insulating materials set forth in CABO, BOCA, ICBO, SBCCI, Model of Energy Code and the National Building Code of Canada.

Moisture Vapor Absorption

This requirement assures that normal variations in relative humidity will not adversely affect thermal resistance. Celbar Loosefill insulation meets the requirements of less than 15% for maximum weight gain under the specified test conditions.

Corrosiveness

When in contact with steel, cooper, aluminum, or galvanized materials, Celbar Loosefill insulation was determined to be non-corrosive.

Other Properties Tested

Celbar Loosefill cellulose insulation passed these additional tests:

- Odor Emission Starch Content
- Fungi Resistance Separation of Chemicals
- Smolder Resistance Flame Spread Permanency