



# Climatizer Plus™ Cellulose Insulation

## Technical Data Sheet

SPECIFICATIONS	CLIMATIZER PLUS™ CELLULOSE INSULATION
Packaging:	30 lbs/13.61 bag
Product Identifier:	Cellulose Fibre Insulation (CFI)
Product Type:	Loose-fill Thermal and Acoustical insulation
Description:	Fiberized paper treated with fire retardants
Design Density:	Attics: 24.9kg/m <sup>3</sup> 1.6lb/cu.ft
Manufactured By:	Climatizer Insulation Inc. 120 Claireville Drive, Etobicoke ON M9W5Y3 t: 416-798-1235 f: 416-798-1311 Office hours: Mon-Fri 8am-5pm info@climatizer.ca www.climatizer.ca orders@climatizer.ca

### DESCRIPTION

CLIMATIZER PLUS™ is a loose-fill fibrous insulation type manufactured from selected paper stock that is chemically treated with non-toxic additives for fire resistance/retardation, as well as pest and moisture resistance. Each bag of Climatizer Plus insulation displays UL's ECOLOGO™ certification mark for its recognition as an environmentally sustainable product.

### COMPOSITION

CLIMATIZER PLUS™ is manufactured from selected organic and recycled fibres that are impregnated with additives to resist moisture, mould, wood decay, insects, vermin, corrosion and combustion.

Cellulose Fibres (recycled paperstock):  $C_6H_{10}O_5$   
Boric Acid:  $H_3BO_3$   
Ammonium Sulphate:  $(NH_4)_2SO_4$

### REQUIREMENT STANDARDS

CLIMATIZER PLUS™ is manufactured to meet requirements based on the following standards:

1. Canadian Construction Materials Centre (CCMC)  
"Standards for Cellulose Fibre Insulation (CFI) for Buildings CAN/ULC S703-09

2. CCMC Evaluation Lising 09217-L
3. ISO 9001 International Standards
4. UL ECOLOGO™ certification

### INSTALLATION

CLIMATIZER PLUS™ may be hand-poured or pneumatically placed using a blowing machine and delivery hose (preferable). Machine application ensures that the material is properly conditioned, and placed at the required design density. CLIMATIZER PLUS™ does not settle below its designed density or lose its fire-retardant properties with the passage of time. Thermal resistance and noise absorption properties are permanent features of this product

### APPLICATION

CLIMATIZER PLUS™ is a loose-fill or spray applied thermal and acoustical insulation. Loose-fill is appropriate for horizontal or moderately sloped attic areas up to 4:12 pitch. Injection may be used to fill areas such as flat or sloped ceiling and vertical walls. Spray applied may be used in open stud cavities or steeply sloped attic surfaces. Choose the most appropriate method of installation to achieve the desired or thermal and/or acoustical performance. CLIMATIZER PLUS™ can be used in new construction or to retrofit existing structures/dwellings.



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### LIMITATIONS

Like other insulation types, CLIMATIZER PLUS™ should not be placed in direct contact with heat sources such as chimney flues, electric motors or light fixtures. Unless CSA approved for use with thermal insulation, do not cover recessed light fixtures with any type of insulation as excessive heat build-up may occur. An air space of 6" or more is required between the fixture and its protective barrier. This consideration also applies to any other heat source such as fan motors, transformers, or incandescent trouble lights. Similarly, do not permit insulation to directly cover a chimney or flue. Do not fill fireplace or furnace chases. Maintain the minimum clearance specified by the building code or inspector having jurisdiction. CLIMATIZER PLUS™ should not be used where the ambient temperature is continuously above 90°C (or 194°F).

### TECHNICAL DATA

#### CAN/ULC Test Criteria: CAN/ULC S703-09

CAN/ULC S102	FSC 20
CAN/ULC S102.2	FSC 120
Open Flammability (Permanence)	Passed
Open Flammability (W/cm <sup>2</sup> )	Passed
Moisture Vapour Absorption	Passed
Fungal Growth	Passed
Limiting Design Density (Type 1 Open Spaces)	27.23kg/m <sup>3</sup>
Corrosiveness	Passed
Smoulder Resistance	Passed
Thermal Resistivity	Passed

### THERMAL RESISTANCE COMPARISON

The following values for thermal resistance of cellulose insulation at seasonal temperature extremes were taken from the ASHRAE Handbook of Fundamentals (Re: BNL50862):

Winter Value at 5°C	RSI 0.678 (R 3.85)
Design Value at 24°C	RSI 0.652 (R 3.70)
Summer Value at 43°C	RSI 0.629 (R 3.57)

The above value indicated the change in CLIMATIZER PLUS™ R-value between winter and summer attic temperatures is only 7.1%, whereas a continuation of the tables for other types of insulation indicates the R-value loss for mineral fibre under the same circumstances would be 21.4%.

### ACOUSTICAL PROPERTIES

CLIMATIZER PLUS™ offers superior qualities for improving noise suppression in wall, floor or ceiling construction. There are 4 primary factors to consider: Mass; Dampening; Absorption; and Sealing.

1. Mass (Density): Increased mass per unit of thickness of CLIMATIZER PLUS™ compared to other types of insulation adds to the overall effectiveness of a wall, floor or ceiling assembly in improving STC (Sound Transmission Class) value.
2. Dampening: Unlike fibrous batts or foam boards, CLIMATIZER PLUS™ incorporates itself as an integral part of a wall, floor or ceiling assembly. The natural ability of CLIMATIZER PLUS™ to fill crevices and gaps produces a significant improvement in the sound dampening characteristics of the assembly.
3. Absorption: CLIMATIZER PLUS™, because of the unique porosity of its interwoven fibres, will exhibit a NRC (Noise Reduction Coefficient) of 0.75 at a 25 mm (1 inch) thickness. Increased attenuation in both low and high absorption within an enclosed wall or ceiling cavity.
4. Sealing: The field reliability of CLIMATIZER PLUS™ natural noise reduction capabilities are realized though its natural ability to fill crevices and voids normally occurring in wall, floor, ceiling or attic construction. When installed correctly and according to applicable Building Codes, CLIMATIZER PLUS™ will provide a comprehensive seal around complex shapes and structures thereby ensuring its ability to minimize sound transmission through such space interruptions.





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### FILTRATION PROPERTIES

CLIMATIZER PLUS™ offers the added advantage of keeping a home cooler during the summer season. There is a natural movement of air either by convection currents of air from warm to cold environments or movement by pressure differentials. CLIMATIZER PLUS™, due to its perfect fit and greater mass, inhibits this air movement. Other types of insulation may offer a poor fit and in testing have shown to lose up to half their insulation values. In retrofit conditions where additional attic insulation is desired, CLIMATIZER PLUS™ can be used as a blanket cover to significantly reduce air movement, fill gaps in existing insulation (despite type), and between the insulation and adjacent framing members. This can substantially increase the overall insulation value.

### THERMAL RESISTANCE VS. APPLIED BULK DENSITY

CLIMATIZER PLUS™ maintains an almost constant R-value over the full range of densities at which it can be installed, whereas light density glass fibre loose-fill insulation suffers a drastic loss in R-value if the density is only slightly less (fluffing) than the required density.

### FIRE RESISTANCE

CLIMATIZER PLUS™ exhibits fire resistance capabilities identified in the physical properties chart. It will not melt or degrade as most other insulation types will when exposed to flame or high temperatures. Because it will only char under direct fire exposure, it can provide heat protection longer to adjacent building materials, and therefore allow building occupants more time to escape than would many other insulation materials.

### MOISTURE

CLIMATIZER PLUS™ is able to dissipate excess moisture and maintain a moderate range in moisture content. Canadian homes and buildings can experience a loss of warm moist air from the interior environment to the colder exterior air by several means such as unsealed, torn, or discontinuous vapour barrier, or by piping or electrical wiring boxes penetrating

ing the vapour barrier. During the heating season, these disruptions to the vapour barrier permit moisture to the insulation layer or on the cold roof or wall sheathing. To combat this occurrence, insulation should be chosen that can help dissipate that moisture. CLIMATIZER PLUS™ is able to transport moisture to a surface where it can evaporate which is important for keeping moisture levels low and insulation effectiveness high, while preventing mould growth from forming on nearby building structures.

### INSTALLATION GUIDE

Available for download on our website, or by request to [info@climatizer.ca](mailto:info@climatizer.ca)

### AVAILABILITY AND COSTS

CLIMATIZER PLUS™ cellulose insulation is available for shipping throughout Canada, the United States and Internationally. Please contact our Sales Representatives to receive additional information, pricing and delivery schedules. We offer high quality insulation material at competitive pricing for comparative performance features.

### WARRANTY

CLIMATIZER PLUS™ is guaranteed to meet published specifications and standards. The applicator must warrant a specific product installation.

### MAINTENANCE

CLIMATIZER PLUS™ requires no specific maintenance. A building owner should periodically inspect the installation to ensure that traffic has not displaced the insulation or disturbed the natural attic ventilation or permitted the insulation to contact heat sources.

### TECHNICAL SUPPORT

Climatizer Insulation has a team of Sales Representatives, Facility and Operations Managers available to assist and advise you in addressing your insulation needs. Technical data and test reports are available upon request to assist designers and applicators in addressing project needs.



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