



CLIMATIZER INSULATION

CELLULOSE INSULATION • FIBREGLASS • ROOF VENTS

1. PRODUCT NAME:

CLIMATIZER

A specially manufactured fibrous insulation, refined to develop maximum advantage of inherent physical properties.

2. MANUFACTURER:

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3. PRODUCT DESCRIPTION:

CLIMATIZER is a loose fill, fibrous insulation manufactured from selected paper stock just like other everyday building materials such as asphalt shingles, backer board, ceiling tiles and drywall papers. Each bag of CLIMATIZER displays Environment Canada's ECOLOGO, classifying it as an "environmentally friendly" product. CLIMATIZER may be hand poured or pneumatically placed using a blowing machine and delivery hose. Machine application ensures that the material is properly conditioned, and placed at the required design density.

Basic Uses: A loose fill, injected or spray applied thermal or 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 ceilings and vertical walls. Spray applied may be used in open stud cavities or steeply sloped attic surfaces. Choose the most appropriate method of insulation to achieve the desired thermal and/or acoustical performance. Used for new construction or retrofit.

CLIMATIZER offers greater performance value (P-Value) than other fibrous insulations. P-Value has been adjusted for the detrimental effects of air leakage and moisture accumulation. Because the higher density and perfect fit of CLIMATIZER dramatically reduces air leakage, and air convection, its P-Value is substantially better than glass fibre batt or loose fill materials having a similar R-Value. In addition, CLIMATIZER's basic R-Value remains more constant than mineral fibre throughout a wide range of ambient temperatures (refer to para. 4 technical data under "Thermal Resistance Comparison") which makes it a superior insulation for reducing summer heat gain.

CLIMATIZER does not settle below its design density or lose its fire retardant properties with passage of time. Thermal resistance and noise absorption properties are permanent features of this material.

Limitations: CLIMATIZER (like other insulation products) 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 because excessive heat build-up may occur. An air space of six inches or more is required between the fixture and its protective barrier. This consideration also applies to any other heat sources such as fan motors, transformers or incandescent trouble lights. Similarly, do not

permit insulation to directly contact 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 should not be used where the ambient temperature is above 90°C (194°F) continuously.

Composition: CLIMATIZER is manufactured from selected organic fibres impregnated with borate additives to resist mould, wood decay, insects, corrosion and combustion. A special fiberizing process is employed to obtain the thermal acoustical properties required.

Applicable Standards: CLIMATIZER is manufactured in accordance with Canadian General Standards Board (CGSB) Standard CAN/CGSB-51.60-M90. CLIMATIZER has an acceptable evaluation by Canadian Construction Materials Council (CCMC) and CHMC, and is also available as an underwriters Laboratories of Canada listed material. Continuing quality control is further assured by participation in a third party product testing program directed by CGSB.

4. TECHNICAL DATA:

CAN/CGSB-51.60-M90 Test criteria;

Thermal resistance (25mm) RSI = 0.676
(1 inch) R = 3.84

Flame Spread Rating (CAN/ULC-S102) FSC 20
CAN/ULO-S102.2 FSC 120
Flame Spread Permanence Passed
Moisture Absorption 8.8%
Fungal Growth Passed
Design Density (Settled) 24.9Kg/m3
or 1.55 lb/ft3 Attic
3.0 lb/ft3 Walls
Corrosivity Passed
Smoulder Resistance 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 indicates the change in CLIMATIZER 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%. Consequently, CLIMATIZER offers the added advantage of keeping a home cooler during the summer.

Acoustical Properties: CLIMATIZER, compared to other insulation products, has superior properties for improving noise suppression in wall, floor or ceiling construction. There are four performance factors to consider, mass, damping, absorption, and sealing.

(a) Mass (Density): Increased mass per unit of thickness of CLIMATIZER compared to other fibrous or foam insulation adds to the overall effectiveness of a wall, floor or ceiling assembly in improving STC (Sound Transmission Class) value.

(b) **Damping:** Unlike fibrous batts or foam boards, **CLIMATIZER** incorporates itself as an integral part of a wall, floor or ceiling assembly. The natural ability for **CLIMATIZER** to fill crevices and gaps produces a significant improvement in the sound damping characteristics of the assembly.

(c) **Absorption:** **CLIMATIZER**, because of the unique porosity of its interwoven fibers, will exhibit a NRC (Noise reduction Coefficient) of 0.75 at a 25 mm (1 inch) thickness. Increased attenuation in both low and high frequency range is achieved due to absorption within an enclosed wall or ceiling cavity.

(d) **Sealing:** Field reliability of **CLIMATIZER's** natural noise reduction capabilities is realized through its natural ability to fill crevices and voids normally occurring in wall, floor, ceiling or attic construction. **CLIMATIZER** will completely seal around complex shapes such as pipes, conduit and electrical boxes thereby ensuring its ability to minimize sound transmission through such interruptions.

Filtration Properties: (Natural movement of air either by convection or air from warm to cold environment or movement by pressure differential). **CLIMATIZER**, due to its perfect fit and greater mass inhibits air movement, whereas tests have proven that air movement through and around light density, poorly fitted fibrous glass insulation can reduce its effective insulation value up to one half.

In retrofit conditions, where additional attic insulation is desired and where air leakage is occurring through other insulation types, **CLIMATIZER** can be used as a blanket cover to significantly reduce air movement, fill gaps in existing insulations, and between the insulation and adjacent framing members. This can substantially increase the overall insulation value.

Thermal Resistance vs. Applied Bulk Density: **CLIMATIZER** 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 suffers a drastic loss in R-Value if the density is only slightly less (flutting) than the required design density.

Fire Resistance: **CLIMATIZER** exhibits fire resistance capabilities identified in the physical properties chart. **CLIMATIZER** will not melt or degrade as most other insulations will when exposed to flame or high temperatures. Because **CLIMATIZER** will only char under direct fire exposure it will provide heat protection longer to adjacent building materials, and therefore allow building occupants more time to escape than would be the case with most other insulation materials.

Moisture: **CLIMATIZER** has been the ability to dissipate excess moisture and maintain a moderate range in moisture content.

Canadian homes and buildings can experience loss of warm moist air from interior environment to the colder exterior air by several means such as ripped, unsealed or discontinuous vapour barrier, or by piping or electrical wiring and boxes penetrating the vapour barrier. During the heating season, these disruptions to the vapour barrier permit escaping warm air to condense within the insulation layer or on the cold roof or wall sheathing. To combat this occurrence, insulations should be used which exhibit an ability to dissipate that moisture. **CLIMATIZER's** ability to transport moisture to a surface where it can evaporate is most important in keeping moisture levels low and insulation effectiveness high.

5. INSTALLATION:

Preparatory Work. In new construction, ensure that spaces to receive insulation are free of foreign objects and are reasonably clean. In retrofit work prepare installation holes, vents and access for installation equipment. Verify that the vapour retarder, if used, is installed with joints sealed and without tears or punctures. Install insulation stops, roof turbines or other devices to ensure attic space is adequately ventilated.

Installation: Place insulation by manual or pneumatic method in open horizontal or moderately sloped locations and pneumatic method in enclosed horizontal, sloped or vertical locations to ensure full coverage and complete filling of spaces intended for insulation. Maintain a 75 mm (3 inch) minimum clearance from heat sources such as chimney flues or 6" from recessed light fixtures. The installer must be familiar with provincial, municipal and local regulations regarding clearances from heat emitting devices. Because of its higher than average R-Value, **CLIMATIZER** will deliver greater thermal protection over upper sill plate areas where vertical space limits the depth of insulation which can be installed.

CLIMATIZER when machine injected into a vertical wall cavity to the proper design density will not settle.

Cleanup: Wall Injection - plug drilled holes used when installing insulation. Replace siding or trim that was removed to gain access to spaces. Touch up painted or finished surfaces to match original.

6. AVAILABILITY AND COSTS:

Availability: **CLIMATIZER** is available throughout Canada. Contact our representative for advice or special or unusual conditions or geographic locations.

Costs: Cost of **CLIMATIZER** will vary do to factors of local labour, shipping, quantities and unusual conditions. **CLIMATIZER** offers lower cost for comparative performance.

7. WARRANTY:

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

8. MAINTENANCE:

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

9. TECHNICAL SERVICES:

CLIMATIZER has Field Representatives, Plant Technicians and Engineers available to assist and advise. Extensive technical research data and test reports are available to assist designers and applicators in addressing unique situations.

A master guide specification section on **CLIMATIZER** is available for the asking. This section is written to permit specifiers to quickly edit a pre-organized specification section to suit a specific project.

10. FILING SYSTEMS MASTER FORMAT (1983 Edition) Section No. 07215 (For filing data or specifying)