



PRODUCT DATA

1. PRODUCT NAME: PROCELL GREEN

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

2. SALES OFFICES

Ontario & Quebec:

THERMO-CELL INDUSTRIES LTD.
123 Clement St., Vars, Ontario K0A 3H0
Tel: (613) 443-5100 Fax: (613) 443-5160

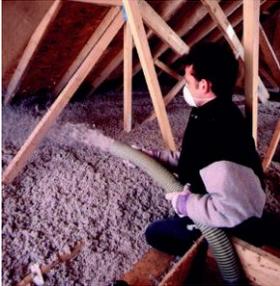
www.thermocell.com

Maritime Provinces:

THERMO-CELL INDUSTRIES LTD.
P.O. Box 220
Debert, Nova Scotia B0M 1G0
Tel: (902) 662-3600 Fax: (902) 662-2882

3. PRODUCT DESCRIPTION

PROCELL GREEN is a loose-fill, fibrous thermal and acoustical insulation manufactured from selected paper stock. Each bag of PROCELL GREEN displays Environment Canada's ECOLOGO, classifying it as an "environmentally friendly" product. PROCELL GREEN may be hand-poured or pneumatically blown using a blowing machine and delivery hose. Machine application ensures that the material is properly conditioned and installed at the required design density.



Basic Uses: PROCELL GREEN is a Type 1 product intended for dry applications only, and is appropriate for horizontal or moderately sloped attic areas up to 4.5-in-12 pitch. Injection may be used to fill areas such as flat or sloped ceiling and vertical walls.

Choose the most appropriate method of installation to achieve the desired thermal and/or acoustical performance. Used for new construction or retrofit applications.

PROCELL GREEN 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 of the higher density and perfect fit of PROCELL GREEN (which dramatically reduces air leakage and air convection), its P-Value is substantially better than glass fibre batts or loose-fill materials having a similar R-Value. In addition, PROCELL GREEN's basic R-Value remains more constant than mineral fibre throughout a wide range of ambient temperatures (refer to Part 4 Technical Data under Thermal Resistance Comparison), which makes it a superior insulation for reducing summer heat gain.

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

Limitations: PROCELL GREEN (like other insulation products) should not be placed in direct contact with heat sources such as chimney flues, electric motors or light fixtures.

Maintain building, electrical, gas and oil safety code clearances between the insulation and heat emitting devices, such as fuel burning appliances, chimney pipes, ducts and vents to these appliances (at least 50 mm) and recessed light fixtures (at least 75 mm) unless approved for insulation contact.

PROCELL GREEN should not be used where the ambient temperature is above 90°C (194°F) continuously.

Composition: PROCELL GREEN 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 and acoustical properties required.

Applicable Standards: PROCELL GREEN is manufactured in accordance with CAN/ULC-S703 Standard for Cellulose Fibre Insulation for Buildings and has been evaluated by the Canadian Construction Materials Centre (CCMC #8251).

PROCELL GREEN is manufactured under an ISO 9001:2008 certified quality management system.

4. TECHNICAL DATA

Product Standard CAN/ULC-S703 Test Criteria (supersedes CAN/CGSB 51.60-M90):

Open-Flammability	>0.12 W/cm ²
Open-Flammability Permanency	>0.12 W/cm ²
Surface Burning Characteristics (CAN/ULC-S102) (CAN/ULC-S102.2)	FSC <25 FSC <150
Smoulder Resistance	<15%
Moisture Vapour Sorption	<20%
Corrosiveness	No perforations of coupons <25% mass loss (truss plate)
Fungal Resistance	<growth than control
Separation of Chemicals	<1.5%
Thermal Resistivity	>18.5 (m K)/W (R = 3.8/in)
Design Density	
Attic (Settled)	25.6 kg/m ³ (1.6 lb/ft ³)
Wall	48.1 kg/m ³ (3.0 lb/ft ³)

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 (R3.85)
Design value at 24°C	RSI 0.652 (R3.70)
Summer value at 43°C	RSI 0.629 (R3.57)

The above values indicate that the change in PROCELL GREEN's R-Value between winter and summer attic temperatures is only 7%, whereas a continuation of the tables for other types of insulation indicate the loss for mineral fibre under the same circumstances would be 21.4%. Consequently, PROCELL GREEN offers the advantage of keeping a home cooler during hot summer months.

Acoustical Properties: PROCELL GREEN, 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 thickness of PROCELL GREEN 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, PROCELL GREEN incorporates itself as an integral part of a wall, roof or ceiling assembly. The natural ability of PROCELL GREEN to fill crevices and gaps produces a significant improvement in the sound damping characteristics of the assembly.

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

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

Infiltration/Convection Properties (Natural movement of air either by convection from warm to cold environments or movement by pressure differential): PROCELL GREEN, due to its perfect fit and greater density, 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 by up to one half.

In retrofit conditions where additional attic insulation is desired and where air leakage is occurring through other insulation types, PROCELL GREEN 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: PROCELL GREEN 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 (a consequence of "fluffing") than the required design density.

Fire Resistance: PROCELL GREEN exhibits a fire resistance capability identified in the Technical Data chart. PROCELL GREEN will not melt or degrade like most other insulations when exposed to flame or high temperatures. Because PROCELL GREEN will only char under direct fire exposure, it provides longer heat protection to adjacent building materials and will therefore allow building occupants more time to escape than would be the case with most other insulation materials.

Moisture: PROCELL GREEN has the unique ability to slowly absorb and dissipate excess moisture, thereby reducing the risk of potential condensation problems.

Canadian homes and buildings can experience loss of warm moist air from interior environments 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. PROCELL GREEN'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 all spaces set 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: Install insulation by dry, pneumatic application methods in accordance with the most recent installation instructions.

PROCELL GREEN will not settle when machine injected into a vertical wall cavity at its proper design density.

6. AVAILABILITY AND COST

PROCELL GREEN is available throughout Canada. Contact our representative for advice on special or unusual conditions or geographic locations. PROCELL GREEN offers lower cost for comparative performance.

7. WARRANTY

Thermo-Cell warrants that PROCELL GREEN is manufactured to meet published specifications and retain its thermal performance for the normal life of the building. The applicator must warrant a specific product installation.

8. MAINTENANCE

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

9. TECHNICAL SERVICES

Thermo-Cell Industries 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 on PROCELL GREEN is available upon request. This section is written to permit specifiers to quickly edit a pre-organized specification section to suit any project.

10. FILING SYSTEMS MASTERFORMAT

(1983 Edition) Section No. 07212 (For filing data or specifying).