



INSTALLATION GUIDE



Profib[®]Mat

Hemp fiber
thermal and
acoustic insulation



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GENERAL GUIDELINES

Product description and features

Profib®Mat is a flexible insulating batt made from industrial hemp fibers, designed to be friction-fitted between the wooden or steel frames of a building. It offers a highly effective insulation solution thanks to its thermal capacity, hygroscopic qualities (moisture regulation), and superior soundproofing. Profib®Mat is resistant to fire, corrosion, and mold.

Profib® insulating batts enhance the quality and comfort of building interiors and reduce the environmental impact of construction.

Applications

This guide covers the installation of thermal and acoustic insulation made from industrial hemp fibers for:

- Buildings with wooden or steel frames
- Walls
- Roofs (rafters and roof trusses)
- New or existing buildings

The product must be installed in accordance with this guide and municipal, provincial, as well as federal requirements. It is the responsibility of the product user to check with local authorities for regulations that may affect the use of the product.

**Storage and handling methods must comply with
the instructions in this guide.**

Quality control and storage

Store Profib®Mat insulation in its original packaging, protected from rain and sunlight.

Avoid transporting or leaving it in damp places. Installation should be done in dry weather.

When unpacking the product, ensure the batts are visually intact (no perforations, tears, compression, etc.). Make sure the batts are not damp and do not have mold stains. Also, ensure the manufacturing date on the packaging is at least 72 hours before the premises are occupied.

If in doubt, contact the seller.

Safety

Consult the Safety Data Sheet (SDS) for complete product information. For your safety, wear personal protective equipment: gloves, mask, and safety goggles.

It is also recommended to wear a safety helmet to prevent injuries when handling insulation application equipment.



Cautions

Hemp is a natural fiber with good hygroscopic properties. It can absorb moisture from the ambient air and release it in drier weather, thus improving the comfort of a building. Therefore, it is very important to use a vapor-open membrane (and not a polyethylene vapor barrier) to benefit from the hygroscopic qualities of hemp and to check with a professional if the building envelope composition is suitable for the use of the insulation.

It is very important to respect the distances specified by safety codes for buildings, electricity, gas, and oil between the insulation and heat-producing devices, such as fuel-burning heaters, chimneys, ducts, and vents leading to these devices (at least 50 mm) and recessed lighting fixtures (at least 75 mm), unless they have been approved as devices that can come into contact with the insulation. The insulation should not be used inside electrical outlets or junction boxes. The product should only be installed in structures protected from precipitation and weathering (in a continuously dry environment). The use of the product in environments with high indoor relative humidity (e.g., indoor pools) is not recommended unless otherwise specified by an architect or building engineer. The product should not be used in places where it will be exposed to compressive, tensile, or bending loads.

Cutting tools

Different tools can be used for cutting. Their uses are detailed in their specific user guides.



Table saw



Circular saw



Grinder



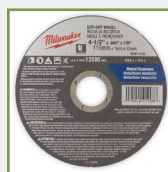
Miter saw



Continuous disc



Centerfire foam blade



Cutting disc

INSTALLATION : EXTERIOR WALLS

Profib®Mat insulation is installed between wooden or steel studs.

Refer to appendices 1 and 2 (p.9-10) for wall models. Each implementation must be confirmed by your architect, engineer, or contractor.

1. Preliminary operation

Ensure that the surface to be insulated is clean, in good condition, free of moisture, and that the covering has no sealing defects.



2. Cutting

Cut the insulation with an allowance of 1/2" to 3/4" (12.7 to 19mm) relative to the distance between the parallel faces of the studs both vertically and horizontally. Refer to the cutting tools section to know which tool to use.



3. Fitting

Insert the insulation between the studs and compress it slightly widthwise to benefit from its "spring effect." The insulation returns to its original shape, perfectly fitting the studs, thus avoiding thermal bridging risks. Adjust the insulation to make it perfectly contiguous. Ensure the continuity of insulation at the junctions between walls, floors, ceilings, and roof slopes. The insulation should not obstruct ventilation openings or be in direct contact with heat sources (chimney flue, lighting, etc.). If necessary, fill gaps with insulation residues produced on-site.

RECOMMENDATION

It is strongly recommended to use a vapor-open membrane (and not a polyethylene vapor barrier) to benefit from the hygroscopic qualities of hemp.

INSTALLATION : ROOF TRUSSES

The attic, consisting of a traditional framework, is ventilated, unfinished, and unheated. The implementation will simply involve placing the insulation on the ceiling or between joists and adding a second perpendicular layer if necessary.

Refer to appendix 3 (p.11) for roof models. Each implementation must be confirmed by your architect, engineer, or contractor.



1. Preliminary operation

Ensure that the surface to be insulated is clean, in good condition, free of moisture, and that the covering has no sealing defects.



2. Cutting

Cut the insulation with an allowance of 1/2" to 3/4" (12.7 to 19mm) relative to the distance between trusses. Refer to the cutting tools section to know which tool to use.



3. Fitting

Insert the insulation between the studs and compress it slightly widthwise to benefit from its "spring effect." The insulation returns to its original shape, perfectly fitting the studs, thus avoiding thermal bridging risks. Adjust the insulation to make it perfectly contiguous. Ensure the continuity of insulation at the junctions between walls, floors, ceilings, and roof slopes. The insulation should not obstruct ventilation openings or be in direct contact with heat sources (chimney flue, lighting, etc.). If necessary, fill gaps with insulation residues produced on-site.

If necessary, apply a second layer of insulation perpendicularly, with staggered joints, over the first layer.

RECOMMENDATION

It is strongly recommended to use a vapor-open membrane (and not a polyethylene vapor barrier) to benefit from the hygroscopic qualities of hemp.

INSTALLATION : CATHEDRAL CEILING

Refer to appendix 4 (p.12) for roof models. Each implementation must be confirmed by your architect, engineer, or contractor.

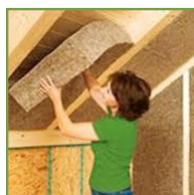
1. Preliminary operation

Ensure that the surface to be insulated is clean, in good condition, free of moisture, and that the covering has no sealing defects.



2. Cutting

Cut the insulation with an allowance of 1/2" to 3/4" (12.7 to 19mm) relative to the distance between joists. Refer to the cutting tools section to know which tool to use.



3. Fitting

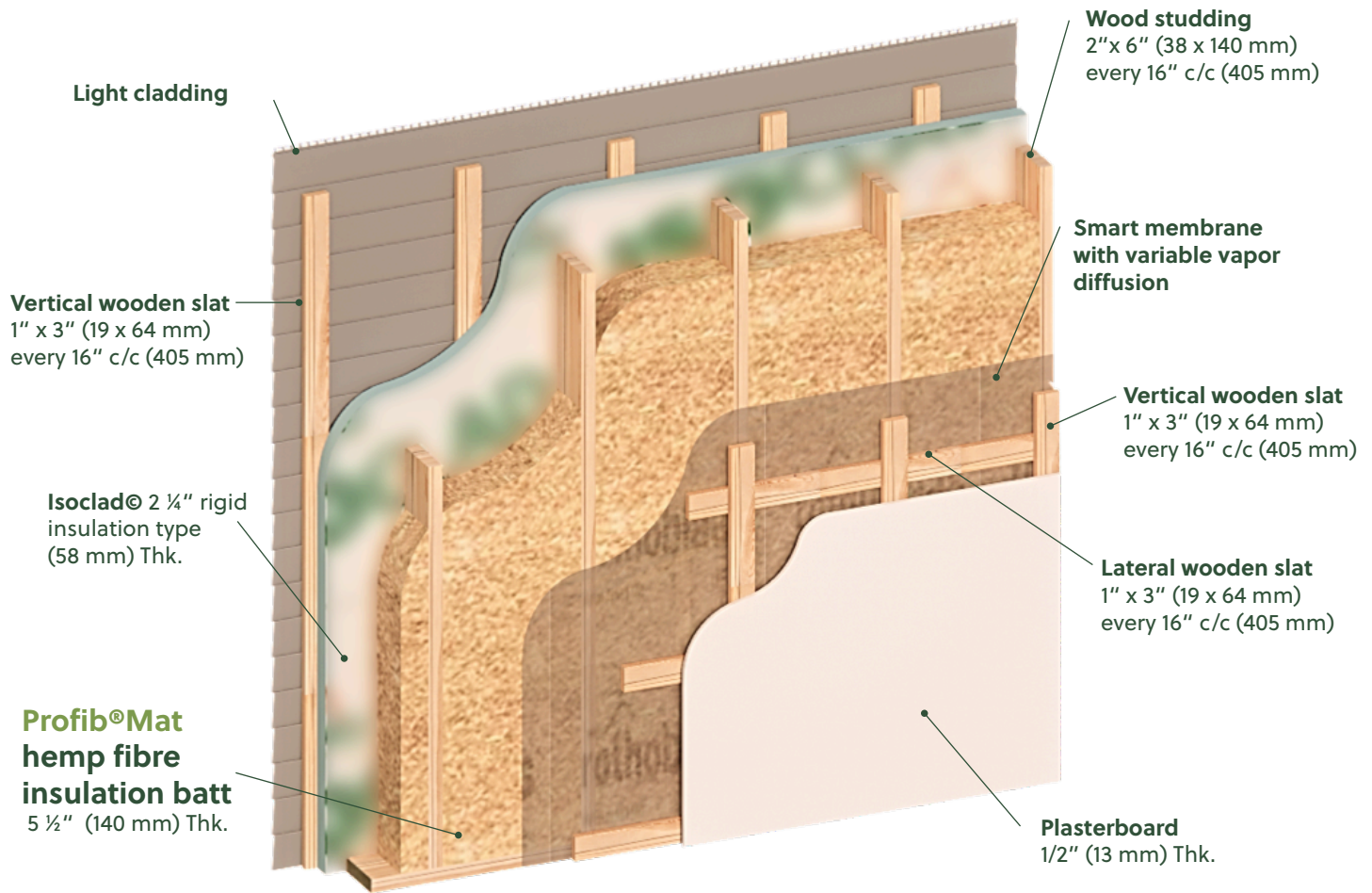
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RECOMMENDATION

It is strongly recommended to use a vapor-open membrane (and not a polyethylene vapor barrier) to benefit from the hygroscopic qualities of hemp.

APPENDIX 1

Exterior wall composition



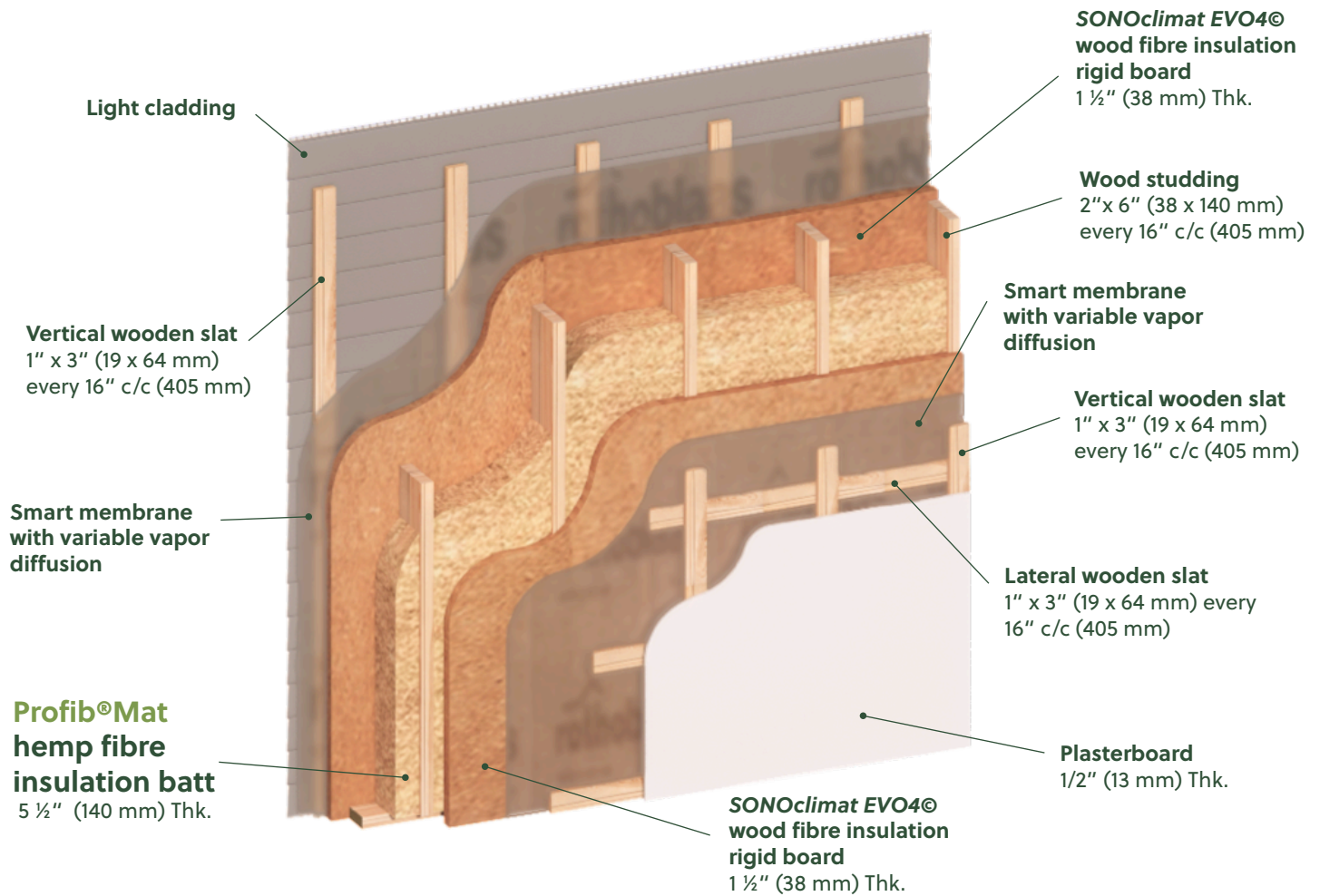
EXTERIOR WALL COMPOSITION TYPE 1	THERMAL RESISTANCE
Total thermal resistance: RSI_{TOT} : 5,09 (R_{TOT} 28,88) ou 4,40 (R_{TOT} 24,95)	
Effective thermal resistance: RSI_E : 4,45 (R_E 25,26) ou 3,76 (R_E 21,35)	RSI (R)
Outdoor air film	0,03 (0,17)
Flexible exterior cladding	0,14 (0,79)
Vertical wooden slat 1" x 3" au 16" c/c	0,18 (1,02)
Isoclad® 2 1/4" or 3" or IsoBrace® 1 3/8" or 2 3/8" (RSI of the smallest layers) rigid insulation	1,6 (9,08) ou 0,91 (5,15)
Wood studding 2" x 6" every 16" c/c	-
Profib®Mat hemp insulation batt 5 1/2" (R 16)	2,76 (15,67)
Smart membrane with variable vapor diffusion *	-
Lateral wooden slat 1" x 3" every 16" c/c **	0,18 (1,02)
Vertical wooden slat 1" x 3" every 16" c/c **	0,18 (1,02)
Plasterboard 1/2 "	0,08 (0,45)
Indoor air film	0,12 (0,68)
	0,18 (1,02)

* Or any other comparable product certified in Canada.

** Only one row of lateral wooden slat can be installed 2" x 3" every 16" c/c (same RSI value than double slats)

APPENDIX 2

Ecological wall composition



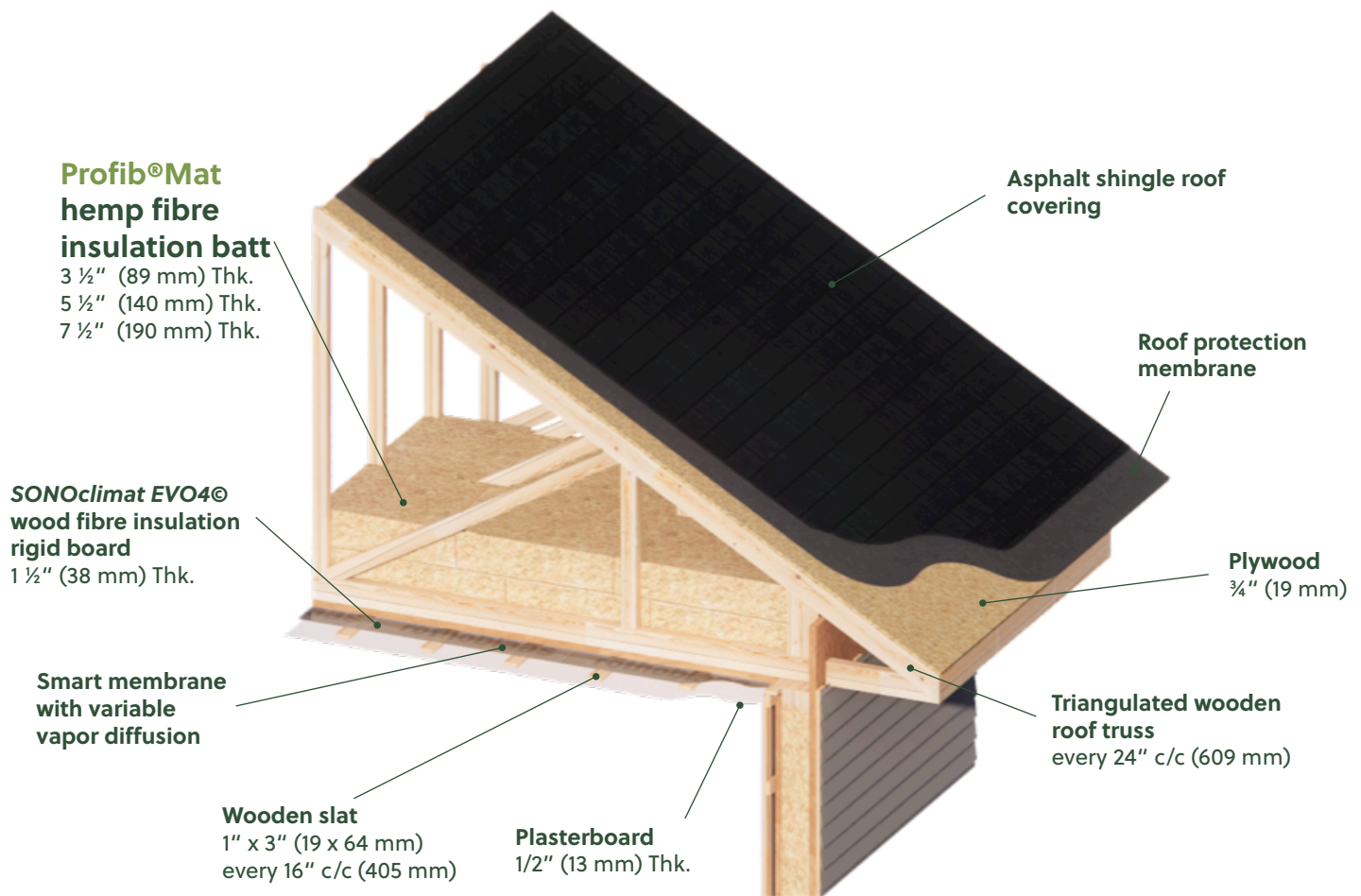
EXTERIOR WALL COMPOSITION TYPE 3	THERMAL RESISTANCE
Total thermal resistance: RSI_{TOT} : 4,89 (R_{TOT} 27,76)	RSI (R)
Effective thermal resistance: RSI_E : 4,25 (R_E 24,13)	
Outdoor air film	0,03 (0,17)
Flexible exterior cladding	0,14 (0,79)
Vertical wooden slat 1" x 3" every 16" c/c	0,18 (1,02)
Smart membrane with variable vapor diffusion *	-
SONOclimat ECO4® wood fibre insulation rigid board 1 1/2" (R4)	0,7 (4,05)
Wood studding 2" x 6" every 16" c/c	-
Profib®Mat hemp insulation batt 5 1/2" (R 16)	2,76 (15,67)
SONOclimat ECO4® wood fibre insulation rigid board 1 1/2" (R4)	0,7 (4,05)
Smart membrane with variable vapor diffusion *	-
Lateral wooden slat 1"x 3" every 16" c/c	0,18 (1,02)
Vertical wooden slat 1"x 3" every 16" c/c **	
Plasterboard 1/2 "	0,08 (0,45)
Indoor air film	0,12 (0,68)
	0,18 (1,02)

* Or any other comparable product certified in Canada.

** Only one row of lateral wooden slat can be installed 2" x 3" every 16" c/c (same RSI value than double slats)

APPENDIX 3

Roof trusses composition



ROOF COMPOSITION TYPE 1	THERMAL RESISTANCE
Total thermal resistance: RSI_{TOT} : 9,58 (R_{TOT} 54,56)	RSI (R)
Effective thermal resistance: RSI_E : 8,56 (R_E 48,60)	
Outdoor air film	0,03 (0,17)
Asphalt shingle roof covering	0,08 (0,45)
Roof protection membrane	-
Plywood ¾"	0,16 (0,90)
Triangulated wooden roof truss, every 24" c/c	-
Profib®Mat hemp fibre insulation batt 5 ½" (R 16) *	2,76 (15,67)
Profib®Mat hemp fibre insulation batt 7 ½" (R 22) *	3,76 (21,40)
Profib®Mat hemp fibre insulation batt 3 ½" (R 10) *	1,75 (10,00)
SONOclimat ECO4® wood fibre insulation rigid board 1 ½" (R 4)	0,7 (4,05)
Smart membrane with variable vapor diffusion **	-
Wooden slat 1"x 3" every 16" c/c	0,15 (0,85)
Plasterboard ½ "	0,08 (0,45)
Indoor air film	0,11 (0,62)

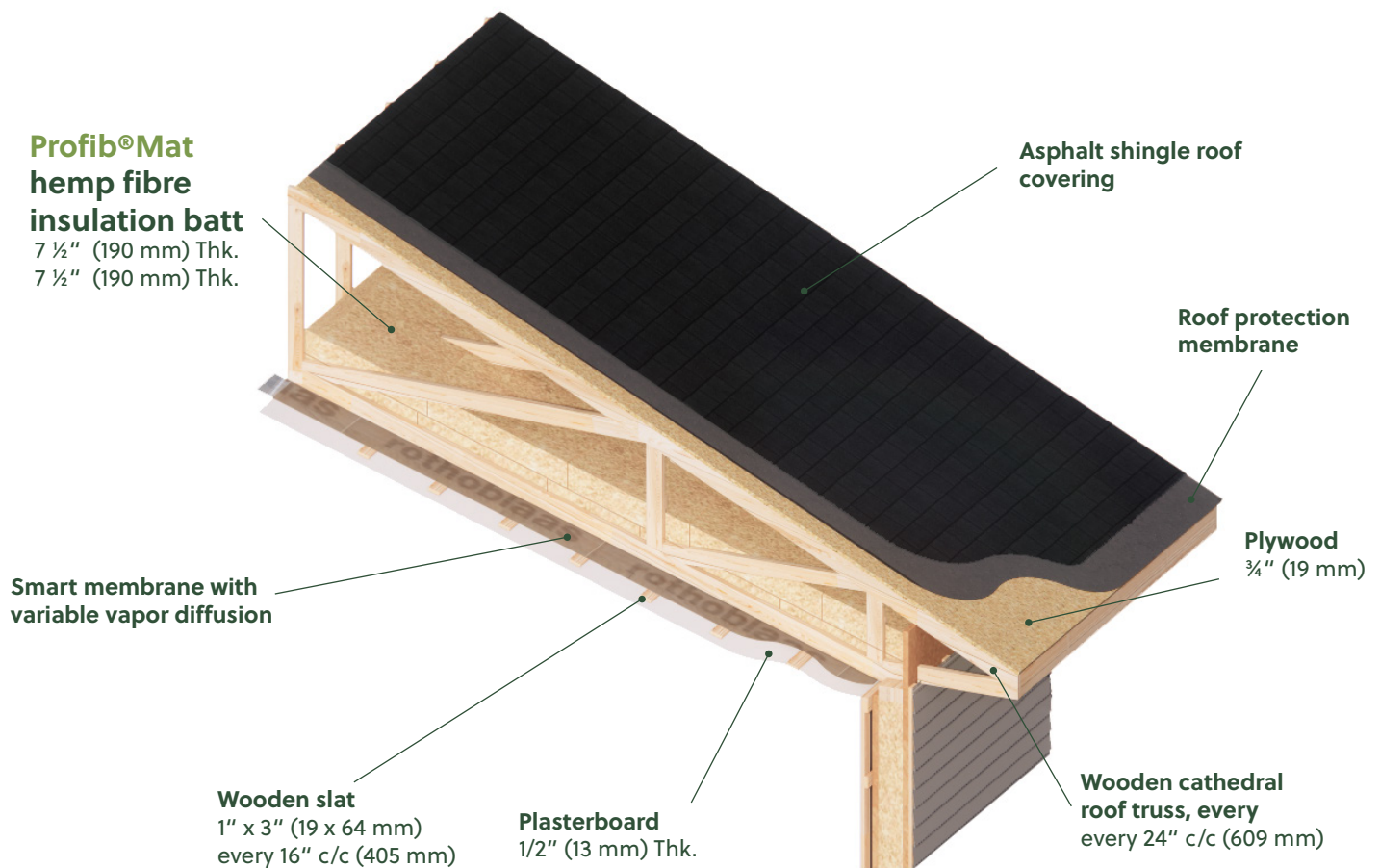
*Insulation can be changed to **Profib®Cell+** wood fibre cellulose (R 3,7/inch) See technical data sheet for application.

** Or any other comparable product certified in Canada.

Min. 13" for a comparable R48

APPENDIX 4

Cathedral ceiling composition



ROOF COMPOSITION TYPE 2	RÉSISTANCE THERMIQUE
Total thermal resistance: RSI_{TOT} : 8,13 (R_{TOT} 46,16)	RSI (R)
Effective thermal resistance: RSI_E : 6,83 (R_E 38,78)	
Outdoor air film	0,03 (0,17)
Asphalt shingle roof covering	0,08 (0,45)
Roof protection membrane	-
Plywood ¾"	0,16 (0,90)
Wooden cathedral roof truss, every 24" c/c	-
Profib®Mat hemp fibre insulation batt 7 ½" (R 22)	3,76 (21,40)
Profib®Mat hemp fibre insulation batt 7 ½" (R 22)	3,76 (21,40)
Smart membrane with variable vapor diffusion*	-
Wooden slat 1"x 3" every 16" c/c	0,15 (0,85)
Plasterboard ½ "	0,08 (0,45)
Indoor air film	0,11 (0,62)

* Or any other comparable product certified in Canada.

APPENDIX 5

Technical data sheet

TECHNICAL DATA SHEET



Profib®Mat

DESCRIPTION

Profib®Mat is a flexible insulating batt made from hemp fibers, designed to be friction-fitted between the wooden or steel frames of a construction. It offers a highly effective insulation solution thanks to its good thermal resistance combined with its ability to regulate humidity and superior soundproofing.

MasterFormat 07 21 16 - Blanket Insulation



FEATURES AND BENEFITS



**Renewable
and sustainable**



Soundproofing



**Non-toxic
and non-abrasive**



**Low carbon
footprint**

- Hygroscopic potential (moisture regulation)
- Superior thermal phase shift (ability to slow down heat transfer)
- Exceptional stability of the R-value in extreme climatic conditions
- Mechanical stability without sagging or settling
- Contributes to green building credits such as LEED for environmental impact, ingredients, and emissions

TEMPERATURE VARIATION AND R-VALUE

THICKNESS	1" (24,5 MM)	3,5" (88,9 MM)	5,5" (140 MM)	7,5" (190,5 MM)
R (RSI) value at T° 24°C for NBC compliance*				
24°C	2,9 (0,56)	10 (1,75)	15,7 (2,76)	21,4 (3,76)
R (RSI) value depending on insulation T°**				
4°C	3,2 (0,56)	11,2 (1,97)	17,6 (3,10)	24,0 (4,23)
-4°C	3,4 (0,59)	11,7 (2,06)	18,4 (3,24)	25,1 (4,42)
-7,5°C	3,4 (0,60)	11,9 (2,09)	18,7 (3,29)	25,4 (4,48)

* Average temperature of the insulation

DELIVERY, STORAGE, AND INSTALLATION

The product is delivered on pallets. Transport and store in a dry, enclosed area. Allow 72 hours between the manufacturing date indicated on the packaging and the occupancy of the premises. The insulation must be installed in accordance with the installation guide, the building code, and municipal regulations.

TECHNICAL DATA

THICKNESS	R 10,0 (RSI 1,75) - THICKNESS 3,5" (88,9 MM) R 15,7 (RSI 2,76) - THICKNESS 5,5" (140 MM) R 21,4 (RSI 3,76) - THICKNESS 7,5" (190,5 MM)	ASTM C518
GLOBAL WARMING POTENTIAL	0,68 KG EQ CO ₂ (1 RSI)	DEP
FIRE BEHAVIOR	SDI 30 - SFI 255	CAN/ULC- S102
MOLD RESISTANCE	PASSED	ASTM C1338
CORROSIVENESS	ALUMINUM, COPPER, STEEL - PASSED	CAN/ULC- S703 6.3.2
WATER VAPOR SORPTION	12 %	CAN/ULC S703 6.3.8
MATERIALS WATER VAPOR TRANSMISSION	PERM 9,58 547,85 NG/(Pa.s.m ²)	ASTM E96
ACOUSTICS	STC 62	ASTM E90
DENSITY	35 KG/M ³	

DIMENSION

THICKNESS	WOOD FRAME 3 1/2" 5 1/2" 7 1/2"
	STEEL FRAME 3 1/2" 6"
WIDTH	WOOD FRAME 15" 23"
	STEEL FRAME 16 1/4" 24 1/4"
LENGTH	48"

SAFETY

It is always recommended that installation personnel wear a dust mask, safety glasses, and gloves. Make sure you have the SDS sheet available at all times. Available at naturefibres.com.



The information described in this sheet is provided to help select the appropriate insulating material for your use. It is the user's responsibility to determine if the product meets their needs and complies with current regulations. In the event of a justified claim, only the product is subject to replacement.



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