



94 Reservoir Park Drive  
Rockland, MA 02370  
(617)-544-3200

April 9, 2024

**Solution: Install Attic Insulation**

**Site: Somerville Recreation Dept., 16 Walnut St., Somerville, MA 02145**

**Presented To:**  
**Andrew Reider**  
City of Somerville  
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**Inovis Energy, Inc, is a turn-key implementer of energy efficiency measures. We provide our clients with a streamlined approach to energy conservation projects that makes the process efficient, clear, and successful**

**We have included the necessary information for review of the above-mentioned project in this report. We hope you find our analysis clear and concise. If there are any specific questions, or additional information requested, please let us know.**

*Tony Parente*

**Tony Parente**  
**Director of**  
**Business**  
**Development**  
**Inovis Energy, Inc.**

**Proposed Scope of Work:**

Currently there is a significant energy loss identified through the attic.

A general description of work is as follows:

1. **Attic Flat Ceilings: 13.5" Greenfiber Loose Fill Cellulose, R-48, 2,760 SF; 13.5" Greenfiber blown Cellulose R-49, 1,280 SF. No existing Insulation.**
2. **Attic Knee Walls and above all openings or gaps for fire blocking: 3.5" Johns Manville TempControl Mineral Wool R-15, 300 SF. No existing Insulation.**

**Clarifications, Omissions, and Assumptions:**

1. **Work to be performed during normal, first shift hours (6a-4p), Monday-Friday, prevailing wage.**
2. **No existing code violations to be corrected.**
3. **Inovis will insulate pipes that are reachable within reasonable limits of a 10' ladder or lift access. Pipes on the underside of hot water tanks are excluded due to access.**
4. **This proposal excludes product/process pipe, permits, labels, painting, firestopping.**

**Financials:**

Description	Total Cost	Utility Incentive	Total Cost less Incentive	Annual Therms Savings	Annual Oil Saved, Gal.	Annual Cost Savings	Payback (yrs)
Supply & Install Attic Insulation	\$20,900	\$14,630	\$6,270	528	377	\$1,414	4.4

\*Cost savings based on #2 Fuel Oil cost of \$3.75/Gal.

ATTIC COVERAGE CHART – LOOSE-FILL AND STABILIZED APPLICATIONS

Tabla de Cobertura de Ático - Aplicaciones de Relleno Suelto y Aplicaciones Estabilizadas

R-Value at 75° F Mean Temp. Valor de resistencia térmica (valor R) at 75 F de temperatura media	Minimum Thickness (inches) Espesor mínimo (en pulgadas)			Net Coverage (no adjustment for framing) Cobertura neta (sin compensación para la estructura)			Net Coverage (adjusted for 2" x 6" framing on 16" centers) Cobertura neta (con compensación para una estructura de 2" x 6" en centros de 16")	
	STABILIZED Initial Installed Thickness Espesor inicial instalado	LOOSE-FILL Initial Installed Thickness Espesor inicial instalado	Settled Thickness Espesor asentado	Maximum Sq. Ft. per Bag Pies cuadrados máximos por bolsa	Minimum Bags per 1,000 Sq. Ft. Cantidad mínima de bolsas por 1,000 pies cuadrados	Minimum Weight per Sq. Ft. Peso mínimo por pie cuadrado	Maximum Sq. Ft. per Bag Pies cuadrados máximos por bolsa	Minimum Bags per 1,000 Sq. Ft. Cantidad mínima de bolsas por 1,000 pies cuadrados
	25lbs (11.3kg)							SANCTUARY®
13	3.8	3.9	3.6	65.8	15.2	0.38	72.6	13.8
19	5.5	5.7	5.3	44.2	22.6	0.57	48.8	20.5
22	6.4	6.6	6.1	38.0	26.3	0.66	41.2	24.2
30	8.7	8.9	8.3	25.9	38.6	0.97	27.4	36.5
38	10.9	11.2	10.4	19.0	52.6	1.32	19.9	50.1
44	12.6	12.9	12.0	15.7	63.5	1.59	16.5	60.8
49	13.9	14.3	13.3	14.1	70.8	1.80	14.6	68.5
60	16.9	17.3	16.1	11.6	86.0	2.20	12.0	83.5

LOOSE-FILL APPLICATIONS

THE ABOVE COVERAGE CHART IS BASED ON A NOMINAL BAG WEIGHT OF 25 LBS USING A VOLUMATIC III, 3RD GEAR AND 8" GATE. THE CHART IS BASED ON SETTLED THICKNESS AND IS FOR ESTIMATING PURPOSES ONLY. DO NOT EXCEED MAXIMUM SQUARE FEET COVERAGE PER BAG. THE APPLICATOR MUST INSTALL BOTH THE MINIMUM NUMBER OF BAGS PER 1000 SQ. FT. AND THE MINIMUM INSTALLED THICKNESS TO ENSURE THE STATED R-VALUE HAS BEEN REACHED. FAILURE TO MEET BOTH THESE REQUIREMENTS MAY PREVENT THE APPLICATION OF SPECIFIED R-VALUE. JOB CONDITIONS, APPLICATION TECHNIQUES, EQUIPMENT AND SETTINGS CAN INFLUENCE ACTUAL COVERAGE. MINIMUM NET WEIGHT IS 23.75 LBS. IN ACCORDANCE WITH ASTM C-739.

STABILIZED APPLICATIONS

THE ABOVE COVERAGE CHART IS BASED ON A NOMINAL BAG WEIGHT OF 25.0 LBS USING A VOLUMATIC III, 3RD GEAR AND 8" GATE. THE CHART IS BASED ON SETTLED THICKNESS AND IS FOR ESTIMATING PURPOSES ONLY. DO NOT EXCEED MAXIMUM SQUARE FEET COVERAGE PER BAG. THE APPLICATOR MUST INSTALL BOTH THE MINIMUM NUMBER OF BAGS PER 1000 SQ. FT. AND THE MINIMUM INSTALLED THICKNESS TO ENSURE THE STATED R-VALUE HAS BEEN REACHED. FAILURE TO MEET BOTH THESE REQUIREMENTS MAY PREVENT THE APPLICATION OF SPECIFIED R-VALUE. THE INSTALLED MOISTURE CONTENT MUST BE BETWEEN 16% AND 22% IN ATTIC APPLICATIONS. JOB CONDITIONS, APPLICATION TECHNIQUES, EQUIPMENT, AND SETTINGS CAN INFLUENCE ACTUAL COVERAGE. MINIMUM NET WEIGHT IS 23.75 LBS. IN ACCORDANCE WITH ASTM C-1497. THE STABILIZED APPLICATION IS FOR PROFESSIONAL INSTALLERS ONLY USING SPECIALIZED EQUIPMENT.

SIDEWALL & FLOOR COVERAGE CHART – DENSE-PACK APPLICATION

Tabla de Cobertura Lateral y del Piso - Aplicaciones de Paquete Denso

Dry Dense-Pack Sidewall & Floor Applications (3.5 pcf minimum installed density)				SANCTUARY®	
Framing Estructura	Thermal Resistance (R value) Resistencia térmica (R)	Installed Thickness (Inches) Espesor instalado (pulgadas)	Minimum Wt Per Square foot lb/ft² Peso mínimo por pie cuadrado lb/ft²	Maximum Coverage per Bag (Adjusted for Framing) Cobertura máxima por bolsa (con compensación para la estructura)	
				16 inch o.c. ft²/Bag 16 pulgadas o.c. pie2/bolsa	24 inch o.c. ft²/Bag 24 pulgadas o.c. pie2/bolsa
2 x 4	13	3.5	1.02	27.0	26.1
2 x 6	21	5.5	1.60	17.2	16.6
2 x 8	28	7.5	2.19	12.6	12.1

This coverage chart is for dry applications only and is based on the Krendl KS200, with material applied dry.

SIDEWALL COVERAGE CHART – SPRAY-APPLIED APPLICATIONS

Tabla de Cobertura Lateral - Aplicaciones Aplicadas por Spray

Spray-Applied Sidewall Applications (2.75 pcf minimum installed density)				SANCTUARY®	
Framing Estructura	Thermal Resistance (R value) Resistencia térmica (R)	Installed Thickness (Inches) Espesor instalado (pulgadas)	Minimum Wt Per Square foot lb/ft² Peso mínimo por pie cuadrado lb/ft²	Maximum Coverage per Bag (Adjusted for Framing) Cobertura máxima por bolsa (con compensación para la estructura)	
				16 inch o.c. ft²/Bag 16 pulgadas o.c. pie2/bolsa	24 inch o.c. ft²/Bag 24 pulgadas o.c. pie2/bolsa
2 x 4	13	3.5	0.79	35.0	33.8
2 x 6	21	5.5	1.24	22.3	21.6

This coverage chart is based on the Volumatic III, 2nd gear, 6" gate. The installed moisture content must be between 25% and 35% as measured by a hand held moisture meter. Do not cover the insulation until the insulation moisture content, measured and documented after a minimum period of 24 hrs from the time of installation, reaches 25% or less in accordance with Greenfiber's Wallspray Manual. Install dry dense pack Sanctuary insulation in all exterior wall sections where added vapor impediments, such as cabinets, mirrors, tubs, and shower enclosures are located. If unsure where impediments are located, dry dense pack the entire exterior wall section(s). Non-standard or unusual wall configurations (i.e., other than 2x4 and 2x6 walls) can affect thermal and sound properties and require special installation considerations. These types of designs should be analyzed and, if necessary, tested prior to plan review. Contact Greenfiber technical representative for applications or framing that is not included on these charts.

READ THIS BEFORE YOU BUY

WHAT YOU SHOULD KNOW ABOUT R-VALUES

This chart shows the R-Value of this insulation. R means resistance to heat flow. The higher the R-Value, the greater the insulating power. Compare insulation R-Values before you buy. There are other factors to consider. The amount of the insulation you need depends on the climate you live in. Also, your fuel savings from insulation will depend upon the climate, the type and size of your house, the amount of insulation already in your house, and your fuel use patterns and family size. If you buy too much insulation, it will cost you more than what you'll save on fuel. To get the marked R-Value, it is essential that this insulation be installed properly.

Manufactured by Greenfiber®

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Made in USA

PM-6.3329 Rev E 01/23

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Wilkes Barre, PA 18702  
Waco, TX 76704  
Salt Lake City, UT 84119  
Debert, Nova Scotia  
Chandler, AZ 85225



UL Classified. See complete marking on back of packaging.

## COMPANY

Johns Manville, a Berkshire Hathaway company, was founded in 1858. Our ownership by Berkshire Hathaway, one of the most admired companies in the world and one of the most financially secure, allows JM to invest for the future. This enables JM to continue delivering the broadest range of insulation products in the industry and offering innovative solutions that meet your needs.

## DESCRIPTION

JM mineral wool batts are made of inorganic fibers derived from basalt, a volcanic rock. Advanced manufacturing technology ensures consistent product quality, with high-fiber density and low shot content for excellent performance. JM mineral wool batts are inorganic, noncombustible, moisture resistant, non-deteriorating, and will not mildew or support corrosion.

## USE

JM TempControl® batts are designed to deliver thermal control in stud cavities of exterior walls, basements, and heated crawl spaces.

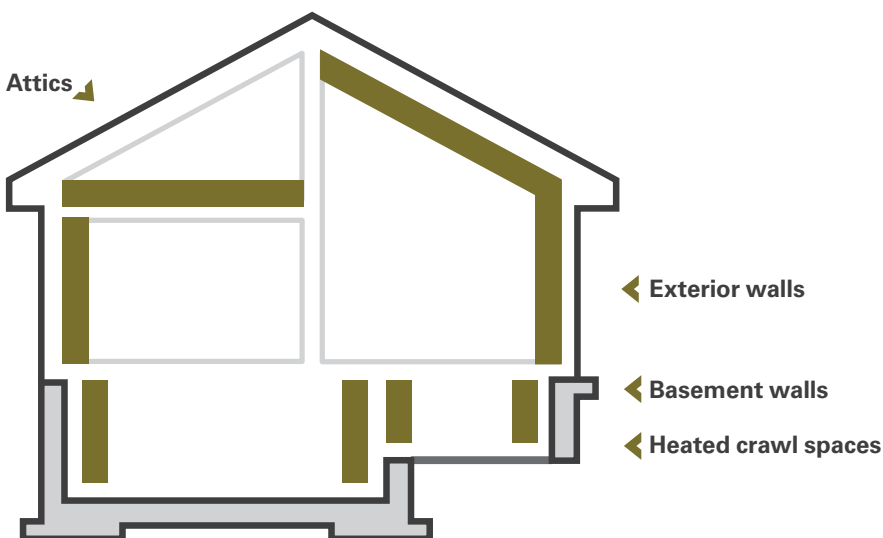
## INSTALLATION

In standard framing, carefully insert batts between the studs or joists to fill the cavities with a friction-fit to framing members. JM mineral wool batts are easily cut with a knife for quick installation and snug fit in nonstandard size cavities.

## PACKAGING

JM TempControl® products are compression packed for more efficient storage and transport.

## DESIGN CONSIDERATIONS



## PERFORMANCE ADVANTAGES

### Dependable Thermal Performance:

With high fiber quality and low shot content, JM mineral wool batts deliver consistent thermal insulating performance at the rated R-value. The high-density, non-combustible fiber helps keep homes warm in winter and cool in summer while reducing heating and cooling bills to save money year-round.

**Fire Safety:** Mineral wool TempControl has a melting point in excess of 2000°F (1093°C). See Applicable Standards for details.

**Noncombustible:** See Applicable Standards for details.

**Durable & Inorganic:** JM mineral wool batts do not support growth of fungi, nor do they sustain vermin.

## ENERGY AND ENVIRONMENT



## LIMITATIONS OF USE

Check applicable building codes.

## APPLICABLE STANDARDS & BUILDING CODE CLASSIFICATION

JM MINERAL WOOL BATTS
ASTM C665, Type 1
ASTM E136 noncombustible
ASTM E84 Flame Spread/Smoke Developed, 0/0
IBC (International Building Code) all types

## PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	PERFORMANCE
Thermal Resistance	ASTM C518	R-13, R-15, R-21, R-23, R-30
Surface Burning Characteristics	ASTM E84	Flame spread 0/smoke 0
Critical Radiant Flux	ASTM E970	Greater than 0.12 W/cm <sup>2</sup>
Water Vapor Sorption	ASTM C1104	Less than 5%
Odor Emission	ASTM C1304	Pass
Corrosiveness	ASTM C665	Pass
Fungi Resistance	ASTM C1338	Pass
Density	ASTM C167	2 lbs/ft <sup>3</sup> (>32 kg/m <sup>3</sup> )

## STANDARD SIZES

PRODUCT	THICKNESS in (mm)	WIDTH in (mm)	LENGTH in (mm)
R-13 TempControl®	3½" (89)	15¼" (387), 23" (584)	47" (1194)
R-15 TempControl®	3½" (89)	15¼" (387), 23" (584)	47" (1194)
R-21 TempControl®	5½" (140)	15¼" (387), 23" (584)	47" (1194)
R-23 TempControl®	5½" (140)	15¼" (387), 23" (584)	47" (1194)
R-30 TempControl®	7¼" (184)	15¼" (387), 23" (584)	47" (1194)

\*16" & 24" widths available on a made-to-order basis.

## ACOUSTICAL PERFORMANCE

### ASTM C423 Test Method (Type A Mounting)

R-VALUE	SOUND ABSORPTION COEFFICIENTS						
	1/3 Octave Band Center Frequencies, Hz						
	125	250	500	1000	2000	4000	NRC
R-15	0.75	1.22	1.19	1.08	1.04	1.01	1.15
R-23	1.10	1.16	1.11	1.07	1.00	0.97	1.10
R-30	1.13	1.15	1.12	1.06	1.01	0.97	1.10