



Investigative Energy Audit For

Tyonek Fire Hall



Prepared For
Native Village of Tyonek

August 30, 2017

Prepared By: Kevin Ulrich & Kelli Whelan

**ANTHC-DEHE
4500 Diplomacy Dr.
Anchorage, AK 99508**

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PREFACE

The purpose of this report is to provide guidance in reducing facility operating costs and enhance the sustainability of this community. The report assesses the current energy usage of the facility, provide options for reducing the amount of energy used, and evaluate the cost vs. benefit of each option.

Discussions of site specific concerns, financing options, general facility information, and an Energy Efficiency Action Plan are also included in this report.

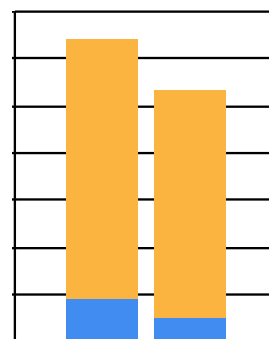
ACKNOWLEDGMENTS

The ANTHC Rural Energy Initiative gratefully acknowledges the assistance of President Arthur Standifer, Tribal Administrator Sandi Kroto, and Tyonek Tribal Conservation District Program Assistant Tonya Kaloa.

OVERVIEW

This report was prepared for the Native Village of Tyonek. The scope of the audit focused on the Tyonek Fire Hall and includes an analysis of building occupancy schedules, building shell, heating systems, heating and ventilations systems, domestic hot water, lighting, and other electrical loads. The Tyonek Fire Hall is approximately 4,900 square feet and serves as storage and workshop space for the fire department and tribal vehicles.

Annual Energy Costs by Fuel Type



ENERGY BASELINE

Based on unsubsidized electricity and fuel oil prices in effect at the time of the audit, the total predicted energy costs are \$12,860 per year. This includes \$1,778 for electricity and \$11,082 for #1 fuel oil.

Table 1 lists the predicted annual energy usage before and after the proposed retrofits for the Tyonek Fire Hall.

Table 1: Predicted Annual Energy Use for the Tyonek Fire Hall

Predicted Annual Fuel Use				
Fuel Use	Existing Building	With Proposed Retrofits	Total Energy Savings	Total Cost Savings
Electricity	11,171 kWh	5,950 kWh	5,221 kWh	\$835
#1 Oil	2,333 gallons	2,016 gallons	317 gallons	\$1,506

PROPOSED ENERGY EFFICIENCY MEASURES (EEM)

Table 2 below summarizes the energy efficiency measures analyzed for the Tyonek Native Corporation Satellite Office. Listed are the estimates of the annual savings, installed costs, and two different financial measures of investment return. All costs assume that local labor will be used with no additional cost associated for travel or administrative tasks.

Table 2: Priority List – Energy Efficiency Measures

Priority	Feature	Improvement Description	Annual Energy Savings	Installed Cost	Savings to Investment Ratio, SIR ¹	Simple Payback (Years) ²	CO ₂ Savings
High	Other Electrical: Air Compressor (7 gal?)	Unplug air compressor in the evening when not in use.	\$13	\$25	3.51	2.0	210.6
Medium	Electric Baseboard Heating	Add controls to electric baseboard to prevent unit from running constantly.	\$221	\$1,000	2.60	4.5	1,726.6
Medium	Other Electrical: Fire Truck Battery Charger	Replace ambulance battery so that it is not constantly charged.	\$255	\$2,500	1.49	9.8	1,988.8

Priority	Feature	Improvement Description	Annual Energy Savings	Installed Cost	Savings to Investment Ratio, SIR ¹	Simple Payback (Years) ²	CO ₂ Savings
Medium	Air Tightening	Use mats to cover the gap between the garage doors and the foundation floor.	\$268	\$2,000	1.25	7.5	1,193.3
Medium	Lighting: Fire Hall	Replace with new energy-efficient direct-wire LED equivalent lamps.	\$105	\$1,080	1.14	10.3	819.2
Medium	Lighting: Garage Lighting	Replace with new energy-efficient direct-wire LED equivalent lamps.	\$105	\$1,080	1.14	10.3	819.2
Medium	Garage Doors: (Garage)	Add insulating blanket to garage door.	\$106	\$1,372	1.05	12.9	472.6
Medium	Garage Doors: (Fire Hall)	Add insulating blanket to garage door.	\$318	\$4,115	1.05	12.9	1,417.5
Low	Cathedral Ceiling	Add R-19 fiberglass batt insulation to existing wall structure.	\$849	\$21,438	0.94	25.3	3,781.5
TOTAL			\$2,239	\$34,609	1.08	15.5	12,429.4

FACILITY DESCRIPTION

Building Occupancy Schedules

The building is occupied from approximately three hours per day by tribal maintenance staff. When occupied, the garage doors are commonly left open fully for light and visibility as well as easy mobility around the large fire vehicles.

Building Shell

The building is a standard wood-framed structure with 2 x 4 lumber in the walls and roof as well as a gravel pad foundation with concrete flooring. There is no existing insulation in the walls.

There are two total windows in the Garage half of the building, each of which is double-pane glass with aluminum framing. The windows were not measured but were estimated to have dimensions of approximately 4ft. x 4ft.

There are three standard doors and four large garage doors in the building. Each of the standard doors are insulated metal with no windows, and there are two doors in the Fire Hall half of the building and one in the Garage half of the building. Each of the garage doors are approximately 14 ft. wide and 16 ft. tall with three of the doors in the Fire Hall half of the building and one of the doors in the Garage half of the building.

Heating Systems

The heating systems used in the building are:

Oil Fired Unit Heater

Fuel Type: #1 Oil
 Input Rating: 185,000 BTU/hr
 Steady State Efficiency: 75 %
 Idle Loss: 0 %
 Heat Distribution Type: Air

Electric Unit Heaters (4)

Fuel Type: Electricity
 Input Rating: 0 BTU/hr
 Steady State Efficiency: 90 %
 Idle Loss: 0 %
 Heat Distribution Type: Air

Fire Hall Electric Baseboard

Fuel Type: Electricity
 Input Rating: 0 BTU/hr
 Steady State Efficiency: 95 %
 Idle Loss: 0 %
 Heat Distribution Type: Water
 Boiler Operation: All Year

Lighting

Table 3: Lighting Information in the Tyonek Fire Hall

Room	Bulb Type	Fixtures	Bulbs per Fixture	Annual Usage (kWh)
Fire Hall	Fluorescent T12 8ft. 96 Watts	18	2	1,791
Garage	Fluorescent T12 8ft. 96 Watts	18	2	1,791
Airport	High Pressure Sodium 150 Watt	~ 30	1	925

The lights for the airport runway are connected to the same electric service as the fire hall. These lights were not inspected on site and all information is approximated.

Electrical Equipment

Table 4: Major Electrical Equipment in the Tyonek Fire Hall

Equipment	Rating (Watts)	Annual Usage (kWh)
Air Compressor	750	366
Gas Station Pump	550	753
Fire Truck Battery Charger	3,000	1,835

The gas station pump is connected to the same electric service as the fire hall.

The fire truck battery charger is plugged in constantly throughout the year because the battery in the fire truck is unable to hold a charge.

PROJECT FINANCING

The total estimated cost of the recommended EEM's \$34,609. The payback for the implemented EEM's is approximately 15.5 years. ANTHC is willing to assist the community with acquiring funds to complete the scope of work recommended in this energy audit.

There are several options for financing energy efficiency projects within the State of Alaska. These include the use of grants, loans, and other funding opportunities. Below is some information on potential funding opportunities.

Energy Efficiency Revolving Loan Program – This is a loan administered by the Alaska Housing Finance Corporation (AHFC) for use by any applicant who is also the owner of the building where the work will take place. It provides a loan for permanent energy-efficiency projects with a completion window of one year.

Sustainable Energy Transmission and Supply Program – This is a loan administered by the Alaska Energy Authority (AEA) for a government, business, or other organized body of people. It provides a loan for energy-efficiency or power transmission or distribution projects.

USDA-RD Communities Facilities Direct Loan & Grant Program - This is a loan or grant provided by the US Department of Agriculture – Rural Development (USDA-RD) for any essential community facility in a rural area. It provides a loan or grant to develop essential community facilities with upgrades or equipment for improvement.

MEASUREMENT AND VERIFICATION

The results of these recommended measures can be measured through the collection of energy use data through the monthly bills provided by the local electric utility and the local fuel oil supplier. Collecting data and performing a historical comparison is the simplest method of validating the energy and cost savings seen by the measures. Additionally, active remote monitoring systems are available that can collect and store data regarding energy and fuel usage. These systems allow the user to track the usage in real time and can be shared more easily with partners across the state.

APPENDICES

Appendix A –Energy Billing Data

The table below shows the fuel and electricity data used during the energy modeling process to confirm the accuracy of the energy distribution. Fuel records were not available for the fire hall.

Month	Fuel Oil Use (gallons)	Electricity Use (kWh)
January	Not Available	1,607
February	Not Available	1,534
March	Not Available	1,784
April	Not Available	1,311
May	Not Available	403
June	Not Available	256
July	Not Available	256
August	Not Available	306
September	Not Available	471
October	Not Available	577
November	Not Available	1,387
December	Not Available	1,640

Appendix B – Energy Audit Report – Project Summary

ENERGY AUDIT REPORT – PROJECT SUMMARY	
General Project Information	
PROJECT INFORMATION	AUDITOR INFORMATION
Building: Tyonek Fire Hall	Auditor Company: ANTHC-DEHE
Address: P.O. Box 82009	Auditor Name: Kevin Ulrich and Kelli Whelan
City: Tyonek	Auditor Address: 4500 Diplomacy Dr.
Client Name: Arthur Standifer	Anchorage, AK 99508
Client Address: P.O. Box 82009 Tyonek, AK 99682	Auditor Phone: (907) 729-3237
Client Phone: (907) 583-2111	Auditor FAX:
Client FAX:	Auditor Comment:
Design Data	
Building Area: 4,896 square feet	Design Space Heating Load: Design Loss at Space: 141,764 Btu/hour with Distribution Losses: 141,764 Btu/hour Plant Input Rating assuming 82.0% Plant Efficiency and 25% Safety Margin: 216,104 Btu/hour Note: Additional Capacity should be added for DHW and other plant loads, if served.
Typical Occupancy: 0 people	Design Indoor Temperature: 45 deg F (building average)
Actual City: Tyonek	Design Outdoor Temperature: -1.2 deg F
Weather/Fuel City: Tyonek	Heating Degree Days: 9,722 deg F-days
Utility Information	
Electric Utility: Chugach Electric	Average Annual Cost/kWh: \$0.16/kWh

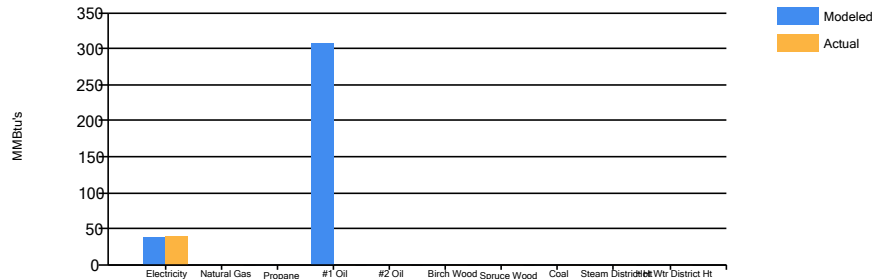
Annual Energy Cost Estimate				
Description	Space Heating	Lighting	Other Electrical	Total Cost
Existing Building	\$11,605	\$635	\$416	\$12,860
With Proposed Retrofits	\$9,876	\$425	\$116	\$10,621
Savings	\$1,729	\$210	\$301	\$2,239

Building Benchmarks			
Description	EUI (kBtu/Sq.Ft.)	EUI/HDD (Btu/Sq.Ft./HDD)	ECI (\$/Sq.Ft.)
Existing Building	70.7	7.27	\$2.63
With Proposed Retrofits	58.5	6.02	\$2.17
EUI: Energy Use Intensity - The annual site energy consumption divided by the structure's conditioned area. EUI/HDD: Energy Use Intensity per Heating Degree Day. ECI: Energy Cost Index - The total annual cost of energy divided by the square footage of the conditioned space in the building.			

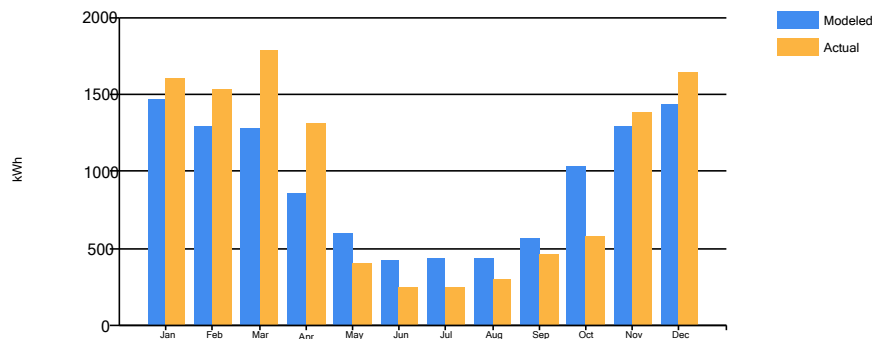
Appendix C – Actual Fuel Use versus Modeled Fuel Use

The graphs below show the modeled energy usage results of the energy audit process compared to the actual energy usage report data. The model was completed using AkWarm modeling software. The orange bars show actual fuel use, and the blue bars are AkWarm's prediction of fuel use.

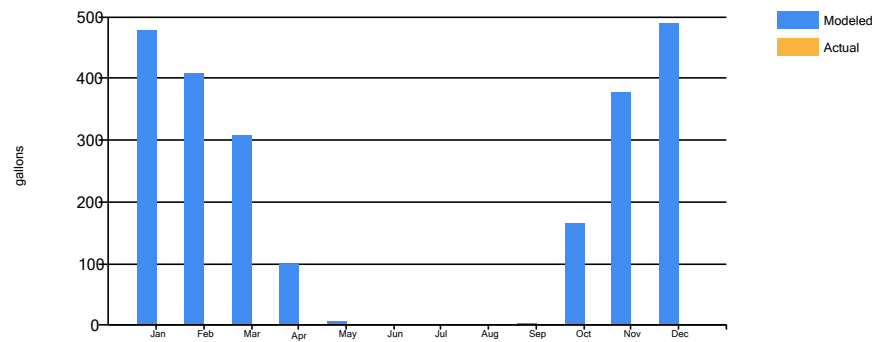
Annual Energy Use



Electricity Use



#1 Fuel Oil Use



Appendix D - EUI Calculation Details

Electricity for the residential, commercial, and public facilities is provided by the Chugach Electric Association.

The average cost for each type of fuel used in this building is shown below in Table 5. This figure includes all surcharges, subsidies, and utility customer charges:

Table 5: Energy Cost Rates for each Fuel Type.

Average Energy Cost	
Description	Average Energy Cost
Electricity	\$ 0.16/kWh
#1 Oil	\$ 4.75/gallons

Table 6 shows the calculated results for the building Energy Use Index (EUI), which determines the total energy usage for a type of building for comparison with other buildings of the same type. This allows the user to determine the relative energy use of a building in relation to others of the same type or use.

Table 6: EUI Building Calculations for the Tyonek Fire Hall

Energy Type	Building Fuel Use per Year	Site Energy Use per Year, kBTU	Source/Site Ratio	Source Energy Use per Year, kBTU
Electricity	11,171 kWh	38,126	3.340	127,340
#1 Oil	2,333 gallons	307,966	1.010	311,046
Total		346,092		438,385
BUILDING AREA		4,896	Square Feet	
BUILDING SITE EUI		71	kBTU/Ft²/Yr	
BUILDING SOURCE EUI		90	kBTU/Ft²/Yr	
* Site - Source Ratio data is provided by the Energy Star Performance Rating Methodology for Incorporating Source Energy Use document issued March 2011.				

Table 7 shows information on common energy use benchmarks used to characterize the efficiency of a building.

Table 7: Building Benchmarks for the Tyonek Fire Hall

Building Benchmarks			
Description	EUI (kBtu/Sq.Ft.)	EUI/HDD (Btu/Sq.Ft./HDD)	ECI (\$/Sq.Ft.)
Existing Building	70.7	7.27	\$2.63
With Proposed Retrofits	58.5	6.02	\$2.17
EUI: Energy Use Intensity - The annual site energy consumption divided by the structure's conditioned area. EUI/HDD: Energy Use Intensity per Heating Degree Day. ECI: Energy Cost Index - The total annual cost of energy divided by the square footage of the conditioned space in the building.			

Appendix E – Materials List and Labor Estimation

Table 8 & 9: Materials List and Cost Estimation for Tyonek Fire Hall

Energy Retrofit	Required Materials	Quantity	Cost per Item	Total Materials Cost
Electric Baseboard Controls	Controls	1	\$500	\$500
Fire Truck Battery Replacement	Vehicle Battery	1	\$500	\$500
Lighting	T8 8ft. Low equivalent lamps	72	\$30	\$720
Air Tightening/Insulation	Garage Door Blankets	4	\$250	\$1,000
Air Tightening/Insulation	Inner Wall Batt Insulation	8000 sq. ft.	\$0.50/sq. ft.	\$4,000

Category	Cost (\$)
Labor	19,817
Travel	4,040
Materials	6,720
Freight	1,008
Indirect	3,158
Total	\$6,366

Appendix F – Materials Specifications

DirectLED - 8 Foot - LED Fluorescent Replacement Tube - Ballast Bypass - 36 Watt - 3900 Lumens - Frosted Lens

EarthLED Total Product Insight

Performance Specifications

REPLACEMENT FOR:	F96 T8, T12 8 FOOT FLUORESCENT TUBE
BRIGHTNESS (LUMENS):	3900
COLOR TEMPERATURE:	3000K 4000K 5000K 6000K
COLOR ACCURACY (CRI):	80
DIMENSIONS	1.02" X 96" (BI-PIN, SINGLE PIN) 1.02" X 93.91" (R17D)
POWER CONSUMPTION:	36 WATTS
VOLTAGE:	100-277 VOLTS
DIMMABLE:	NO

Dimensions / Additional Data

CERTIFICATIONS:	UL (G13 BI-PIN, R17D)
PRODUCT/ORDER CODE:	DL-FY-T8-2400NF-FROSTED

Lifespan / Cost To Run

PROJECTED LIFE: @3 HRS/DAY	50,000 HRS
YEARLY ENERGY COST: 3 HRS/DAY @ .11 KWH	\$4.34

WARRANTY	5 YEAR FY LIGHTING LIMITED WARRANTY EARTHLED PRODUCT PROTECTION PLAN IS AVAILABLE
----------	--

R-19 Kraft Faced Insulation Batts 23 in. x 93 in.



- Soft to touch, pre-cut widths to fit between studs and joists
- Greenguard GOLD certified & verified to be Formaldehyde free
- Offers exceptional thermal and sound control performance

\$88.20 / each

If you buy 15 or more

\$61.74 / each

Quantity

Product Overview

EcoTouch insulation is the reinvention of fiberglass insulation from Owens Corning, the industry leader that invented fiberglass insulation. Install our insulation with confidence knowing that over 70 years of innovation and experience has gone in the making of EcoTouch insulation. Unlike traditional fiberglass insulation, Owens Corning EcoTouch insulation contains more than 99% natural ingredients consisting of minerals and plant-based compounds and is verified to be formaldehyde free. Owens Corning EcoTouch insulation is third-party certified to include a minimum of 65% total recycled content for unfaced insulation and 58% for kraft faced insulation. Owens Corning EcoTouch insulation helps to control sound and temperature - keeps your home warm in the winter and cool in the summer.

- Dimensions: 6-1/4 in. x 23 in. x 93 in., 8 pieces (118.83 sq. ft. / bag)
- Application: 2 in. x 6 in. walls (Interior / exterior), floors
- Completely fills the cavity, eliminating gaps and the need for additional handwork
- Provides thermal performance and helps lower monthly heating / cooling costs
- EcoTouch insulation helps control sound; add to bedrooms, home office, family room, utility room, kitchen and bathroom
- Can be combined with FOAMULAR insulating sheathing to achieve greater R-value in exterior wall applications

Specifications

Dimensions

Coverage Area (sq. ft.)

118.83

Product Depth (in.)

93

Product Height (in.)

6.25

Product Length (ft.)

7.75 ft

Product Thickness (in.)

6.25 in

Product Width (in.)

23

Details

Faced or Unfaced

Faced

Formaldehyde Free

Yes

Insulation Application Type

2x6 Walls,Crawlspace,Floors

Insulation R-Value

19

Insulation Type

Fiberglass

Product Weight (lb.)

34lb

Roll or Batt

Batt

Vapor Retardant

Yes

Warranty / Certifications

Warranty Information

Limited Lifetime



EcoTouch® PINK® FIBERGLAS™ Insulation

Manufacturers Fact Sheet

This fact sheet contains important details about Owens Corning's™ **EcoTouch® PINK® FIBERGLAS™ Insulation**. Read it carefully. The chart below covers the entire line of EcoTouch® products sold under the names Thermal Batt, FastBatt, Cathedral Batt, Basement Blanket™, Sound Attenuation Batt (SAB) and Sonobatts®. The chart includes all products, both unfaced and faced with Kraft paper, foil, polyethylene ("Poly"), FSK or PSK.

EcoTouch® PINK® FIBERGLAS™ Insulation

R-value	Thickness (inches)	Width (inches)	Length (inches)	Piece Sq. Ft.	Pieces/ Package	Package Sq. Ft.
8	2.5	16	96	10.7	20	213.3
8	2.5	24	96	16.0	20	320.0
11	3.5	15	93	9.7	16	155.0
11	3.5	15	94	9.8	9	88.1
11	3.5	15	105	10.9	16	175.0
11	3.5	16	96	10.7	16	170.7
11	3.5	23	93	14.9	16	237.7
11	3.5	23	96	15.3	16	245.3
11	3.5	24	48	8.0	32	256.0
11	3.5	24	96	16.0	16	256.0
11	3.5	48	720	240.0	1	240.0
13	3.5	11	93	7.1	22	156.3
13	3.5	15	93	9.7	10	96.9
13	3.5	15	93	9.7	11	106.6
13	3.5	15	93	9.7	13	125.9
13	3.5	15	105	10.9	12	131.3
13	3.5	15	94	9.8	9	88.1
13	3.5	15.25	93	9.8	12	118.2
13	3.5	15.25	93	9.8	13	128.0
13	3.5	15.25	105	11.1	12	133.4
13	3.5	16	96	10.7	11	117.3
13	3.5	16	96	10.7	13	138.7
13	3.5	19.25	93	12.4	11	136.8

EcoTouch® PINK® FIBERGLAS™ Insulation

R-value	Thickness (inches)	Width (inches)	Length (inches)	Piece Sq. Ft.	Pieces/ Package	Package Sq. Ft.
13	3.5	23	93	14.9	11	163.4
13	3.5	24	48	8.0	24	192.0
13	3.5	24	96	16.0	11	176.0
13	3.5	24	96	16.0	12	192.0
13	3.5	48	480	160.0	1	160.0
15	3.5	11	93	7.1	14	99.5
15	3.5	15	93	9.7	7	67.8
15	3.5	15	93	9.7	8	77.5
15	3.5	15	105	10.9	7	76.6
15	3.5	15	105	10.9	8	87.5
15	3.5	16	96	10.7	7	74.7
15	3.5	16	96	10.7	8	85.3
15	3.5	23	93	14.9	7	104.0
15	3.5	24	96	16.0	7	112.0
19	6.25	11	93	7.1	16	113.7
19	6.25	15	48	5.0	16	80.0
19	6.25	15	93	9.7	8	77.5
19	6.25	15	94	9.8	5	49.0
19	6.25	15	105	10.9	8	87.5
19	6.25	15	470	49.0	1	49.0
19	6.25	15.25	93	9.8	8	78.8
19	6.25	15.25	105	11.1	8	89.0
19	6.25	16	48	5.3	16	85.3
19	6.25	16	96	10.7	8	85.3
19	6.25	19.25	48	6.4	16	102.7
19	6.25	19.25	93	12.4	8	99.5
19	6.25	19.25	96	12.8	8	102.7
19	6.25	23	48	7.7	16	122.7
19	6.25	23	93	14.9	8	118.8
19	6.25	23	94	15.0	5	75.1
19	6.25	23	96	15.3	8	122.7
19	6.25	23	470	75.1	1	75.1
19	6.25	24	48	8.0	16	128.0
19	6.25	24	96	16.0	8	128.0
19	6.25	48	470	156.7	1	156.7
19	6.25	48	480	160.0	1	160.0
21	5.5	15	93	9.7	7	67.8
21	5.5	15	93	9.7	8	77.5
21	5.5	15	105	10.9	8	87.5
21	5.5	16	96	10.7	7	74.7
21	5.5	23	93	14.9	6	89.1
21	5.5	24	96	16.0	7	112.0
22	6.75	15	48	5.0	14	70.0

Read This Before You Buy

What you should know about R-Values

The chart shows the R-values 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 insulation you need depends mainly on the climate you live in. Also, your fuel savings from insulation will depend on the climate, the type and size of 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.



INNOVATIONS FOR LIVING®

EcoTouch® PINK® FIBERGLAS™ Insulation

Manufacturers Fact Sheet

EcoTouch® PINK® FIBERGLAS™ Insulation

R-value	Thickness (inches)	Width (inches)	Length (inches)	Piece Sq. Ft.	Pieces/ Package	Package Sq. Ft.
22	6.75	23	48	7.7	14	107.3
22	6.75	24	48	8.0	14	112.0
25	8	19.25	96	12.8	6	77.0
25	8	23	96	15.3	6	92.0
25	8	16	96	10.7	6	64.0
25	8	16	48	5.3	12	64.0
25	8	24	96	16.0	6	96.0
30	9.5	12	48	4.0	20	80.0
30	9.5	15	48	5.0	10	50.0
30	9.5	15	300	31.3	1	31.3
30	9.5	16	48	5.3	10	53.3
30	9.5	16	48	5.3	11	58.7
30	9.5	19.25	48	6.4	10	64.2
30	9.5	23	300	47.9	1	47.9
30	9.5	24	48	8.0	10	80.0
30	9.5	24	48	8.0	11	88.0
30	8.25	15.5	48	5.2	11	56.8
30	8.25	23.75	45	7.4	10	74.2
30	8.25	23.75	48	7.9	10	79.2
38	12	16	48	5.3	8	42.7
38	12	19.25	48	6.4	8	51.3
38	12	24	48	8.0	8	64.0
38	10.25	15.5	48	5.2	8	41.3
38	10.25	23.75	48	7.9	8	63.3

Please contact 419-248-6557 for additional information. Email: gettech@owenscorning.com

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Garage Door Insulation Kits

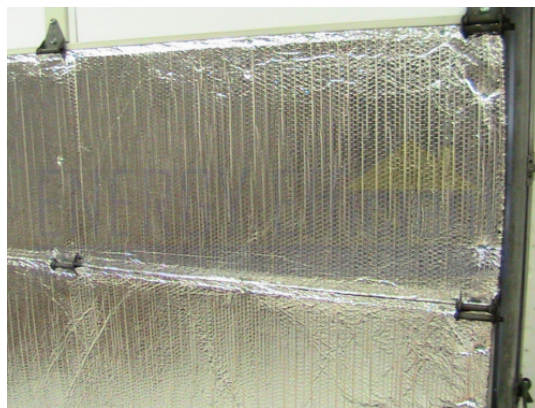
see also...



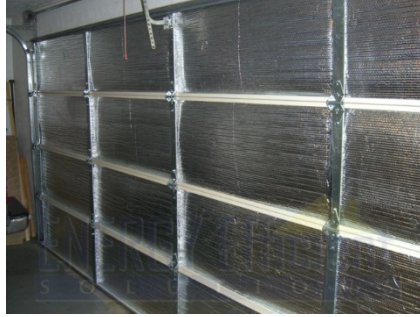
We also carry foam panel garage door insulation kits.

Energy Efficient Solutions now offers garage door insulation kits. These kits fit virtually all single and double garage doors. The insulation can be attached using either the included screws or tape. Made with double bubble, double sided foil radiant barrier, this insulation kit helps keep heat out in the summer and heat in during the winter, making your garage more comfortable all year.

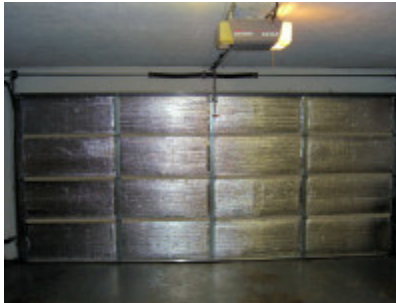
Ways to install insulation on a garage door



Option 1 - Run one strip across the whole door and attach with screws.



Option 2 - Cut material to fit inside each panel and tape to hold in place.



Single Car Door: (up to 10ft)

~~\$79.99~~ **\$64.99**

Qty: [Add to Cart](#)

Double Car Door: (up to 16ft)

~~\$99.99~~ **\$84.99**

Qty: [Add to Cart](#)

Specifications:

Made from Double Bubble Double Foil Radiant Barrier.

Single car garage door kit fits doors up to 10 ft wide x 8 ft high.

Double car garage door kit fits doors up to 16 ft wide x 8 ft high.

In addition to the heat reflecting properties of the Radiant Barrier, it has an R-Value of 6.7*.

Insulate garage door for reducing heat gain in the summer and heat loss in the winter.

Kit Contents:

Double Sided Double Bubble Radiant Barrier insulation - 24" x appropriate length.

Mounting Screws

2" x 75ft roll of Aluminum Foil Tape

Installation Instructions

* Thermal R-Value determined according to ASTM C236 standard.