

# DO-IT YOURSELF ATTIC INSTALLATION INSTRUCTIONS

## GREENFIBER CELLULOSE FIBER INSULATION



## HOW TO INSTALL

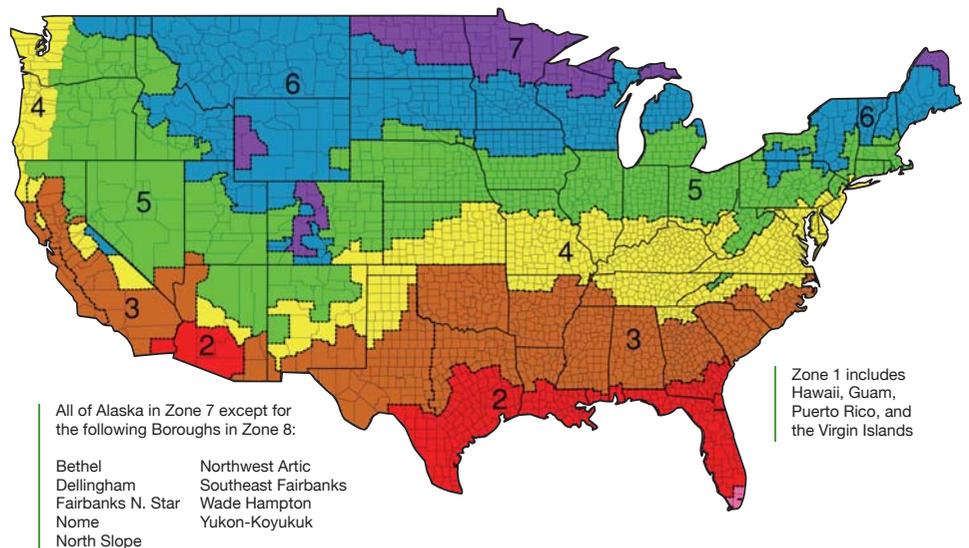
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### Calculate How Much GreenFiber Insulation You Need

First, determine the R-value recommended for your region. R-value indicates insulating power or thermal resistance (chart below). Once you know your target R-value, refer to the GreenFiber Insulation coverage chart (on GreenFiber Insulation product bag or see charts below). This chart will indicate, for a 1,000-square-foot area, how many bags of GreenFiber Insulation you will need to purchase and how many inches of coverage you will need.

To calculate exactly how much GreenFiber Insulation you need for a specific number of square feet, you can use the following table provided by the U.S. Department of Energy Insulation Recommendations for Existing Houses.\*

\* These recommendations are cost-effective levels of insulation based on the best available information on local fuel and materials cost and weather conditions. Consequently, the levels may differ from current local building codes. In addition, the apparent fragmentation of the recommendations is an artifact of these data and should not be considered absolute minimum requirements.



ZONE	ADD INSULATION TO ATTIC		FLOOR
	Uninsulated Attic	Existing 3-4 Inches of Insulation	
1	R30 to R49	R25 to R30	R13
2	R30 to R60	R25 to R38	R13 to R19
3	R38 to R60	R25 to R38	R19 to R25
4	R38 to R60	R38	R25 to R30
5 to 8	R49 to R60	R38 to R49	R25 to R30

Wall Insulation: Whenever exterior siding is removed on an **UNINSULATED** wood-frame wall:

- Drill holes in the sheathing and blow insulation into the empty wall cavity before installing the new siding, and:
- Zones 3-4: Add R5 insulative wall sheathing beneath the new siding
- Zones 5-8: Add R5 to R6 insulative wall sheathing beneath the new siding

**INSULATED** wood-frame wall:

- For Zones 4 to 8: Add R5 insulative sheathing before installing the new siding



## GREENFIBER BLOW-IN NATURAL FIBER CELLULOSE INSULATION

Application Coverage Chart		19.05 lbs (8.64 kg)				INS541LD	
R-Value at 75° F Mean Temp.	Minimum Thickness (inches)		Net Coverage (no adjustment for framing)			Gross Coverage (based on 2" x 6" framing on 16" centers)	
	Initial Installed Thickness	Settled Thickness	Maximum Sq. Ft. per Bag	Minimum Bags per 1,000 Sq. Ft.	Minimum Weight per Sq. Ft. (lbs/ft <sup>2</sup> )	Maximum Sq. Ft. per Bag	Minimum Bags per 1,000 Sq. Ft.
R 13	4.29	3.86	56.0	17.9	0.340	61.8	16.2
R 19	6.19	5.57	36.7	27.2	0.519	40.0	25.0
R 22	7.12	6.41	31.1	32.2	0.613	33.5	29.8
R 25	8.05	7.25	26.8	37.2	0.710	28.7	34.9
R 30	9.57	8.62	21.7	46.1	0.878	22.9	43.6
R 38	11.97	10.77	16.4	61.1	1.164	17.1	58.5
R 49	15.20	13.68	12.0	83.5	1.591	12.4	80.7
R 60	18.37	16.53	9.3	108.1	2.059	9.5	105.0

The coverage chart is based on settled thickness, a nominal bag weight of 22.55 lbs and coverage based on the GreenFiber Monarch blowing machine. Settings are non-adjustable. Use this chart for estimating purposes only. Job conditions, application techniques and settings on other equipment will influence actual coverage. Do not add water to this product.

### Sidewall Coverage Chart

Sidewalls	Wall Thickness	Thickness in Inches	Maximum Coverage Sq. Ft. Per Bag Coverage		Weight Per Sq. Ft.
			16" oc	24" oc	
R 13	(2x4)	3.5	20.6	19.9	1.02
R 21	(2x6)	5.5	13.1	12.7	1.60

**Bag Weight:** 19.05 lbs.

**Attic Density Range:** 1.32-1.65 lbs/cu ft.

**Wall Density:** 3.5 lbs/cu ft.

### Sample Calculation for 1,000 Sq. Ft. Attic

Target R-Value	Area Sq. Ft.	/	Sq. Ft/Bag From Chart	=	Number of Bags Required
R-19	1,000 Sq. Ft.	/	40 Sq. Ft. Bag	=	25 Bags
40 Sq. Ft. Bag					

### 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.

To determine the amount of existing insulation you have, refer to the following chart from the Department of Energy found on their web site, <http://www.ornl.gov/sci/roofs+walls/insulation/>.

What you see	What it probably is	Depth (inches)	Total R-value
Loose fibers	light-weight yellow, pink, or white	fiberglass	=2.5 x depth
	dense gray or near-white, may have black specs	rock wool	=2.8 x depth
	small gray flat pieces or fibers (from newsprint)	cellulose	=3.7 x depth
Granules	light-weight	vermiculite or perlite	=2.7 x depth
Baffle	light-weight yellow, pink, or white	fiberglass	=3.2 x depth

## 2 Gather Installation Materials

*The items listed below may be found around your house or can be purchased at your retailer.*

*Transporting GreenFiber Insulation typically requires only a pickup truck.*

*Before you leave the store, test the machine.*

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The proper number of bags of GreenFiber Insulation for the desired R-value.

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A blowing machine and hose. Place outside your home or in garage.

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A heavy-duty 12-gauge extension cord.

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A tarp to be placed under the blowing machine to catch excess material.

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A ladder to gain access to the attic if needed.

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Safety eyewear and N95 NIOSH-approved particulate masks such as a 3M model #8210 or #8511 or equivalent for protection against nuisance dust.

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Adequate lighting in the attic for installation.

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A ruler or other measuring device to monitor the depth of insulation.

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Soffit vent chutes (if needed).

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Metal barrier material for three-inch clearance around recessed lights and other heat sources. Do not use paper, cardboard or other potentially combustible materials as a barrier.

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A vehicle to transport the blowing machine, GreenFiber Insulation and other materials.

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## 3 Get Ready

*Be sure to place the blowing machine on a level surface and plug it in to a 20-amp, 110-volt household outlet.*

*Keep GreenFiber Insulation away from heat surfaces and recessed light fixtures.*

- Identify locations of recessed lights, furnace flues, heating vents, chimneys and other sources of heat or combustion in the attic. Install barriers around heat sources with clearances of at least 3 inches from the heat source. Check local code requirements for barriers. Heat trapped by any type of insulation can be a fire hazard.
- Use baffles or vent chutes to maintain attic ventilation. Insulation should not cover attic soffit vents.
- Determine the desired installed thickness of the insulation then measure and mark the rafters as a guideline to be used during application.
- Prepare a rigid barrier around the attic access hole to prevent insulation from falling out when you open the attic door. The barrier should be as tall as your installed insulation height.
- Place the blowing machine on a level surface outside the building or in a garage.
- Plug the machine into a 110-volt electrical outlet (20 amps or greater) using the shortest, heavy-duty extension cord possible (minimum 12-gauge).
- Attach the hose to the machine. Run the hose from the machine through the attic access hole into the attic, avoiding sharp bends or kinks.
- Make the proper airflow adjustment by either opening your machine's product slide gate 3/4 of the way or, on some machines, closing the air valve to approximately 1/4 inch.
- Locate one person in the attic to hold the application hose and the other near the blower to empty insulation bags into the machine hopper outside or in garage.
- Consider laying a kneeboard across the ceiling joists to provide a platform for standing or kneeling during installation.
- Open a bag of GreenFiber Insulation and carefully place its contents into the hopper (any spilled insulation should only be reused if it is free of debris). It is important to keep your hands, feet and clothing away from moving parts inside the hopper.



### 3 Install

*GreenFiber Insulation installs easily over any existing insulation, filling gaps and voids.*

*To achieve the desired R-value it is important to install the correct thickness of GreenFiber Insulation.*

*Be sure to keep GreenFiber Insulation from filling soffits. Use a soffit vent baffle as shown here.*

- Put on safety eyewear and NIOSH-approved dust mask (N95)
- Turn on the blowing machine. The product will begin to flow through the hose. Adjust the product slide gate to wide open or the air setting as needed.
- Begin to insulate at the corner farthest from the attic access and work back. Be careful to step on top of and not between the ceiling joists.
- Hold the hose approximately 3 feet above the installation surface and distribute the insulation evenly.
- Do not block soffits or cover heat sources with insulation unless they are type IC rated for contact with insulation.
- Fill to the desired depth, using attic markings and rulers as guides.
- Use all the bags required to achieve your desired R-value. Empty the blowing machine when you are finished and clean up the surrounding area.
- Return machine to the same retail location you rented it from.

### TIP

*Do not fill soffits with insulation. Use soffit vent baffles to allow the soffit to stay open above the insulation for proper airflow. Insulate the inside of the access hole cover with batt or foam board insulation to complete the job.*

### CAUTION:

To help avoid fire: Keep insulation at least three inches away from the sides of recessed light fixtures. Do not place insulation over such fixtures so as to trap heat unless they are type IC rated for contact with insulation. Also keep insulation away from exhaust flues of furnaces, water heaters, space heaters or other heat-producing devices. To be sure that insulation is kept away from light fixtures and flues, use a barrier to permanently maintain clearance around these areas. Check with local building or fire officials for guidance on installation and barrier requirements. (US Federal Regulation 16 C.F.R. Part 1404.4).



# DO-IT YOURSELF TROUBLESHOOTING GUIDE

## Blowing Machine Trouble-Shooting Guide

Please remember to turn OFF and UNPLUG the machine before attempting to resolve any problems.

### Cause Solution

#### The machine will not run

There is a loose wire in the power cord	Call GreenFiber for repair and do not attempt to use the machine
Power cord is not properly plugged in	Remove plug, check ends and plug back in
Main power switch on machine is off	Check switch and turn on
Circuit breaker will not stay on	Check for adequate power (20 amps) and overloading. Use minimum,shortest-length, 12-gauge extension cord

#### Machine runs with no insulation going through hose

Slide gate is closed (Applicable to 118 Machine only)	Open slide gate to $\frac{3}{4}$
Clogged, kinked or pinched hose is stopping material flow	Check hose for clog, kinks or pinched hose
Material blockage between blower and agitator arms	Turn off and unplug machine. Check for foreign objects and remove
Hose plugged leave blower on continuously to prevent reoccurrence	Clear flow passage by agitating hose at clog or reversing hose –

#### Low air flow

Improper air flow setting	Adjust material slide gate or air valve
Seals in airlock are leaking, making noise or blowing insulation up out of the hopper	Return to store for repair and obtain a different machine seal needs to be replaced prior to further use

#### Machine is jammed

Foreign material is in hopper air lock Carefully turn the machine over and remove the foreign material.	Turn off and unplug machine. Hand-release the pulley to loosen.
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#### Blower runs but agitator arms do not

The agitator motor thermal protector has overheated	Allow the machine to cool and reset the motor
There is an obstruction in the agitator hopper or in the airlock	Turn off and unplug machine then carefully remove any obstructions from inside the hopper

#### The blower runs slowly and drive motor will not start

Low voltage to the machine	Use a 20-amp, 110-volt household outlet and at least a 12-gauge extension cord, no more than 50 ft
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#### Grinding or unusual noise

Worn bearings	Call GreenFiber for repair and do not attempt to use the machine
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#### Sparks from blower

Worn brushes	Call GreenFiber for repair and do not attempt to use the machine
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#### Electrical shocking

Using Blower in rain or near water	Operate machine in a dry area ONLY
Electrical shorting, loose wire or frayed cord	Call GreenFiber for repair and do not attempt to use the machine
Non-grounded outlet	Use grounded outlet ONLY

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