Oregon Shepherd
Natural Wool Insulation

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PermaLoft 100% natural wool building Insulation

PermaLoft is hypoallergenic and contains no VOC's

PermaLoft contains: Wool fiber, Borate and Sodium Carbonate

When properly installed PermaLoft has an R value of 3.92 per inch 9.3 inches of PermaLoft provides R 38 thermal value

PermaLoft meets ASTM Standards for E-84 and C-518

PermaLoft is manufactured in Rainier, Oregon USA

www.OregonShepherd.com

Thank You For Choosing Oregon Shepherd For Your Insulation Project!

Congratulations on your decision to use our PermaLoft Wool Insulation. We look forward to helping you to: ***Save Money / Protect Your Family / Build With Superior Performance***

Why Wool Insulation????

* It's 100% Natural
* No off-gassing
* Absorbs and retains toxins
* Absorbs and later releases moisture
* No VOC's
* No HCFC blowing agents (low GWP)
* Very low embodied energy
* Renewable
* Recyclable (It will outlast the home)
* Lower cost and more efficient than foam
* Most importantly, it's cozy!

Wool is naturally crimpy and elastic which provides cushion. Because of this, sheep accumulate a fair amount of vegetative matter (stems, seeds, hay, dirt, etc.) in their fleece. The wool we use has been scoured which can remove some of this vegetative matter, however the product may still include bits of vegetation.

Oregon Shepherd Natural Wool Insulation is the best overall combination of performance, ease of installation, permanence, fire safety, and vermin resistance available. The unique qualities of our products will also save you money on all your future heating and cooling bills. Our top quality PermaLoft Insulation Products are made in the USA, support American Farmers, are 100% natural, non-VOC and fully tested. For further detailed product information or questions for your insulation project, please contact us at:

www.OregonShepherd.com

Oregon Shepherd PermaLoft Natural Wool Insulation - Specification Sheet

PRODUCT NAME

PermaLoft Natural Loose-Fill Wool Insulation

MANUFACTURER

Oregon Shepherd, LLC
75930 Rockcrest St.
Rainier, OR 97048
Phone: 231.399.0700 ext. 4

www.OregonShepherd.com

PRODUCT DESCRIPTION

Basic Use:

PermaLoft is used in construction as a thermal insulation. It is designed to be blown in.

Benefits of Permaloft:

- All natural
- Does not deteriorate
- Wool fiber resists settling
- Naturally flame resistant, non-combustible
- 90% less energy to manufacture
- No VOC's
- Renewable
- Recyclable
- Contains no chemicals
- Hypoallergenic

COMPOSITION

Natural Wool Fiber, Borate, Sodium carbonate, Casein

LIMITATIONS

A minimum of one and most generally two 20 amp circuits are needed for blower. If using a generator it is best to use a 5000 amp generator. This product should be kept dry during shipping, storage and installation.

TECHNICAL DATA

Material Standards:

- ASTM C-518
  R 3.9/inch

Fire Resistance:

- ASTM E-84
  Max. Flame Spread Index: 15
  Max Smoke Dev. Index: 300

Physical/Chemical Properties:

- Thermal Resistance
  OSU TRMS 9000
  R3.9/inch

INSTALLATION

Installation procedures and techniques must be as recommended by Oregon Shepherd, LLC.

AVAILABILITY AND COST

Manufactured in the United States and sold throughout the United States and Canada. Contact Oregon Shepherd for price information and technical support. 1-888-629-9665 (WOOL).

MAINTENANCE

No maintenance require

Oregon Shepherd PermaBatt Containment Fabric - Specification Sheet

PRODUCT NAME
Netting / Containment Fabric

MANUFACTURER:
Oregon Shepherd, LLC
75930 Rockcrest St.
Rainier, OR 97048
Phone: 231.399.0700 ext. 4
www.OregonShepherd.com

Optional Netting/Fabric PRODUCT DESCRIPTION :

Basic Use:
Containment fabric is used to adhere to studs to form a barrier to contain insulation as blown into vertical cavities or horizontal cavities below floor surface.

COMPOSITION
Polypropylene, non-woven

SOURCE
Non-woven polypropylene fabric purchased by Oregon Shepherd from building supply distributors and re-sold.

MAINTENANCE
No maintenance required.

PermaLoft Installation Instructions

The Blower: Virtually any blower that will blow cellulose will blow PermaLoft Loose-Fill Wool Insulation. The rental blowers from most large building supply or home improvement stores are generally fine, however we suggest you verify their condition. There are machines a notch better available from construction equipment rental companies. One good example is the "Force 2" from Intec that is frequently available for rent. Blowers have specific power requirements which must be met. A minimum of one and most generally two 20 amp circuits are needed. If using a generator it is best to use a 5000 amp generator. We use a blower with twin 7.5 amp blowers and a third 5 Amp motor for the feed system.

When renting the blower make sure it is complete and in good condition with a 75 foot hose. Inspect the airlock and determine if the veins are straight and are in firm contact with the sides of the cylinder.
NOTE: We DO NOT recommend using a blower used for loose-fill fiberglass, as the fiberglass remnants could still be present when trying to use another product in that type of blower.

Depending on your budget and the size of the area you are insulating, you may want to hire a Contractor or a Loose-fill Insulation Installer. A trained professional may be able to install your blown-in insulation faster, more efficiently and with better results.

Blown-in Insulation (*also called loose-fill insulation*) can be used in several different applications, but it is especially useful in unfinished attics, or attics with hard-to-reach areas of both new or existing construction. Blown-in Insulation can be installed in either enclosed cavities such as walls or floors; or unenclosed spaces such as attics.

Loose-fill Insulations are typically installed with special equipment that blows the insulation through a hose and into the cavity. Although loose-fill can be installed in both new and retrofit situations, they are especially popular for retrofit projects because they can be installed with minimal disturbances to existing finishes. Campers, Van Conversions and Tiny Homes are also becoming very popular with the loose-fill wool insulation.

Installation often calls for the "two-hole method," which entails drilling two holes spaced vertically between the interior walls' framing studs. The holes should be 2 inches (5 cm) in diameter. Working between each stud, drill one hole 16 inches (41 cm) from the top of the wall. Drill the other hole 24 inches (61 cm) from the bottom of the wall. The insulation is blown into the holes, then the installation holes are sealed. In conventional and cathedral ceilings, insulation is easier to blow in if an access opening through the ceiling already exists. Otherwise, it may be necessary to drill holes in the ceiling or between the roof rafters.

Step 1: Prepare the Attic

Place a plywood walkway down for easy and safe access in the attic.

Determine coverage requirements by measuring length and width of your attic space. Determining the square footage of the attic will help you order the necessary amount of PermaLoft. To simplify measuring in a large attic, take each measurement in two steps. Slide a measuring tape to one side of the attic (eliminating the need to crawl all the way to the edge), and make a mark near the center point on the floor. Then slide the tape to the opposite side, measure out to the mark and add the measurements together. Once you have accurate length and width measurements, multiply the two numbers together to determine the square footage.

To keep the attic access free and avoid blowing PermaLoft on top of it, place cardboard blocking upright around the access. Remove any objects from the attic that might interfere with the proper application of the insulation.

Step 2: Protect Fixtures and Vents

Make sure that any eave or soffit vents are not blocked.

With any type of insulation, it's important to keep the insulation material away from recessed lighting fixtures. Use 10" H flashing to block off recessed fixtures, maintaining at least 3" of air space between the fixture and the flashing. There are commercially available covers for recessed lighting fixtures, or covers can be built from plywood. Insulation should be blown directly up to these covers.

Also install metal flashing around heating fixtures, chimney flues and any other fixtures that generate heat.

Soffit vent chutes prevent soffit vents from being covered with insulation, helping to maintain good air circulation in the attic. Use a stapler to install the chutes over the soffit vents. Blow the PermaLoft right around the chute to get full coverage at the edge of the attic.

If your attic has air vent or fan, we suggest you use our netting containment fabric over the loose-fill that can be secured to the studs with a staple gun after installation, to prevent the insulation from moving, however if there is no blowing airflow in the attic space, the containment fabric is optional and not required.

Step 3: Purchase the PermaLoft

To help determine cost when ordering PermaLoft a chart is available on the Oregon Shepherd website listing amounts of material needed — according to specific coverage areas and desired R-values. If you know the coverage area in square feet and the R-value (depth) you'd like to achieve, you can determine the cost by following the online chart, or you may contact us at 1-888-629-9665 for a personal quote.

Once the amounts have been calculated and the PermaLoft purchased, work can begin on the process of blowing the material into the attic space with the specialized blower.

Step 4: Install the PermaLoft

Place one or more attic rulers in each quadrant of the attic space. This will help you know when you have achieved the correct R-value depth of insulation.

The blower will have either an on/off switch or separate controls for the agitator and air. If the controls are separate then turn on air first, and agitator second. There is a slide valve that regulates the insulation feed. Begin with the slide valve ½ open and adjust as needed for steady flow. If there is too much insulation left in the agitator adjust slide lock down, if flow from hose is not steady increase slide lock opening. If jamming or overheating occurs you may need to push the reset button to restart the machine after clearing the jam. If the agitator or airlock has a speed setting then start at the lowest speed and increase the speed gradually to reach a steady flow of material.

Hold the hose parallel to the floor with the insulation falling 10' - 12' away. Begin at the far wall and work toward the center. Always blow in the direction of the joists. Be careful to step only on floor joists to avoid accidentally putting your foot through the finished ceiling below.

Fill three or four joist cavities by moving the hose to the right and left. Where possible, back away from the work to avoid standing on the installed product and packing the insulation. Be sure to get insulation to the top of the walls and low places. Don't cover eave vents.

Avoid using your hand as a baffle to direct the insulation as it exits the hose. Do this only when necessary to avoid packing.

Keep the hose close to the floor where insulation must go under obstructions like cross bracing and wiring. Insulation must be blown on both sides of these kinds of obstructions. If an obstruction has caused a low spot to occur, fill in the area.

Quality Assurance

Check the thickness of the insulation, and check that you have used the correct R-value volume per the volume chart.

To ensure quality installation, whether you hire a professional or do it yourself, you should look for voids and gaps, and fluffing. Voids and gaps occur if insulation is installed at too low a density or if a cavity isn't completely filled. Voids also occur if the installation holes are improperly located between the vertical framing studs or if there are too few fill holes.

Fluffing occurs when insulation is installed to minimum thickness but not to minimum weight requirements. The result is a less dense application of insulation. When insulation is fluffed, air passes more easily through it. This means increased heat loss.

WARNING:

Be aware that the impeller fan on the blower is dangerous.

Read operating instructions carefully.

Be sure the vacuuming pipe is well attached and if it should fall off,

safely and slowly set the blower aside and shut it down

before doing anything else.

We suggest wearing a breathing mask, gloves and goggles

when doing this job to avoid flying fibers.

Our Wool Insulation is all natural and is completely safe to touch.