Performance+®

INSULATING YOUR HOME

Selection & Installation Guide

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KNAUF®

WHY INSULATE?

SAVE MONEY
You could save up to 20% on cooling and heating costs.

YEAR-ROUND COMFORT
Stay cooler in the summer and warmer in the winter.

REDUCE NOISE
Insulation minimizes indoor and outdoor sounds.

BOOST RESALE VALUE
Homebuyers prefer energy-efficient homes.

Performance+®

90% of our time is spent indoors — where air quality is often 2-5 times more polluted than outdoor air.

When designing healthy indoor environments, performance, efficiency, indoor air quality and sound, matter. Knauf is a leading fiberglass insulation manufacturer providing a full line of formaldehyde-free products that are Asthma & Allergy Friendly® Certified and Verified Healthier Air™.

Asthma & Allergy Friendly® aafa.org/certified

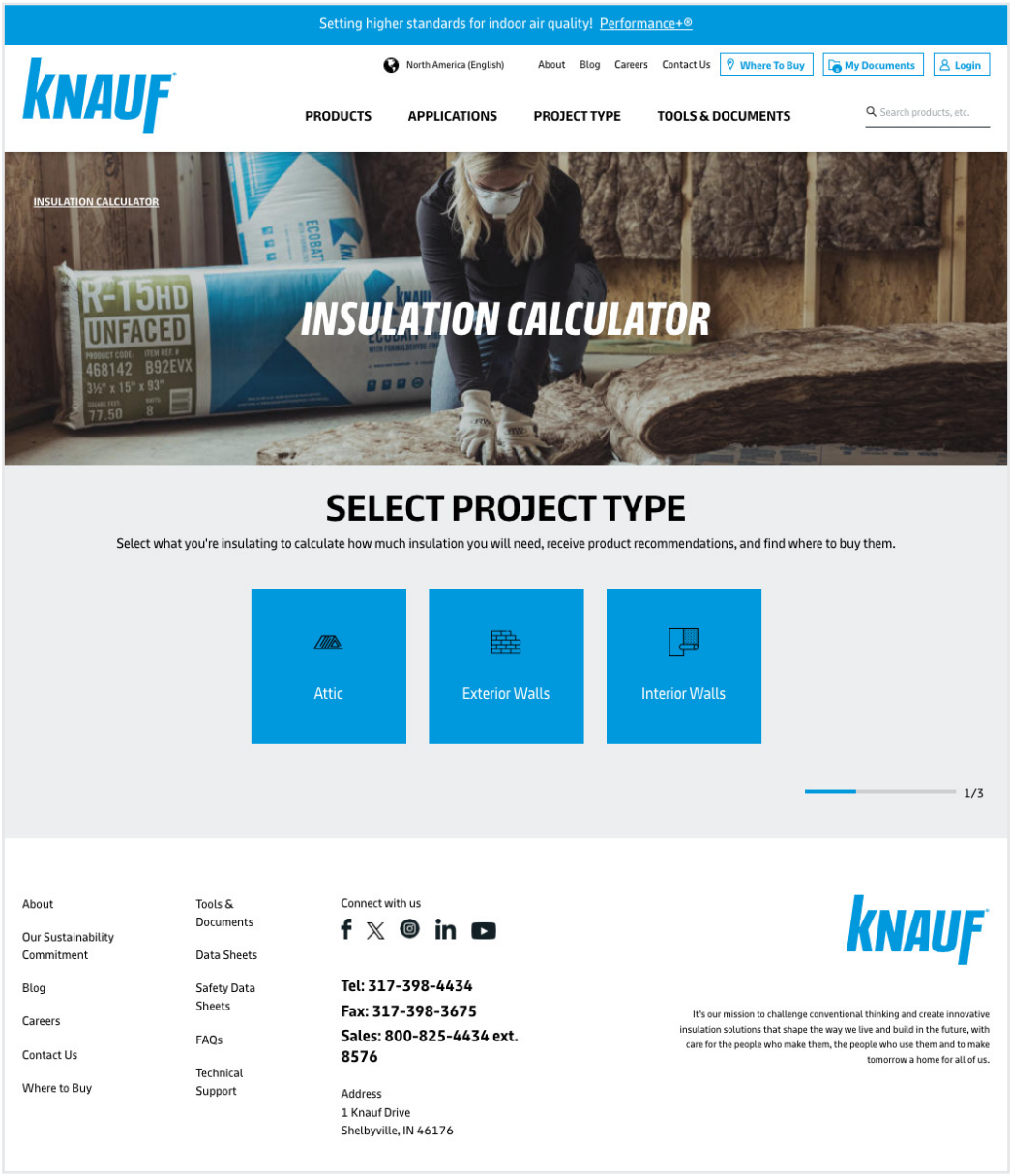
VERIFIED HEALTHIER AIR

Determine Your Insulation Needs

LOCATE YOUR ZONE

R VALUE

Insulation's effectiveness is measured in R-value, which is the ability to resist heat transfer. The higher the R-value, the better the insulation properties are, saving you more money. Refer to the current building code for your location to determine the code requirement for your climate zone.



Scan for Insulation Calculator

Calculate your insulation needs through 3D scan and thermal imaging technology. Download Knauf Pro+ app from the app store

Get the Right Insulation for Your Project

KRAFT FACED VS. UNFACED INSULATION

Faced insulation helps to provide vapor control in exterior walls. Kraft facing is a vapor retarder and is required in certain climate zones or unfaced can be used in conjunction with a separate vapor retarder. Refer to your location's current building and energy codes to determine if vapor retarders are required in your climate zone.

BATTS

KRAFT FACED OR UNFACED

- For walls, floors and attics
- More square feet than rolls
- Pre-cut for easy installation

ROLLS

KRAFT FACED OR UNFACED

- For walls, floors and attics
- Easy to transport and carry
- Can be cut to desired length

LOOSE FILL

BLOWING WOOL

- For attics and enclosed cavities
- Quick installation over large areas
- Requires two people and an insulation blower

ACCESSORY

MULTI-PURPOSE FILLER

- For small projects and spaces
- Easy to handle and cut
- Stops energy loss around doors, windows, ducts and pipes

Recommendations for Application Areas

WALLS

FACED BATTS AND ROLLS

- Kraft batts help muffle sound in assemblies
- Kraft facing is a vapor retarder
- Install product so the kraft facing is positioned toward the warm-in-winter side of the home, so it fills the cavity completely and is in full contact with the drywall

UNFACED BATTS AND ROLLS

- Unfaced batts helps muffle sound in assemblies
- May be combined with vapor retarder and used in exterior walls

FLOORS/CEILINGS

FACED BATTS AND ROLLS

- Use over unfinished areas
- Kraft facing is a vapor retarder
- The side of the batt with the kraft facing should be positioned toward the home interior

UNFACED BATTS AND ROLLS

- Helps muffle sound between finished spaces

ATTICS

WHAT TYPE OF INSULATION IS USED?

Attics are typically insulated with loose fill insulation, though faced or unfaced batts or rolls may be used.

LOOSE FILL

Loose fill insulation offers excellent coverage through the attic, including hard-to-reach areas (such as far-away corners).

FACED BATTS AND ROLLS

- Faced insulation is generally used for new insulation
- Kraft facing is a vapor retarder; check local codes for requirements
- If installing kraft faced batts, the kraft facing should be positioned toward the home interior
- Do not use kraft faced insulation when adding a second layer to attic insulation

UNFACED BATTS AND ROLLS

- Unfaced insulation is generally used as an addition to existing insulation

Best Practices for Installation

ESTIMATING HOW MUCH INSULATION IS NEEDED

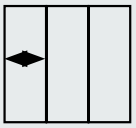
Download Knauf Pro+
App from the app store

WALLS + FLOORS/CEILINGS

1 List the R-value you want your finished insulation to provide.

EXAMPLE
R-21

2 Measure the distance between studs or joists to determine the correct width of insulation.



3 Find the total square footage of the area you want to insulate by multiplying the space's width by its length.

WIDTH
x LENGTH
= SQ. FT.

4 Divide the total square footage of the space that will be insulated by the square feet covered by one package of the insulation you're using. This should tell you how many packages are necessary to finish the job.

TOTAL SQ. FT.
÷ SQ. FT. OF 1 PKG.
= NUMBER OF PKGS. NEEDED

ATTICS

1 If there is already existing insulation, determine the R-value currently installed. Next, subtract that figure from the R-value you want to achieve. The resulting number will be the R-value you need to add.

EXAMPLE
R-49 Desired
- R-11 Existing
= R-38
Additional needed

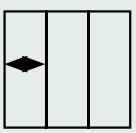
2 Find the total square footage of the area you want to insulate, by multiplying the space's width by its length.

WIDTH
x LENGTH
= SQ. FT.

3 Divide the total square footage of the space that will be insulated by the square feet covered by one bag of the insulation you're using. This should tell you how many packages are necessary to finish the job.

TOTAL SQ. FT.
÷ SQ. FT. OF 1 BAG
= NUMBER OF BAGS NEEDED

4 If insulating an uninsulated attic with batts or rolls, measure the distance between studs or joists to determine the appropriate insulation width.



Insulation can blow on top of existing blow or batts/rolls.

Supplies Needed

WALLS + FLOORS/CEILINGS

PROTECTIVE CLOTHING

- Full length pants
- Long-sleeved shirt
- Work gloves
- Safety glasses
- Dust mask

TOOLS

- Tape measure
- Staple gun and staples
- Utility knife
- Straight edge
- Silicone cutting mat or board
- Apply tape to seal any holes in kraft facing (if used)
- Broom handle for pushing insulation into hard-to-reach corners
- Flexible sealant, caulk or equivalent, to air seal any holes/openings prior to installing insulation

ATTICS

PROTECTIVE CLOTHING

- Full length pants
- Long-sleeved shirt
- Work gloves
- Safety glasses
- Dust mask
- A hard hat, to guard against nails in the roof

TOOLS

If insulating with batts or rolls:

- Tape measure
- Staple gun and staples
- Utility knife
- Straight edge
- Silicone cutting mat or board
- Apply tape to seal any holes in kraft facing (if used)
- Broom handle for pushing insulation into hard-to-reach corners
- Flexible sealant, caulk or equivalent, to air seal any holes/openings prior to installing insulation

If insulating with loose fill insulation, omit tape and add multiple attic rulers (one for every 300 square feet of space) and a blowing machine if using Performance+ EcoFill.® Wx

Installing Insulation in Walls

ADDING INSULATION TO EXTERIOR SIDEWALLS

- Seal and caulk any holes or openings.
- Make sure insulation fits snug against the top, bottom and all sides of the framing.
- When installing insulation with a vapor retarder (such as kraft facing), be sure the faced side is positioned toward the warm-in-winter side.
- When installing kraft faced batts, start at the top and gently work your way down, stapling the paper's tab or flange either on the inside face of the wall studs or on the face of the stud that is toward the interior. Check current codes for approved fastening. Fit tightly against the bottom framing. Unfaced batts are installed by friction fit.
- Do not compress the insulation.
- If using unfaced insulation, a separate vapor retarder may be required. Check with local codes.
- Kraft facing is flammable and should not be left exposed. Once insulation is in place, cover with drywall or another approved finish material.
- For garage walls, place insulation between studs with the vapor retarder facing the interior. Since the facing is flammable, it should not be left exposed without a code-approved ignition barrier. All kraft and other flammable facings must be covered with a code-compliant ignition or fire barrier. Drywall is a commonly used fire retardant covering.
- Split insulation to fit snug around wiring, ductwork and plumbing. Be sure the cavity is filled completely.

CAVITIES WITH NARROW FRAMES

- Seal and caulk any holes or openings.
- Make sure insulation fits snug against the top, bottom and all sides of the framing.
- When insulating framed spaces with non-standard widths, cut the faced batt 1/2" wider than the space to be filled. After stapling the insulation's flange, pull the facing on the cut side to the other stud, stapling it to the stud through its vapor retarder.
- Make sure insulation is an appropriate distance from heat-generating, fossil-fuel appliances. Consult the National Fire Protection Association (NFPA) or the appliance manufacturers' recommendations for specifics.
- When insulating between wood framing and masonry chimneys, use only unfaced insulation, if the application is approved by local fire codes.

INTERIOR WALLS

- Seal and caulk any holes or openings.
- Split insulation to fit snug around wiring, ductwork and plumbing. Be sure the cavity is filled completely.
- Once insulation is in place, cover it with drywall or another approved finish material.

WALL CAVITY DEPTH

- Use the proper thickness of insulation for your wall cavity's depth. Typically, 2" x 4" assemblies have a depth of 3-1/2", and 2" x 6" assemblies have a depth of 5-1/2".

Installing Insulation in Floors/Ceilings

- Place insulation between floor/ceiling joists, starting at one end and working away.
- Make sure the batt is flush against the bottom of the floor above, and that its ends fit snug against the band joists*.
- When installing insulation with a vapor retarder (such as kraft facing), be sure the faced side is positioned toward the home's interior.
- Insulation should be installed in full contact against the subfloor.*
- If the home is on pilings and the floor's underside is easily accessible, cover the insulation with an exterior material, to keep it safe from weather and other abuse.
- To insulate bridging or cross bracing of floor/ceiling joists, split a batt vertically down the middle, putting one half in the upper opening and the other in the lower opening.
- (You may also butt the batt to the bridging, then fill the bridging space with scrap insulation.)

SECURING INSTALLED INSULATION

SUPPORT WIRES

- Insulation shall be substantially supported. Refer to current local codes for compliance.

FLOOR/CEILING CAVITY DEPTH

- Use the proper thickness of insulation for your floor/ceiling cavity's depth. Typically, 2" x 8" assemblies have a depth of 7-1/4", 2" x 10" assemblies have a depth of 9-1/4", and 2" x 12" assemblies have a depth of 11-1/4".

**Please refer to your local codes*

INSTALLING MULTI-PURPOSE INSULATION

- Use an insulation knife to cut the blanket to the size required for the application.
- Exterior wall electrical outlets and switches: Cut the blanket the same size as the outlet or switchbox. Place the cut piece behind the box so that it is in contact with the exterior wall sheathing and the back of the box. It may be necessary to cut an additional piece or pieces to fill the entire space behind the box. Fill the remainder of the wall cavity with Performance+ EcoBatt® insulation and cut to fit around the box.

Installing Insulation in Attics

BATT AND ROLL INSULATION

PREPARING THE ATTIC

- Seal and caulk any holes, openings and penetrations through the ceiling.
- Seal any unsealed duct joints.
- Place baffles at eaves to protect insulation from windwashing and ensure proper attic/roof ventilation.
- Lay plywood planks across joists, and walk only on those two surfaces.

ADDING INSULATION TO PREVIOUSLY INSULATED ATTICS

- If there is already existing insulation, determine the R-value currently installed. Next, subtract that figure from the R-value you want to achieve. The resulting number will be the R-value you need to add.
- If the height of the existing insulation does not reach the top of the joist, lay unfaced batts in the joists, on top of the old.
- When joists are full to the top, place additional unfaced batts at right angles to the existing insulation, to ensure a uniform layer.
- Begin by laying insulation at the outer edges, and work toward the middle.
- Maintain at least 3” clearance from chimneys, flues, and non insulationcontact appliances. Vents should be flue vented, unless it is for a combustion appliance. Most motors and even new lights are insulation contact rated. Check with flue or device manufacturer.
- Only IC-rated lighting fixtures may be touched directly by insulation.
- When necessary, cut insulation to fit around obstructions.
- Staple a piece of batt insulation over the top of the attic access door.

INSTALLING IN NON-INSULATED ATTICS

- If there is no pre-existing insulation in the attic, faced insulation may be used, with the facing side directed toward the home’s interior. Check local current codes if vapor retarders are required for this application.
- Otherwise, installation of faced batts and rolls is identical to the installation of unfaced batts and rolls (above).

Installing Insulation in Attics

INSULATING WITH LOOSE FILL INSULATION

PREPARING THE ATTIC

Prepare the attic as you would for insulation with batts or rolls—caulking openings through the ceiling, keeping air vents from being blocked, and laying plywood over joists.

In addition:

- Seal any unsealed duct joints.
- Install a code-approved insulation barrier around the attic access opening, to keep insulation from falling out.
- Install and seal an airtight enclosure around can lights.
- Install non-combustible baffle to maintain minimum around chimneys, flues, and non insulation contact appliances.
- Staple attic rulers on joists or vertical framing (one for every 300 square feet of space).
- Make sure the bottom of each attic ruler is level with the bottom of your attic's existing insulation. Or drywall if there is no insulation.
- When insulation is blown, it should reach the desired R-value on the attic ruler.

RENTING A BLOWING MACHINE

- Installing EcoFill® Wx into your attic will require the rental of a blowing machine and a second person to help operate the machine.
- Carefully read all instructions on the blowing machine before operating it.

BLOWING THE INSULATION IN

- Keep the blowing machine outside or in your opened garage, and feed only the hose up to the attic.
- Once the blowing machine is started, begin by blowing insulation at the points furthest from the attic's access.
- As each attic section is filled, the installer should move slowly backward toward the access door.
- Again, care should be taken not to block any ventilation in the attic.
- Continue to blow insulation until you have reached your desired R-value.
- Run blowing machine until machine and hose are both empty.

WHY KNAUF INSULATION?

- Asthma & Allergy Friendly® Certified and Verified Healthier Air™
- Softer to the touch, easy to cut, split and install
- Provides excellent thermal and sound control performance
- GREENGUARD Gold certified, free of Red List chemicals and formaldehyde
- Bonded with industry-transforming, plant-based ECOSE® Technology
- Made from a high degree of recycled glass content