



INNOVATIONS FOR LIVING™

HOMEOWNER'S GUIDE TO INSULATING

IDEAS FOR COMFORT AND ENERGY SAVINGS



WHAT'S YOUR INSULATING PROJECT?

You can perform many energy-saving insulating projects to boost the energy efficiency of your home. Owens Corning suggests specific installation procedures for different projects that can help your home meet U.S. Department of Energy (DOE) insulation recommendations as well as state and local codes. Use this guide to help you choose the best insulating products for your home projects. After reviewing the project details, you may decide to “do-it-yourself” or hire a contractor.

Once you review this guide, be sure to reference the last section, entitled “Important Information to Consider,” for quick tips on products, U.S. Department of Energy (DOE) R-value recommendations, Q&A and related information.



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WHAT IS AN INSULATING ENVELOPE?

THE ESSENTIAL ISSUES

What exactly is an insulating envelope? The Owens Corning insulating envelope is designed to reduce the natural movement of heat from warmer to colder areas. Other insulating envelope components work to: control moisture and air infiltration, assure proper ventilation, control noise and maximize the efficiency of your HVAC system.

R-VALUE

R-value means resistance to heat flow. The higher the R-value, the greater the insulating power. In both PINK FIBERGLAS™ and FOAMULAR® Extruded Polystyrene Rigid Foam Insulation, tiny air pockets trapped in the insulation resist the passage of heat—heat loss in winter and heat gain in summer. The thicker or more dense the insulation, the more air pockets and the higher the R-value.

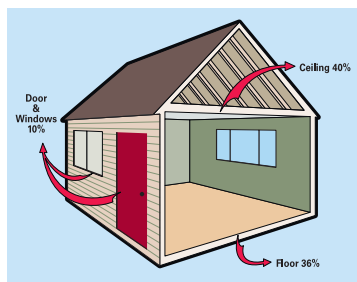
NOISE CONTROL

Our QuietZone® Noise Control Solutions reduce the levels of airborne noises (such as conversations, appliances, TVs and plumbing) transmitted through walls, ceilings and floors. This system also helps eliminate the pops and pings of metal ducts and absorbs the sound waves that can travel through your HVAC system.

AIR INFILTRATION

According to the U.S. Department of Energy (DOE), “Before you insulate, you must control air leakage.” Reducing air infiltration takes the strain off your heating and cooling units so they don’t waste energy by running longer than necessary. The result can be annual energy-cost savings of up to 10%*

- We recommend Owens Corning PINKWRAP® Housewrap, FOAMULAR IS Insulating Sheathing, FANFOLD Underlayment Board, WEATHERResist® Flashing Tape, FoamSealR™ Sill Plate Gasket and BILD-R-TAPE® Construction Tape as products to help seal the building envelope



Reducing air infiltration can dramatically improve your home's thermal performance. Most of a home's air infiltration occurs through the ceiling and floor.



QuietZone®
Acoustic Sealant

* According to the U.S. Department of Energy. Learn more at <http://www.energy.gov/insulationairsealing.htm>. Savings vary depending on the original amount of insulation in your home, climate, house size, air leaks and personal energy use and living habits. Find out why in the seller's fact sheet on R-values.

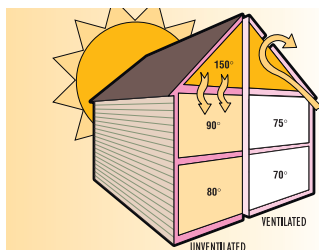
VENTILATION

When your attic or crawl space is properly ventilated, a positive airflow is created, which allows the house to breathe and helps prevent moisture buildup.

- Owens Corning provides numerous easy ways to ensure proper attic and roof ventilation, such as raft-R-mate® Attic Rafter Vents, VentSure® Ridge and Roof Vents, and vinyl soffit panels

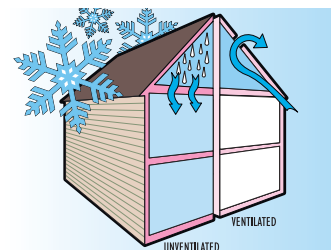
MOISTURE CONTROL

Showers, cooking, washing and even breathing can put a surprising amount of moisture into the home, according to the EPA. Vapor retarders help control the amount of moisture passing through insulation and collecting inside exterior walls, ceilings and floors. Owens Corning provides products with vapor retarders pre-applied such as kraft-faced insulation. The kraft paper acts as a vapor retarder, and it is already adhered.



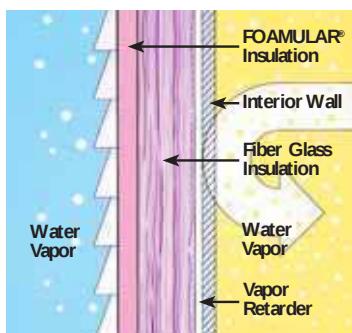
IN SUMMER

In hot weather, proper ventilation prevents the attic from becoming a hot box that spills unwanted heat down through the attic floor into the living area.



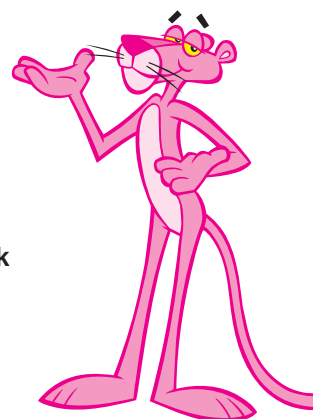
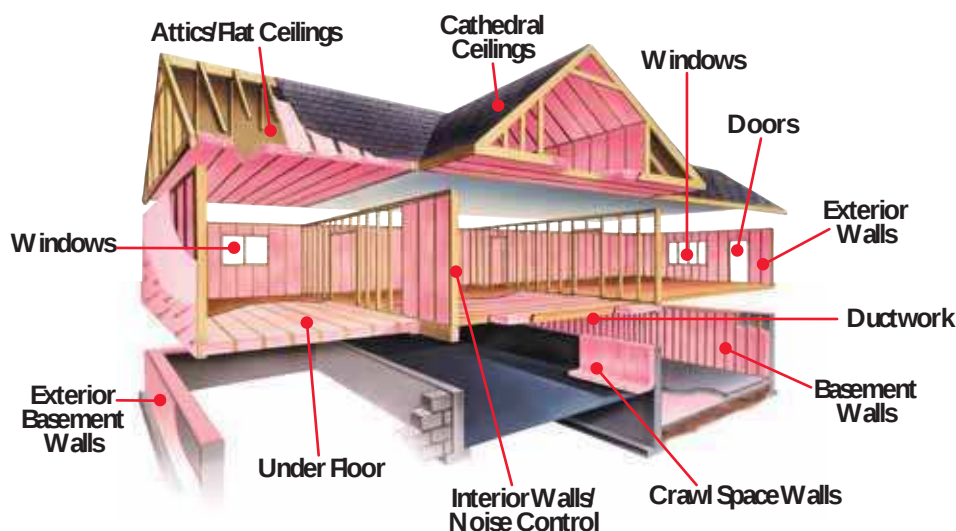
IN WINTER

In cold weather, proper ventilation helps prevent moisture from condensing on the rafters or roof deck and dripping into the insulation.



On the Gulf Coast and in Florida, local building codes may not call for an interior vapor retarder, or may call for the vapor retarder to be installed toward the outside of exterior walls. See installation instructions on package.

HERE ARE THE MAIN AREAS OF YOUR HOUSE TO INSULATE





R-VALUES

WHAT ARE THE LATEST GOVERNMENT INSULATION R-VALUE RECOMMENDATIONS FOR EXISTING HOMES?

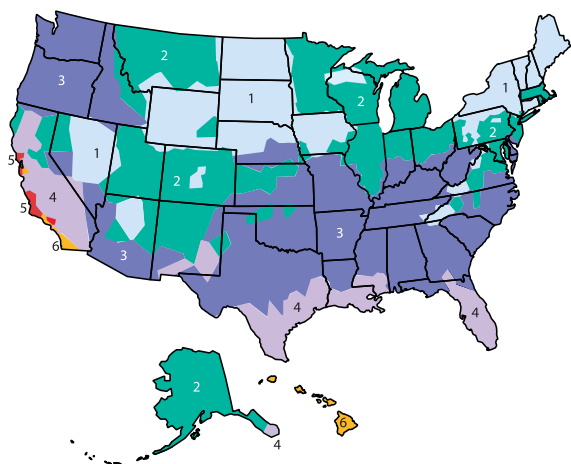
The U.S. Department of Energy (DOE) bases its R-value recommendations for existing homes on specific heating and cooling needs and the cost of energy across the country—ZIP code by ZIP code.

FIND OUT HOW MUCH INSULATION YOUR HOME NEEDS

- Determine your area's "Insulation Zone" by locating your city or town on the map below
- Check the chart below for your Insulation Zone
- Identify the home's heating source to find the latest government-recommended R-values for attics/flat ceilings, under floors, crawl space walls and exterior walls
- If you have any questions regarding the latest government insulation R-value recommendations for your specific area, simply call 1-800-GET-PINK™

DETERMINING YOUR ATTIC'S CURRENT INSULATION R-VALUE

The attic is one of the easiest and most important areas of a home to insulate. The DOE recommends up to R-49 for attics in most areas. This is equal to approximately 16" of *FIBERGLAS* blanket insulation. Most older homes have between 3" and 6" of insulation. To learn how much insulation your home might need, simply measure the thickness of your attic's existing insulation with a ruler. Take the insulation thickness and multiply by 3.14 to get the approximate R-value of the existing insulation. Then check the chart below to see what the DOE recommends for your area of the country.



Zone	Gas	Heat pump	Fuel oil	Electric furnace	Ceiling			Floor	Crawl space (B)	Slab edge	Basement	
					Attic	Cathedral	Wall (A)				Interior	Exterior
1	✓	✓	✓		R-49	R-38	R-18	R-25	R-19	R-8	R-11	R-10
1				✓	R-49	R-60	R-28	R-25	R-19	R-8	R-19	R-15
2	✓	✓	✓		R-49	R-38	R-18	R-25	R-19	R-8	R-11	R-10
2				✓	R-49	R-38	R-22	R-25	R-19	R-8	R-19	R-15
3	✓	✓	✓	✓	R-49	R-38	R-18	R-25	R-19	R-8	R-11	R-10
4	✓	✓	✓		R-38	R-38	R-13	R-13	R-19	R-4	R-11	R-4
4				✓	R-49	R-38	R-18	R-25	R-19	R-8	R-11	R-10
5	✓				R-38	R-30	R-13	R-11	R-13	R-4	R-11	R-4
5		✓	✓		R-38	R-38	R-13	R-13	R-19	R-4	R-11	R-4
5				✓	R-49	R-38	R-18	R-25	R-19	R-8	R-11	R-10
6	✓				R-22	R-22	R-11	R-11	R-11	(C)	R-11	R-4
6		✓	✓		R-38	R-30	R-13	R-11	R-13	R-4	R-11	R-4
6				✓	R-49	R-38	R-18	R-25	R-19	R-8	R-11	R-10

(A) R-18, R-22, and R-28 exterior wall systems can be achieved by either cavity insulation or cavity insulation with insulating sheathing.

For 2 in. x 4 in. walls, use either 3-1/2-in. thick R-15 or 3-1/2-in. thick R-13 fiberglass insulation with insulating sheathing.

For 2 in. x 6 in. walls, use either 5-1/2-in. thick R-21 or 6-1/4-in. thick R-19 fiberglass insulation.

(B) Insulate crawl space walls only if the crawl space is dry all year, the floor above is not insulated, and all ventilation to the crawl space is blocked.

A vapor retarder (e.g., 4- or 6-mil polyethylene film) should be installed on the ground to reduce moisture migration into the crawl space.

(C) No slab edge insulation is recommended.

NOTE: In addition to the DOE's insulation R-value recommendations, you may want to call your local building department to check for local code requirements if you are planning a room addition or remodeling project.



HOW MANY PINK FIBERGLAS INSULATION PACKAGES DO YOU NEED?

NOW THAT WE'VE EXPLAINED THE BASICS

IT'S EASY TO CALCULATE THE NUMBER OF INSULATION PACKAGES YOU'LL NEED TO COMPLETE YOUR PROJECT

- Multiply area length times width to determine total square footage to be insulated
- Measure the distance between joists or studs to determine correct insulation width for the job (15" or 23")
- Choose appropriate insulation product (R-value, thickness and width) for your home insulation project (see page 6 for more information). Choose insulation product width to match distance between joists or studs—15" or 23". If the joist cavity is full, insulation width makes no difference because you should install new insulation across the top of the joists
- Divide total square footage to be insulated by square footage per package, then round up to the next whole number to determine total number of packages required

	EXAMPLE	YOUR HOME
Attic length	22 ft.	
Attic width	x 40 ft.	x
Total sq. ft.	= 880 ft.	=
Divided by sq. ft. per pkg. (R-25/16" width = 33.33)	÷ 33.33	÷
Number of pkgs	27	

Contact a local retailer for pricing in your area. Owens Corning is fully committed to safety and believes accidents are preventable. Please join us by promoting safety where you live and work.

WHAT TOOLS WILL YOU NEED?

LOOK FOR THE PROPER TOOLS AND MATERIALS AT YOUR LOCAL HOME IMPROVEMENT STORE

Insulating is a safe job when the insulation is installed properly. Refer to the following tool checklist before beginning your home insulation projects. Remember, if you can't find out what you need to know at a store, call Owens Corning at 1-800-GET-PINK™ for all the information you need.

Basic Tools

- Tape measure
- Utility knife
- Straightedge or 2x4 (for cutting insulation)
- Lightweight, squeeze-type stapler (if installing faced insulation)
- Hammer and appropriate fasteners (when applying interior finish over insulation)

Protective Gear

- Work gloves
- Loose-fitting, long-sleeved shirt
- OSHA-approved safety glasses
- Disposable dust respirator (NIOSH- or MSHA-approved)

Special Equipment

- Portable work light
- Boards or sheets of plywood (provide a safe place to sit or kneel in an unfinished attic and a surface on which to cut the insulation)
- Insulation supports (for holding the insulation up under floors)
- Pole or rake (for pushing insulation into out-of-the-way places in attics/flat ceilings)



Basic Tools



Special Equipment



Protective Gear



INSTALLATION TIPS AND PREPARATION INSTRUCTIONS

PINK FIBERGLAS INSULATION



- Leave PINK *FIBERGLAS* Insulation in its wrapper until you're ready to use it. Packaged insulation is highly compressed and expands greatly when the wrapper is opened
- Use precut batts in walls for easier handling
- Use continuous rolls in attics and floors because of longer joist spans
- To cut PINK *FIBERGLAS* Insulation, lay it on a board, facing down if applicable. Lay a yardstick (or 2x4) over the area of insulation to be cut. Press your straightedge down hard and cut with a utility knife, using the straightedge as a guide



PREPARATION INSTRUCTIONS

Before you begin any insulation project, make sure you:

- Prevent air infiltration by caulking and sealing all top and bottom plates, sealing any wire or open penetrations, and weather-stripping attic access openings
- Gather the necessary tools, such as those listed on the previous page
- Wear the proper protective gear (follow package recommendations)

FOAMULAR EXTRUDED POLYSTYRENE RIGID FOAM INSULATION



- Apply boards vertically (parallel to studs 24" on center maximum)
- Attach to wood studs using appropriate cap-head fasteners, spacing 16" on center and of sufficient length to penetrate framing $\frac{3}{4}$ " minimum
- In metal stud framing a quick, secure attachment is achieved with a wafer-head insulation screw
- *FOAMULAR* Extruded Polystyrene Rigid Foam Insulation is easy to cut to fit around windows and other construction obstacles, but measure and cut carefully in order to avoid leaving uninsulated spaces
- Seal joints with Owens Corning *BILD-RTAPE* Construction Tape to prevent air infiltration

NOTE: Since all extruded polystyrene rigid foam insulation products are nonstructural, they must be installed over adequately braced corner framing in accordance with local building codes



NOTES





INNOVATIONS FOR LIVING™

PROJECT GUIDE FOR EXISTING HOMES

DO-IT-YOURSELF OR HIRE A CONTRACTOR





PROJECT: UNINSULATED ATTIC

The attic is one of the most important areas to insulate in newly constructed homes or in remodeling projects. In fact, the U.S. Department of Energy (DOE) recommends that most homes need R-49, which is equivalent to 15.5" or more of Owens Corning PINK FIBERGLAS blanket insulation, in their attics. In addition to fiber glass batts, our PRO PINK® Blown-In Insulation is an excellent product choice for ensuring maximum thermal performance in uninsulated attics.

If you would like to use a contractor for your project, call 1-800-GET-PINK™ or visit www.owenscorning.com to find a Certified Energy Professional® (CEP) Insulation Contractor near you.*

RECOMMENDED INSULATION PRODUCTS

- R-38 PINK FIBERGLAS Insulation (12" Thick)
- R-30 PINK FIBERGLAS Insulation (9½" Thick)
(In Gulf Coast states and Florida, local building codes may not call for an interior vapor retarder.)

INSTALLATION PROCEDURES



1. Lay temporary flooring (using plank or plywood pieces) across joists and hang a temporary work light. To make sure the soffit vents aren't blocked, install attic vents or baffles like Owens Corning raft-R-mate Attic Rafter Vents, which assure unobstructed airflow from the soffit to the attic.



2. Begin laying faced or unfaced PINK FIBERGLAS insulation at outer edge of attic and work toward center. The vapor retarder should be facing down toward the warm-in-winter side of the ceiling. In Gulf Coast states and Florida, local building codes may not call for an interior vapor retarder.



3. Lay insulation in long runs first, and use leftovers for shorter spaces. Ends of insulation should be cut to fit snugly around cross bracing. Insulation should extend far enough to cover exterior walls but should not block flow of air from soffit vents. If needed, install a baffle wherever there is a soffit vent to assure airflow. To complete the ventilation process, add roof vents.



4. Insulation must be kept 3" away from recessed lighting fixtures unless fixtures are marked "I.C." (Insulated Ceiling)—designed for direct insulation contact. Insulation placed over an unrated fixture may cause the fixture to overheat and perhaps start a fire. The insulation should always be installed at least 3" away from any metal chimneys, gas water heater flues or other heat-producing devices.



5. Fill the spaces between a masonry chimney and wood framing with a noncombustible material such as unfaced PINK FIBERGLAS insulation, which will not burn.

NOTE: Do not leave faced insulation exposed. The facings on kraft-faced insulation will burn and must be installed in substantial contact with an approved interior finish as soon as the insulation has been installed. Facing must be installed in substantial contact with an approved ceiling, floor or wall material. Keep open flame and other heat sources away from facing. Do not place insulation within 3" of a light fixture or similar electrical device unless device is labeled for contact with insulation. Use only unfaced insulation between wood framing and masonry chimneys. Do not use insulation in spaces around metal chimneys, fireplaces or flues. Unfaced insulation is considered noncombustible by model building codes. Flame Spread 25 products are flame-spread rated and can be left exposed where codes allow. See package for warnings, fire hazard and instructions, or call 1-800-GET-PINK™.



PROJECT: ADDING PINK FIBERGLAS INSULATION TO AN ATTIC

When adding a second layer of insulation in the attic, the unfaced type should always be used so that moisture is not trapped inside the bottom layer of insulation. In addition to fiber glass batts, our *PRO PINK* Blown-In Insulation is also an excellent product choice for ensuring maximum thermal performance to an attic.

If you would like to use a contractor for your project, call 1-800-GET-PINK™ or visit www.owenscorning.com to find a CEP contractor near you.

RECOMMENDED INSULATION PRODUCTS

- R-25 PINK FIBERGLAS Insulation (8" Thick)
- R-30 PINK FIBERGLAS Insulation (9½" Thick)
- *raft-R-mate* Attic Rafter Vents

INSTALLATION PROCEDURES



1. Temporary flooring should be laid across the joists to provide some footing and a temporary work light should be installed.



4. The insulation should extend far enough to cover the tops of the exterior walls, but should not block the flow of air from the soffit vents. To make sure the soffit vents aren't blocked, install attic vents or baffles like Owens Corning *raft-R-mate* Attic Rafter Vents, which assure unrestricted airflow from the soffit into the attic.



2. Lay the insulation blanket at the outer edge of the attic space and work toward the center. This allows for more headroom in the center of the space, where cutting and fitting can be done. It's also a good idea not to get "insulated into a corner" where it will be hard to get back to the attic access.



5. Insulation should be kept 3" away from recessed lighting fixtures unless fixtures are marked "I.C." (Insulated Ceiling)—designed for direct insulation contact. If insulation is placed over an unrated fixture, it may cause the fixture to overheat and perhaps start a fire. The insulation should always be installed at least 3" away from any metal chimneys, gas water heater flues or other heat-producing devices.



3. If the joist cavities are completely filled to the top of the joists, lay the new insulation in long runs perpendicular to the direction of the joists, and use leftover pieces for small spaces. If the cavity is not completely filled, use the appropriate thickness of insulation to fill it to the top, then add an additional layer of insulation in a perpendicular direction.



6. Stuff spaces around masonry chimneys or other areas that have small openings with small pieces of unfaced insulation.

NOTE: Check your local building codes for requirements in your area.



PROJECT: FINISHED ATTIC

To increase the living space in their homes, more and more people are taking advantage of their homes' large attics. PINK *FIBERGLAS* Insulation from Owens Corning can help keep a finished attic comfortable year-round.

RECOMMENDED INSULATION PRODUCTS

Rafters and Collar Beams

- R-21 Exterior 2x6 Wall PINK *FIBERGLAS* Insulation (5½" Thick)
- R-19 Floor and 2x6 Wall PINK *FIBERGLAS* Insulation (6¼" Thick)
- R-30C 2x10 Cathedral Ceiling PINK *FIBERGLAS* Insulation (8¾" Thick)
- R-38C 2x12 Cathedral Ceiling PINK *FIBERGLAS* Insulation (10¼" Thick)
- *raft-R-mate* Attic Rafter Vents

End and Knee Walls

- R-25 PINK *FIBERGLAS* Insulation (8" Thick)
- R-21 Exterior 2x6 Wall PINK *FIBERGLAS* Insulation (5½" Thick)
- R-19 Floor and 2x6 Wall PINK *FIBERGLAS* Insulation (6¼" Thick)
- R-15 Exterior 2x4 Wall PINK *FIBERGLAS* Insulation (3½" Thick)
- R-13 Exterior 2x4 Wall PINK *FIBERGLAS* Insulation (3½" Thick)

INSTALLATION PROCEDURES



1. Use separate pieces of PINK *FIBERGLAS* Insulation for rafters and collar beams. Trying to fit a continuous length of insulation where collar beams and rafters meet may result in hard-to-fill gaps. If space permits, use either R-38C or R-30C cathedral ceiling batt insulation. Staple facing flange to either the inside or face of framing to hold the insulation in place.



3. If insulation is to be installed in a flat ceiling, place PINK *FIBERGLAS* Insulation between joists by stapling facing flanges to the inside framing. Place the vapor retarder toward the warm-in-winter side of living area of the house in heating climates. In Gulf Coast states and Florida, local building practices may not call for an interior vapor retarder.



5. Use leftover pieces of insulation to fill in small spaces around window framing, behind electrical outlets, etc. (If using faced insulation, remove the facing material before filling in small areas.)



insulating 2x10 joists, use 8¾" R-30C Cathedral Ceiling PINK *FIBERGLAS* Insulation, which will automatically provide the required space when properly installed. See package instructions.) If needed, install eave vents and baffles such as Owens Corning *raft-R-mate* Attic Rafter Vents along the entire ceiling cavity to assure airflow. For additional ventilation, install ridge and soffit vents.

2. When selecting and installing insulation for the rafter portion, 1" of ventilation space should be provided between the insulation and the roof sheathing. (For example, if



4. Install faced PINK *FIBERGLAS* Blanket Insulation in end and knee walls. Staple the faced insulation so it will remain in place.



6. As soon as the insulation has been installed, finish the walls and ceiling with an approved interior finish, such as gypsum wallboard.

NOTE: Do not leave faced insulation exposed. The facings on kraft-faced insulation will burn and must be installed in substantial contact with an approved interior finish as soon as the insulation has been installed. Facing must be installed in substantial contact with an approved ceiling, floor or wall material. Keep open flame and other heat sources away from facing. Do not place insulation within 3" of a light fixture or similar electrical device unless device is labeled for contact with insulation. Use only unfaced insulation between wood framing and masonry chimneys. Do not use insulation in spaces around metal chimneys, fireplaces or flues. Unfaced insulation is considered noncombustible by model building codes. Flame Spread 25 products are flame-spread rated and can be left exposed where codes allow. See package for warnings, fire hazard and instructions, or call 1-800-GET-PINK.

* Some products may not be available in all areas.

PROJECT: CATHEDRAL CEILING INSULATION

The rafters in cathedral ceilings are usually made of 2x10s or 2x12s, and Owens Corning high-density insulation products are designed specifically for these rafters R-30C and R-38C PINK FIBERGLAS Insulation batts come kraft-faced and unfaced, and typically have to be special ordered.

RECOMMENDED INSULATION PRODUCTS

2x12 Construction

- R-38C 2x12 Cathedral Ceiling PINK FIBERGLAS Insulation (10 $\frac{1}{4}$ " Thick)

2x10 Construction

- R-30C 2x10 Cathedral Ceiling PINK FIBERGLAS Insulation (8 $\frac{1}{4}$ " Thick)
- *raft-R-mate* Attic Rafter Vents

HIGH-DENSITY INSULATION

High-density R-30C and R-38C PINK FIBERGLAS Insulation are designed to eliminate R-value loss caused by compressing standard R-30 and R-38 products in 2x10 or 2x12 cathedral ceilings respectively. They help prevent moisture damage and help assure long roof life by providing 1" of ventilation air space between the insulation and roof deck.

INSTALLATION PROCEDURES



1. Before insulating begins a ventilation baffle like Owens Corning *raft-R-mate* Attic Rafter Vents should be installed at the eave of every joist all the way to the ridge vent leaving a 1"-2" space to make sure the ventilation space is not blocked by insulation.



3. Insulation must be kept 3" away from recessed lighting fixtures unless fixtures are marked "I.C." (Insulated Ceiling) — designed for direct insulation contact. If insulation is placed over an unrated fixture, it may cause the fixture to overheat and perhaps start a fire.



2. To install the insulation, the material is pushed up between the rafters until it's flush with the edge of the wood. Note that if a faced insulation product is being used, the facing goes toward the inside of the house—the warm side in heating climates. 1" of ventilation space should be provided between the insulation and the roof sheathing. (For



4. When installing faced batt insulation, position the batt between the rafters so that the facing is flush with the lower edge of the rafters. If baffles have been installed, insulation can be either inset or face stapled. Inset stapling is preferred by most drywall installers. If the recommended baffles are not used, it is best to face staple the insulation to prevent blocking the airspace.

example, if insulating 2x10 joists, use 8 $\frac{1}{4}$ " R-30C Cathedral Ceiling PINK FIBERGLAS Insulation, which will automatically provide the required space when properly installed. See package instructions) If needed, install eave vents and baffles such as Owens Corning *raft-R-mate* Attic Rafter Vents along the entire ceiling cavity to assure airflow. For additional ventilation, install ridge and soffit vents



PROJECT: INTERIOR BASEMENT WALL INSULATION

PINK FIBERGLAS[™] INSULATION

“Conditioned” means the space is heated or cooled by the furnace or air conditioning unit. When insulating a conditioned basement, only the walls need to be insulated.

Before PINK FIBERGLAS Insulation can be installed, a 2x4 or 2x6 stud wall on either 16" or 24" centers must be built.

RECOMMENDED INSULATION PRODUCTS

2x6 Wall Construction

- R-21 Exterior 2x6 Wall PINK FIBERGLAS Insulation (5½" Thick)
- R-19 Floor and 2x6 Wall PINK FIBERGLAS Insulation (6¼" Thick)

2x4 Wall Construction

- R-13 Exterior 2x4 Wall PINK FIBERGLAS Insulation (3½" Thick)
- R-11 Basement 2x4 Wall PINK FIBERGLAS Insulation (3½" Thick)

INSTALLATION PROCEDURES



1. Either faced or unfaced exterior wall insulation can be used in basement walls with R-values ranging from 11 to 21. Faced insulation should be placed between the studs with the vapor retarder facing the interior of the room in heating climates. In this example, we're using R-13 insulation, which has a kraft-facing vapor retarder. The flange on the facing can be stapled to the inside or face of the stud.



2. For the band joist, use unfaced cut-to-fit pieces of R-19 insulation and place them snugly into the space.



3. With either faced or unfaced insulation, an interior finish material such as drywall should be installed as soon as the insulation is in place.

NOTE: Do not leave faced insulation exposed. The facings on kraft-faced insulation will burn and must be installed in substantial contact with an approved interior finish as soon as the insulation has been installed. Facing must be installed in substantial contact with an approved ceiling, floor or wall material. Keep open flame and other heat sources away from facing. Do not place insulation within 3" of a light fixture or similar electrical device unless device is labeled for contact with insulation. Use only unfaced insulation between wood framing and masonry chimneys. Do not use insulation in spaces around metal chimneys, fireplaces or flues. Unfaced insulation is considered noncombustible by model building codes. Flame Spread 25 products are flame-spread rated and can be left exposed where codes allow. See package for warnings, fire hazard and instructions, or call 1-800-GET-PINK.

FOAMULAR® INSULPINK® INSULATION BOARD

Another option when trying to avoid framing out the wall would be Owens Corning **FOAMULAR INSULPINK®** Foam Insulation Board. Panels lock together to form a tight, true barrier against air infiltration and energy loss. When wall depth is an issue, this is an easy-to-install alternative for basement walls. This product is made in 1½" thickness, providing an R-value of 7.5. Always seal joints with **BILD-R-TAPE** Construction Tape.

RECOMMENDED INSULATION PRODUCTS

Furring Strip Construction

- R-7.5 **FOAMULAR INSULPINK** (1½" Thick)

INSTALLATION PROCEDURES



1. The installation process for rigid insulation is much like that for paneling. The material is held in place by furring strips that are screwed to the walls at each slot formed by the joints in the insulation.



2. This insulation board should be covered with an interior finish material such as gypsum wallboard as soon as the insulation is completely installed.

NOTE: Although it does contain a flame-retardant additive to inhibit ignition from small fire sources, if exposed to fire of sufficient heat and intensity, **FOAMULAR** Insulation will ignite. Do not expose the product to open flame during shipping, storage, installation or use. In most applications a code-compliant thermal barrier must be used to separate **FOAMULAR** Insulation from the building interior. See "Conditions of Use" section of ICC ES Report 96-24 for application covering recommendations.



PROJECT: WALLS OF CONDITIONED CRAWL SPACE

“Conditioned” means the space is heated or cooled by the furnace or air conditioning unit. The walls of a conditioned crawl space or one with uninsulated ducts or water pipes should be insulated. Unfaced R-25 or R-19 insulation works best for this application.

RECOMMENDED INSULATION PRODUCTS

- R-25 PINK FIBERGLAS Insulation (8"Thick)
(No vapor retarder)
- R-19 Floor and 2x6 Wall PINK FIBERGLAS Insulation (6¼"Thick)
(No vapor retarder)

INSTALLATION PROCEDURES



1. First measure and cut small pieces of insulation and fit them snugly into the band joist or the area above the foundation wall.



2. For the walls the insulation should be cut long enough to cascade down the walls and extend 2' along the ground on the floor of the crawl space. Then use long furring strips or cap nails to hold the insulation in place by nailing them to the sill. The nails should not be driven completely through the furring strips so that the insulation is compressed as little as possible, preferably to no less than one-half its original thickness.



3. After the insulation has been installed, a 4- or 6-mil polyethylene vapor retarder should be spread across the entire floor. It should be placed under the insulation. Then—to hold insulation firmly against the wall—rocks or bricks can be set on top of the insulation that extends out onto the floor.

PROJECT: UNCONDITIONED CRAWL SPACE UNDER FLOOR APPLICATION

“Unconditioned” means the space is not heated or cooled by the furnace or air conditioning unit.

RECOMMENDED INSULATION PRODUCTS

- R-30 PINK *FIBERGLAS* Insulation (9½"Thick)
- R-25 PINK *FIBERGLAS* Insulation (8"Thick)
- R-19 Floor and 2x6 Wall PINK *FIBERGLAS* Insulation (6¼"Thick)

INSTALLATION PROCEDURES



1. Always install the insulation with the vapor retarder toward the warm side of the structure in heating climates. In a vented crawlspace, the warm side is usually up, closest to the floor.



4. Insulation should be placed around cross braces by cutting it and pushing it between the braces.



2. The insulation should be installed all the way back at the end of each joist run so that it touches the band joist. You want complete coverage under the house. There will usually be a narrow joist space on the walls that run parallel to the joist. The insulation should be cut to fit this space.



5. To support the insulation, use nylon banding or metal insulation supports. Wood furring strips can also be used.



3. There are often both pipes and wires in crawlspace under floors, and occasionally there will be a junction box. Water pipes should be insulated, and you will need to insulate carefully around electrical wiring and boxes.



6. Install a 4- to 6-mil polyethylene ground cover to keep ground moisture from seeping up into the space. Hold the polyethylene in place with bricks or rocks.



SMALL INSULATION PROJECTS

Attics, ceilings, basements, walls and floors aren't the only areas that need insulation. Here are some tips for other places where PINK FIBERGLAS Insulation products help achieve additional energy savings*

INSTALLATION PROCEDURES



Project 1
Seal your vapor retarder:
Patch rips or tears in vapor
retarders with *BILD-R TAPE*
Construction Tape before
installing the interior finish.



Project 3
Plug the drafts:
It's important to caulk, seal
and weather-strip around all
seams, cracks and openings.
Be sure to pay special attention
around windows, door frames,
electrical fixtures and where
siding or bricks and wood
trim meet.



Project 2
Wrap your pipes:
It's no secret that insulated
hot water pipes keep water
warmer longer. As a result, your
heater will not have to work as
hard. PINK FIBERGLAS Insulation
must be fitted properly around
pipes. There should be no gaps or
spaces between insulation pieces.



Project 4
Insulate your water heater:
If you haven't insulated your
water heater, you may be losing
heat into the surrounding area,
which means your water heater
may have to work overtime
just to keep the water hot.
When your hot water heater
is properly insulated, you will
minimize loss of precious heat
that's intended for hot baths
and steamy showers. Consult
your water heater directions
or a qualified water heater
professional to help determine
whether your water heater is
properly insulated.

* Savings vary. Find out why in the seller's fact sheet on R-values. Higher R-values mean greater insulating power.



Project 5
Seal your attic opening:
PINKCap® Attic Stair Insulator is designed to reduce heat loss from an attic ladder access opening. It is fully assembled and easy to install without any tools. This lightweight product fits through the attic opening from below and slides into place to cover the opening and encase the retractable ladder.



Project 7
Seal small cracks:
Pack Multi-Purpose PINK *FIBERGLAS* Insulation into small cracks around doors, window frames and pipes to help eliminate cold spots. (If using faced insulation, peel off the facing material before filling in small areas.) The result can contribute to an annual energy-cost savings of up to 10%^{**}.



Project 6
Ventilate your attic:
Building codes typically require that every enclosed attic or insulated rafter cavity space be provided with a minimum amount of ventilation, which allows fresh air to flow freely into and out of your attic. *raft-R-mate* Attic Rafter Vents create a space between each rafter for air to flow freely up the rafters and into the attic. They are easily installed and help prevent roof damage.

NOTE: Do not leave faced insulation exposed. The facings on kraft-faced insulation will burn and must be installed in substantial contact with an approved interior finish as soon as the insulation has been installed. Facing must be installed in substantial contact with an approved ceiling, floor or wall material. Keep open flame and other heat sources away from facing. Do not place insulation within 3" of a light fixture or similar electrical device unless device is labeled for contact with insulation. Use only unfaced insulation between wood framing and masonry chimneys. Do not use insulation in spaces around metal chimneys, fireplaces or flues. Unfaced insulation is considered noncombustible by model build codes. Flame Spread 25 products are flame-spread rated and can be left exposed where codes allow. See package for warnings, fire hazard and instructions, or call 1-800-GET-PINK[™].

^{**} According to the U.S. Department of Energy. Learn more at <http://www.energy.gov/insulationairsealing.htm>. Savings vary depending on the original amount of insulation in your home, climate, house size, air leaks, and personal energy use and living habits. Find out why in the seller's fact sheet on R-values.





INNOVATIONS FOR LIVING™

PROJECT GUIDE FOR NEW HOMES AND ADDITIONS

WORKING WITH A BUILDER OR CONTRACTOR





THE BEST TIME TO INSULATE?

WHEN BUILDING A NEW HOME OR REMODELING

Building or remodeling is your greatest opportunity to provide your new home with a complete insulating system and add maximum energy efficiency at the lowest cost. It's easier to do the job right and a lot cheaper than fixing it later. The following pages list options to consider when designing your new space with your builder or contractor.





KEY QUESTIONS FOR YOUR BUILDER OR CONTRACTOR

1. How long has your company been in business?
2. May I see your insurance certificate?
3. May I talk to previous customers and see some of your previous projects?
4. How long is your warranty and what does it cover?
5. Will you be using subcontractors and, if so, are the subcontractors insured?
May I see insurance verification?
6. Tell me about your energy-efficiency policy.
Do you strive to surpass energy code requirements rather than simply meet code?
7. What should my energy consumption be in this home?
8. What are the R-values of my doors, windows, exterior walls, attic, garage and basement?
9. How will the HVAC system be sized, designed and installed?
10. Do you test for air leakage in the houses you build? How?
11. Do you install *QuietZone* Noise Control Solutions in your homes, such as around bathrooms, bedrooms, between floors, in media rooms and in duct systems?

THE PREFERRED INSTALLER THE PREFERRED BRAND.

It's a fact. Owens Corning is America's favorite brand of insulation. Our PINK FIBERGLAS Insulation is used by more builders than any other brand, according to a study conducted by *Builder* magazine.*

A big reason that builders choose Owens Corning insulation is our network of *Certified Energy Professional* Insulation Contractors. The CEP program provides training for independent contractors on specifying and installing Owens Corning Insulating and Noise Control Systems.

Experts in local building codes and installation techniques, CEP contractors know how to help builders create customer satisfaction by installing the preferred brand in the preferred way.

If you would like to use a contractor for your project, call 1-800-GET-PINK™ or visit www.owenscorning.com to find a CEP contractor near you.



* 2005 Brand Use Study.

Certified Energy Professional independent contractors are neither affiliated with nor agents of Owens Corning.

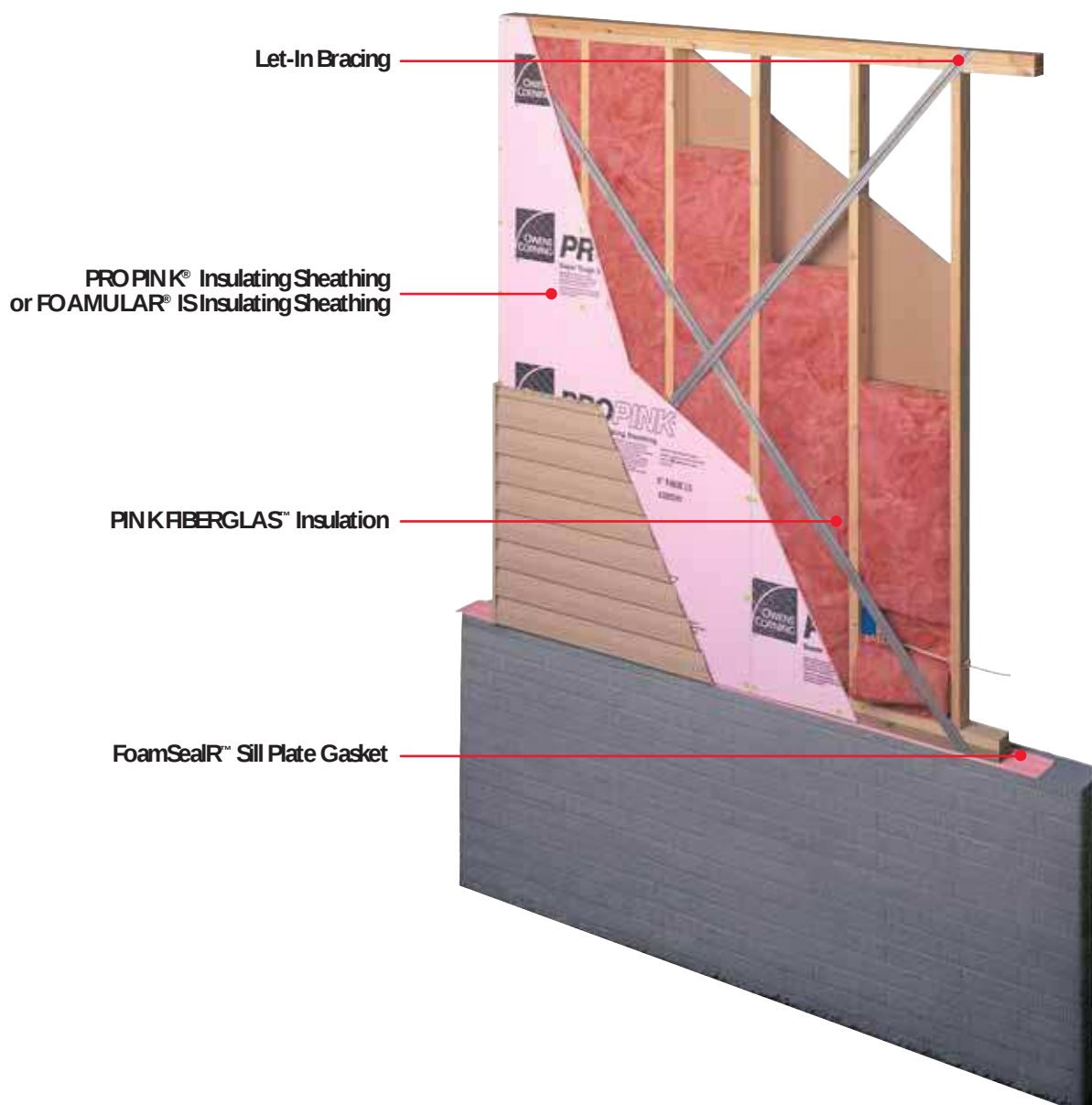


PINK THERMAL WALL

BUILDING ENERGY EFFICIENT WALL SYSTEMS

THE PINK THERMAL WALL FOR EXTERIOR WALLS

You only have one chance to properly insulate exterior and foundation walls. A well-designed exterior wall system can make a significant contribution toward maximizing the energy efficiency of your home. The Owens Corning PINK Thermal Wall, combining PINK FIBERGLAS Insulation, FOAMULAR IS Insulating Sheathing and FoamSealR™ Sill Plate Gasket in the stud cavities, provides a complete thermal, moisture and air barrier solution for higher energy savings.



BUILDING 2x4 OR 2x6 WALLS

THE PINK THERMAL WALL FOR 2x4 CONSTRUCTION

Wood framing members make up approximately 25% of a new home's exterior walls. Because wood is an inferior insulator, it creates a heat-flow path around the insulation barrier. For 2x4 exterior walls, 1" *FOAMULAR* IS or *PROPINK* Insulating Sheathing, sealed with *BILD-R-TAPE* Construction Tape, adds an R-value of 5 and further reduces air infiltration by covering thermal gaps created by uninsulated studs. When combined with R-13 *PINK FIBERGLAS* Insulation and *FoamSealR* Sill Plate Gasket in a 2x4 wall system, the PINK Thermal Wall for 2x4 construction allows you to achieve a wall system R-value as high as R-19 (exterior siding or brick plus interior drywall equals an R-value of one).

THE PINK THERMAL WALL FOR 2x6 CONSTRUCTION

Switching from traditional 2x4 walls to 2x6 wall construction delivers up to 62% more insulating power and is one of the easiest ways to add energy efficiency. The studs are built on top of the *FoamSealR* Sill Plate Gasket. The larger studs create a cavity for 5½" thick R-21 *PINK FIBERGLAS* Batt Insulation. Combine this with 1" *FOAMULAR* IS or *PROPINK* Insulating Sheathing and seal with *BILD-R-TAPE* Construction Tape, and your R-value increases to R-27!



Kraft-Faced Thermal Batts



PROPINK® Insulating Sheathing



BILD-R-TAPE® Construction Tape



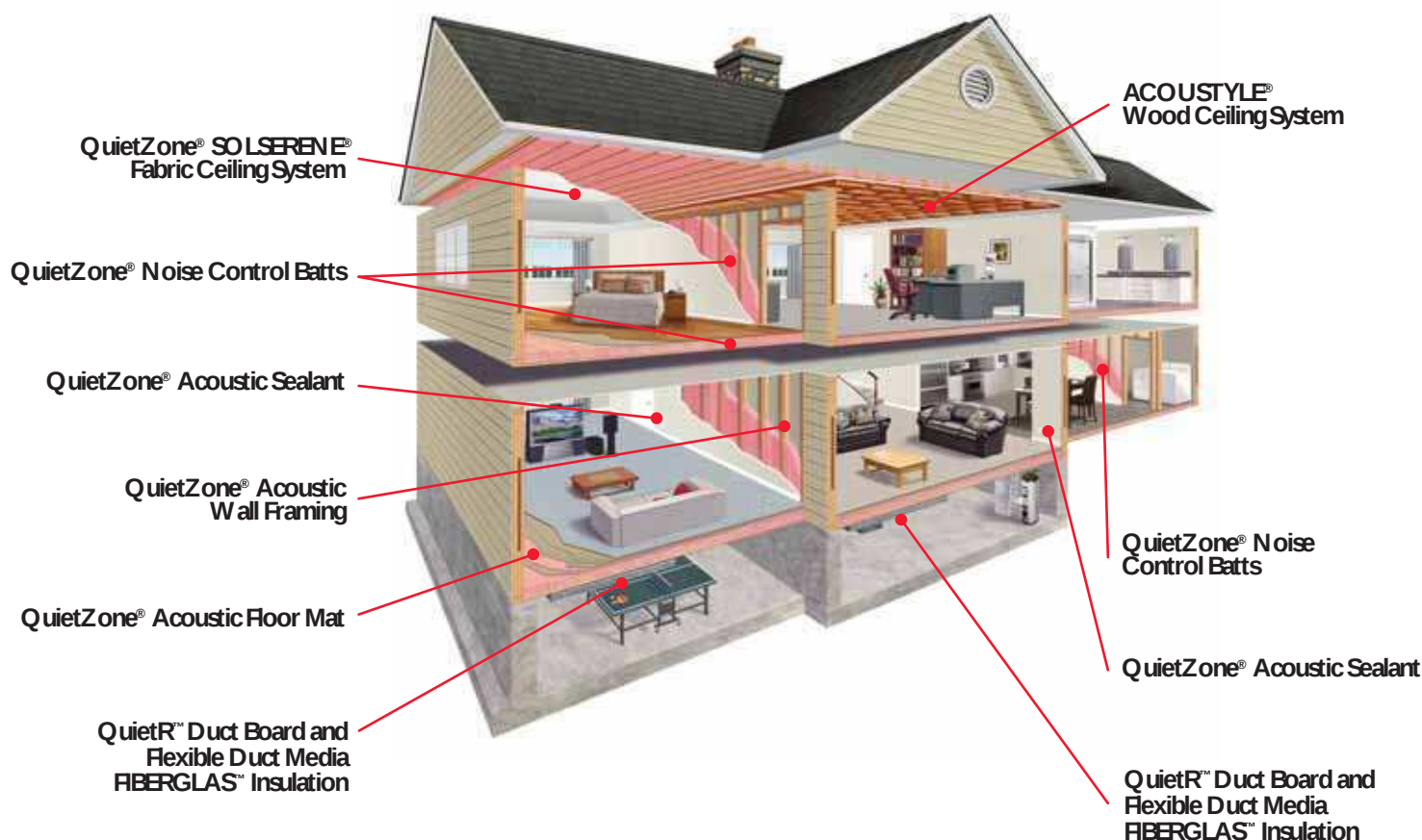
QUIETZONE® NOISE CONTROL SOLUTIONS

You're building a new home. Paying close attention to how it will look. But have you also considered how it will sound? This is just as important—perhaps even more so. That's because everyone deserves to fully enjoy life at home. And that means being able to do what you want, when you want, without having to worry about disturbing others.

TODAY'S HOUSING BOOMS

Home theaters and offices. Open floor plans. Hard floors and countertops. People want more out of their new homes. But more features often result in more noise. Add everyday sounds such as phones, appliances, HVAC equipment and sound that travels from room to room through HVAC ducts, and it's easy to see why 78% of homeowners say they are disturbed by noise.*

Fortunately, you can have the features and the sound control you want for your new home. But you have to plan for noise control during the home construction process. Otherwise, it's too late. Treating walls, ceilings and floors with QuietZone Noise Control Solutions from Owens Corning will reduce the level of noise transmitted between rooms.



* TNS-Global Noise Reduction Market Understanding Study, January 2005.



CUSTOMIZABLE SOLUTIONS FOR BETTER LIVING

QuietZone Noise Control Solutions are easily tailored to fit any lifestyle or budget. What's more, having them in your home can help increase its value. Choose from the following options:

QUIETZONE® QUIET FOUNDATIONS™ NOISE CONTROL SOLUTIONS

The essentials for systematically controlling noise in your new home

- Reduce the levels of airborne noises (such as conversations, appliances, TVs and plumbing) transmitted through walls, ceilings and floors
- Simple to add to new-construction homes
- Include *QuietZone* Noise Control Batts and *QuietZone* Acoustic Sealant installed in the walls, ceiling and floors
- *QuietZone* Quiet Foundations™ Plus Noise Control Solution includes QuietR™ Duct Board and Flexible Duct Media PINK FIBERGLAS Insulation to help eliminate the pops and pings of metal ducts and absorb the sound waves that can travel through HVAC systems

QUIETZONE® QUIET RETREATS™ NOISE CONTROL SOLUTION

Maximum noise control for special rooms

- Uses state-of-the-art technology to help manage the sound experience for rooms where it's especially important to keep sound in or out (home theaters, home offices, master bedrooms, etc.)
- Designed to reduce both airborne and structural noises
- Includes *QuietZone* Noise Control Batts and *QuietZone* Acoustic Sealant installed in the walls, ceiling and floors as well as *QuietZone* Acoustic Floor Mat, *QuietZone* Acoustic Wall Framing, QuietR™ Duct Board and Flexible Duct Media PINK FIBERGLAS Insulation for your HVAC system
- Additional options include the *QuietZone* SOLSERENE® Fabric Ceiling System for sound enhancement or the *QuietZone* ACOUSTYLE® Wood Ceiling System





OWENS CORNING DUCT SOLUTIONS

ADD COMFORT, QUIET AND ENERGY EFFICIENCY TO EVERY ROOM

A lot of homeowners don't realize that ductwork is an important component of a home's comfort system. A complete system for new construction is Owens Corning QuietR™ Duct Board and Flexible Ducts insulated with Owens Corning PINK Insulation®. Our duct products work to help the HVAC system deliver energy efficiency and comfort by reducing leaks, regulating air temperatures and reducing noise transmission.

QUIETR™ DUCT BOARD AND FLEXIBLE DUCTS INSULATED WITH OWENS CORNING PINK INSULATION®

Increased Energy Efficiency

- 10% return duct leakage reduces equipment efficiency by up to 30%**
- Reduce air leaks with performance up to 8 times better than unsealed sheet metal ducts**
- Help eliminate radiant heat loss and condensation problems

Added Comfort

- Deliver air where it belongs helping to make every room comfortable
- Reduce hot and cold spots in the home

A Quieter Environment

- Absorb equipment and fan noise
- Eliminate the annoying pops and pings of metal ducts
- Reduce household noise transmitted through the duct system between rooms (78% of the homeowners say they are disturbed by noise')

Duct systems made from QuietR™ Duct Board and Flexible Ducts insulated with Owens Corning PINK Insulation absorb noise, increase comfort and can help increase your home's energy efficiency up to 30%†† A traditional metal duct system does nothing to help control noise or increase energy efficiency. Before you build a new home or add on to your existing home, consider the following questions for your builder or contractor.

- What is the energy efficiency of my HVAC system and how are my ducts insulated?
- What is the R-value of my duct system?
- Does my duct system have noise control?
- Do you typically test for air leakage in duct systems?
- Do my returns have ducts?

* Owens Corning recommends that flexible ducts only be installed in accordance with the manufacturer's installation specifications. Please refer to www.flexibleduct.org for more information.

** "Investigation of Air Distribution System Leakage and Its Impacts in Central Florida Homes" FSEC-CR-397-91. Prepared for the Governor's Energy Office.

*** A comparison of Air Duct Systems Energy Savings and Acoustical Performance, NAIMA Pub. No. AH109, May 2000.

† TNS Global Noise Reduction Marketing Understanding Study, January 2005.

†† NAIMA Pub. No. AH109.



FOLD-FORM[®] INSULATED CONCRETE FORMS AND WEATHERPROTECTR[®] SYSTEM

SAVE TIME AND LABOR ON THE JOB SITE WHILE BUILDING IN ENERGY EFFICIENCY, NOISE CONTROL, AND INCREASED STRENGTH.

Fold-Form Insulated Concrete Forms combine high-quality expanded polystyrene foam with solid concrete, providing excellent energy efficiency, noise control and resistance to natural disasters while offering an excellent alternative to traditional wood and concrete block construction.

CONCRETE REASONS TO DEMAND FOLD-FORM[®] INSULATED CONCRETE FORMS AND WEATHERPROTECTR[®] SYSTEM

Easy as 1-2-3: Easy to transport and handle on the job site. Pre-assembled, interlocking form sections store flat and are light weight. No specialized skill required, use the same basic hand tools, hardware, and dimensional lumber found on any job site.

Design Versatility: The *Fold-Form* system integrates well with all types of existing residential construction.

Adaptability: A unique hardware package allows construction of custom shapes such as curved walls, brick ledges and offsets.

Energy Efficiency: Finished walls can attain an insulating value of R-20*.

Strength: In university tests, *Fold-Form* solid concrete walls were proven to be the best protection against flying debris created by winds as high as 250 mph, when compared to conventional framed walls and hollow concrete block walls.

Peace and Quiet: Solid concrete is regularly used as an economical barrier to sound pollution. A structure's resistance to sound penetration is described as an STC (Sound Transmission Class) rating. Higher STC ratings mean better resistance to sound penetration and noise pollution. Industry tests show that *Fold-Form* ICF walls have an STC rating of 44-47. Typical framed structures have an STC rating of 36**.

Moisture Control: Achieve optimal moisture control with the WeatherProtectR[®] System. Combined with Owens Corning *Fold-Form* Insulated Concrete Forms, the system provides a complete foundation seal. Its self-adhering properties allow for unmatched coverage, and it remains flexible even in cold weather conditions.



* Owens Corning tests and reports all insulating products at a mean temperature of 75 degrees to determine R-value. The FTC requires that any insulation products installed in homes follow this process. *Fold-Form* Insulated Concrete Form walls attain R-20 by calculation, with concrete and exterior finishes.

** Vanderwerf, P.A., S.J. Feige, P. Chammass, L.A. Lemay, *Insulating Concrete Forms for Residential Design and Construction*, 1st edition, McGraw-Hill, New York, 1997.

Fold-Form[®] is a registered trademark of Lite-Form International LLC.





INNOVATIONS FOR LIVING™

IMPORTANT INFORMATION TO CONSIDER





PRODUCT INDEX

A COMPLETE INSULATING JOB CAN INCLUDE THESE PRODUCTS

ASK YOUR BUILDER, CONTRACTOR OR LOCAL RETAILER ABOUT OWENS CORNING PRODUCT OPTIONS TO MEET YOUR NEEDS

PINK FIBERGLAS™ INSULATION

Used for all applications—from the top to the bottom of your house.

HIGH-DENSITY PINK FIBERGLAS™ INSULATION

Specifically engineered to solve efficiency problems unique to cathedral ceilings and exterior walls. “High density” means more fibers per square inch than standard insulation products. That means you get a higher R-value per inch.

PINK FIBERGLAS™ MULTI-PURPOSE INSULATION

Ideal for small projects, it seals gaps around windows, doors, air conditioners, outlet boxes and pipes.

PRO PINK FASTBATT® FIBERGLAS™ INSULATION

Wide facing fits tightly in the cavity, eliminating the need for stapling while providing continuous coverage and vapor control.

PRO PINK COMPLETE™ BLOWN-IN INSULATION

Sprays smoothly and quickly into any wall or ceiling cavity, providing complete compression and gap-free coverage. PLEASE NOTE: Can be installed only by *Certified Energy Professional Insulation Contractors*.

PRO PINK® INSULATING SHEATHING

A premium insulating panel used to construct the exterior walls of your home.

PRO PINK® FANFOLD RESIDING BOARD

Adds up to R-15 to the exterior wall while providing an ideal leveling surface for residing.

FOAMULAR® IS INSULATING SHEATHING

A laminated insulating panel used to construct the above-grade exterior walls of your home.

FOAMULAR® 150 EXTRUDED POLYSTYRENE RIGID FOAM INSULATION

Designed to create exceptional thermal and moisture protection on the exterior foundation walls.

FOAMULAR® 250 EXTRUDED POLYSTYRENE RIGID FOAM INSULATION

An ideal choice to withstand weight for underslab applications.

**FOAMULAR INSULANK® FOAM INSULATION BOARD**

Designed to make quick work of insulating basement walls from the inside.

FOLD-FORM® INSULATED CONCRETE FORMS

Designed for above- and below-grade exterior concrete wall construction. They create a basement environment ideal for use as added living space.

PINKWRAP® HOUSEWRAP

Reduces air infiltration for exterior walls

BILD-R-TAPE® CONSTRUCTION TAPE

Ideal for taping *FOAMULAR* Extruded Polystyrene Rigid Foam Insulation joints for an airtight air infiltration barrier.

FoamSealR™ ENERGY-SAVING MULTI-USE PLATE GASKET

Used for an airtight seal between the masonry foundation and the wood sill plate.

raft-R-mate® ATTIC RAFTER VENTS WITH OPTIONAL AIR STOP / INSULATION BLOCK

Used to ensure free movement of air from the roof soffits to the roof or ridge vents, thereby helping prevent moisture buildup in the attic.

PINKCap® ATTIC STAIR INSULATOR

Helps prevent airflow through the attic stair opening, reducing heat loss/gain.

WEATHERResist® FLASHING TAPE

An outstanding product for sealing joints around windows and door openings

WeatherProtectR® SYSTEM

Intended to be added to foundations made with Owens Corning *Fold-Form* Insulated Concrete Forms for optimum water-resistant performance. The system includes *WeatherProtectR* Water-Resistant Membrane, *WeatherProtectR* P Primer and *WeatherProtectR* M Mastic.

QUIETR™ DUCT BOARD

Used to fabricate components for indoor commercial and residential heating, ventilating and air conditioning duct systems

OWENSCORNING DUCT SOLUTIONS

Increase the efficiency of your HVAC system, helping to make every room more comfortable.



COMMONLY ASKED INSULATING QUESTIONS AND ANSWERS

Q. Does R-value refer to inches?

A. No. R-value refers to insulation's resistance to heat flow, not to its thickness. Tiny air pockets trapped in the insulating material resist the passage of heat. The higher the insulation's R-value, the greater its insulating power. R-value is usually determined by the thickness and the density of the insulation.

Q. What is a vapor retarder?

A. Vapor retarders help control the amount of moisture passing through insulation and collecting inside exterior walls, ceilings and floors. There are three types of vapor retarders—kraft-faced: kraft paper attached to insulation with a thin coat of asphalt; foil-faced: foil-backed paper attached with a thin coat of asphalt; polyethylene: A separate 4- to 6-mil polyethylene film applied over installed insulation.

Q. Does the vapor retarder on insulation affect the R-value?

A. No. There is virtually no thermal performance difference between unfaced *FIBERGLAS* insulation and kraft-faced or foil-faced *FIBERGLAS* insulation when properly installed. Faced insulation contains a built-in vapor retarder.

Q. Do higher insulation levels create condensation problems?

A. No. Insulation is not a source of condensation problems. Ventilation and vapor retarders are the general solutions.

Q. If I install a vapor retarder in my attic, do I still need ventilation?

A. Yes. Even with a good vapor retarder, proper ventilation is considered essential to prevent damage from condensation. Soffit vents—openings at the roof overhang—combined with a ridge vent, roof vent or gable vents, are effective ways to create a positive movement of air in and out of the attic.

Q. I am in the middle of an insulation project, but I accidentally tore the vapor retarder. Is repair necessary?

A. Not usually. The edges should lie close enough together to block most of the water vapor. To fix a large tear, seal the two edges together with a tape like Owens Corning *BILD-RTAPE* Construction Tape.

Q. My home has about 6" of insulation in the attic, and I'm planning to add more. Should I use faced insulation?

A. No. Use only unfaced *FIBERGLAS* insulation—with no vapor retarder. A facing acts as a vapor retarder, which helps reduce the amount of moisture entering a wall, ceiling or floor, thus preventing condensation. In heating climates, your original layer of insulation should already have a vapor retarder facing the "warm-in-winter" side (living area) of your home.

If you create a double vapor retarder with another layer of faced *FIBERGLAS* insulation, any moisture that does get through the first layer may condense on the second. This might cause water stains on the ceiling and could lead to severe structural damage. (See page 13.)

Q. If my crawl space is ventilated, can I still insulate the walls of the crawl space, or is it better to insulate the floor?

A. If you have a vented crawl space with pipes and uninsulated ducts, it is better to insulate the crawl space walls. If there are insulated ducts and no pipes, the best course of action is to insulate the floor above. The vents should be closed in the winter and open in the summer.

Q. Since *FIBERGLAS* blankets compress so easily, can I increase the effectiveness of my insulation by squeezing a 5½" R-21 blanket into a 2x4 wall instead of using 3½" R-15 blankets?

A. No. Compressing *FIBERGLAS* blanket insulation into a smaller wall space will not necessarily increase your insulation's efficiency. *FIBERGLAS* insulation works on the principle of trapped air pockets. By compressing *FIBERGLAS* insulation, you decrease the amount of air trapped in the material. For example, compressing R-19 into a 2x4 wall will give you an R-13 value. It would be better to buy the product that best fits in the space. R-13 or R-15 batts are the best products for a 2x4 wall. (See page 6 for R-value recommendations)



Q. I know insulation helps keep heat in during the winter months, but is there any benefit to having it during summer months?

A. Yes, insulation helps slow the process of summer heat entering the home, which helps keep the inside cool and lessens the need for continuous air conditioning.

Q. If my attic already has insulation in it, how much will it cost to increase the energy efficiency of my attic to recommended levels?

A. First determine existing insulation thickness and area (square footage) of attic space. (See page 7.) Consult your local retailer for recommended levels of insulation and costs.

Q. What are radiant barriers? Are radiant barriers an effective way to upgrade my home's insulation performance?

A. Radiant barriers recognized by energy codes come in three basic types: single-layer film material, multilayer or bubble film material, and single films applied directly to the underside of roof (plywood/OSB) sheathings. Radiant barriers are not insulation and, by definition, have no R-value. However, there are some radiant barrier products that have entrapped air spaces (bubble pack or multilayer films) where an R-value may be available for the product. In these situations, the product is operating as an insulation as well, but the winter R-value (heat flow up) is very small. Often, the manufacturer of these product types will list the summer R-value (heat flow down) because it's so much higher than the winter time (heat flow up) value.

Additionally, the actual reduction in heat flow achieved through properly installed radiant barriers is substantially less than that claimed by some manufacturers.

Q. Is my insulation safe?

A. Based on over 65 years of research we believe that our glass fibers are safe to manufacture and use. We recommend that you follow the industry safe work practices to avoid irritation. Please refer to product label or www.owenscorning.com for safe work practices and for more information.

Q. In winter, I notice a wet spot on my ceiling where it meets the inside of the exterior wall. My attic area above the room is insulated. What might be causing the moisture problem?

A. Check to see if your attic insulation completely covers your ceiling area out over the exterior wall top plate, but not over the eave. You may have a cold spot caused by a lack of insulation over this area, or you may have a ventilation problem or "ice damming." Install baffles such as Owens Corning *raft-R-mate* Attic Rafter Vents to assure airflow. For additional ventilation, install roof vents.

Q. How do I add layers of attic insulation to a joist cavity that is only half full?

A. If a joist cavity is only half full and the recommended insulation level in your area is R-38, fill the joist cavity flush with the top with the appropriate thickness of unfaced *FIBERGLAS* insulation. Then lay a second layer of unfaced insulation perpendicular to the existing layer to give a total of 12" (or an R-value of 38) in the joist cavity. Covering the attic joists with the second layer will reduce heat loss through the wood.

Q. Do I staple the flanges on faced *FIBERGLAS* insulation to the face of the stud or to the inside of the stud?

A. In general, when stapling is necessary, the insulation can be stapled to the inside or the face (the 1½" dimension) of the wall studs or ceiling joists. Inset stapling—or stapling to the inside of the stud—is preferred by most drywall installers. In cathedral ceiling applications, a 1" ventilation space is recommended. If *raft-R-mate* Attic Rafter Vents have been installed up the entire length of the cavity, then either way is acceptable. If no baffles are installed, the insulation should be face stapled to reduce the possibility of blocking the ventilation space between the insulation and the roof deck.



IT'S GREEN TO THINK PINK

For over 65 years, Owens Corning has enhanced everyday lives, making products whose end results positively influence the global environment. Our products make homes and buildings more energy efficient, attractive and durable. We make cars lighter and stronger. We protect astronauts, strengthen aircraft and insulate ships. Because of Owens Corning products used every day last longer and contribute to a better environment.

- Owens Corning PINK FIBERGLAS Insulation has the highest certified recycled content of any fiber glass insulation— 35% Our PINK Rigid Foam Insulation products have 15% recycled content. These claims are backed by an independent third-party testing organization, Scientific Certification Systems (SCS)
- Owens Corning insulation products can help increase home energy efficiency up to 30%*
- Owens Corning is a member of the Alliance for Sustainable Built Environments (ASBE) and is active in numerous environmental organizations worldwide. You can learn more about the ASBE at www.sustainablebuiltenvironments.org
- A pound of Owens Corning insulation saves 12 times the energy needed to produce it during the first year alone**
- The facts are in. Plastic housewrap benefits the environment by helping reduce greenhouse gas emissions (GHG) emitted from burning fossil fuels to heat buildings. It takes about 9.25 gallons of fuel to manufacture enough plastic housewrap to cover a typical house. But when properly installed, that housewrap can save approximately 330 gallons of fuel each year during the life of that house
- Owens Corning is an Energy Star® Partner, and our products carry the Energy Star Home Sealing Label



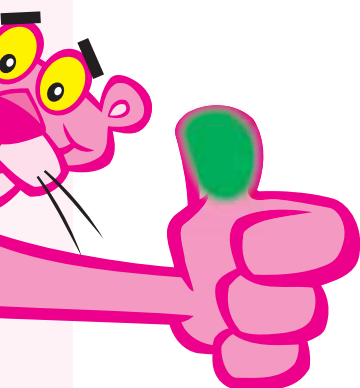
* U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. Savings vary depending on the original amount of insulation in your home, climate, house size, air leaks, and personal energy use and living habits. 30% savings is based on whole house weatherization and insulation improvements.

** Green and Competitive, Alliance to Save Energy, www.naima.org/pages/resources/library/pdf/GREEN.PDF

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It was over 65 years ago that Owens Corning invented PINK FIBERGLAS Insulation. Today, we continue to improve, innovate and reinvent PINK FIBERGLAS Insulation and insulating products so you can enjoy the highest possible energy savings and year-round comfort.

You'll also find Owens Corning solutions in Roofing, Vinyl Siding and Cultured Stone® Manufactured Stone Veneer and more. An ideal way to discover how these exterior innovations can add beauty and improve the energy efficiency of your home is to visit www.owenscorning.com or call 1-800-GET-PINK™.

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Owens Corning promotes energy conservation and environmentally friendly home construction through partnerships with organizations and programs such as Habitat for Humanity, Energy and Environmental Building Association (EEBA), *Environments For Living*®, the Alliance for Sustainable Built Environments (ASBE), EEBA-Houses that Work, the EPA/DOE Energy Star® Home Sealing Program, GREENGUARD Environmental Institute, The National Association of Home Builders (NAHB) and others.



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