OWENS CORNING®

INNOVATIONS FOR LIVING®

NEW

energyCOMPLETE™

with Flexible Seal Technology

Whole Home Insulation and Air Sealing System




Answers to Frequently Asked Questions

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ENERGY EFFICIENCY

1. What's the estimated energy savings vs. a standard fiber glass system?

With the EnergyComplete™ Whole Home Insulation and Air Sealing System, you achieve up to ⅓ savings on the energy used to heat and cool your home![1]

2. What is the estimated energy savings vs. a comparable air sealing system (flash & batt)?

A flash & batt system with sprayed polyurethane foam can achieve levels of energy savings comparable to those achieved with the EnergyComplete™ System. However, there is no need to quarantine the home and other trades can be on-site during installation, which reduces the production cycle for the builder.

3. I achieve the same energy efficiency with caulk. What is different about the EnergyComplete™ System?

In terms of our spray foam vs. a spot sealant like caulk, EnergyComplete™ Spray Foam with Flexible Seal Technology has a number of designed-in features that provide a consistent sealing application, time after time, from installer to installer:

(1) It hits a broader target due to the fact that it is sprayed (i.e., precision to find and selectively seal a crack is not required)

(2) It automatically flows, penetrates and expands, filling small cracks without the need to manually squeeze the sealant into the crack, as with caulk (i.e., again, precision is not required)

(3) The air that is entrained into the spray action provides a self-cleaning feature to the wood surface that is receiving the foam—effectively blowing sawdust and debris away from the surface being sealed, thereby ensuring a solid and long-lasting bond between our sealant and the wood

(4) Allows sealing in hard-to-reach places, like the band joist

4. I achieve the same energy efficiency with spray polyurethane foam. What is different about the EnergyComplete™ System?

You can expect the same or an increase in energy savings as compared to traditional spray foams. This is dependent upon where you are building and the overall design of your home. That said, what's significant is that you can achieve this performance with a more safe-to-install and economical alternative to traditional spray foam systems.

1 The average residential energy use for space heating and cooling is 39%. *Buildings Energy Data Book, 2008*, U.S. Department of Energy (DOE). Savings vary. To find out more, contact your Owens Corning sales representative. Savings estimates are based on comparison to an average new U.S. home. The savings percentages compare the performance of a new home built to meet minimum insulation code requirements in a particular location to a new home insulated with the EnergyComplete™ System that meets or exceeds the DOE recommended insulation levels. The ⅓ savings on heating and cooling was calculated on a 2-story, 3,100-sq.-ft. new home with a basement in Denver, CO.

5. I can achieve 50% reduction in the homes I build with traditional spray foam vs. your stated "up to ⅓." Why the difference?

The prediction of energy consumption involves many assumptions. One of the biggest assumptions that can be made is the amount of air infiltration for a "typical house" and that for the system being considered. This is a big "lever" in affecting energy consumption. Our air infiltration assumption for a **typical** house is based on the stringent new requirement of the 2009 International Residential Code. Our assumption for an **EnergyComplete™** System house is based on measured data. You may want to inquire with your current spray foam supplier how they established the typical infiltration and whether it realistically represents the norm. Setting other manufacturers' claims aside, the EnergyComplete™ System performs equal to or better than spray foam insulation in all applications.

6. Will this system allow me to rightsize my HVAC equipment?

Yes. As a result of utilizing the EnergyComplete™ System in the home and the up to ⅓ reduction in heating and cooling energy consumption, the HVAC equipment should be rightsized to achieve the appropriate amount of run time and occupant comfort. There is also the benefit of equipment savings. A reduction in the chiller size of as much as 20% can be achieved, depending on climate. Consult the technical bulletin on HVAC considerations with the EnergyComplete™ System for more details and with your local HVAC provider to quantify the amount.

7. Does this solution help me meet ENERGY STAR® and other energy-efficiency and green building requirements?

Yes. The energy savings and/or product attributes (sealing and insulation) from the EnergyComplete™ System will help achieve points on the prescriptive or performance paths in programs such as ENERGY STAR®, LEED® for Homes and the NAHB National Green Building Program. In addition, Owens Corning PINK FIBERGLAS™ Insulation and EnergyComplete™ Spray Foam are certified for GREENGUARD Indoor Air Quality and GREENGUARD Children & Schools.℠ We have a number of technical bulletins that can help you with this process.

8. Does this system allow me to meet guidelines set forth in ASHRAE Standard 62.2?

Yes. ASHRAE Standard 62.2-2007 specifies the air exchange requirements for residential structures. Owens Corning strongly recommends that filtered mechanical ventilation be used with the EnergyComplete™ System and that the rate of ventilation (i.e., how many cubic feet per minute) be that prescribed by ASHRAE Standard 62.2-2007. Consult our technical bulletin on Ventilation of EnergyComplete™ System Homes for more details.

9. How does this system reduce greenhouse gas emissions?

Researchers at the McKinsey Global Institute have concluded that building insulation is the single most cost-effective solution to reduce greenhouse gas emissions globally across all sectors. This is driven by the reduced amount of energy needed to heat and cool a house.

10. Is the PINK FIBERGLAS™ Blown-In Insulation that is used in the wall cavity blown in wet or dry?

Dry.

11. What components of the EnergyComplete™ System are actually "green"?

All insulation saves more energy than it takes to create it in the first year alone, and keeps on saving for the life of the building. According to a recent report from the McKinsey Global Institute, building insulation is the single most cost effective way to reduce greenhouse gas emissions globally. And Owens Corning insulation is made with 40% recycled glass, the highest level of certified recycled content in North America[2]—making us one of the largest recyclers of glass in the world. Many of our products are also certified for GREENGUARD Indoor Air Quality and GREENGUARD Children & Schools,℠ meaning we meet the strictest standards for indoor air quality.

2 Scientific Certification Systems (SCS) provides independent verification of recycled content in building materials and verifies recycled content claims made by manufacturers. For more information, visit www.scscertified.com.

INSTALLATION

1. Who installs it?

Energy professionals within the insulation contractor trade who are trained and certified by Owens Corning are authorized to install the EnergyComplete™ System.

2. How will it work with my insulation contractor?

The EnergyComplete™ System is only available through a certified EnergyComplete™ System professional.

3. Do I need to hire an installer to install?

Yes. The EnergyComplete™ System is only available through a certified EnergyComplete™ System professional.

4. Will this add to or reduce my construction cycle time?

When compared to traditional spray foam, it will reduce your cycle time since you will be able to have other trades in the house concurrently with the EnergyComplete™ System installation. In addition, PINK FIBERGLAS Insulation can be applied in as little as 20 minutes after the EnergyComplete™ Spray Foam is applied.

5. How long will my other trades have to wait before re-entering my home after this application?

Other trades can work in the home during installation of the EnergyComplete™ System—there is no need to quarantine the home during installation or for any period either during or following installation. As a result, you can reduce your construction cycle time.

6. How long does it take to install the EnergyComplete™ Spray Foam?

The complete sealing job on a 2,400-sq.-ft. house typically requires 3 to 4 hours.

7. How long do I need to wait until I can apply the PINK FIBERGLAS™ Insulation?

After about 20 minutes (depending on temperature and humidity), the foam is tack free and insulation can be installed.

8. Should I use PINK FIBERGLAS™ Blown-In Insulation with the system?

Yes. The EnergyComplete™ System has been designed and tested in concert with our blown-in insulation, which provides high thermal resistance (R-15 for a 2 x 4 cavity and R-23 for a 2 x 6 cavity), enhanced filling of the cavity and best-in-class noise control.

9. Can I use batts?

Yes, the thermal component of the EnergyComplete™ System can be PINK FIBERGLAS Batt Insulation. If this is the approach taken, we strongly recommend utilizing our high-performance batt insulation to achieve maximum R-value in the wall cavity. However, using PINK FIBERGLAS Blown-In Insulation provides the maximum thermal and acoustic performance.

10. If I need to clean the material off of a substrate after it has cured, what approach should I use?

After the material is cured it can be cleaned off with the cleaning solution provided or with alcohol. Just wet a rag and wipe. A razor blade or scraper can be used to remove large amounts of foam from an area.

11. Can I apply the EnergyComplete™ Spray Foam to a crawl space before the floor deck is in place, which would provide easier access to the sill plate and band joist than if I waited until framing was complete?

This would not be recommended, because you would miss the sealing of the joint between the subfloor and band joist. A potential work-around would be to apply a thin layer of the spray foam to the top of the band joist, which would act as a gasket when the subfloor is applied.

12. Doesn't the EnergyComplete™ Spray Foam on the face of studs create issues for drywall installation?

No. The foam is very compliant and will readily accommodate the placement of drywall on top of it. When the foam is applied in a very irregular, non-uniform manner—resulting in globs of foam on the face of studs—this may cause difficulties for the drywall installer, and therefore this practice should be avoided in the foam application stage.

13. What is done around doors and windows?

This product can be used around doors and windows. There is a special nozzle that comes with the sprayer to enable the installation. The foam itself is acceptable for use around doors and windows, due to its low expansion, low pressure-build characteristics. It has been tested against AAMA 812 (Voluntary Practice for Assessment of Single Component Aerosol Expanding Polyurethane Foams for Sealing Rough Openings of Fenestration Installations), and the result can be found in the Product Data Sheet.

14. How do you handle an unvented attic?

We discourage this practice because the noise generated from HVAC equipment passes through an uninsulated ceiling space and can be objectionable to some homeowners. Our recommendation is to leave the attic vented and to seal and insulate at the ceiling plane. If there is a desire to locate the HVAC equipment in the attic, then the ducts need to be insulated, and we supply a variety of products for this specific application.

15. **In the case where the PINK FIBERGLAS™ Insulation is blown into the wall cavity, requiring placement of the fabric to contain it, can I glue drywall through the fabric to the studs?**

    If gluing drywall is the building practice in your market, PINK FIBERGLAS Batt Insulation should be used.

16. **If I glue the drywall to the EnergyComplete™ Spray Foam on the face of the stud, can I expect good adhesion through to the stud?**

    No. The adhesive should be used only in locations where there is no foam on the stud face.

17. **I will be using the EnergyComplete™ Spray Foam to seal bottom plates adjacent to a concrete slab that will be receiving a decorative concrete stain. Will the spray foam affect the stain?**

    Any area of a concrete surface that will be decoratively stained should be masked to avoid getting foam on that surface from overspray or being tracked from foam on shoes or hoses.

18. **What is the clean-up procedure for the EnergyComplete™ Sprayer when the job is complete?**

    Both sides of the spray equipment should be flushed and cleaned. Side A uses water for the cleaning, and Side B uses a specially designed cleaner. The cleaning procedure typically takes less than 10 minutes. Consult the Installation Guide for more details.

19. **If I need to clean the material off of a surface immediately after it was applied, what should I use?**

    Soap and water.

20. **Is this product applicable in block construction or wood-frame only?**

    It can air seal interior cracks in wood or masonry construction.

21. **Should surfaces be masked to protect from overspray?**

    Yes. All windows and doors should be covered with plastic sheeting or another suitable material. The same should be done for all bathtubs, toilets and sinks. Also, any area of a concrete surface that will be decoratively stained should be masked.

22. **What does the temperature need to be for application?**

    The air temperature inside of the house should be at 40°F or greater. Consult the Installation Guide for more details.

23. How do we keep the buckets of material from freezing during application?

The recommended application temperature is 40°F, which would preclude freezing. For unusual circumstances where temperatures below 40°F are expected, pail heaters can be used.

24. Since EnergyComplete™ Spray Foam is installed before the recessed lights (can lights), how should they be sealed?

Recessed lighting should be certified by the manufacturer as being IC-rated and of air-tight construction. The lights should be sealed with a gasket or high-performance caulk between the housing and the interior wall or ceiling covering.

25. Where should EnergyComplete™ Spray Foam be used in a crawl space?

If the crawl space is unvented and accessible, it should be treated in the same manner as a basement, sealing all rim joist penetrations and interfaces. If the crawl space is vented or inaccessible, the subfloor will be the air barrier and all penetrations through the subfloor should be sealed from above. In either case, consult the Installation Guide for more details.

PERFORMANCE

1. How will this system impact air changes per hour in my home?

This product will dramatically reduce the number of air changes from typical sources of air infiltration. It is this infiltration of air that wastes energy. To assure maximized energy savings, moisture management and indoor comfort, Owens Corning strongly recommends the use of filtered mechanical ventilation for fresh air makeup, which is supplied at a controlled rate (unlike the uncontrolled infiltration).

2. What is the R-value achieved with this system?

It varies with climate zone, but it closely matches the recommendations by the Department of Energy and is approximately 40% above the 2009 International Energy Conservation Code (2009 IECC).

3. What is the R-value of the spray foam sealant?

Although the EnergyComplete™ Spray Foam with Flexible Seal Technology is not intended to be used as insulation, the R-value is 3.2 per inch.

4. Can I use a lower R-value and still achieve building code with this system?

Regressing to a lower R-value would result in lower energy performance. Our research strongly indicates that home buyers want and expect advanced energy efficiency in all home styles and prices.

5. What is the fire performance of this product, and is it a fire block?

When applied in accordance with the Installation Guide, the spray foam sealant meets the requirements of a Class A fire-rated material for surface burning characteristics, flame spread and smoke development according to ASTM E84 (Standard Test Method for Surface Burning Characteristics of Building Materials). This means that the material may be left exposed. The spray foam sealant is not a fire block. Consult the Product Data Sheet for additional details.

6. Does PINK FIBERGLAS™ Blown-In Insulation settle over time?

No. Numerous independent studies have been done that show no settling of PINK FIBERGLAS Blown-In Insulation used in walls or attics.

7. Are there acoustical benefits with this system?

Homes constructed with the EnergyComplete™ System achieve up to a 40% perceived reduction in external noise as compared to other systems on the market.[1]

1 Owens Corning Test Report 90326 found that the EnergyComplete™ System with blown-in insulation reduces perceived outside noise through the wall by up to 40% compared to closed-cell spray foam and 20% compared to open-cell spray foam.

8. Will this solution crack as a home shifts and settles over time?

Aging studies were conducted on the EnergyComplete™ System from Owens Corning and the results from these studies demonstrate that the system will perform over the life of the home. It is designed to stay flexible and compliant over time, maintaining the integrity of the air and thermal seal.

9. How much does the foam expand?

About 4 to 5 times its initial volume.

10. How does the EnergyComplete™ System address air leakage into the attic?

One of the most significant leakage paths into the attic is at the interface between the drywall and the horizontal framing at the top of the wall (the top plate). This leakage path exists with both exterior walls and interior partition walls. The EnergyComplete™ Spray Foam is applied on the top plate of all walls, exterior and partition, in the rough framing stage that is adjacent to the attic space. When the drywall is installed, the sealant acts as a gasket and reduces the air infiltration at this critical location. Sealing at this location is not easily or consistently accomplished with other products on the market.

11. Does the EnergyComplete™ Spray Foam act as a vapor barrier?

No. Due to the open-cell structure, the spray foam readily passes water vapor. Consult the Product Data Sheet for the actual water vapor permeance.

12. Does the EnergyComplete™ Spray Foam seal against water also?

No. The spray foam is designed to stop air only. Water intrusion should be stopped at the exterior side of the sheathing, not the interior side, where the spray foam sealant is applied.

13. What is the expected blower door performance of a house that uses this product?

Results of 3 ACH50 or below (0.2 NACH or below) are achievable with this system when properly installed (3 air changes per hour or below, when tested at a blower door pressure of 50 pascals).

14. Can the spray foam sealant be used for sealing the exterior of the building?

No. It is designed for interior use only.

15. What about the notion that houses are being built too tight?

The reduction of air infiltration (i.e., tight construction) is an essential part of managing the energy consumption and thermal comfort of a home. Also important is ensuring that a home exchanges fresh air with the outside. This seeming contradiction is addressed by reducing the *uncontrolled* airflow through the sealing of cracks and openings in the building envelope, yet enabling a *controlled* airflow through a filtered air exchanger, which typically connects to the HVAC system. Owens Corning strongly recommends the use of filtered mechanical ventilation for fresh air makeup, which is supplied at a controlled rate. Consult our technical bulletin on Ventilation of EnergyComplete™ System Homes for more details.

PRICING

1. How much does the system cost?

The EnergyComplete™ System is more economical than traditional spray foam and the specific cost depends on many factors including where you are building and the certified professional installing the system. Directionally, you can expect the EnergyComplete™ System to be competitive with the current spray foam hybrid/flash & batt systems in the market.

2. What is the price of the EnergyComplete™ Sprayer?

There are two models of the equipment. The approximate price range is $15,500–$16,500. Included in this price is certified installer training for 2 installers (does not include travel to the training site).

3. What is the cost difference between the EnergyComplete™ System with blown-in and batt insulation?

The primary cost difference between these two systems is the thermal portion consisting of either a blown-in fiber glass or a batt insulation. These installed cost differences are established by the certified EnergyComplete™ System installer.

4. Is the EnergyComplete™ Spray Foam priced by linear or square feet?

The EnergyComplete™ Spray Foam is priced to the installer on a per set basis. A set of materials is enough to provide a sealant package for a home with 2,900 linear feet of joints/cracks.

USING THE SYSTEM

1. You recommend filtered mechanical ventilation. What type do you recommend?

Depending upon your climate, we recommend either a heat recovery ventilator (HRV) or an energy recovery ventilator (ERV) because of their energy-conserving performance. Consult our technical bulletin on Ventilation of EnergyComplete™ System Homes.

2. Is mechanical ventilation required?

Mechanical ventilation is strongly recommended—the EnergyComplete™ System will dramatically reduce the amount of air changes from infiltration. It is this infiltration that wastes heating and cooling energy. Owens Corning strongly recommends the use of filtered mechanical ventilation for fresh air makeup, which allows for managed air exchange (unlike the uncontrolled infiltration). Consult our technical bulletin on Ventilation of EnergyComplete™ System Homes.

3. Do I still need a housewrap with this system?

Yes. One of the main purposes of a housewrap is to serve as a drainage plane that protects the building from water that breaches the cladding. The spray foam sealant does not replace the need for a drainage plane.

4. Does this system include a vapor retarder? If not, what should be used?

No. Where a vapor retarder is required, our recommendation is to use a vapor retarder that exhibits smart characteristics in terms of moisture diffusion into and out of the wall cavity.

5. Do I need to use a vapor retarder with this system?

The use of a vapor retarder is dependent on climate. Contact your local building department to check for local code requirements.

6. What are the electrical requirements to operate the spray equipment?

You will need power for the sprayer and the compressor. In cold weather, you may also need to power a space heater. All operate on 110 VAC power. If power is not available, a generator will be needed. Refer to the equipment manual for power requirements.

7. Is the foam open or closed cell?

Open cell.

8. How much material is needed to seal a house?

Four pails of EnergyComplete™ Spray Foam Part A combined with one pail of Part B will seal approximately 2,900 linear feet of joints/cracks.

9. What is the shelf life of the EnergyComplete™ Spray Foam materials?

The shelf life for Part A and Part B is approximately 12 months from date of manufacture when stored in closed original containers at 70°F.

10. What if water gets into the materials?

If water gets into the Side B container, the material will be damaged and should be discarded per the waste disposal recommendation.

11. If the materials freeze, can they still be used when thawed?

Yes.

12. What is the standard hose length that comes with the equipment? What is the maximum hose length that can be used?

The standard issue is 100 ft. of hose, plus the 6 ft. of whip hose (the small one that gets hooked up to the gun). This can be extended to 150 ft.

13. How cost effective is it to install?

The costs associated with installation are largely dependent on installer experience, crew size and costs of the materials. All things being equal, the EnergyComplete™ System can be installed in a similar time frame to hybrid systems currently available in the market without the need to quarantine the house. This is an added benefit to builders which allows other trades to be working on-site.

14. What is the cleaner?

The cleaner is a relatively slow-evaporating solvent that is designed for cleaning of tools and equipment which came in contact with Part B of the EnergyComplete™ Spray Foam. The cleaning of tools and equipment which came in contact with Part A is done with plain water.

15. What are the safety hazards, if any?

Unlike polyurethane spray foam installations, where full suits should be worn with an external air supply mask, the EnergyComplete™ Spray Foam requires minimal personal protective equipment. Owens Corning recommends that installers use chemical gloves, goggles or a face shield, a long-sleeved shirt, and a dust mask if the installation site is dusty.

Additionally, unlike traditional spray foams, there is no need to quarantine the work area. Other trades are welcome to work in and around the home during the installation of the EnergyComplete™ Spray Foam.

16. Is the PINK FIBERGLAS™ Blown-In Insulation formaldehyde-free?

There is no formaldehyde added to our unbonded blown-in insulation as there is no binder in this product. All of our PINK FIBERGLAS Insulation products meet the strictest standards for indoor air quality and are GREENGUARD Certified for Indoor Air Quality and Children & Schools.

17. So why don't you market it as formaldehyde-free?

What's important to market is the fact that we meet the strictest standards for indoor air quality with third-party validation. We proudly market and display that messaging on our products.

18. Can this system be used in conjunction with continuous foam insulation on the exterior of the wall?

Yes. Consult the EnergyComplete™ System R-value chart for recommendations on the amount by climate, and consult the product literature on our FOAMULAR® Rigid Foam Insulation for additional details. The EnergyComplete™ Spray Foam is only applied on the interior side of the wall.

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Visit www.ocenergycomplete.com for more information.

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