



HELPING BUILDERS COMPLY WITH ENERGY EFFICIENT BUILDING PROGRAMS

TECHNICAL BULLETIN
Energy Efficient Building

OWENS CORNING ENERGYCOMPLETE™

Background

EnergyComplete™ is the first whole house system that addresses the problems of air infiltration through thermal, air, and moisture management. EnergyComplete™ combines breakthrough air sealing technology with trusted, proven Owens Corning insulation.

The air sealant – EnergyComplete™ Air Infiltration Barrier with Flexible Seal Technology – is a safe, low-expanding foam material that penetrates to fill seams, gaps and holes in the building envelope. EnergyComplete™ produces energy savings, preserves consistent, comfortable temperatures throughout the home. And it may improve indoor air quality, when used as recommended with the inclusion of mechanical air exchange equipment. Field trials with this system have shown whole-house infiltration levels of 3 ACH50 or 0.2 NACH.

The EnergyComplete™ system can help contribute to requirements and credits for the energy efficient building programs of ENERGY STAR® and Environments For Living®.

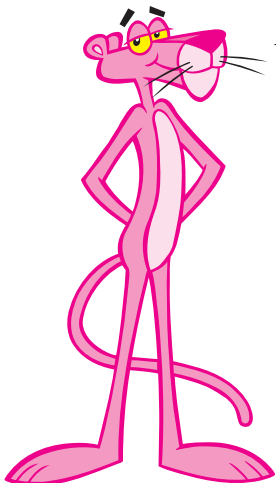
ENERGY STAR®

ENERGY STAR® Qualified New Homes is a program offered by the U.S. Environmental Protection Agency (EPA). Under this program homes are at least 15% more energy efficient than homes built to the 2004 International Residential Code (IRC), and include additional energy-saving features that typically make them 20–30% more efficient than standard homes.

Builders can qualify their houses under the ENERGY STAR New Homes program by one of two ways – the prescriptive path or the performance path. The prescriptive path is a Builder Option Package (BOP), where a builder constructs the home using a prescribed set of construction specifications that meet program requirements. The performance path is a home energy rating (or HERS rating), where software is used to model the home's energy use to verify that it meets a target score.

Both paths address air leakage through the building envelope. The prescriptive path requires a maximum number of air changes per hour (ACH) dependent on the climate zone. The performance path requires a leakage rate that is determined by the HERS rating software, taking into account whether or not mechanical ventilation is to be used.

In addition, both paths require a completed Thermal Bypass Inspection Checklist. The TBIC addresses the thermal barrier (insulation) and its alignment with the air barrier. The air barrier is defined as, "...any solid material that blocks air flow between a conditioned space and an unconditioned space, including necessary sealing to block excessive air flow at edges and seams. The TBIC also covers any/all penetrations through the thermal & air barriers, requiring them to be fully sealed with foam or caulk. EnergyComplete™ provides the sealing needed to minimize or eliminate air leakage as required by the ENERGY STAR New Homes program.





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Environments For Living®

Similar to ENERGY STAR, the Environments For Living (EFL) program is a national, turn-key program designed to assist builders in constructing and marketing homes utilizing the principles of building science – homes that offer energy efficiency, indoor environmental quality and durability benefits.

EFL has two qualification levels: Gold and Platinum. Both have a focus on the building thermal envelope and alignment with the air barrier, including air tightness criteria: gold = 0.35 cfm or less per square foot of envelope area at 50 Pascals, platinum = 0.25 cfm or less per square foot of envelope area at 50 Pascals. And as with ENERGY STAR, the air tightness of the finished home is verified via a whole-house pressurization (“blower door”) test.

EFL follows a protocol similar to the Thermal Bypass Inspection Checklist and utilizes the same measures to achieve the required level of air tightness – seal all joints, seams, cracks and penetrations through the air barrier. Once again, EnergyComplete™ is the solution to meeting EFL air tightness requirements.

¹Environments For Living® Program Documents, www.environmentsforliving.com.



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