



**R-CONTROL SIPs**

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**STRUCTURAL INSULATED PANELS**

**CONTROL,  
NOT COMPROMISE.**

[www.r-control.com](http://www.r-control.com)



## Life Cycle Benefits

When choosing R-Control SIPs you are getting a material with built-in features that provide environmental benefits.

Building materials and their impact on the environment should be considered over the full life of the building structure. This is considered the "life cycle" of the building. This includes inventorying the cost to the environment from material production, transportation, installation, use, and end of life reuse, recycling, or disposal. Research has shown that for both residential buildings and commercial buildings that operations contribute to over 90% of the building's impact on global warming. Reducing energy use is the best way to reduce our impact on the environment.

***The energy savings from R-Control SIP structures can translate into emission reductions of tons of carbon dioxide per year***

R-Control SIPs improve the energy efficiency over the full operating life of the building resulting in a positive impact on the environment.

## R-Control SIP Materials

R-Control SIPs reduce their impact on the environment by using component materials that are earth friendly:

- The wood facings are from rapidly renewable wood species
- Foam-Control EPS does not contain CFCs, HFCs, HCFC's
- R-Control SIP construction minimizes the use of traditional lumber
- The Foam-Control EPS is fully recyclable
- Waste is minimized by providing factory fabrication of complete building packages

## R-Control SIP R-values

| Panel Thickness | R-value at 75° F | R-value at 40° F |
|-----------------|------------------|------------------|
| 4 1/2"          | 14.9             | 16.0             |
| 6 1/2"          | 22.6             | 24.3             |
| 8 1/4"          | 29.3             | 31.6             |
| 10 1/4"         | 37.0             | 39.9             |
| 12 1/4"         | 44.7             | 48.3             |

## Green Building Programs

The selection of R-Control SIPs for your building makes it easy to comply with various national green building programs.

### USGBC - LEED

The U.S. Green Building Council developed the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ to promote green buildings. The LEED system provides a yardstick for measuring the environmental impact of buildings. "Certified", "Bronze", "Silver", and "Platinum" levels can be achieved based upon a point system. R-Control SIPs have been used in many LEED buildings, including buildings with the highest Platinum rating. For more information on the LEED program, please visit [www.usgbc.org](http://www.usgbc.org).

### ENERGY STAR®

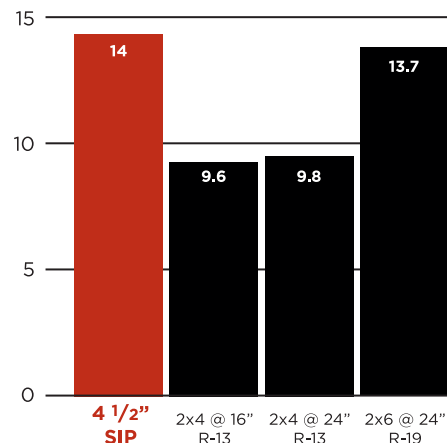
The U.S. Department of Energy established the ENERGY STAR program which many consumers are aware of from their everyday purchases of electronics and appliances. The ENERGY STAR program also provides a method for ENERGY STAR rating a structure. R-Control SIPs are deemed to comply with the program without conducting on-site blower door testing. For more information on the ENERGY STAR program, please visit [www.energystar.gov](http://www.energystar.gov).

### NAHB Green Building

The National Association of Home Builders created a building program for use by builders to help advance green building. As part of the NAHB program, SIP panels are given points for the increased effective R-value for the building envelope. For more information on the NAHB Green Building program, please visit [www.nahbgreen.org](http://www.nahbgreen.org).

## Whole Wall R-Value

There's more to most walls than meets the eye, and the R-value of a whole wall can be considerably lower than the R-value of the insulation. Whole wall R-value calculation procedures factor in all of the effects of additional structural members at windows, doors, and exterior wall corners.



### National Tests Verify R-Control SIPs Outperform Conventional Framing

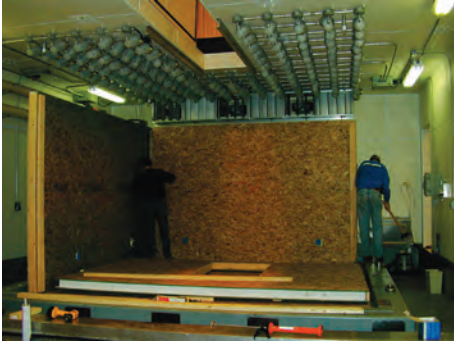
An R-Control SIP test room significantly outperformed a 2x6 stick-framed and fiberglass-insulated room in testing under identical laboratory conditions at Oak Ridge National Laboratories (ORNL). Results from a carefully monitored and instrumented study in ORNL's climate simulation laboratory showed that R-Control SIP construction is more energy efficient and far more airtight than stick-frame construction.

### Testing Method

The ORNL test setup created identical climate conditions and measured the airtightness and the heating energy requirement of the two rooms. ORNL testing demonstrated that R-Control SIP connections created a structure which was virtually air tight. This contrasted to stick built walls which had considerable air leakage. Dramatically reducing air infiltration provides a more comfortable interior environment, an advantage in building with R-Control SIPs.



Can you tell the difference?



A cold, stormy, windy day can.

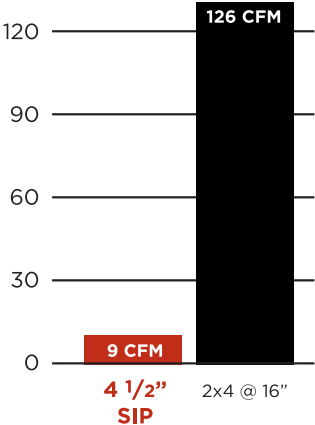


### WHOLE-ROOM AIR INFILTRATION, ORNL TESTING

Lower cfm = higher comfort + lower energy cost

### Blower Door Testing

The room with 4 1/2-inch SIP walls, a SIP ceiling, a window, a door, pre-routed wiring chases, and electrical outlets showed 90% less air leakage than an otherwise identical room built with 2x6 studs, OSB sheathing, fiberglass insulation, and drywall. At 50 pascals of negative pressure, the stick-built room leaked 126 cubic feet of air per minute (CFM), while the R-Control SIP room loss was a mere 9 CFM.

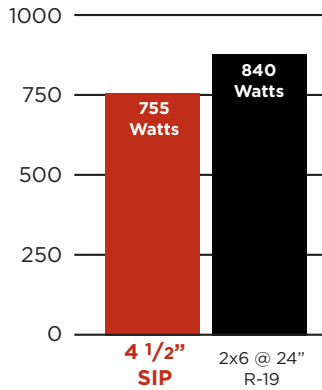


## Energy Use

The ORNL room with 4 1/2" SIP walls used 9% less heating energy than the 2x6 stick-built room under identical conditions (an indoor temperature of 70°F and an outdoor temperature of 0°F). Based upon this testing, a 6 1/2" SIP (50% more R-value than a 4 1/2" SIP) will dramatically outperform 2x6 stick construction. Building with SIPs will more effectively meet energy code requirements than building with 2x6 stick walls.

### WHOLE-ROOM AIR ENERGY USE, ORNL TESTING

Lower watts = lower energy cost



## Ready to take control? Start here.

If you're wondering how R-Control SIPs can work on your next project, just contact your nearest R-Control supplier. They'll be happy to collaborate on design, walk you through R-Control SIP installation, provide test data, pricing, and answers to all your questions. Start by visiting our web site: [www.r-control.com](http://www.r-control.com).



R-Control SIPs are made exclusively with Foam-Control EPS. R-Control SIPs and Foam-Control EPS are manufactured by AFM Corporation licensees.

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