

PERFORMANCE UPDATE



National Tests Verify R-Control SIP Performance

Test Room With R-Control SIPs Blows Away Stick Construction



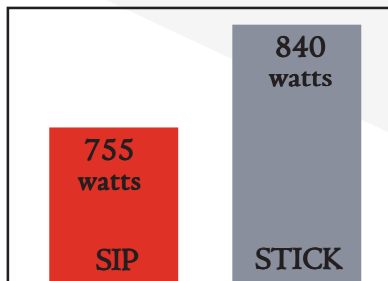
Can you tell the difference?



A cold, stormy, windy day can.

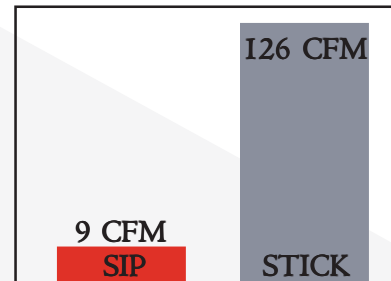


A SIP test room significantly outperforms a 2x6 stick-framed and fiberglass-insulated room in testing under identical laboratory conditions at Oak Ridge National Laboratories (ORNL). Results from a carefully monitored and instrumented study in Oak Ridge's climate simulation laboratory showed that SIP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



Whole Room Energy Use, ORNL Testing
(Lower watts = lower energy costs)

Results are conclusive, R-Control SIPs outperform stick framing and batt insulated construction.



Whole Room Air Infiltration, ORNL Testing
(Lower cfm = higher comfort + lower energy cost)

Testing Method

R-Control Building Systems supplied R-Control SIPs for the full scale thermal testing. The test program at Oak Ridge National Laboratory (ORNL) was sponsored by the Structural Insulated Panel Association (SIPA). The test setup created identical climate conditions for both rooms and measured both 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.

Energy Use

The room with 4 1/2-inch 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 inch 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.

Industry Affiliations:
SIPA, NAHB, AIA,
EPSMA, ICFA, NRCA



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Blower Door Testing

A 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 SIP room loss was a mere 9 CFM.

Availability

R-Control Building Systems is North America's largest provider of Expanded Polystyrene (EPS) Insulation Products and Systems with licensed facilities located throughout North America and the world. Please contact your R-Control Building Systems supplier for design consultation, availability and pricing.