

# R-Control® SIPs Life Cycle Analysis

## Life Cycle Benefits.

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

Building materials and their impact on the environment must be considered over the life of the building structure. This is considered the "life cycle" of the building.

## Assessment Study.

The Expanded Polystyrene Molders Association (EPSMA) commissioned industry leading Franklin Associates to conduct a life cycle assessment of SIPs with EPS insulation. The study quantified the energy use and emissions associated with SIP production and compares this with the savings in energy and greenhouse gas that result from the use of SIPs compared to stick framed construction. The life cycle stages evaluated include: all steps in the production of R-Control SIPs with EPS insulation from raw material extraction, through manufacturing, shipment to the project site and finally electricity and natural gas consumption for heating and cooling of the building over its 50 year life use.

## Payback.

Energy and greenhouse gas savings are determined by comparing the heating and cooling energy requirements for a typical stick framed house to the same house built with R-Control SIPs. The typical stick framed house is 2x6 wood frame construction with R-19 fiberglass insulation.

**Energy and GWP Investment**

SIPs vs. Stick Frame	Energy Investment Millions Btu's	GWP Investment tons CO <sub>2</sub> Equiv.
SIP	177.1	9.63
Stick Frame	110.4	5.87
Investment	66.7	3.75

**Average U.S. saving in energy use  
and global warming potential.**

SIPs vs. Stick Frame	Energy Savings Millions Btu's	GWP Savings tons CO <sub>2</sub> Equiv.
SIP Annual Savings	13.2	0.99
SIP Savings over 50 yrs.	660	49.6

<b>Investment Payback Period</b>	<b>5.1 years</b>	<b>3.8 years</b>
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## Summary.

Results of the study proved the significant energy savings achieved over the long-term by the use of R-Control SIPs and showed substantial reductions in greenhouse gas emissions.



**SIPs**



**CONTROL,  
NOT COMPROMISE.®**

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

- SIPs reduce air leakage
- Lower air leakage results in lower energy consumption and reduced global warming potential
- EPS insulation reduces energy consumption
- Lower energy consumption reduces carbon dioxide emissions



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