Highly-Insulating (R-5) Windows and Low-e Storm Windows Volume Purchase Program

What You Need to Know

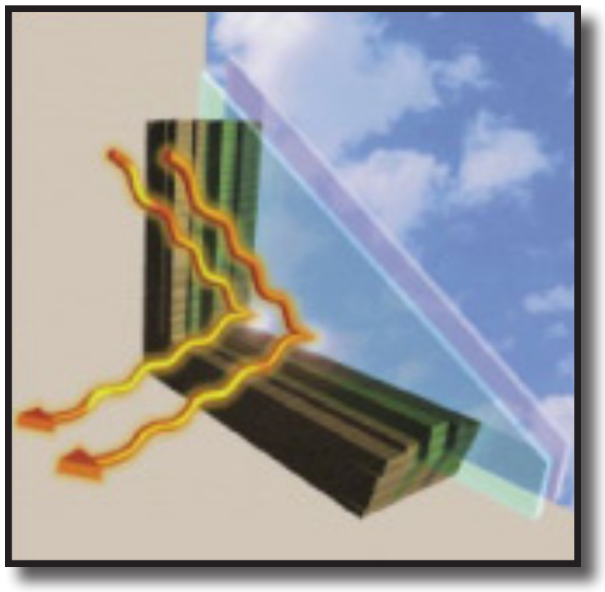
Windows have traditionally been a large source of heat loss within buildings. Substantial improvements have been achieved with insulating glass and low-E coatings, but the potential for even greater heating energy savings with highly-insulating windows still remains largely untapped.

What are Low-e Storm Windows?

Storm windows can reduce heat loss through the windows by 30% to 40%, and low-e storm windows save even more energy. Low-e coating(s) are microscopically thin coatings applied to the window glass that help keep heat inside during the winter and outside during the summer.

Chicago Low-e Storm Window Study

HUD's PATH program, along with the DOE and industry partners, sponsored a field evaluation to investigate the performance of low-e storm windows. The local weatherization agency in Chicago identified 6 older homes with single pane windows to use in the study.



Low-e coating on the glass reflect heat back into the room during the winter months.

The Facts

- Energy usage measured in the winter of 2005-2006.
- Monitoring began with single pane windows in late October 2005
- Low-e Storm windows were added in January 2006
- Monitoring continued through March 2006

Conclusions from Chicago Study

- Clear glass storm windows reduced the whole house heating load by 13% with a 10 year simple payback.
- Low-E storm windows reduced heating load by 20% with less than a 5 year simple payback.
- Reduction in summertime cooling requirements may also provide additional energy savings.

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Overcoming Barriers to Widespread Adoption of R-5 Windows

To overcome these barriers, the Building Technologies Program (BTP) of the Department of Energy (DOE) is employing a three-pronged strategy:

First, BTP is working with industry and potential buyers to drive down the production cost of low-e storm windows as well as issuing production engineering awards to window manufacturers to achieve this goal without sacrificing performance. Second, in order to establish economies of scale, BTP is organizing a volume purchase of low-e storm windows, and third, BTP is planning to build greater awareness of highly insulating and low-e storm windows by establishing more stringent ENERGY STAR criteria.

The Pathway to Zero Energy Buildings

The Building Technologies Program has embraced the strategic goal of developing net-zero-energy buildings to reduce national energy consumption. A net-zero-energy building is a residential or commercial building with greatly reduced needs for energy through efficiency gains (60 to 70% less than conventional practice), with the balance of energy needs supplied by renewable technologies. Highly insulating windows are a key stepping stone to achieving net-zero-energy buildings. Likewise, there is a considerable interest by builders and developers in many utility service territories that are planning or constructing homes and neighborhoods to meet net-zero energy goals.

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Windows Volume Purchase

A volume purchase involves a number of steps:

- Identification of buyer base including potential governmental and private sector customers
- Communication with manufacturers about appropriate technical and economic criteria based upon customer expectations
- Specification and interested manufacturers bid

Customers then have the opportunity to purchase the listed products from that web site. Manufacturers are able to lower their price at any time, but may not raise it, and are able to delist products at any time.

Schedule for volume purchase:

- Volume purchase RFP: December 2009
- Manufacturer proposals: February 2010
- Qualified vendors contacted: March 2010
- Window products available: Spring 2010 – mid 2011
- Phase II volume purchase: February 2011

March 2010

U.S. DEPARTMENT OF ENERGY
Energy Efficiency & Renewable Energy

EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov/informationcenter

For More Information on the Volume Purchase Program
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