Windows, Green Buildings and the NFRC

- Presented By:
  - Deb Callahan, MA, NCPM, CAE
  - Chief Executive Officer
  - National Fenestration Rating Council
Wells College, Class of 1985
Go Odds, Beat Evens
The Wells Connection

Una Moneypenny
NFRC Senior Manager
of
Product Development
Nonprofits = Social Innovation
Who We Are
Welcome to NFRC
Each year, the average American household spends $1,500–2,500 on energy bills.

45% of that cost is for heating and cooling. Choosing high-performance windows, doors, and skylights can save you money and keep your home comfortable. We're here to show you how.

What is fenestration, anyway?
Fenestration refers to all things related to windows, doors, and skylights. It originated from the Latin word "fenestra," meaning "opening."

What higher energy performance means for your home.

Higher efficiency, lower energy bills.
Windows, doors, and skylights may appear passive, but they're always performing. High-performance products regulate the flow of heat and light that comes in and out of your home, keeping your electricity costs low.

Natural light that doesn't add heat.
Certain products use spectrally selective glass that blocks infrared light while still allowing high levels of visible light—so you can daylight your home while maintaining comfortable temperatures.

Consistent temperatures, and consistent comfort.
What??

fen·es·tra·tion
ˌfenəˈstrəSHən/
Noun
ARCHITECTURE
the arrangement of windows and doors on the elevations of a building.

BOTANY
ZOOGOLOGY
the condition of being fenestrate.

MEDICINE
a surgical operation in which a new opening is formed, especially in the bony labyrinth of the inner ear to treat certain types of deafness.
MISSION
NFRC is committed to advancing continuous improvement of windows, doors, and skylights, contributing to making buildings more comfortable and energy efficient.
VISION

NFRC empowers people to create better buildings, increasing public awareness of energy efficiency and environmental responsibility, thereby enriching the wellness of those who choose NFRC-certified fenestration products.
Organizational Structure
Who We Work With

- Serves nearly 800 manufacturers and program participants
- 761 active manufacturers
- Members represent a wide spectrum of fenestration professionals - material research, manufacturing, installation & inspection
- NFRC's Certified Directory has 7,704 product lines
- 51,460,134 active products
NFRC's Outreach
Our Roots
Our Roots ca. 1970s

Compensating for heat loss accounted for 25% of all heating dollars spent in the U.S.

New fenestration technologies introduced

Energy Crisis extended beyond just gasoline
Growing Field of Fenestration

New Technologies:

- Helped improve energy performance but also brought confusion
- Some manufacturers made outlandish claims
- Industry stakeholders recognized the need for change
Origins of Window Ratings

Seattle established first products directory

Selling products in Seattle required being on the list

Other states started to follow
Here Come the Big Guns

Federal government encouraged the fenestration industry to act.

California created first plan for statewide rating and labeling system for fenestration
California tends to be a trendsetter

Washington and Oregon followed suit

Industry did not want 50 different ratings systems

National Energy Policy Act of 1992 recognized NFRC as the country’s fenestration energy performance rating and labeling organization
Our Unique Role
NFRC’s Ratings

Standardized methods for determining the energy performance of windows, doors and skylights

A “level playing field” to compare fenestration products

Fair, accurate, and credible ratings
PRODUCT CERTIFICATION PROGRAM

Independent Certification Programs

Test Labs

Simulation Labs
THE NFRC LABEL

World’s Best Window Co.
Millennium 2000+
Vinyl-Clad Wood Frame
Double Glazing • Argon Fill • Low E
Product Type: Vertical Slider

<table>
<thead>
<tr>
<th>ENERGY PERFORMANCE RATINGS</th>
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<tbody>
<tr>
<td>U-Factor (U.S./I-P)</td>
<td>0.30</td>
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<tr>
<td>Solar Heat Gain Coefficient</td>
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<table>
<thead>
<tr>
<th>ADDITIONAL PERFORMANCE RATINGS</th>
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<tbody>
<tr>
<td>Visible Transmittance</td>
<td>0.51</td>
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<tr>
<td>Air Leakage (U.S./I-P)</td>
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</tr>
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Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer’s literature for other product performance information. www.nfrc.org
Reaching the Consumer
Reaching the Consumer

https://www.youtube.com/watch?v=nlfzmL2KviY

https://www.youtube.com/watch?v=47r3O8B-pxg
RECOGNIZED IN BUILDING CODES

International Energy Codes Council

ASHRAE

EPA’s EnergyStar®

USGBC’s LEED Program
Why We’re Important
Buildings = Energy Hogs

Cost of inefficient windows in US is $50 billion annually (LBNL)

Heat gain and heat loss through windows are responsible for 25%–30% of residential heating and cooling energy use. (DOE)

Switching out your single-pane or even your newer double-paned, clear-glass windows to energy-efficient windows, can save up to $465 a year (EPA).
Windows Impact the Building Environment

- Hospital patients heal faster with less medication
- Students learn faster and retain information better
- Retail sales improve
- Improves mood and sense of wellbeing
- More control over one’s environments
NFRC is Important Because Comfort & Energy Are Important

Performance

Occupant Comfort & Sense of Wellbeing

Longevity

Energy Efficiency

Appearance

Cost Effectiveness

Occupant Comfort & Sense of Wellbeing