

A “Wake-up” Call for Consumers: The Future Mission of the National Fenestration Rating Council

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Americans need a “wake-up” call on the costs of energy inefficient windows and window products. Home owners, businesses, commercial property renters and owners, and others are spending more than \$20 billion a year in unnecessary heating and cooling expenses, according to the U.S Department of Energy. Most do not know they have an alternative. That alternative, an energy efficient window, could dominate the market in a few years *if* the National Fenestration Rating Council and its members are successful in transforming the market through consumer education. NFRC’s main task in the next four years is to build consumer recognition of the NFRC labeling program and what it means to the consumer.

The NFRC has developed a unique public/private institutional arrangement that exemplifies the nation’s preferred approach to addressing our future energy problems; a public/private partnership that is poised to use market forces to accomplish a transformation in the window industry. The benefits of that market transformation, to be generated by a strong NFRC technical labeling and rating system and a targeted information program, will yield over one quad in energy savings by the year 2020. It is NFRC’s vision that the NFRC label will become the basic indicator of a “good window,” one that is worth the added cost, if any. Further, that label will become the means by which market recognition and consumer awareness will “pull” the industry toward energy efficiency while at the same time meeting other consumer demands, such as high quality, design, and appearance. Once transformed, the market will generate economies in design, scale, and distribution that will lower the unit cost of these higher quality window.

INTRODUCTION

The National Fenestration Rating Council was established in 1989 in order to establish a fair and accurate system for rating the thermal performance of windows, doors, skylights and other fenestration products and to ensure its uniform application on a national basis. Its mission is “to establish a fair, accurate, and credible energy performance rating system and to coordinate certification and labeling activities to ensure their uniform application.”

The Council is unique to the building industry because it is a working public/private collaborative represented by the fenestration and glazing industry, the building industry, government, utilities, and consumer groups. Its twelve member Board of Directors, which is responsible for decision-making with the aid of six committees, consists of representation from each group. The Council has currently developed and is implementing a uniform national rating system for energy performance of fenestration products. This system:

- benefits consumers looking for accurate and consistent information,
- helps utility demand side management and consumer program efforts,

- supports state code bodies interested in developing cost-effective and uniform building standards,
- provides manufacturers with a computerized means of designing new products,
- rewards manufacturers for developing energy-efficient products through proper product differentiation,
- encourages investments in energy-efficient window manufacturing processes and their resultant products, and
- eliminates costly requirements for different rating systems in different local jurisdictions.

To date, NFRC has established procedures for rating the thermal transmittance (U-factor) and solar heat gain performance of a variety of products. Rating procedures for other energy performance parameters, such as annual energy performance, air leakage, condensation resistance and long-term energy performance, are in various stages of completion.

In addition, NFRC has also established and implemented a number of ongoing operational programs and procedures to

support the accuracy, integrity, and uniformity of the energy performance rating system. These programs include the NFRC Laboratory Accreditation Program, the NFRC Certification Agency Program, and the NFRC Product Certification Program.

How is NFRC helping to improve the fenestration industry?

The advent of the Council, coupled with major improvements in fenestration technology, has transformed the industry. In the past six years the industry has shifted its focus toward improved energy performance due to the pressures brought to bear by codes and standards and increasing customer demand for energy efficient products. By December of 1993, NFRC had rated and certified over 3,800 residential fenestration products. The average U-factor for those products was 0.55. By November of 1995, NFRC had rated and certified almost 22,000 products with an average U-factor of between 0.35 and 0.40.

This trend toward better, higher performance windows, doors, and skylights remains primarily a West Coast phenomena because of the more stringent energy standards employed by California and the Pacific Northwest states. The members of the National Fenestration Rating Council want to change the West Coast “only” pattern and assure transformation of the market in all regions of the country.

The NFRC has now added three additional rating procedures to the original U-factor. These three, solar heat gain, optical properties, and air leakage, make the NFRC rating system a must for every region of the country. The Council has recently implemented a broad and far-reaching communications and education plan aimed at assuring that all the “players” in the fenestration market, whether they are consumers, builders, designers, specifiers or code officials, understand what NFRC ratings are, the importance of good fenestration product energy performance, and the dollars and energy that can be saved by demanding high performance fenestration products in their new homes and places of business.

The NFRC is in a unique position to affect this change. It is a public/private collaborative, with membership from the fenestration industry, government, utilities, builders, designers, and consumers. While it is federally-mandated by the Energy Policy Act of 1992, it is very much an industry supported venture which includes most of the nation’s major product manufacturers and many of the smaller manufacturers. It is primarily supported by membership dues and fees from its product certification program. It has received limited funding, and a great deal of technical support from the U.S. Department of Energy. DOE is not able to fund a comprehensive communications and education program.

The Cost of Inefficiency

Americans need a “wake-up” call on the costs of energy inefficient windows and window products. According to the U.S. Department of Energy, homeowners, businesses, commercial property renters and owners, and others are spending more than \$20 billion a year in unnecessary heating and cooling expense. Most do not know they have an alternative. That alternative—an energy efficient window—could dominate the market in a few years with the help of NFRC’s communication and education plan that seeks to transform the market for these products.

The NFRC Communication and Education plan has four objectives:

1. Transform the marketplace by enabling products with superior energy performing characteristics to be clearly and successfully differentiated by all consumer interests. The vision is that the NFRC label will become the key driver of consumer decisions about windows and window products.
2. Create a high level of market awareness and understanding about the energy performance of windows, doors, skylights and other fenestration products, and the role these products play in building energy use. Through education, consumers and other players in the market will see the value of energy efficient windows.
3. Ensure that all of the different types of “consumers”—builders, remodelers, architects, utilities, national and state code and regulatory agencies, retailers, and homeowners—rely on NFRC energy ratings and labels. NFRC’s objective is to build a commonly-accepted standard that becomes the consistent yardstick for quality and energy efficiency.
4. Gather and evaluate important information about the fenestration marketplace and its dynamics and key “drivers,” thus equipping NFRC with direction for a longer term communications and education campaign. NFRC wants to become a “learning organization.” It sees this communications and education plan as a vehicle not only to promote change, but also to bring valuable insight back to NFRC and its members about the dynamics of the market.

Creating Market Transformation

The benefits of a complete market transformation, to be generated by a strong NFRC technical labeling and rating system are already in place, and a targeted information program is about to begin. In the estimation of the Department of Energy, this effort could yield over one quad in energy

savings by the year 2020. It is NFRC's vision that the NFRC label will become the basic indicator of a "good window." Further, that label will become the means by which market recognition and consumer awareness will "pull" the industry toward higher efficiency levels while at the same time meeting other consumer performance needs such as quality, design, and appearance. Once transformed, the market will generate economies in design, production, and distribution that will lower the unit cost of these higher quality windows as well.

NFRC's Strategy

The major barriers to change in the window market have been:

- (1) lack of a technical standard to measure energy efficiency; and
- (2) lack of information and education in the marketplace on the implications of that standard, from building codes, to production, to point-of-sale.

The NFRC communications and education plan intends to build a high level of awareness of its energy rating and labeling program by:

- eliminating market confusion over window energy performance and the various options available in window construction that affect performance (frame materials, glazing systems, low-e coatings, inert gas fills, etc.);
- helping consumers select, specify or purchase the appropriate fenestration product for a particular application or condition;
- protecting consumers from unsubstantiated energy performance claims by providing a standardized energy performance rating (like MPGs for cars and Energy Guide labels for appliances);
- affording an easy mechanism for determining energy code compliance; and,
- activating distribution channels that will promote the use of NFRC performance rating.

NFRC is successfully addressing the first barrier with its labeling and rating system. NFRC has worked hard to understand the fenestration market system, its decision makers and dynamics, and has developed a whole-product energy performance rating, certification, and labeling system. By evaluating the entire product, not just its glass or other individual components, the NFRC system provides consum-

ers with directly comparable energy performance information for one of the most significant contributors to their energy bills. But again, consumers must be able to use the system to make informed decisions.

While the NFRC whole product rating procedures have been supported by organizations representing engineers, utilities, builders, and consumers, wholesale integration of NFRC labels into the market system has not yet occurred.

Getting the right information into the marketplace is the more pressing challenge. We believe that without a professional, targeted campaign, the road to market transformation will be long and difficult. NFRC plans to combat the second barrier through a comprehensive plan. The initial focus of the communication and education plan will be to target the nation's consumers.

1. *Communication and Education Materials Development*

NFRC and a public relations firm will develop a variety of "communications" materials for distribution to the selected interest groups. These materials will include information packets, brochures, fact sheets, product directories and "consumer's guides" designed to meet the needs of each audience. The materials will be developed in a variety of formats, but all will provide contact information, describe how the energy performance rating system works, and explain how to read and interpret the NFRC labels.

The "educational" components of the plan focus on utilizing a variety of educational forums to build greater familiarity with and use of the NFRC energy rating and labeling system. (e.g., through seminars, educational workshops and trade and professional association meetings.)

The specific groups targeted by the communication and education plan are listed below along with some of their specific needs. The list of needs shown here assumes that ALL users identified need accurate energy performance information and the ability to compare different products as to their energy efficiency.

One of the key educational items to be developed is a "Consumer's Guide to Selecting the Right Windows, Doors and Skylights." This will build on the work of the U.S. Department of Energy in its "Residential Window Design Guidelines." This *Guide* would be provided to consumers along with a copy of the NFRC *Certified Products Directory* to assist in making informed product purchase decisions. The *Guide* would also be available for sale through retail outlets, building supply centers, and other distribution outlets.

Table 1.

Targeted Audiences in Priority Order	Needs
1. General Public	Performance comparisons, efficiency reliability, protection from unsubstantiated efficiency claims
2. Retailers	Assistance with selecting the right products to purchase and sell, educational materials for their customers
3. State Energy Officials/Building Code Bodies	Code compliance and reference mechanisms
4. Building Industry (new construction and remodeling)	Reduced liability, improved product efficiency marketing tools, code compliance mechanisms
5. Utilities	Information to develop marketing and DSM tools showing the benefits of energy efficient fenestration
6. Window, Door and Skylight Manufacturers (Fenestration Industry)	“Level playing field” on energy performance, ability to differentiate products based on efficiency improvements
7. Architects, Designers, Specifiers	Improved specifications regarding fenestration performance, reduced liability, educational tools
8. Engineers, HVAC Contractors, Energy Analysts	Improved accuracy in sizing HVAC equipment, reduced liability from oversizing or undersizing systems due to fenestration performance inaccuracy
9. Federal Agencies	Consumer information about energy efficient fenestration, guidelines for federal agencies, property owners and building managers on fenestration energy efficiency

2. *Reaching Out To These Consumers:*

Once the initial communication and education materials have been completed, the NFRC will launch a nationwide campaign to reach the key audiences outlined above.

Educational training will be the primary NFRC focus for many of the target audiences. Building code officials, state and national code bodies, engineering associations, architectural associations and manufacturer sales forces are all specifically targeted for educational seminars on fenestration energy performance and use of the NFRC energy rating and labeling system. NFRC adoption into state and national building energy codes is a high priority supported by these communication and education efforts.

NFRC will measure its success in market transformation by indicators such as these:

- A majority of manufacturers will display the NFRC label on their products;

- Utilities will endorse NFRC labels through billing information and handouts;
- All states that have a building energy code will require NFRC labels;
- Consumers will demand energy ratings and labels prior to product purchase;
- Architects and engineers will specify NFRC labeled products;
- Builders will demand NFRC energy ratings and labels for their products;
- Banks and other financial institutions will recognize the effects of fenestration energy efficiency when issuing a mortgage; and
- Real estate transactions and advertising will reference NFRC energy ratings.

NFRC wants to be a “learning organization” and program evaluation is an important aspect of the learning process. These indicators, and others to be developed with the help of the marketing and public relations firm, represent criteria for evaluation of the success of the communication and education program. We intend to document our experience so others may learn from it. NFRC believes that its communications and education effort will significantly alter the fenestration market by creating a broad consumer demand for rated products and high performance products. Consumers need an efficiency yardstick to assist in the selection of high performance products that meet their budgets. The NFRC energy rating and labeling system is that yardstick.

REFERENCES

NFRC Multi-Year Plan

NFRC Communications and Education Plan

NFRC Proposal to the Energy Foundation

NFRC Certified Products Directory