

The NFRC Label: A Tool for Meeting and Exceeding Building Energy Codes



How do your windows rate?

If you want to know how windows, doors, and skylights perform, you should get to know the National Fenestration Rating Council (NFRC).

We are a clearinghouse that provides all the information you need to choose these products strategically so you can improve energy efficiency and save money.

NFRC compiles information from a wide range of industry resources to deliver easy access to news, information, and research that clearly shows the improvements windows, doors, and skylights can make over the long-term. NFRC is also an expert source of information on the benefits of building energy codes. These codes establish minimum performance requirements for many different kinds of products -- including windows, doors, and skylights.

Building energy codes are important because they offer many benefits, including the following:

- Contributing to sustainability and a prosperous future.
- Lowering operating costs in residential non-residential buildings.
- Creating healthier and more comfortable living and working conditions.

Understanding building energy codes helps you choose the windows, doors, and skylights that maximize these benefits. Best of all, NFRC offers you professional guidance in understanding building energy codes and a user-friendly tool known as the Certified Products Directory (CPD). This tool enables you to quickly and easily compare products. The CPD gives you all the performance information you need to meet or exceed building energy codes and decide for yourself which product is right for you.

The CPD contains performance information on more than three million products, and it is always accessible at www.nfrc.org.

NFRC and Building Energy Codes

What exactly is NFRC? It's a label on a product. Our label tells you whether the product meets or exceeds building energy codes and puts you on the path to savings and improved comfort.

Why is the NFRC label important? Because energy is important. The U.S. Department of Energy (DOE) estimates that the amount of energy lost annually through windows is \$35 billion.

Furthermore, the average American household spends \$1500 - \$2500 every year on energy bills, and about 45 percent of this amount is for heating and cooling. By using the NFRC label to ensure they are meeting building energy codes, owners of residential and non-residential buildings can reduce their energy costs while improving their comfort and saving money.

When you see the NFRC label on a product that means it has been tested by an independent, third-party organization that has no vested interest in the outcome of the test. The label certifies that the product will perform the way its manufacturer says it will perform. You can then easily determine for yourself whether the performance values shown on the label meet the building energy codes for your home. It's just that simple.

Why Independent Testing is Important

Independent, unbiased testing gives you peace of mind. It empowers you to purchase windows, doors, and skylight with confidence. It also assures you that you are making the right decision for yourself and investing your money wisely.

The NFRC label is highly regarded and commands respect throughout the building industry. In fact, to qualify for an ENERGY STAR label, residential windows must be NFRC certified. NFRC's rigorous certification program has even served as a model for some of the U.S. Environmental Protection Agency's (EPA) efforts to develop its new certification body requirements.

Background of Building Energy Codes

The DOE says building energy codes provide the foundation for a sustainable energy future. Such codes set the minimum energy efficiency requirements for designing, constructing, and renovating buildings.

You should care about building energy codes because they provide a standard for evaluating energy usage in residential and non-residential buildings. This standard also assists in identifying and adopting the technology that can help you reduce the amount of energy that is literally going out the window.

By continually improving these minimum requirements, energy codes contribute to cost savings over the lifecycle of residential and non-residential buildings, freeing up money to invest in other energy-saving projects.

Who Governs Building Energy Codes?

According to the DOE, building energy code adoption occurs through legislative or regulatory action. When code adoption is accomplished through legislation, a committee is formed to draft the legislation. When adoption occurs through a regulatory process, however, a state or local government will create an advisory board that represents a variety of interests to prepare the code for adoption. The board considers local preferences and construction practices during the process. Ultimately, the wording of the code is made available for public review and comment.

International Code Council (ICC)

The International Energy Conservation Code (IECC) is a document developed under the International Code Council (ICC). The ICC uses a consensus process. People from all industries are welcome to participate in building energy code development. The final vote on the content of the codes, however, is conducted by ICC members.

According to the ICC, the IECC is just one of 14 model codes contributing to building construction regulations. ICC codes are updated every three years. States and jurisdictions can adopt, implement, and enforce the IECC as their energy code. Before adopting the IECC, however, states and jurisdictions often make changes to reflect specific building practices or energy-efficiency goals.

American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)

A building energy codes standard known as 90.1 is developed under the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE). According to ASHRAE, it uses the American National Standards Institute (ANSI) consensus process to represent a balance of interests. According to ASHRAE, individuals participate in the development of the 90.1 by addressing committees, participating in subcommittees, or commenting during the public review process. Voting includes members from a balance of all interests, not just government representatives. Revisions to the 90.1 standard are ongoing and are approved only when balance is achieved among the categories that are affected by the revisions. Prior to the adoption of ASHRAE 90.1, state and local governments make changes in accordance with specific building practices or energy-efficiency goals.

Beyond-Code Programs

The DOE and the EPA point out that forward-thinking states and jurisdictions concerned with energy efficiency, green building, and sustainability often build upon the baseline building energy codes developed by ASHRAE and the ICC. They do this by adopting “Beyond-Code” programs. These codes are sometimes called “green” or “stretch”

codes. Sometimes, these become the new minimum codes. Many states and jurisdictions provide financial incentives to those who adopt Beyond-Code programs.

Green codes and stretch codes strive to achieve maximum energy efficiency in buildings. Their requirements are more rigorous than minimum building energy codes. They also address specialized issues that are not usually covered in certain building energy codes.

Most Beyond-Code programs use the IECC and/or ASHRAE 90.1 as their foundation.

Are Beyond-Code Programs Popular?

According to the DOE, about 300 Beyond-Code programs had been adopted nationwide as of 2009. While they are intended to be innovative, the implementation of Beyond-Code programs often comes to be expected. Their proven ability to facilitate improvements in energy efficiency in the residential and commercial building markets quickly emerges as the new standard in many areas across the U.S. This is evident in the fact that green and stretch codes are being increasingly submitted to the ICC or ASHRAE as proposals for change.

Building Energy Codes and You

Building energy codes can help you reduce energy costs and create a prosperous future. You can even play a role in developing building energy codes. They are developed in public forums, where all stakeholders are encouraged to offer their ideas for improvement. In fact, these forums are specifically designed to serve many diverse interests.

Building energy codes are important to you and your future because they drive constant improvement by encouraging window, door, and skylight manufacturers to develop new, energy-saving technology.

Understanding the NFRC Label

	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider	
	ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient	
0.30	0.30	
ADDITIONAL PERFORMANCE RATINGS		
Visible Transmittance	Air Leakage (U.S./I-P)	
0.51	0.2	
<small>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</small>		

Knowing how to read the NFRC label can help you make sound decisions about which windows, doors, and skylights will make your home or commercial building more comfortable and energy efficient.

U-Factor measures how well a product prevents heat from escaping a home or building. U-Factor ratings generally fall between 0.20 and 1.20. The lower the U-

Factor, the better a product is at keeping heat in. U-Factor is particularly important during the winter heating season. This label displays U-Factor in U.S. units. Labels on products sold in markets outside the United States may display U-Factor in metric units.

Solar Heat Gain Coefficient (SHGC) measures how well a product blocks heat from the sun. SHGC is expressed as a number between 0 and 1. The lower the SHGC, the better a product is at blocking unwanted heat gain. Blocking solar heat gain is particularly important during the summer cooling season.

Visible Transmittance (VT) measures how much light comes through a product. VT is expressed as a number between 0 and 1. The higher the VT, the higher the potential for daylighting.

Air Leakage (AL) measures how much outside air comes into a home or building through a product. AL rates typically fall in a range between 0.1 and 0.3. The lower the AL, the better a product is at keeping air out. AL is an optional rating, and manufacturers can choose not to include it on their labels. This label displays AL in U.S. units. Labels on products sold in markets outside the United States may display AL in metric units.

NFRC – Your Source for Information on Building Energy Codes

The information presented in this publication is intended to help you understand what building energy codes are and why they are important. NFRC realizes that no publication can address every aspect of this broad topic. We therefore encourage you to contact us with specific questions. Whether you are a consumer interested in purchasing products or a code official looking for clarification on NFRC's ratings, we're ready to assist you.

Contact NFRC for More Information

Contact us at codesquestion@nfr.org, and we'll answer all your questions about building energy codes and how they may impact you. You can also contact our IECC and ASHRAE codes specialist, [Ray McGowan](#) at 240-821-9510.

For more information on NFRC's activities and programs and the role building energy codes play in making homes and buildings more energy efficient, contact NFRC's Senior Manager, Communications and Marketing, [Tom Herron](#), at 240-821-9505 with your questions.