



# RSL Energy Testing Program



*Energy efficiency and beauty at your doorway!*

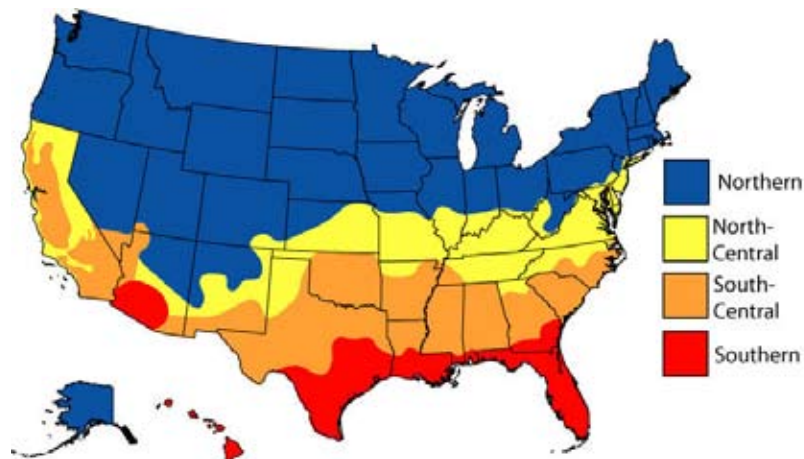


# RSL Green Commitment

RSL, Inc. is committed to conducting business in a manner that demonstrates environmental responsibility and provides our customers with environmentally beneficial products. Our process focus will emphasize waste minimization, resource conservation, product durability, recycling, energy efficiency, geographic sourcing, fuel conservation and procurement of products from vendors that demonstrate environmentally sound practices.

## Energy Star

An energy efficient home does not have to compromise privacy, natural light or beauty at your doorway! RSL doorglass can be used in doors to meet ENERGY STAR and Green Building criteria. RSL includes its U factor and SHGC rating on each label adhered to our doorglass products. The ENERGY STAR Windows Program is a voluntary partnership between the EPA (Environmental Protection Agency) and the NFRC (National Fenestration Rating Council) to promote sales of energy efficient windows and doors. Regional thermal performance standards are defined across four climate zones. Local and state codes may be more or less stringent.





# Green Building Practices

Green building brings together a vast array of practices and techniques to reduce and ultimately eliminate the impacts of buildings on the environment and human health. But effective green buildings are more than just a random collection of environmental friendly technologies. They require careful, systemic attention to the full life cycle impacts of the resources embodied in the building and to the resource consumption and pollution emissions over the building's complete life cycle.

On the aesthetic side of green architecture or sustainable design is the philosophy of designing a building that is in harmony with the natural features and resources surrounding the site. There are several key steps in designing sustainable buildings: specify 'green' building materials from local sources, reduce loads, optimize systems and generate on-site renewable energy.

Building materials typically considered to be 'green' include rapidly renewable plant materials like bamboo and straw, lumber from forests certified to be sustainably managed, dimension stone, recycled stone, recycled metal, and other products that are non-toxic, reusable, renewable, and/or recyclable. Building materials should be extracted and manufactured locally to the building site to minimize the energy embedded in their transportation.

Low-impact building materials are used wherever feasible. However, a common fallacy is that 'green' materials are always better for health of occupants or the environment. Many harmful substances (including formaldehyde, arsenic and asbestos) are naturally occurring and are not without their histories of use with the best of intentions. A study of emissions from materials by the State of California has shown that there are some green materials that have substantial emissions whereas some more 'traditional' materials actually were lower emitters. Thus, the subject of emissions must be carefully investigated before concluding that the natural materials are always the healthiest alternatives for occupants and for the earth.

\* Contact RSL or your local distributor for a signed copy of our Manufacturer's Certification Statement for energy efficiency tax credits.



# RSL Testing

- On July 1st 2010 a new NFRC (National Fenestration Rating Council) requirement for IGUs (Insulated Glass Units) goes into effect regarding performance rating and labeling. This is a federally mandated requirement for Energy Star qualification. As a component manufacturer, no doorglass product can be Energy Star certified alone. RSL, however, has conducted and passed the testing required by NFRC.
- RSL has selected NAMI (National Accreditation and Management Institute), an NFRC authorized company, as its certification agency for this program. Performance testing will be conducted every two years and an audit of RSL's fabrication process will be done twice annually. RSL will identify approved IGU with NAMI logo and approval # etched in the bottom right corner of each IGU.
- Architectural Testing for ASTM E2190 conducted successful seal durability testing (fogging, humidity & accelerated weathering) of RSL sealed insulating glass units and summarized the results in ATI report #89495.01-122-28. NAMI certified these test results (report #NI1009973).
- Architectural Testing conducted Acoustical Performance testing (report #83632.01-113-11). This test measured sound transmission loss.
- Architectural Testing conducted thermal performance simulations of RSL Clear, LowE, GBG, BBG, Impact and decorative doorglass in accordance with NFRC standards for U Factor, Solar Heat Gain Coefficient, and Visible Transmittance. The tests included a wide range of doorglass sizes with various spacer widths, materials, insulating techniques, gas filling, clear tempered and LowE glass. The test were conducted using both polystyrene and polyurethane filled steel and fiberglass doors.





# RSL Testing

- RSL doorglass frames protect against moisture and air infiltration in two ways (frame to glass and frame to door). RSL vinyl and Impact frames both have co-extruded flaps on both frame to glass and frame to door edges. These white, watertight flaps eliminate oozing and provide an excellent seal.
- RSL's injection molded frames use a frame to door sealant that is a white, foamed material combining the best qualities of closed cell foam and elastomer (rubbery) sealants. This high adhesion sealant has moderate surface tack with superior heat resistance (283°F). The frame to glass sealant uses a mildew resistant, solid butyl that will not shrink, crack or become brittle.
- RSL's Hurricane Impact units are engineered to meet high velocity hurricane zone requirements TAS 201, 202 & 203. Tested at Testing Evaluation Laboratories and approved by Florida Building Code #FL11515, this product withstood 9000 pressure cycles against water & air infiltration and has a DP of +/- 60psf.
- RSL Clear, LowE, and GBG doorglass is insulated with aluminum spacer bars, whose horizontal lengths are filled with moisture absorbing desiccant. To ensure accurate identification of the time and location of manufacture, the vertical aluminum spacer bars are etched with "RSL" and the month and year of assembly.
- RSL uses soft coat and hard LowE glass in order to reduce air conditioning energy in the summer and reduce heating in the winter. This energy efficient glass is insulated on the #2 side (sealed in the airspace on the outer pane of tempered glass and facing the inside of the home).



A wide selection of RSL products meet energy efficient requirements.



# Test Standards

**Rigorous requirements ensure durable IGU performance.**

- ◆ **ASTM E2188 – 2002**  
Standard test method for IGU weather & humidity cyclic testing
- ◆ **ASTM E2189 - 2002**  
Standard test method for IGU resistance to fogging
- ◆ **ASTM E2190 - 2008**  
Standard test method for IGU performance. Six samples tested for 105 days in humidity and weather cycling tests with initial, intermediate and final frost / dew point requirements at minimum to -40°C. Two samples tested for 7 days to resistance to fogging with no fogging as pass criteria
- ◆ **ASTM E413-04**  
Standard test method for rating sound insulation
- ◆ **NFRC 100-2004**  
Procedure for determining U-Factors
- ◆ **NFRC 200-2004**  
Procedure for determining Solar Heat Gain Coefficient & Visible Transmittance





# Save up to \$1500 with Stimulus Tax Credit



## How does the new Federal Energy Tax Credit work?

When filing federal tax returns up to \$1500 of the doorglass purchase can be deducted under the 25c - Non-Business Energy Property Tax Credit. The tax credit requirements include exterior doors and windows that:

- are used to improve an existing home,
- must be installed in the taxpayer's primary residence,
- are installed and being used between January 1, 2009 and December 31, 2010,
- have NFRC certified U-Value and SHGC ratings that do not exceed .30.

## How do you claim your Tax Credit?

1. Purchase and install RSL doorglass.
2. Keep receipts. RSL will provide a manufacturer's certificate if requested\*.
3. Use IRS form 5695, which should be available early 2010.
4. Homeowners are not required to submit manufacturer's certificates with tax returns.
5. This credit is not a rebate. Please consult a tax advisor for more details.

\*An online version of the Manufacturer's Certificate can be found on our website at:

<http://www.RSLinc.com/pdf/MFGCERTSTMT.pdf>





## Energy Efficiency Ratings in Steel Doors

Green shaded values meet .30/.30 requirement.

		Green		Green		Green		Red		Blue		Orange			
		1/2" Clear	1/2" Low-E	1/2" Clear GBG	1/2" Low-E GBG	3/4" Low-E	3/4" Low-E GBG	BBG Clear (Closed)	BBG Low-E (Closed)	Decorative w/Caming	Decorative w/Liquid Crystal	Hurricane Impact Clear	Hurricane Impact Low-E	Hurricane Impact Low-E GBG	Hurricane Impact BBG (Closed)
<b>Half Light</b> 36" & 3/4 Oval	U-Factor	.28	.26	.29	.27	.24	.24	.24	.21	.24	.26	.25	.22	.24	.24
	SHGC	.20	.17	.17	.15	.17	.15	.06	.03	.16	.18	.17	.13	.13	.06
	DT/VT	.21	.19	.18	.17	.19	.17	—	—	.17	—	.20	.17	.16	—
	ST	28	28	28	28	30	30	35	35	32	34	39	39	39	35
<b>3/4 Light</b> 48" & Large Oval	U-Factor	.30	.27	.31	.29	.25	.25	.26	.23	.25	.28	.28	.24	.25	.26
	SHGC	.24	.21	.21	.18	.21	.18	.07	.04	.19	.22	.21	.16	.16	.07
	DT/VT	.25	.23	.22	.20	.23	.20	—	—	.20	—	.24	.21	.19	—
	ST	28	28	28	28	30	30	35	35	32	34	39	39	39	35
<b>Full Light</b> 64" & 80"	U-Factor	.36	.33	.37	.34	.29	.29	.30	.25	.29	.32	.31	.27	.29	.30
	SHGC	.31	.27	.27	.24	.27	.24	.09	.05	.25	.29	.27	.21	.21	.09
	DT/VT	.33	.30	.28	.26	.30	.26	—	—	.26	—	.32	.27	.25	—
	ST	28	28	28	28	30	30	35	35	32	34	39	39	39	35

**U-Factor:** Defines the amount of heat loss. The lower the value, the less heat is transmitted through the entry door.

**Solar Heat Gain Coefficient (SHGC):** The portion of directly transmitted and absorbed solar energy that enters the interior. The lower the value, the less heat is transmitted through the entry.

**Daylight Transmission/Visible Transmission (DT/VT):** Measures how much light comes through the entry. The higher the value, from 0 to 1, the more daylight is let in over the unit area of the entry.

**Sound Transmission (ST):** Measures how much sound comes through the entry. The higher the value, the more sound transmission is reduced.

The performance ratings below were developed by Architectural Testing using applicable NFRC procedures for determining whole product performance. The ratings are determined for a fixed set of conditions and specs.





## Energy Efficiency Ratings in Fiberglass Doors

Green shaded values meet .30/.30 requirement.

		1/2" Clear	1/2" Low-E	1/2" Clear GBG	1/2" Low-E GBG	3/4" Low-E	3/4" Low-E GBG	BBG Clear (Closed)	BBG Low-E (Closed)	Decorative w/Caming	Decorative w/Liquid Crystal	Hurricane Impact Clear	Hurricane Impact Low-E	Hurricane Impact Low-E GBG	Hurricane Impact BBG (Closed)
<b>Half Light</b> 36" & 3/4 Oval	UFactor	.28	.26	.29	.27	.23	.23	.24	.21	.23	.25	.25	.22	.24	.24
	SHGC	.20	.17	.17	.15	.17	.15	.06	.03	.16	.18	.17	.13	.13	.06
	DT/VT	.21	.19	.18	.17	.19	.17	—	—	.17	—	.20	.17	.16	—
	ST	28	28	28	28	30	30	35	35	32	34	39	39	39	35
<b>3/4 Light</b> 48" & Large Oval	UFactor	.30	.27	.31	.28	.24	.24	.26	.22	.24	.27	.27	.23	.25	.26
	SHGC	.24	.21	.21	.18	.21	.18	.07	.04	.19	.22	.21	.16	.16	.07
	DT/VT	.25	.23	.22	.20	.23	.20	—	—	.20	—	.24	.21	.19	—
	ST	28	28	28	28	30	30	35	35	32	34	39	39	39	35
<b>Full Light</b> 64" & 80"	UFactor	.36	.32	.37	.34	.29	.29	.30	.26	.28	.32	.31	.26	.29	.30
	SHGC	.31	.27	.27	.24	.27	.24	.09	.05	.24	.29	.27	.21	.21	.09
	DT/VT	.33	.30	.28	.26	.30	.26	—	—	.26	—	.32	.27	.25	—
	ST	28	28	28	28	30	30	35	35	32	34	39	39	39	35

**U-Factor:** Defines the amount of heat loss. The lower the value, the less heat is transmitted through the entry door.

**Solar Heat Gain Coefficient (SHGC):** The portion of directly transmitted and absorbed solar energy that enters the interior. The lower the value, the less heat is transmitted through the entry.

**Daylight Transmission/Visible Transmission (DT/VT):** Measures how much light comes through the entry. The higher the value, from 0 to 1, the more daylight is let in over the unit area of the entry.

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