

TECHNICAL BRIEF

How Performance Data is Calculated

The published performance data of all G.James glass products is calculated in accordance with Window 5.2 using NFRC 100 –2001 environmental conditions.

Window 5.2 is a publicly available program designed to calculate window thermal performances. This method is consistent with both the updated rating procedures developed by the National Fenestration Rating Council (NFRC) and International Standards Organization (ISO) 15099 standard. The Window 5.2 program contains the optical and thermal properties for the majority of glazing products available and can be downloaded (free) from: www.windows.lbl.gov/software/window/window.html

Why Was The Program Developed?

The windows program was developed to standardize the measurement and calculation procedures for window and glazing industry. It is designed so that the program and the results it generates reflect best practice in the industry.

How Are The Performance Numbers Generated?

The basis of the Window 5.2 program is that all glazing products have been measured using the same general procedure where the internal & external reflectance and general transmission have all been measured over a minimum range of 300 to 2500 nanometers. (*Low emittance glazings are usually measured over an extended range up to 40000nm to confirm their far infrared performance*). These measurements are performed using spectrophotometers of suitable and independently confirmed accuracy.

The spectral data of all products submitted to LBNL for inclusion in the Window 5.2 product database (known as the International Glass Database or IGDB), is subjected to a further peer review process before the product is certified for inclusion into the IGDB and Window 5.2 program. This process both ensures an open and transparent acceptance procedure, as well as confirming the accuracy of the data in the program. The raw spectral data for each product in the IGDB is then treated in accordance with both NFRC 300-2001 and ASTM E903-1996 to derive its visible and solar transmittances and reflectance's. A summary of the optical properties of the accepted products is listed in the "Glass Library" of the program.

Finally the Window 5.2 program treats the selected product or product combination under selected environmental conditions, to evaluate its U-Value, SHGC and SC. The standard environmental conditions generally used are NFRC 100- 2001.

The major majority of glass manufacturers quote their performances using NFRC 100-2001 with:

- The U-Value quoted under NFRC 100-2001 winter conditions
- The SHGC and SC quoted under NFRC 100-2001 summer conditions

G.James is proud to draw your attention to its products certification and inclusion into the international glazing database (IGDB).