

Overview

The governing document for spectral data submissions is NFRC 200, Section 5.7.4.1. (Below is the pertinent excerpt.) NFRC 200 requires film manufacturers to provide a set of three spectral data submissions to Lawrence Berkley National Laboratory (LBNL) for NFRC Spectral Data approval. Once the data are approved, they are maintained by LBNL in the International Glazing Database (IGDB). For additional information on how to prepare and submit data please review this webpage <http://www.nfrc.org/optical.aspx>

At this time, all ratings are obtained through computer simulation only; no physical testing is required. In addition, film attachments are only rated for Solar Heat Gain Coefficient (SHGC) and Visible Transmittance (VT), not U-Factor. Film attachment products can be rated on either the interior or exterior glazing surface. Each default glazing system option for a film attachment, as referenced in Table 5-1 below, is rated by NFRC accredited simulators using NFRC-approved software. The simulator will access the IGDB to obtain the necessary film spectral data to simulate the NFRC ratings. The ratings are then submitted to the designated NFRC licensed certification and inspection agency (IA) for approval and NFRC certification authorization.

Film manufacturers pay fees to NFRC for their spectral data submissions and for the Product Certification Program according to the NFRC Fee Schedule. Please note film manufacturers pay an annual per product fee for each set of spectral data files submitted for approval. The set of three spectral data file submissions (film product on single 3mm clear, single 6mm clear, and single 6mm grey) constitutes one product for the purposes of the annual per product fee for spectral data.

NFRC 200 - Section 5.7.4.1. Approved Center-of-Glazing Computational Program

Approved center-of-glazing software shall be used to determine $SHGC_c$ and VT_c .

NFRC approved solar optical data shall be used for the film installed on 3 mm (1/8 in.) clear glass, 6 mm (1/4 in.) clear glass and 6 mm (1/4 in.) grey glass. Any clear glass may be used that has a center-of-glazing $SHGC_c$ of 0.86 ± 0.02 when modeled in configuration A and D below without the film installed. Any clear glass may be used that has a center-of-glazing $SHGC_c$ of 0.82 ± 0.02 when modeled in configuration B and E below without the film installed. Any grey glass may be used that has a center-of-glazing $SHGC_c$ of 0.59 ± 0.02 when modeled in configuration C and F below without the film installed.

The following reference glazing systems shall be simulated with and without the film installed:

- A. Single 3 mm (1/8 in.) Clear.
- B. Single 6 mm (1/4 in.) Clear.
- C. Single 6 mm (1/4 in.) Grey.
- D. Double 3 mm (1/8 in.) Clear/3 mm (1/8 in.) Clear: 13 mm (0.5 in.) air gap.
- E. Double 6mm (1/4 in.) Clear/ 6 mm (1/4 in.) Clear: 7 mm (0.3 in.) air gap.

F. Double 6 mm (1/4 in.) Grey/ 6mm (1/4 in.) Clear: 7 mm (0.3 in.) air gap.

The position (surface number) of the film when installed on the glazing system shall be documented (i.e., #1 to #4).

This will yield the following matrix:

Table 5-1 Center-of-Glazing Values SHGC_c and VT_c

Reference Glazing System	Without Film		With Film		
	SHGC _c	VT _c	Film Posn.	SHGC _c	VT _c
3 mm (1/8 in.) clear	0.859	0.899			
6 mm (1/4 in.) clear	0.816	0.884			
6 mm (1/4 in.) grey	0.576	0.444			
3 mm (1/8 in.) clear 3 mm (1/8 in.) clear	0.761	0.814			
6 mm (1/4 in.) clear 6 mm (1/4 in.) clear	0.702	0.786			
6mm (1/4 in.) grey 6 mm (1/4 in.) clear	0.454	0.395			