



## NFRC Errata and Addendum Log

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### 1. ADDENDUM

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#### 3.1 Definitions

Definitions and terms are in accordance with definitions in NFRC 100 and Terminologies in ASTM C 168, ASTM E 631 and ASTM E 772 from which the following have been selected and modified to apply to fenestration systems.

#### 7.1 ~~Test Methodology~~

~~The Solar Heat Gain Coefficient of the fenestration system shall be determined from the measured values of:~~

- ~~A. the net rate of energy absorption in the calorimeter chamber enclosure, which is presumed equal to the total heat inputs less heat extracted or lost by the system.~~
- ~~B. the incident solar irradiance.~~
- ~~C. the ambient and enclosure temperature differences; and~~
- ~~D. the U factors of the fenestration system and of the calorimeter walls.~~

~~The net rate of energy absorption in the calorimeter enclosure (equivalent to the net rate of energy admitted by the fenestration system) is the sum of the storage in the cell, the energy extracted by the heat extraction system, the heat transfer through the calorimeter walls, the heat transfer through the surround panel and the electrical power inputs. The net heat measured by the calorimeter heat extraction systems is:~~

$$Q_{net} = SHGC A_s E_s - U_s A_s \Delta T_s + Q_{env} \quad \text{Equation 7-1}$$

Where

$Q_{net}$	=	energy extracted by heat extraction system, $W$ (Btu/hr)
$SHGC$	=	Solar Heat Gain Coefficient
$A_s$	=	area of the test specimen, $m^2$ ( $ft^2$ )
$E_s$	=	solar irradiance, $W/m^2$ (Btu/hr- $ft^2$ )
$\Delta T_s$	=	air temperature difference across test specimen, $^{\circ}C$ ( $^{\circ}F$ )
$U_s$	=	U-factor of the test specimen, $W/m^2 K$ (Btu/hr- $ft^2$ $^{\circ}F$ )
$Q_{env}$	=	total energy transmitted through calorimeter walls, surround panel and electrical input from fans or pumps, $W$ (Btu/hr)

Solving for SHGC yields:

$$SHGC = \frac{Q_{net} - U_s A_s \Delta T_s + Q_{env}}{A_s E_s} \quad \text{Equation 7-2}$$

[**Note 1:** In general, by minimizing the temperature difference between the interior air of the calorimeter and the exterior of the calorimeter shell and by shielding the calorimeter exterior from external radiation, we reduce the term  $U_s A_s \Delta T_s$  and can directly calculate SHGC from  $(Q_{net} - Q_{env})/A_s E_s$ . Alternatively, (if the calorimeter is not designed to control  $\Delta T$  to 0) we can calculate  $(Q_{net} - Q_{env})/A_s E_s$  for a number of  $\Delta T$ . A plot of  $(Q_{net} - Q_{env})/A_s E_s$  vs  $\Delta T/E_s$  will give the SHGC (y intercept) and the fenestration U factor (slope).]

## 9.1 Reported Data

Report the following information, where applicable, for the period in which the solar calorimeter is in steady-state conditions as defined by Section 7.4:

W. For Dynamic Glazing Products, reported data shall include ratings achieved at both the full ON and OFF or the full OPEN and CLOSED positions.

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**1. ERRATA**

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Title Page – Address changes

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