



Policy

March 6, 2002
Building Services Division
Department of Public Safety
667 N. Carroll Ave.

SUBJECT: Solar Heat Gain Coefficient (Low – E Glass)

By: Paul Ward, Building Official,

Background: The Texas 76th Legislature adopted the 2000 IECC and IRC effective September 1, 2001. The Cities are required to enforce the codes not later than September 1, 2002. The NCTCOG has recommended the cities begin enforcement January 1, 2001.

Ordinance:

The City is adopting the International Energy Conservation Code, 2000 Edition and the energy provisions of chapter 11, International Residential Code for One- and Two- Family Dwellings effective January 1, 2001.

This section applies to residential construction:

E502.1.5 Fenestration solar heat gain coefficient. In locations with heating degree days (HDD) less than 3,500, (the value for Dallas/ Ft. Worth is 2407 HDD) the combined solar heat gain coefficient (the area-weighted average) of all glazed fenestration products (including the effects of any permanent exterior solar shading devices) in the building shall not exceed 0.4.

Exceptions:

1. Any glazing facing within 45 degrees of true north;
2. Any glazing facing within 45 degrees of true south which is shaded along its full width by a permanent overhang with a projection factor of 0.3 or greater.
3. Any fenestration with attached screens where the screens have a rated shading coefficient of .6 or less.

Policies :

If all the fenestration products in the dwelling have a SHGC of 0.40 or less no additional documentation is required with the plan submittal.

If the builder elects to use any of the exceptions due to orientation such as not using low e glass on north facing sides, then the fenestration products that do not have low e glass must be specifically marked on the plans.

If the various fenestration products have differing SHGC numbers and not all are below 0.40, then the plans shall have a listing showing how many square feet are used at each SHGC level and a calculation giving the area weighted average.

Example: House may contain total of 1000 square feet of typical windows with a SHGC of 0.36 and french doors totaling 80 square feet at 0.48 SHGC and two skylights totaling 64 square feet with a 0.50 SHGC. The area weighted average would be :
 $(1000 \times 0.36) + (80 \times 0.48) + (64 \times 0.50)$ all divided by 1144 or 0.376 In this example the area weighted average is less than 0.40 so the fenestration complies for SHGC even though some units do not meet individually.

Revised 08-13-02 to correct math error. CB