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# TREATMENT OF WINDOWS AND GLASS AREAS

## TEXAS AGRICULTURAL EXTENSION SERVICE

The Texas A&M University System



Dear Energy Saver:

Glass areas, including windows, sliding doors and skylights, can be an energy asset or burden. During the winter months, glass areas allow sunlight into a room and trap its heat. As an energy burden, glass areas can allow cold air to leak into a home in the winter and conduct heated air to the outdoors. In the summer, the heat gained from sunlight can become an additional load on an air conditioning system.

Lower heating and cooling costs can be achieved through proper treatment of windows and glass areas in addition to installation of insulation and maintenance of efficient heating and cooling equipment.

This letter series and other educational programs are provided at no charge by the Texas Agricultural Extension Service. This information should enable you to reduce the energy consumption in your home. If you would like to receive other publications or know more about Extension programs, please contact me.

Sincerely,

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County Extension Agent

## TEXAS AGRICULTURAL EXTENSION SERVICE

The Texas A&amp;M University System



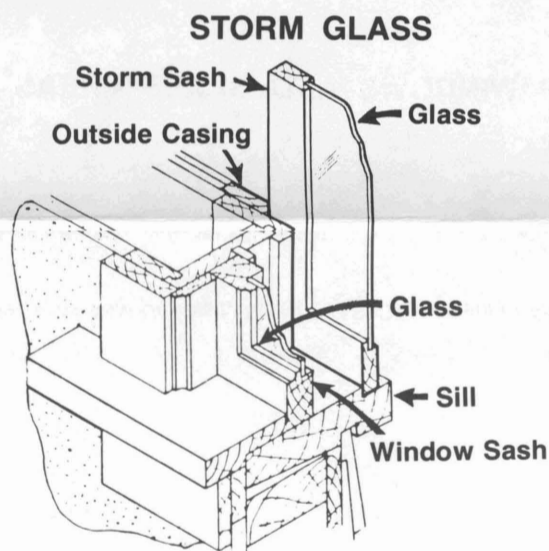
## TREATMENT OF WINDOWS AND GLASS AREAS

### Trap Sun's Heat

South exposures should have the greatest window area, followed by east and west exposures. Window area on north exposures should be minimized. Opening window coverings during the day allows for maximum heat gain.

### Insulate Against Heat Loss

Glass is an excellent conductor of heat and, therefore, a poor insulator. Insulating glass with one-half inch air space can achieve heat loss reduction of almost 50 percent. Adding storm windows will achieve approximately the same reduction.



### Shade Against Summer Heat Gain

Windows should be shaded to prevent summer solar heat gain. Shading is most effective when placed outside the window. Examples of exterior shading devices include awnings, shutters, solar screens, solar films and trees. Roof overhangs also provide protection from solar heat gain. A totally shaded window with air circulation between the shading device and the glass can reduce heat gain by 80 percent.

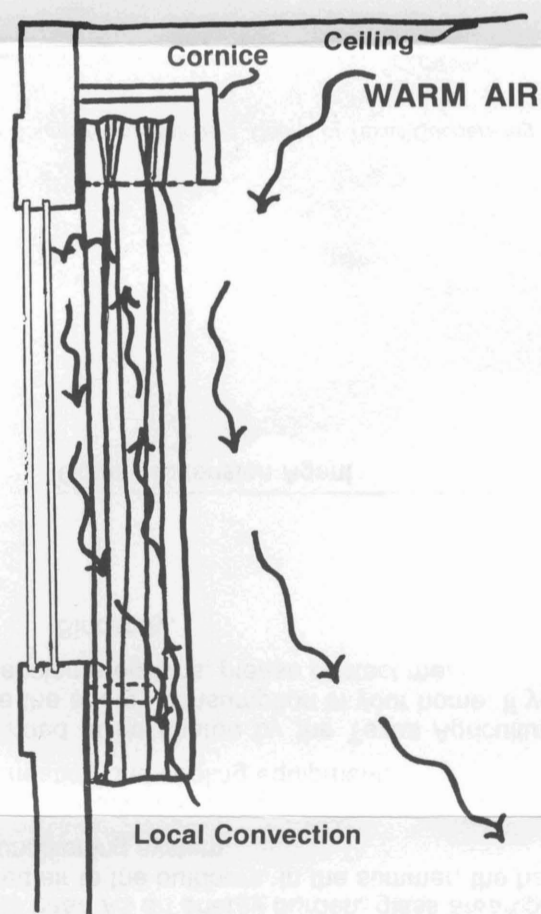
### Minimize Leakage at Windows

Interior window treatments such as draperies, blinds and roller shades can provide some protection, but are less effective because they allow much light in the

house. However, much sunlight can be reflected back out instead of being converted to heat in a room. Some examples of interior devices that reduce solar heat gain and the amount of their reduction are shown in the following table.

Interior Window Treatment	Percent of Heat Loss Reduction
White opaque roller shade	50
White lined drapery	33
Venetian blinds (closed)	29
White translucent roller shade	44

Improve the insulating properties of windows by installing tightly woven, lined draperies or curtains; venetian blinds; or roller shades. A tight fit at the jamb, sill and head improves the insulative effect. A closed-top cornice will stop the movement of heated air out the glass area.



**Tightly-fitted interior window treatments stop movement of heated air through enclosed window space.**

Prepared by Extension housing and home furnishings specialists, The Texas A&M University System.

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THE TEXAS A&M UNIVERSITY SYSTEM  
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