

# PLEXIGLAS® SHEET: Thermal Properties

ACRYLIC SHEET

## Thermal Properties

### PLEXIGLAS® SHEET: U-FACTORS

The amount of heat conducted through Plexiglas® glazing is slightly lower than for glass of the same thickness. The values tabulated below are U-factors for vertical (windows) and horizontal (skylights) Plexiglas® glazing. R-values = 1/U-value. U-values are largely unaffected by the color of Plexiglas® sheet.

**Table 1**  
**U-Factor for Vertical Windows (BTU/hr./sq.ft./°F)**

	Winter Heat Loss*	Summer Heat Gain **
	Sheet Thickness (in)	Sheet Thickness (in)
<b>Construction</b>	0.118, 0.177, 0.236, 0.354, 0.472	0.118, 0.177, 0.236, 0.354, 0.944
<b>Single-Glazed</b>	1.06, 1.01, 0.96, 0.88, 0.81	0.98, 0.93, 0.89, 0.82, 0.76
<b>Double-Glazed</b>		
<b>1/4" air space</b>	0.55, 0.52, 0.49, -, -	0.56, 0.53, 0.50, -, -
<b>Double-Glazed</b>		
<b>1/2" air space</b>	0.47 0.45 0.43 - -	0.50, 0.48, 0.45, -, -

\* 15 mph wind velocity.

\*7.5 mph wind velocity.

**Table 2**  
**U-Factor for Horizontal Panels (BTU/hr./sq.ft./°F)**

Description	Winter*	Summer**
<b>Plastic Bubbles</b>		
<b>Single-Walled</b>	1.15	0.8
<b>Double-Walled</b>	0.7	0.46

\*Values from ASHRAE Handbook of Fundamentals. Thickness not listed; assume 3/16".

\*\*Based on area of opening, not total surface area.

Computer programs are available to calculate the complicated balance of energies due to solar heat gain, heat transfer, daylight and electrical lighting.

Many of the national skylight firms offer this calculation service. In addition, a Skylight Energy Handbook or an IBM computer disc is available by writing: AAMA, 2700

River Road, Suite 118, Des Plaines, IL 60018; or by calling 847-303-5664.

Web Site - WWW.AAMANET.ORG

800 523-7500

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