



PRELCO

PRODUCT DATASHEET

R-max™ Warm-Edge Spacers

GENERAL INFORMATION

What is a warm-edge spacer?

Warm-edge spacers are made from material whose thermal insulating properties are superior to those of traditional spacers. They cut heat transmission around the edges of the glass and increase its total U value and resistance to condensation. Warm-edge spacers are considered to be an essential component in all high performance glazing systems.



How does insulating glass lose heat?

Heat loss in insulating glass occurs in the center and around the edges. The edges extend about 2½" (63 mm) from the outside edge of the glass. No matter what zone heat loss occurs in, it can be reduced by using components having high thermal resistance (see figure 1).

Heat transmission through the **center** of insulating glass can occur three ways:

- **Radiation:** this kind of heat loss can be reduced by the use of Low-E glass
- **Thermal Conduction:** this kind of heat loss can be reduced by the use of noble gas fill such as argon
- **Convection:** this kind of heat loss can be reduced by the presence of a sufficiently wide air space

Heat transmission around the **edge** of insulating glass can only occur one way:

- **Thermal Conduction:** this kind of heat loss can be reduced by the use of warm-edge spacers

Heat loss varies according to the degree of conductivity of the various window components. Heat transmission is greater at the edges than the center of the glazing because it is affected by both the spacer and the frame, which is why it is important to use a high performance spacer.

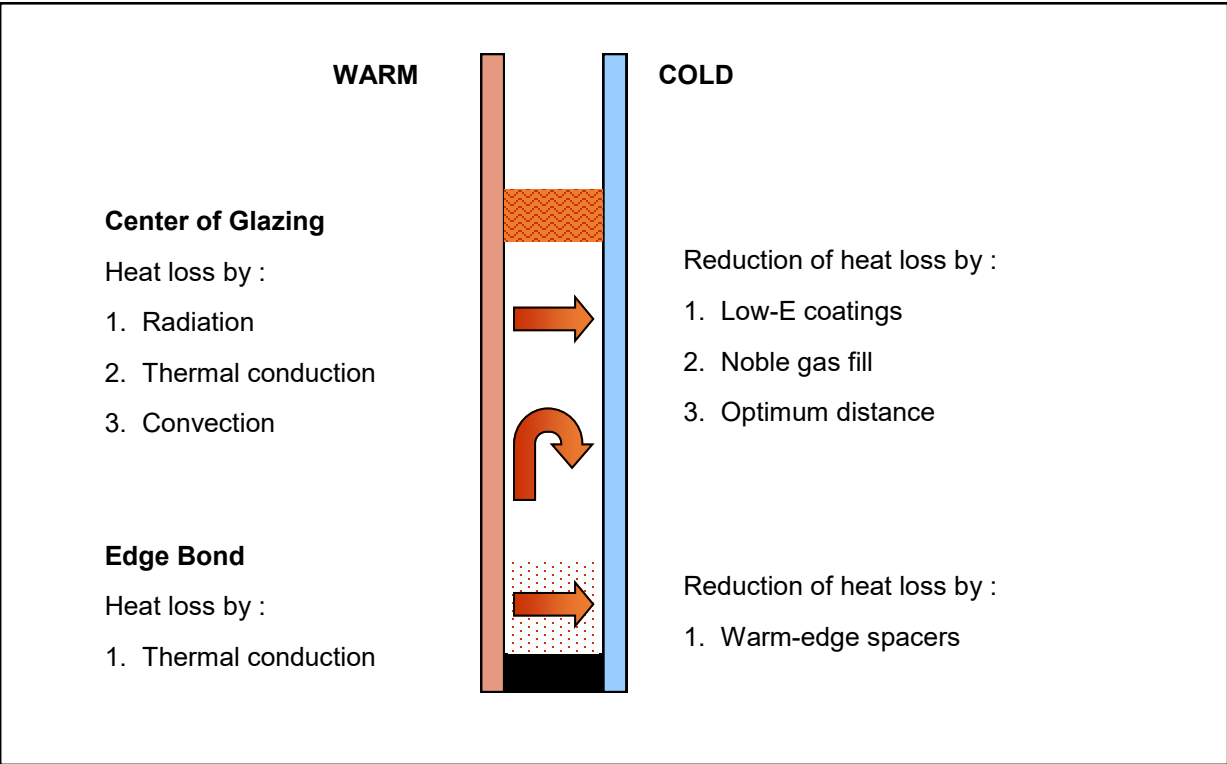


Figure 1 : Heat transmission through a double glazing¹

How do you measure heat transmission at the edge of a window?

The thermal conductivity allows us to measure how much heat a building’s structural elements transmit. This value is expressed as Btu/hr°F or W/K. The lower the value, the better the performance of the material (see figure 2).

CHARACTERISTICS OF R-MAX™ SPACERS

- Composition: high insulating polypropylene and stainless steel
- Colours available: light grey or black
- Thickness of walls: .04" (1 mm)
- Height: .28" (7 mm)

Widths Available*							
po	.30	.37	.45	.48	.53	.61	.69
mm	7.5	9.5	11.5	12.5	13.5	15.5	17.5

* Add .02" (.5 mm) to these dimensions to determine the total width of air space.

	Btu/hr°F	W/K
Warm-edge		
R-Max™	0,0036	0,0019
TPS	0,0038	0,002
Stainless 0,11	0,0063	0,0033
Stainless 0,15	0,0085	0,0045
Swisspacer	0,0099	0,0052
Stainless 0,20	0,0129	0,0068
Cold-edge		
Steel	0,08	0,04
Aluminum	0,23	0,12

Figure 2 : Thermal conductivity of spacers

ADVANTAGES

- Increases the total U value of the window;
- Reduces condensation around the edges;
- Prevents the deterioration of frames caused by condensation and mildew;
- Helps cut heating costs and consequently helps protect the climate;
- Makes the room more comfortable by keeping the surface temperature of the glass higher;
- Great stability to the discoloration caused by UV rays;



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¹ Source: QUEL Ingrid, RANALLO Chris «Warm-Edge Spacers», USGlass, vol.35, n° 3 (march 2000), pp. 52-54.

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