



Thinking about buying insulated replacement windows for your home?



Think about this:

The spacer system you choose is just as important as the window!

 **Edgetech lights the way to a TrueWARM® edge...**



Poorly insulated windows are costly.

Your home's windows and doors may be causing more heating and cooling loss than you realize—even if they are in good condition!

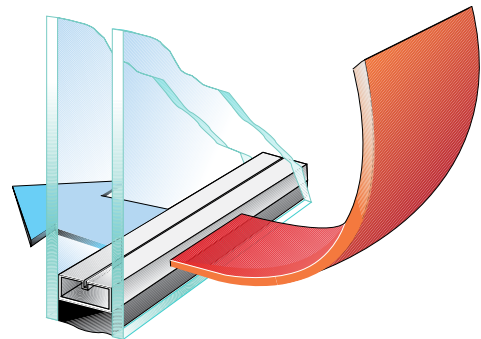
70%
heating

46%
cooling

		Heating/Cooling Loss (B.T.U./hour)		Glass Surface Temperatures	
		°F	°C	°F	°C
Single pane windows					
Movable	1050	10.4	-12		
Fixed	850				
Double pane windows					
Movable	510	40.4	4.7		
Fixed	410				
Triple pane windows					
Movable	330	50.2	10.1		
Fixed	260				

University of Illinois: *Living with the Energy Crisis* - Small Homes Council

80% of the problem
is in the glass.

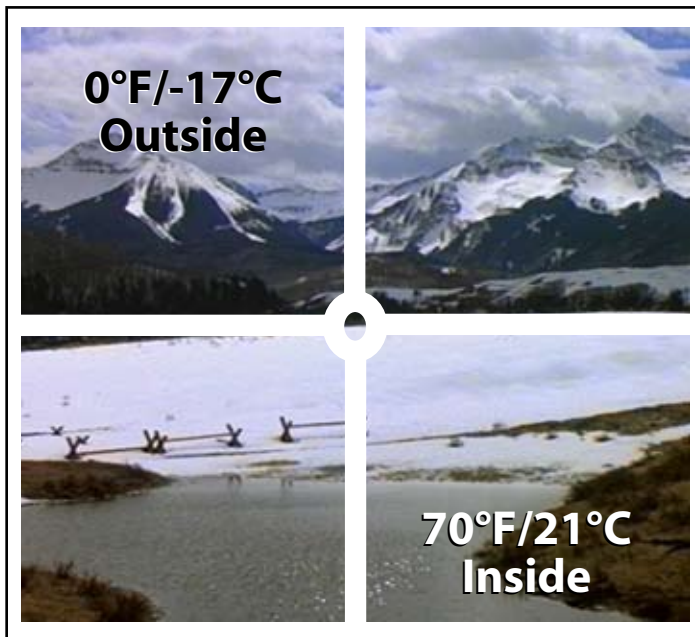
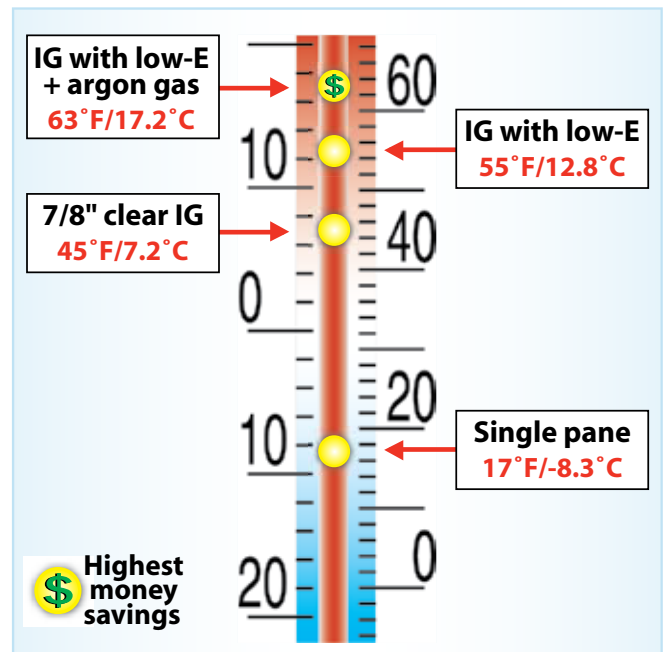


Choose a warm edge window seal for good insulation.

Glazing options give you a choice.

Many glazing options are available to provide various levels of insulation. The **higher** the inside glass temperature, the **more money you save** by preventing heating and cooling loss through the glass.

Inside Glass Temperatures



Different glazing packages offer other advantages, too:

- Energy dollar savings
- Maintenance freedom
- No condensation
- Windows that last a lifetime



State-of-the art glazing protects your investment.

Metal spacers leave you in the cold.

While **aluminum spacer** may be initially inexpensive and easy to work with, it has many **disadvantages**:



- Conducts heat and cold
- Loses 50% R-value at edge
- Has a rigid, inflexible edge
- Appears cold
- Is prone to condensation build-up, which leads to unhealthy mold and bacteria

Take a look at the dramatic heat loss caused by the poor insulating quality of aluminum:

Heat Loss (B.T.U./hour)	Wood	Rigid Vinyl	Steel	Mill Finish Aluminum	Anodized Aluminum	Painted Aluminum
	1.2	1.3	312.0	1416.0	1416.0	1416.0

Figures taken from Chapters 5 and 6 of *Heating, Ventilating & Air Conditioning Guide* and *American Society of Testing Materials*. Public Bulletin G68 - *Window Design Institute of America*.

Aluminum Edge Vulnerability =
heat loss → icing → condensation →
mold/bacteria →

Did You Know?



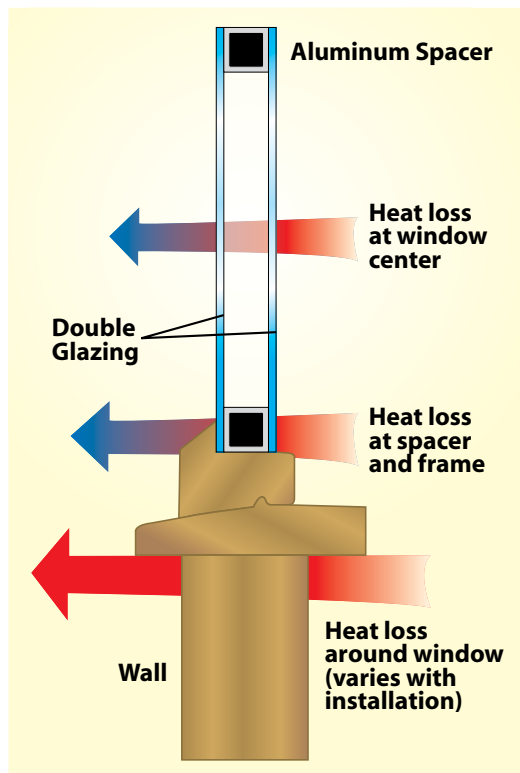
Mold growth has been linked with child asthma and increases in general respiratory illness, allergies and outbreaks of fungal diseases.



Aluminum spacer puts your home and family at risk.

Aluminum lowers unit efficiency.

Heat Loss of Installed Window



Most window manufacturers use aluminum spacers to separate the panes in a double-glazed window. Aluminum is a terrible insulator and actually lowers the efficiency of the whole unit. Manufacturers are experimenting with rubber and fiberglass spacers to cut heat loss in this area.

Many window frames have lower R-values than the high-R glazings they hold. This reduces the overall effectiveness of the window. For example, in the LBL tests, glazing systems that measure R-3.7 in the center of the glass produced overall readings (when the frame and spacers were taken into account) of R-2.85 for wood frames with aluminum frames with aluminum spacers.

At left: In many new windows, heat lost at the spacers and window frame is greater than that lost through the glazing. Overall effectiveness also relies on proper installation of the window.

Printed in Popular Mechanics, June 1994.

To get some idea of just how much of a problem windows really are, think of them as transparent insulation. As insulation, a typical single-glazed window has an R-value of around .88, double glazed windows - 1.6 to 1.75 and single glazed with added storm windows - 1.75 to 1.89.

Printed in Mechanic Illustrated, January 1982.

It comes down to this:

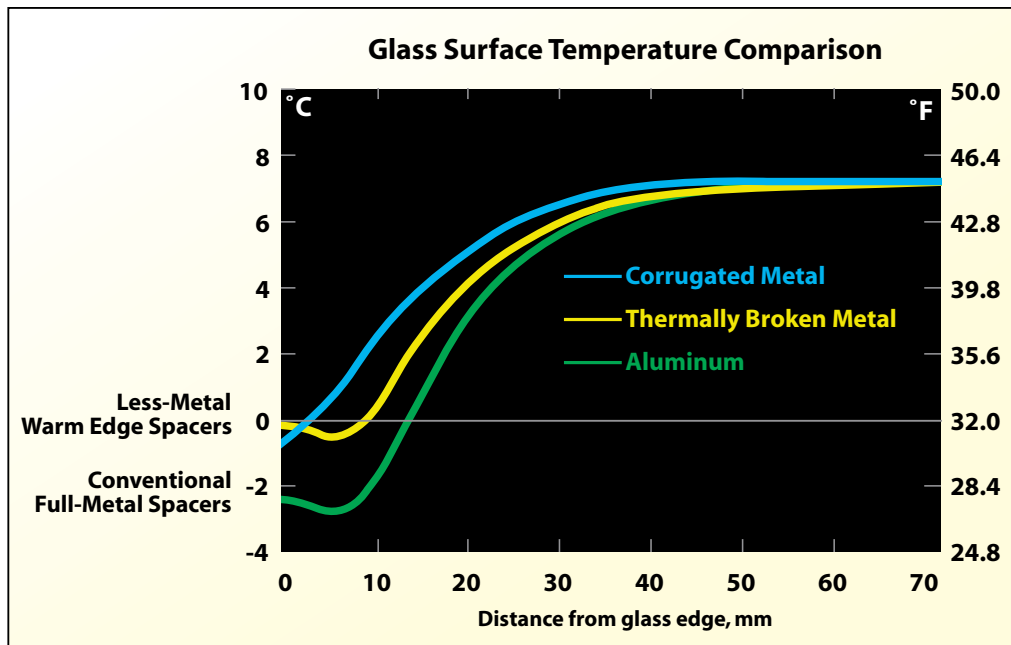
High-performance glazing with aluminum spacer is **no better** than single pane with storm windows



Aluminum spacer compromises glazing effectiveness.

Beware of warm edge lookalikes.

Spacers made of Steel or Wrapped Aluminum claim to be warm edge, and can be 25-50% less conductive than metal.



Research carried out with Thomas Frank of the Swiss Federal Institute for Materials Testing and Research (EMPA).

The problem is that the spacers **contain metal**, so they still **conduct heat and cold** through your windows.

How long will this insulating glass seal last?

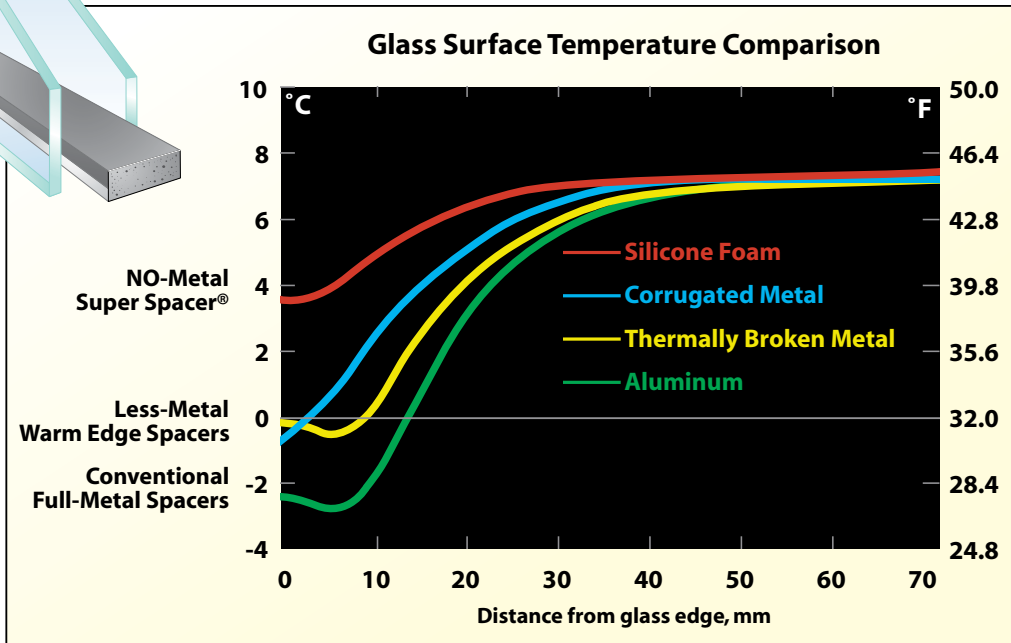
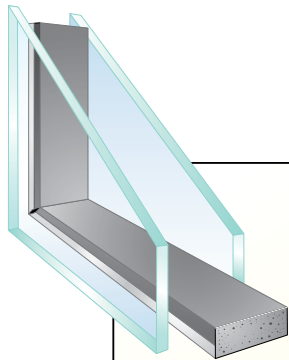
It still expands and contracts and is mostly single seal. **Failure is not if, but when.**



Warm edge substitutes make seal failure inevitable.

Super Spacer's edge is the warmest.

Super Spacer® is the world's only **NO-Metal**, 100% structural foam insulating glass spacer.



Super Spacer provides the warmest window edge for maximum condensation resistance, durability and energy performance.



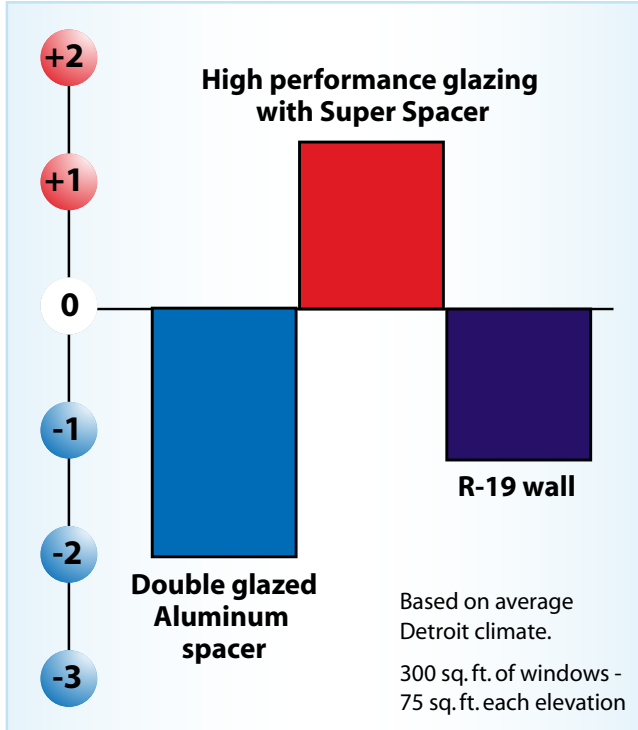
FEATURE	BENEFIT
NO-Metal	Non-conductive
100% closed-cell polymer	TrueWARM® edge
Double seal	No seal failure
Exclusive adhesive	World's only structural spacer
Minimized condensation	Best resistance to mold



Super Spacer's TrueWARM edge will last a lifetime.

The key to efficiency is a warm edge.

Energy Model (in kilowatt hours per year)



As you can see here, Super Spacer® actually **outperforms** 6 inches of Fiberglass Insulation!

ER (energy rating) = solar heat gain - heat loss - air infiltration

The difference with Super Spacer is **no edge vulnerability.**



The difference is clear...Super Spacer is the only TrueWARM® edge.



Super Spacer leaves all other spacers in the cold.

Super Spacer is your best choice.

Super Spacer® gives you a dual-seal system that is exclusive, patented and the world's only TrueWARM® edge.

Windows sealed with Super Spacer:

- are condensation and mold resistant
- are non-conductive
- eliminate seal failure
- relieve sealant and glass stress
- save energy dollars
- reduce drafts
- increase comfort
- outperform an R19 wall
- last a lifetime!



Because Super Spacer keeps moisture off the glass, your windows are safe from condensation and harmful mold that can cause numerous allergic and respiratory diseases.

We call this the Health Smart Windows® advantage.

Protect your investment, your home and most importantly, your family with Super Spacer inside your windows!



Which window spacer system will you choose?