



Wherever there is glass, we can improve it.

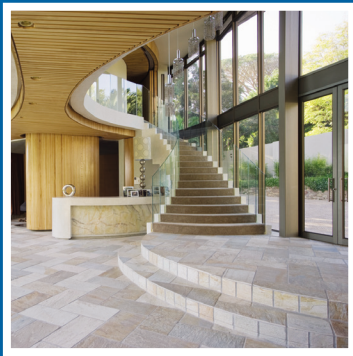
Founded in 1903, Madico has established itself as one of the world's foremost providers of glass films for the widest array of applications: architectural, safety and security, energy control, automotive, anti-intrusion/anti-vandalism, and view control.



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Film Installation Guide



What Causes Glass Breakage?

Glass breakage is caused by stress on the glass. There are five types of stress which may cause glass to break:

- 1. Thermal Stress - from absorption of solar radiation
- 2. Tensile Stress - from the weight of the glass itself
- 3. Mechanical Flexing Stress - from wind pressure
- 3. Impact Stress - from flying objects such as hail or storm debris
- 4. Twisting Stress - from a building or window frame sagging or settling

The first type, thermal stress, is the only type affected by the installation of window film. The use of window film will increase thermal stress on sunlit glass. However, there are other factors which increase thermal stress such as partial shading of windows from overhangs, tightly fitted drapes or blinds, signs and decals on windows, and heating or cooling vents directed at glass. In addition, different types of glass (annealed or tempered, clear or tinted) have different solar absorption rates and will withstand differing degrees of thermal stress.

Warranty Coverage

Please refer to your Madico Architectural warranty for specific limitations and restrictions for certain situations and glass types.

Film Installation Guide Table

The Madico Film Installation Guide helps you choose the appropriate film and glass combinations in order to achieve the best performance for your customer and avoid costly glass breakage claims.

How to Use This Chart:

Use the table to find your glass type at the top, then move down to see what films are compatible with that glass type.

Madico recommends using this table to make sure the product chosen for the installation will be safe for the type of glass being filmed. If you have any questions about this chart or encounter additional film and glass combinations not shown here, please contact the Madico Technical Services department at 727-388-2105.

CAUTION: If the film you are considering has a caution symbol please contact Madico for approval before installing this product.



Table Key:

- ✓ Recommended application
- ⚠ Pre-approval required before installation
- ✗ This combination is prohibited and will not be covered under warranty.

**Solar performance measurements are read in accordance with National Fenestration Rating Council (NFRC) standards on 6mm clear glass.*

Reported solar performance values are typical properties and should not be used as a specification. Since only the user is aware of the specific conditions in which the product is to be used, it is the user's responsibility to determine whether the product is suitable for that intended use.

Product	Visible Light Transmitted*	Solar Energy Reflected*	Solar Energy Absorbed*	Single Pane					Dual Pane						Inboard/Outboard		Low-E						Triple Pane				Laminated	
				Clear Annealed		H/S Tempered	Tinted Annealed		Clear Annealed		Outboard Tinted		Inboard Tinted		Tempered		Standard		Plus or E2		Plus Plus or E3		Clear/Clear/Clear	Clear/Clear/Low E	Tinted/Clear/Clear	Tinted/Clear/Low E	Clear or Tinted	
				1/8" - 1/4" Mono	1/8" - 1/4" Mono	1/8" - 3/8" Mono	1/8" - 1/4" Mono	1/8" - 1/4" Mono	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	1/8"-1/4" IG	Any Size	
				1-40 sq ft	40-100sq ft	1-100 sq ft	1-40 sq ft	40-100sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-30 sq ft	30-40 sq ft	1-40 sq ft	1-40 sq ft	1-40 sq ft	1-40 sq ft
Nova																												
Nova 70	68%	26%	28%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	
Solar Grey																												
Solar Grey 55	57%	8%	42%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	❌	❌	❌	❌	❌	
Solar Grey 35	35%	14%	56%	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	✔️	⚠️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	⚠️	⚠️	❌	❌	❌	❌	❌	
Solar Grey 20	19%	23%	60%	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	❌	✔️	✔️	⚠️	❌	⚠️	❌	❌	❌	❌	❌	❌	❌	❌	
Solar Bronze																												
Solar Bronze 35	35%	24%	52%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	❌	❌	❌	❌	❌		
Solar Bronze 20	23%	33%	53%	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	⚠️	❌	❌	❌	❌	❌		
Dual Reflective																												
Optivision® 45	45%	8%	45%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	❌	❌	❌	❌	❌		
Optivision® 35	37%	12%	50%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	⚠️	❌	❌	✔️	✔️	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌		
Optivision® 25	27%	25%	50%	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	⚠️	❌	❌	❌	✔️	✔️	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌		
Optivision® Reflective 15	14%	40%	47%	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	⚠️	⚠️	❌	❌	✔️	✔️	❌	❌	❌	❌	❌	❌	❌	❌	❌	❌		
Optivision® Reflective 5	8%	45%	46%	✔️	✔️	✔️	✔️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	⚠️	❌	❌	❌	❌	❌		
Reflective																												
Reflective Silver 40	44%	25%	44%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	❌	❌	❌	❌	❌		
Reflective Silver 30	30%	36%	43%	✔️	✔️	✔️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	⚠️	❌	❌	❌	❌	❌		
Reflective Silver 20	19%	45%	42%	✔️	✔️	✔️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	❌	✔️	✔️	⚠️	⚠️	❌	⚠️	❌	❌	❌	❌	❌	❌		
Exterior																												
Solar Grey Exterior 20	20%	30%	53%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Solar Bronze Exterior 35	34%	37%	41%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Solar Bronze Exterior 20	21%	51%	35%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Reflective Silver Exterior 20	18%	66%	22%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Clear 7 Mil Exterior	88%	7%	18%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Graffiti Free®																												
Graffiti Free® 4 mil	89%	8%	15%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Graffiti Free® 6 mil	87%	9%	15%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Clear Safety																												
Clear 4 Mil	87%	8%	18%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Clear 7 Mil	88%	7%	18%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Clear 8 Mil	86%	8%	20%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Clear 14 Mil	87%	8%	18%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️		
Solar Control Safety																												
Silver 20 4 Mil	18%	45%	43%	✔️	✔️	✔️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	❌	✔️	✔️	⚠️	⚠️	⚠️	❌	⚠️	❌	❌	❌	❌	❌		
Silver 40 4 Mil	44%	24%	44%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	❌	❌	❌	❌	❌		
Silver 20 8 Mil	17%	45%	43%	✔️	✔️	✔️	⚠️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	❌	✔️	✔️	⚠️	⚠️	❌	⚠️	❌	❌	❌	❌	❌			
Silver 40 8 Mil	44%	24%	45%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	❌	❌	❌	❌			
Neutral Grey 35 8 Mil	36%	15%	57%	✔️	✔️	✔️	✔️	⚠️	✔️	✔️	✔️	✔️	⚠️	❌	✔️	✔️	⚠️	❌	❌	❌	❌	❌	❌	❌	❌			
Neutral Grey 45 8 Mil	43%	14%	52%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	⚠️	✔️	✔️	⚠️	⚠️	⚠️	⚠️	⚠️	❌	❌	❌	❌			
Special Purpose Films																												
White Out	9%	42%	46%	❌	❌	✔️	❌	❌	❌	❌	❌	❌	❌	❌	✔️	✔️	❌	❌	❌	❌	❌	❌	❌	❌	❌			
Black Out	1%	5%	94%	❌	❌	✔️	❌	❌	❌	❌	❌	❌	❌	❌	✔️	✔️	❌	❌	❌	❌	❌	❌	❌	❌	❌			
Frost Matte 200	67%	14%	24%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️			
UV Gard 200	80%	8%	18%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️			
Amber 81	56%	7%	30%	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️	✔️			