

What matters most to you...We're On It!

# Film-to-Glass Guide – Europe



## Film Type

	Single Pane; Clear or Tinted	Double Pane; Clear or Tinted	Double Pane; Clear Low-e #2	Double Pane; Clear Low-e #3	Triple Pane; Clear
<b>Outside Weatherable Films</b>					
Sentinel Plus Silver 35 OSW	●	●	●	●	●
Sentinel Plus Silver 20 OSW	●	●	●	●	●
Sentinel Plus Stainless Steel 45 OSW	●	●	■	●	●
Sentinel Plus Stainless Steel 40 OSW	●	●	●	●	●
Sentinel Plus Stainless Steel 25 OSW	●	●	▲ <sup>1</sup>	●	●
Sentinel Plus Stainless Steel 15 OSW	●	●	●	●	●
Sentinel Plus SX 80 OSW	●	●	▲	●	●
Sentinel Plus SX 50 OSW	●	●	●	●	●
Sentinel Plus 4 Mil Clear OSW	●	●	●	●	●
<b>Silver</b>					
Silver 50	●	●	●	●	●
Silver 35	●	●	●	●	■
Silver 20	●	●	●	▲ <sup>2</sup>	■
Grey/Silver 15	▲	■	■	■	■
Bronze/Silver 15 (Discontinued)	▲	■	■	■	■
Grey/Silver/Grey 10	▲	■	■	■	■
Bronze/Silver/Bronze 10 (Discontinued)	▲	■	■	■	■
<b>Sterling</b>					
Sterling 70	●	●	●	●	●
Sterling 60	●	●	●	●	●
Sterling 50	●	●	●	●	●
Sterling 40	●	●	●	▲ <sup>2</sup>	●
Sterling 20	●	●	●	▲ <sup>2</sup>	■
<b>LX</b>					
LX 70	●	●	●	●	●
LX 40	●	●	●	▲ <sup>2</sup>	■
<b>Ecolux</b>					
Ecolux 70	●	●	●	■	■
<b>Summer/Winter Low-Emissivity</b>					
Silver AG 50 Low-E	●	●	●	■	●
Silver AG 25 Low-E	●	●	●	■	■
<b>TrueVue</b>					
TrueVue 40	●	●	●	●	■
TrueVue 30	●	●	●	▲ <sup>2</sup>	■
TrueVue 15	●	●	●	▲ <sup>2</sup>	■
TrueVue 5	●	●	●	▲ <sup>2</sup>	■
<b>Stainless Steel</b>					
Stainless Steel 50	●	●	●	●	●
Stainless Steel 35	●	●	●	▲ <sup>2</sup>	■
Stainless Steel 30	▲	▲	■	■	■
Stainless Steel 20	▲	■	■	■	■
Stainless Steel 10	▲	■	■	■	■
<b>ULR</b>					
ULR 70	●	●	●	●	●
ULR 40	●	■	▲ <sup>2</sup>	▲ <sup>2</sup>	■
ULR 20	●	■	■	■	■

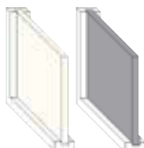
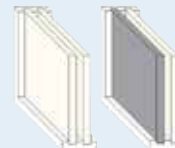



● = Low Risk

▲ = Caution, Submit Film-to-Glass Application for Risk Assessment\*

■ = Tempered Only

\* See Film-to-Glass Application Submittal instructions below.

# Film-to-Glass Guide – Europe

Film Type							
	Single Pane; Clear or Tinted	Double Pane; Clear or Tinted	Double Pane; Clear Low-e #2	Double Pane; Clear Low-e #3	Double Pane; Clear Low-e #2	Double Pane; Clear Low-e #3	Triple Pane; Clear
<b>Slate</b>							
Slate 40	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	●
Slate 30	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	■
Slate 20	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	■
Slate 10	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	■
<b>Solar Bronze</b>							
Solar Bronze 50	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	■
Solar Bronze 35	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	■
Solar Bronze 20	●	●	●	▲ <sup>2</sup>	●	▲ <sup>2</sup>	■
<b>Quantum</b>							
Quantum/Silver/Quantum 20	▲	■	■	■	■	■	■
Quantum/Silver/Quantum 10	▲	■	■	■	■	■	■
<b>Specialty</b>							
Sparkling Frost (Discontinued)	●	●	●	●	●	●	■
Deep Etch	●	●	●	●	●	●	■
Fused Crystal (Discontinued)	●	●	●	●	●	●	■
Clear Frost	●	●	●	●	●	●	●
Black Opaque	▲	■	■	■	■	■	■
White Opaque	●	▲	●	▲	●	▲	●
4 Mil Graffitigard	●	●	●	●	●	●	●
6 Mil Graffitigard	●	●	●	●	●	●	●
7 Mil Graffitigard	●	●	●	●	●	●	●
<b>Clear Safety &amp; Security</b>							
2 Mil Clear	●	●	●	●	●	●	●
4 Mil Clear	●	●	●	●	●	●	●
7 Mil Clear	●	●	●	●	●	●	●
8 Mil Clear	●	●	●	●	●	●	●
10 Mil Clear	●	●	●	●	●	●	●
11 Mil Clear	●	●	●	●	●	●	●
14 Mil Clear	●	●	●	●	●	●	●
4 Mil Sentinel Clear OSW	●	●	●	●	●	●	●
<b>Solar Safety &amp; Security</b>							
4 Mil Stainless Steel 50	●	●	●	●	●	●	▲
4 Mil Stainless Steel 35	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
4 Mil Stainless Steel 30	▲	▲	■	■	■	■	■
4 Mil Stainless Steel 20	▲	■	■	■	■	■	■
8 Mil Stainless Steel 50	●	●	●	●	●	●	■
8 Mil Stainless Steel 35	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
8 Mil Stainless Steel 20	▲	■	■	■	■	■	■
10 Mil Stainless Steel 50	●	●	●	●	●	●	■
10 Mil Stainless Steel 35 (Discontinued)	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
4 Mil Solar Bronze 35	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
4 Mil Solar Bronze 20	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
4 Mil Silver 20	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
8 Mil Silver 35	●	●	●	●	●	●	■
8 Mil Silver 20	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
10 Mil Silver 20	●	●	●	●	▲ <sup>2</sup>	▲ <sup>2</sup>	■
<b>Solar Safety &amp; Security</b>							
8 Mil LX 70	●	●	●	●	●	●	●

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\* See Film-to-Glass Application Submittal instructions below.

# Film-to-Glass Information

## Film-to-Glass Guidance

Windows constructed of tempered or heat-strengthened glass are not at risk for glass breakage.



## Film-to-Glass Application Disclaimers

Round, bent or laminated glass may be recommended by submitting a film-to-glass application. However, there is a high risk of glass breakage for applications with any of the following conditions:

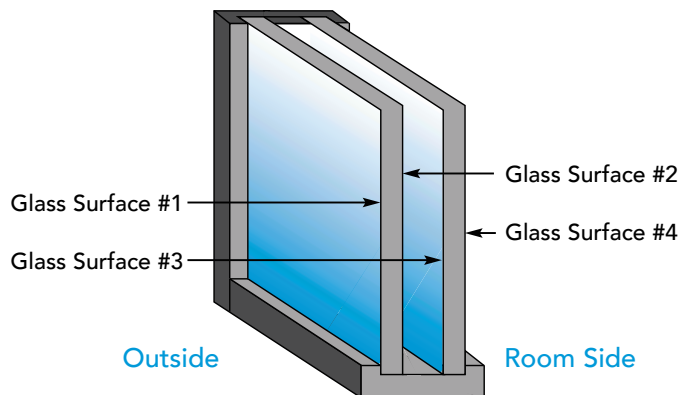
1. Textured, wired or skylight glass;
2. Any glass with more than one window film applied;
3. Any window where light can be seen between the glass and the framing system;
4. Any plastic or polycarbonates;
5. Quadruple pane insulated glass (IG) units;
6. Suspended film insulated glass (IG) units;
7. Glass with paint, lettering, vinyl graphics or other ornamentation;
8. Any single pane with partial film installation. Film must be installed edge to edge;
9. Damaged, chipped, cracked or scratched glass;
10. Glass with concrete framing;
11. Glass with metal framing that has no gaskets or seals;
12. Glass with framing sealant or gaskets that are no longer resilient;
13. Broken glass or insulated glass (IG) unit/s with seal failure prior to film installation;
14. Any building that has a history of glass breakage and/or seal failure problems; or
15. Any film applied to spandrel glass

## Low-E Caution (LEC)

The following scenarios outline the necessary parameters when installing a Low-E Caution (LEC) film to an insulated glass (IG) unit. The Low-E Caution (LEC) indicates possible glass breakage and insulated glass (IG) unit seal failure, due to an increased risk when a LEC film is installed on a double pane, insulated glass (IG) unit with a Low-E coating.

- #1  1  
Any exterior LEC window film installed on a double pane insulated glass unit that has a low-e coating on surface #2 and a g-value (g) of 0.58 or greater is a low risk for glass breakage and insulated glass (IG) unit seal failure.
- #2  2  
Any interior LEC window film installed on double pane insulated glass unit that has a low-e coating on surface #3 and a g-value (g) of 0.61 or less is a low risk for glass breakage and insulated glass (IG) unit seal failure.

## Side View Of Dual Pane Insulated Glass (IG) Unit



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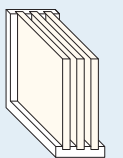
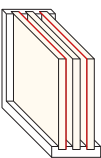
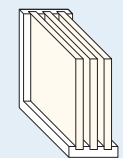
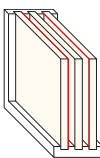
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# Solar Control, Safety and Security Window Films Tech Bulletin

## Glass Breakage Risk on Triple Pane Glass

Triple pane glazing systems have the capacity to store a large amount of heat, therefore increasing the risk of glass breakage for window film applications. The table below lists the solar control films that are either low risk for glass breakage (●) or may be deemed low risk on a case-by-case basis through the submittal of a Film-To-Glass Application (▲). All other solar control films are at a high risk for glass breakage unless the existing glazing is tempered or heat strengthened.

Film Type	 		Film Type	 	
	Triple Pane; Clear	Triple Pane; Low-e		Triple Pane; Clear	Triple Pane; Low-e
<b>Outside Weatherable Films</b>			<b>Interior Films</b>		
Sentinel Plus Silver 35 OSW	●	●	LX 70	●	■
Sentinel Plus Silver 20 OSW	●	●	Silver 50	●	■
Sentinel Plus Stainless Steel 45 OSW	●	▲	Sterling 70	●	▲
Sentinel Plus Stainless Steel 40 OSW	●	▲	Sterling 60	●	▲
Sentinel Plus Stainless Steel 25 OSW	●	▲	Sterling 50	●	■
Sentinel Plus Stainless Steel 15 OSW	●	▲	Sterling 40	●	■
Sentinel Plus SX 80 OSW	●	▲	Silver AG 50	●	■
Sentinel Plus SX 50 OSW	●	●	Clear Frost	●	▲
Sentinel Plus 4 Mil Clear OSW	●	●	White Opaque	●	■
			4 Mil Graffitigard	●	●
			6 Mil Graffitigard	●	●
			7 Mil Graffitigard	●	●

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