



# Safety Window Films

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*The U.S. Department of Energy (DOE) in Washington, D.C. had over 80,000 square feet (7,428 square meters) of Armorcoat 8 Mil Silver 35 solar safety film installed to its windows. The film reduces energy loss, heat and glare, while also increasing protection from flying glass shards in the event of an explosion, extreme weather or other glass breakage incident.*

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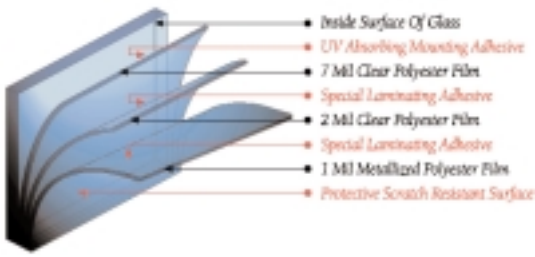


*Approximately 120,000 square feet (11,142 square meters) of Armorcoat 4 Mil Stainless Steel 30 was retrofitted to the windows of the 34-story Millbank Tower, a prominent feature of the London skyline. Armorcoat dramatically improved the aesthetics of the building by giving the glass a beautiful, uniform appearance, while also filtering almost 100% of damaging ultraviolet light and rejecting 54% of total solar energy.*

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- ▶ **Tough, resilient Armorcoat safety and security window films are composed of incredibly strong, optical-quality polyester, high-grade ultraviolet inhibitors and special laminating and mounting adhesives, with a protective, scratch-resistant coating.**
- ▶ **Pressure-sensitive mounting adhesive helps hold glass in place when natural disasters, vandalism, explosions, bomb blasts and other incidents result in glass breakage.**
- ▶ **Solar versions of Armorcoat safety films reject up to 80% of the sun's total solar energy to improve occupant comfort, reduce energy consumption, and improve exterior aesthetics, while still affording increased protection.**
- ▶ **Both clear safety and solar safety versions block nearly 100% of the sun's destructive ultraviolet light from entering through windows to provide protection from premature fading and deterioration of furnishings.**
- ▶ **Armorcoat safety window films are manufactured in thickness between 2 Mil (50 micron) and 14 Mil (350 micron).**
- ▶ **All Armorcoat safety window films are backed by a strong manufacturer's warranty and are easy to clean and maintain.**
- ▶ **Armorcoat has been installed on some of the most safety-intensive buildings around the world, such as the U.S. Capitol, Pentagon, FBI Headquarters and U.S. Department of Energy.**

## Typical Armorcoat Film Construction - 10 Mil Silver 80



▶ Armorcoat works around the clock to protect occupants and property. To increase shatter-resistance, thicker optical grade polyester is used with special laminating adhesives, giving Armorcoat its exceptional strength.

## Physical And Thermal Properties

Test Name	Film Thickness				
	4 Mil (100 micron)	7 Mil (175 micron)	8 Mil (200 micron)	10 Mil (250 micron)	14 Mil (350 micron)
<b>Tensile Strength</b> ASTM D 882 (lbs/in <sup>2</sup> )	29,000	29,000	29,000	29,000	29,000
<b>Elongation (%)</b> ASTM D 882	>100	>100	>100	>100	>100
<b>Yield Stress (5%)</b> ASTM D 882 (lbs/in <sup>2</sup> )	15,000	15,000	15,000	15,000	15,000
<b>Break Strength</b> (lbs/inch)	116	203	232	290	406
<b>Yield Strength (5%)</b> (lbs/inch)	60	105	120	150	210
<b>Tear Strength</b> Graves Tear Test • ASTM D 1004 (lbs force)	6.5	18.9	21.6	27.0	37.8
<b>Tensile Modulus</b> ASTM D 882 (lbs/in <sup>2</sup> )	550,000	550,000	550,000	550,000	550,000
<b>Puncture Strength</b> ASTM D 4830 (lbs)	66	115	140	175	230
<b>Peel Strength</b> (g/inch of width)	>2,500	>2,500	>2,500	>2,500	>2,500
<b>Poisson's Ratio</b> ASTM D 882	.38	.38	.38	.38	.38
<b>Abrasion Resistance (%)</b> ASTM D 1003-92 • ASTM D 1044 8 100 Cycles	<5	<5	<5	<5	<5
<b>ANSI Z 97.1</b>	Pass	Pass	Pass	Pass	Pass
<b>CPSC CFR 1201, Category II</b>	No	Pass	Pass	Pass	Pass
<b>GSA Security Criteria</b> Performance Condition • Daylight Application (4 lbs/in <sup>2</sup> / 28 lbs/in <sup>2</sup> / ms)	3b	3b	3b	3b	3b
<b>Smoke Development Index</b> ASTM D 882	28	28	28	28	142
<b>Flash Temperature (°F)</b> ASTM D 1929	730	730	730	730	730
<b>Self Ignition (°F)</b> ASTM D 1929	750	750	750	750	750

**Notes:** This test data contains results arrived at only after employing specific test procedures and standards. The included data does not constitute a recommendation for, endorsement of, or certification of the product or material tested. This data is provided for informational purposes only and are not to be considered part of the basis of any bargain or transaction involving Bekaert Specialty Films, LLC (BSF) products. BSF makes no representation or warranty, expressed or implied, including the implied warranties of merchantability or fitness for a particular purpose, that its products will conform to these test data. Extrapolation of data from the sample or samples relating to the batch or lot from which data were obtained may not correlate and should be interpreted accordingly with caution. BSF shall not be responsible for variations in quality, composition, appearance, performance, or other feature of similar subject matter produced by persons or under conditions over which BSF has no control.