

Spectrally Selective Solar Window Films

See the light, feel the difference



Avery Dennison® Spectrally Selective Solar Window Films use advanced nanotechnology to reduce solar gain and lower carbon footprints from cooling systems - while preserving all-important window transparency.

SS Natural i™ films for interior application, along with **SS Natural X™** films and **SS Blue X™** films for exterior application, are excellent choices for maintaining light levels in residential buildings, museums, historical buildings and commercial projects. They offer sustainable, cost-saving options that protect interiors from UV damage, and safeguard a building's external aesthetics. All films in the range deliver excellent levels of heat rejection, for cooler and more comfortable interiors.

SS Natural i suits interior installation, with two visible light transmission levels. **SS Natural X** is engineered for convenient, non-disruptive exterior installation, and is also available with two visible light transmission levels.

SS Blue 75X™ exterior solar window film offers a subtle blue tint, and filters 88% of heat-building IR radiation, keeping a building cooler and more comfortable without blocking welcome daylight.

Features and Benefits

- > High visible light transmission - barely discernible on glass
- > Maintains levels of natural daylight
- > 99% UV block, limiting fading and damage from the sun
- > Advanced nanotechnology
- > Excellent heat rejection for enhanced comfort, reduced cooling costs and lower carbon emissions
- > Low reflectivity preserves views - day and night
- > Natural appearance, maintaining original building facades
- > Non-disruptive, exterior installation (**SS Natural X**, **SS Blue X**)



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Optical and Solar Properties*	SS Natural 45i™		SS Natural 70i™		SS Natural 45X™		SS Natural 70X™		SS Blue 75X™	
	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double
Pane										
Visible Light Transmitted	44%	40%	66%	61%	47%	43%	67%	61%	76%	69%
Visible Light Reflected (Interior)	12%	14%	15%	18%	12%	19%	17%	23%	9%	17%
Visible Light Reflected (Exterior)	17%	23%	16%	21%	17%	19%	18%	22%	9%	15%
Ultraviolet	99%	99%	99%	99%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Glare Reduction	51%	50%	27%	25%	48%	47%	25%	24%	16%	15%
Solar Heat Gain Coeff. (G-Value)	0.41	0.51	0.48	0.56	0.50	0.55	0.19	0.15	0.34	0.28
Total Solar Energy Rejected	59%	49%	52%	44%	50%	45%	81%	85%	66%	72%
InfraRed Energy Reduction (IRER)	69%	69%	71%	71%	72%	72%	70%	70%	63%	63%
Selective InfraRed Reduction (SIRR)	86%	86%	87%	87%	86%	86%	83%	83%	88%	88%

*Performance results are calculated on 3 mm glass using NFRC methodology and LBNL Window 5.2 software, and are subject to variations in process conditions within industry standards. Performance calculations should only be used for estimating purposes.



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PRODUCT DATA SHEET

Avery Dennison® Exterior Spectral Selective Solar Films

Issued: 10/2021

Introduction

Avery Dennison® SS Natural window films effectively reduce solar heat gain while retaining high level of daylight and preserving the natural appearance of the glass.

Avery Dennison® SS Blue, the subtle blue tint filters 88% of the heat-building IR radiation to keep the building cooler without blocking welcome daylight.

Conversion

For conversion information please review the Technical Bulletin "Avery Dennison® Solar Window Films Exterior".

Recommendations

These films are an excellent heat rejection upgrade, preserving the natural appearance of a building's interior and exterior, and are often used for historical buildings. They are available in three different light transmission levels.

Features

- » High visible light transmission that is barely discernible on glass; high levels of natural daylight
- » High heat rejection for enhanced comfort and reduced cooling cost
- » Low reflectivity preserves view night and day
- » 99.99% UV Block cuts fading and sun damage

Fire Certification: B-s1, d0 (DIN EN 13501-1)

Warranted Durability¹⁾:	SS Natural 45X	SS Natural 70X	SS Blue 75X
Vertical	7 years	7 years	5 years
Horizontal/Sloped	3 years	3 years	3 years

1) Warranted Durability

The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased. With regard to Avery Dennison Architectural Window Film Products, the durability shall not differ between the climatic zones, but the same durability shall apply to all climatic zones.



Face Film

Exterior durable SR hard coat sputtered optical filter + Nanotechnology

SS Natural 45X; SS Natural 70X; SS Blue 75X



Adhesive

Pressure sensitive **Permanent** – Solvent based acrylic



Backing

PET



Durability

See below



Shelf Life

When stored in original packaging upon arrival at the customer: 2 years. Recommended Storage conditions are 20 °C (± 2 °C) with 50 %RH (± 5%).

Physical Characteristics

Optical & Solar Properties

	SS Natural 45X		SS Natural 70X		SS Blue 75X	
	Single Pane	Double Pane	Single Pane	Double Pane	Single Pane	Double Pane
Visible Light Transmitted %	47	43	67	61	76	69
Visible Light Reflected (Int) %	12	19	17	23	9	17
Visible Light Reflected (Ext) %	17	19	18	22	9	15
U V Block %	99,9	99,9	99,9	99,9	99	99
Total Solar Energy Reflected %	30	31	30	31	8	10
Total Solar Energy Transmitted %	27	23	37	33	39	34
Total Solar Energy Absorbed %	43	46	33	36	53	56
Shading Coefficient	0,45	0,36	0,54	0,45	0,62	0,50
Total Solar Energy Rejected %	61	69	53	61	46	57
Solar Heat Gain Coefficient	0,39	0,31	0,47	0,39	0,54	0,43
Emissivity (Room side)	0,84	0,84	0,84	0,84	0,84	0,84
U-Value Winter	1,04	0,48	1,04	0,48	1,04	0,48
K-Value Winter	5,92	2,73	5,92	2,73	5,91	2,73
Glare Reduction %	48	47	25	24	16	15
Luminous Efficacy	1,04	1,19	1,24	1,36	1,20	1,38

Important

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PRODUCT DATA SHEET

Avery Dennison® Interior Spectrally Selective Solar Films

Issued: 10/2021

Introduction

The Avery Dennison® SS Natural range of spectrally selective interior films deliver excellent levels of heat rejection, whilst preserving the natural appearance of both the glass and the building exterior. The films' neutral color features low visible reflection inside and out, but still delivers an effective energy saving upgrade, with outstanding ROI.

Conversion

For conversion information please review the Technical Bulletin "AD Solar Window Films Interior".

Recommendations

The Avery Dennison® SS Natural i Film Series is designed for interior applications. Nanotechnology is used to filter undesired infrared radiation while allowing visible light to pass through and maintaining colour stability (hence the name 'spectrally selective').

Features

- » High visible light transmission that is barely discernible on glass; high levels of natural daylight
- » High heat rejection for enhanced comfort and reduced cooling cost
- » Low reflectivity preserves view night and day
- » 99.99% UV Block cuts fading and sun damage

Fire Certification: B-s1, d0 (DIN EN 13501-1)

¹⁾ Warranted Durability

The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased. With regard to Avery Dennison Architectural Window Film Products, the durability shall not differ between the climatic zones, but the same durability shall apply to all climatic zones.



Face Film

SS Natural 45i; SS Natural 70i



Adhesive

Pressure sensitive Permanent – Solvent based acrylic



Backing

PET



Durability

10 years¹⁾



Shelf Life

When stored in original packaging upon arrival at the customer: 2 years. Recommended Storage conditions are 20 °C (± 2 °C) with 50 %RH (± 5%).

Physical Characteristics

Optical & Solar Properties:

	SS Natural 45i		SS Natural 70i	
	Single Pane	Double Pane	Single Pane	Double Pane
Visible Light Transmitted %	44	40	66	61
Visible Light Reflected (Int) %	12	14	15	19
Visible Light Reflected (Ext) %	17	23	16	21
U V Block %	99	99	99	99
Total Solar Energy Reflected %	24	26	23	25
Total Solar Energy Transmitted %	26	23	36	33
Total Solar Energy Absorbed %	50	51	41	42
Shading Coefficient	0,47	0,58	0,55	0,64
Total Solar Energy Rejected %	59	49	52	44
Solar Heat Gain Coefficient	0,41	0,51	0,48	0,56
Emissivity (Room side)	0,83	0,83	0,73	0,73
U-Value Winter	1,04	0,48	0,98	0,46
K-Value Winter	5,88	2,72	5,59	2,64
Glare Reduction %	51	50	27	25
Luminous Efficacy	0,94	0,69	1,20	0,95

Important

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