



Reflective Solar Window Films

Bold, efficient and sustainable energy-saving films



The Avery Dennison® Reflective Solar Window Films portfolio offers a simple way to boost a building's sustainability, while adding a strong visual statement and enhancing comfort for building occupants. The materials allow for exterior application with no disruption - a popular choice for commercial applications.

Excellent and immediate improvements to comfort, daylight privacy and energy efficiency are made possible by rejecting excess solar radiation. **R Silver™** window films reduce the carbon footprint from cooling systems by minimizing heat buildup entering through windows. The result is cooler, pleasant building interiors and lower energy costs, with an impressive return on investment.

DS Bronze 20X™ exterior design window film casts a warm coppery glow that complements natural surroundings, yet adds sophistication. DS Bronze 20X combines high heat reduction with a proportionally higher percentage of natural light.

R Silver i™ interior window films enhance appearance and reject excess solar heat, with a competitive price point and a range of visible light transmission levels, for most glazing systems.

Durable **R Silver X™** exterior window films deliver excellent solar heat performance by rejecting radiation before it passes through the window - backed by a limited warranty* and available with several different visible light transmission levels, for most glazing systems. The complementary **R Silver X Poly™** exterior window film suits polycarbonate and other rigid plastic substrates (check with your installer for suitability).

Features and Benefits

- > 99% UV block - limits fading and damage from the sun
- > High level of heat rejection, reducing emissions and costs from building cooling
- > Excellent solar heat and glare rejection, for enhanced comfort
- > Works immediately - with great return on investment
- > Bold appearance upgrades building exterior
- > Maintains daytime privacy
- > Elevated solar performance with exterior application (**R Silver X + R Silver X Poly**)
- > Convenient, non-disruptive installation from outside (**R Silver X**)
- > Option for most rigid plastic glazing systems (**R Silver X Poly**)



Inspired Brands.
Intelligent World.™

graphics.averydennison.eu

Optical and Solar Properties*	R Silver 20i™		R Silver 35i™		R Silver 50i™		R Silver 20X™		DS Bronze 20X™		R Silver 35X™		R Silver 50X™		R Silver 20X Poly™	
	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double	Single	Double
Pane																
Visible Light Transmitted	18%	17%	33%	31%	51%	46%	17%	16%	16%	15%	33%	31%	48%	44%	16%	-
Visible Light Reflected (Interior)	62%	62%	41%	41%	23%	25%	62%	62%	46%	47%	42%	44%	28%	32%	63%	-
Visible Light Reflected (Exterior)	61%	61%	42%	44%	24%	29%	62%	62%	39%	40%	42%	43%	27%	29%	64%	-
Ultraviolet	99%	99%	99%	99%	97%	98%	99%	99%	99%	99%	99%	99%	99%	99%	99%	-
Glare Reduction	80%	79%	63%	62%	44%	43%	81%	80%	82%	81%	63%	62%	46%	45%	82%	-
Solar Heat Gain Coeff. (G-Value)	0.22	0.30	0.35	0.42	0.50	0.55	0.19	0.15	0.17	0.12	0.34	0.28	0.46	0.38	0.19	-
Total Solar Energy Rejected	78%	70%	65%	58%	50%	45%	81%	85%	83%	88%	66%	72%	54%	62%	81%	-

* 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.



DISCLAIMER - All Avery Dennison statements, technical information and recommendations are based on tests believed to be reliable but do not constitute a guarantee or warranty. All Avery Dennison products are sold with the understanding that purchaser has independently determined the suitability of such products for its purposes. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>

©2021 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison. 2021_31179_EN

PRODUCT DATA SHEET

Avery Dennison® XTRM Exterior Reflective Solar Films

Issued: 04/2023

Introduction

Avery Dennison® R Silver XTRM™ and the Avery Dennison® R SkyLite XTRM™ series is a new generation of extended life exterior window films. It's exceptional durability ensures long-term energy efficient performance. The films provide maximum energy efficiency and value. By rejecting excess solar radiation, Avery Dennison® R Silver XTRM™ and the Avery Dennison® R SkyLite XTRM™ films cut heat buildup through the glazing. The films are particularly energy efficient on insulated glass (IGU), rejecting solar energy on the outer pane, keeping the inner pane cool. Avery Dennison® R SkyLite 20 XTRM™ Poly is engineered with an adhesive formulation to ensure compatibility with plastic substrates.

Conversion

These products are available for certified installers only.

Recommendations

Avery Dennison® R Silver XTRM™ films are developed to tackle commercial projects, where a long-term service period is critical to payback. Additionally, the Avery Dennison® R SkyLite XTRM™ films are further developed to be applied on horizontal glazing systems.

Features

- » Warranted durability: Increased lifetime for the best long-term service period
- » Highest level of energy efficiency
- » Excellent solar heat and glare rejection
- » Upgraded building appearance
- » 99+% UV block

Fire Certification:

B-s1, d0 (DIN EN 13501-1)

Warranted Durability ¹⁾ :	R Silver	R Silver	R SkyLite	R SkyLite
	20 XTRM™	35 XTRM™	20 XTRM™	20 XTRM™ Poly
Vertical	up to 15 years	10 years	-	-
Horizontal/Sloped	5 years	5 years	up to 10 years	10 years

¹⁾Warranted Durability



Face Film

R Silver 20 XTRM™; R Silver 35 XTRM™; R SkyLite 20 XTRM™ + Removable protective masking layer; R SkyLite 20 XTRM™ Poly + Removable protective masking layer



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%).

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.

Physical Characteristics

Optical & Solar Properties:

	R Silver		R Silver		R SkyLite		R SkyLite
	20 XTRM™		35 XTRM™		20 XTRM™		20 XTRM™ Poly
	Single Pane	Double Pane	Single Pane	Double Pane	Single Pane	Double Pane	Single Pane
Visible Light Transmitted %	15	14	33	31	15	14	15
Visible Light Reflected (Int) %	63	65	42	44	63	65	63
Visible Light Reflected (Ext) %	63	65	42	43	66	66	66
U V Block %	99,9	99,9	99,9	99,9	99,9	99,9	99,9
Total Solar Energy Reflected %	64	66	45	46	64	66	64
Total Solar Energy Transmitted %	11	10	25	22	10	10	10
Total Solar Energy Absorbed %	25	24	30	32	26	24	26
Emissivity (Room side)	0,84	0,84	0,84	0,84	0,84	0,84	0,84
Glare Reduction %	84	83	63	62	84	83	84
Shading Coefficient	0,2	0,16	0,39	0,32	0,20	0,16	0,20
Solar Heat Gain Coefficient	0,17	0,14	0,34	0,28	0,17	0,14	0,17
U-Value Winter	1,04	0,48	1,04	0,48	1,03	0,48	1,03
K-Value Winter	5,91	2,73	5,91	2,73	5,85	2,71	5,85
Luminous Efficacy	0,75	0,88	0,84	0,96	0,72	0,89	0,72
Total Solar Energy Rejected %	83	86	66	72	83	86	83

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use.

All technical data are subject to change. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

Avery Dennison warrants that its Products meet its specifications. Avery Dennison gives no other express or implied guarantees or warranties with respect to the Products, including, but not limited to, any implied warranties of merchantability, fitness for any particular use and/or non infringement. All Avery Dennison products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes. The period of warranty is one (1) year from the date of shipment unless expressly provided otherwise in the product data sheet. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>.

Avery Dennison's aggregate liability to Purchaser, whether for negligence, breach of contract, misrepresentation or otherwise, shall in no circumstances exceed the price of the defective, non-conforming, damaged or undelivered Products which give rise to such liability as determined by net price invoices to Purchaser in respect of any occurrence or series of occurrences. In no circumstances shall Avery Dennison be liable to Purchaser for any indirect, incidental or consequential loss, damage or injury, including without limitation, loss of anticipated profits, goodwill, reputation, or losses or expenses resulting from third party claims.

© 2023 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.



Graphics
Solutions

EU
graphics.averydennison.eu

PRODUCT DATA SHEET

Avery Dennison® Exterior Reflective Solar Films

Issued: 10/2021

Introduction

Avery Dennison® R Silver X films provide maximum energy efficiency and value. By rejecting excess solar radiation, Avery Dennison® R Silver films cut heat buildup through the glazing. Avery Dennison® R Silver X films are particularly energy efficient on insulated glass (IGU), rejecting solar energy on the outer pane, keeping the inner pane cool thereby reducing the HVAC load still further.

Avery Dennison® R Silver 20X Poly is engineered with a novel adhesive formulation to ensure compatibility with plastic substrates.

Avery Dennison DS Bronze 20X delivers a high level of heat rejection in a warm coppery appearance.

Conversion

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

Recommendations

These films are especially energy efficient when used on advanced glazing systems, rejecting the solar energy before it is transmitted through a window. The Poly version is based on a unique adhesive system designed for rigid plastic substrates. Typical applications include commercial buildings. A silver (mirror like) finish is available in three different light transmission levels.

Features

- » Highest level of energy efficiency
- » Excellent solar heat and glare rejection
- » Upgraded building appearance
- » Daytime privacy
- » 99+% UV block

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

Warranted Durability¹⁾:	R Silver 20X	R Silver 35X	R Silver 50X	R Silver 20X Poly	DS Bronze 20X
Vertical	7 years	7 years	4 years	4 years	4 years
Horizontal/SI oped	4 years	4 years	3 years	3 years	2.5 years

1) Warranted Durability



Face Film

Exterior durable SR hard coat vacuum metal deposition, with a thin optical Aluminum layer; R Silver 20X; R Silver 35X; R Silver 50X; R Silver 20X Poly; DS Bronze 20X



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%).

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.

Physical Characteristics

Optical & Solar Properties:

	R Silver 20X		R Silver 35X		R Silver 50X		R Silver 20X Poly	DS Bronze 20X	
	Single Pane	Double Pane	Single Pane	Double Pane	Single Pane	Double Pane	Single Pane	Single Pane	Double Pane
Visible Light Transmitted %	17	16	33	31	48	44	16	17	16
Visible Light Reflected (Int) %	62	62	42	44	28	32	63	45	45
Visible Light Reflected (Ext) %	62	62	42	43	27	29	64	40	43
U V Block %	99	99	99	99	99	99	99	99	99
Total Solar Energy Reflected %	63	64	45	46	30	32	65	53	47
Total Solar Energy Transmitted %	12	11	25	22	37	31	12	9	8
Total Solar Energy Absorbed %	25	25	30	32	33	37	23	38	45
Shading Coefficient	0,22	0,18	0,39	0,32	0,53	0,44	0,22	0,23	0,35
Total Solar Energy Rejected %	81	85	66	72	54	62	81	81	70
Solar Heat Gain Coefficient	0,19	0,15	0,34	0,28	0,46	0,38	0,19	0,19	0,30
Emissivity (Room side)	0,84	0,84	0,84	0,84	0,84	0,84	0,84	0,69	0,69
U-Value Winter	1,04	0,48	1,04	0,48	1,04	0,48	1,04	0,96	0,46
K-Value Winter	5,91	2,73	5,91	2,73	5,91	2,73	5,91	5,45	2,61
Glare Reduction %	81	80	63	62	46	45	82	81	81
Luminous Efficacy	0,75	0,91	0,84	0,96	0,90	0,90	0,75	0,74	0,45

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use.

All technical data are subject to change. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

Avery Dennison warrants that its Products meet its specifications. Avery Dennison gives no other express or implied guarantees or warranties with respect to the Products, including, but not limited to, any implied warranties of merchantability, fitness for any particular use and/or non infringement. All Avery Dennison products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes. The period of warranty is one (1) year from the date of shipment unless expressly provided otherwise in the product data sheet. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>.

Avery Dennison's aggregate liability to Purchaser, whether for negligence, breach of contract, misrepresentation or otherwise, shall in no circumstances exceed the price of the defective, non-conforming, damaged or undelivered Products which give rise to such liability as determined by net price invoices to Purchaser in respect of any occurrence or series of occurrences. In no circumstances shall Avery Dennison be liable to Purchaser for any indirect, incidental or consequential loss, damage or injury, including without limitation, loss of anticipated profits, goodwill, reputation, or losses or expenses resulting from third party claims.

© 2022 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.

PRODUCT DATA SHEET

Avery Dennison® Interior Reflective Solar Films

Issued: 10/2021

Introduction

The Avery Dennison® R Silver films provide maximum energy efficiency and value. By rejecting excess solar radiation, Avery Dennison® R Silver films cut heat build-up through the glazing.

Conversion

For conversion information please review the Technical Bulletin “AD Interior Solar Films Interior”.

Recommendations

Avery Dennison® R Silver films are the most popular choice for commercial projects with their strong visual statement, effective heat rejection, and the quickest return on investment.

Features

- » Excellent solar heat and glare rejection
- » Upgraded building appearance
- » Daytime privacy
- » 99+% UV block

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

R Silver 20 i; R Silver 35 i; R Silver 50 i metallization by sputtering



Adhesive

Pressure sensitive Permanent – Solvent based acrylic



Backing

PET



Durability

12 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:

	R Silver 20 i		R Silver 35 i		R Silver 50 i	
	Single Pane	Double Pane	Single Pane	Double Pane	Single Pane	Double Pane
Visible Light Transmitted %	18	17	33	31	51	46
Visible Light Reflected (Int) %	62	62	41	42	23	25
Visible Light Reflected (Ext) %	61	61	42	44	24	29
U V Block %	99	99	99	99	97	98
Total Solar Energy Reflected %	55	49	39	37	24	25
Total Solar Energy Transmitted %	13	12	25	22	39	34
Total Solar Energy Absorbed %	32	38	36	41	37	41
Shading Coefficient	0,25	0,35	0,40	0,49	0,58	0,63
Total Solar Energy Rejected %	78	70	65	58	50	45
Solar Heat Gain Coefficient	0,22	0,30	0,35	0,42	0,50	0,55
Emissivity (Room side)	0,71	0,71	0,72	0,72	0,81	0,81
U-Value Winter	0,97	0,46	0,98	0,46	1,02	0,47
K-Value Winter	5,51	2,62	5,57	2,63	5,78	2,70
Glare Reduction %	80	79	63	62	44	43
Luminous Efficacy	0,72	0,49	0,86	0,64	0,87	0,73

Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use.

All technical data are subject to change. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

Avery Dennison warrants that its Products meet its specifications. Avery Dennison gives no other express or implied guarantees or warranties with respect to the Products, including, but not limited to, any implied warranties of merchantability, fitness for any particular use and/or non infringement. All Avery Dennison products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes. The period of warranty is one (1) year from the date of shipment unless expressly provided otherwise in the product data sheet. All Avery Dennison's products are sold subject to Avery Dennison's general terms and conditions of sale, see <http://terms.europe.averydennison.com>.

Avery Dennison's aggregate liability to Purchaser, whether for negligence, breach of contract, misrepresentation or otherwise, shall in no circumstances exceed the price of the defective, non-conforming, damaged or undelivered Products which give rise to such liability as determined by net price invoices to Purchaser in respect of any occurrence or series of occurrences. In no circumstances shall Avery Dennison be liable to Purchaser for any indirect, incidental or consequential loss, damage or injury, including without limitation, loss of anticipated profits, goodwill, reputation, or losses or expenses resulting from third party claims.

© 2021 Avery Dennison Corporation. All rights reserved. Avery Dennison and all other Avery Dennison brands, this publication, its content, product names and codes are owned by Avery Dennison Corporation. All other brands and product names are trademarks of their respective owners. This publication must not be used, copied or reproduced in whole or in part for any purposes other than marketing by Avery Dennison.