
Architectural
Window Films
Select Sample Book
AVERY
DENNISON

Window Film Benefits

UV Block

Protects skin
Inhibits fading

Lower heat gain

Improves comfort
Saves energy

Light control

Improves comfort
Reduces glare

Aesthetics

Upgrades appearance
Ensures daytime privacy

Shard retention

Enhances personal safety
Offers security protection

Anti-graffiti

Protects surface
Clean and easy removal

Avery Dennison is a global developer and manufacturer of specialized polyester films for high-end applications. Avery Dennison's core products in this area are solar control and design Architectural Window Films.

Many aspects of building performance depend critically on windows for aesthetics, comfort, cost and sustainability. Major retrofit, glazing system enhancements are available for both interior and exterior use for solar protection and aesthetic applications.

When selecting an Avery Dennison Architectural Window Film, have peace of mind that you will be enjoying a high quality product. Headquartered in Glendale California, with operations in more than 50 countries and employing over 25,000 people worldwide, Avery Dennison also serves customers in the consumer packaging, graphical display, logistics, apparel, industrial and healthcare industries.

NFRC

NFRC
National Fenestration Rating Council

NFRC is a non-profit organization that administers the only uniform, independent rating and labeling system for the energy performance of windows, doors, skylights and attachment products such as window films. The NFRC logo indicates that the film has passed the NFRC product certification program, and is NFRC listed.

WERS For Film

Heating Cooling
WINDOW ENERGY RATING
WERS For Film Accredited

WERS enables windows to be rated and labeled for their annual energy impact on a whole house, in any climate of Australia.

To participate in WERS, window makers must obtain energy ratings for their products from a rating organization that is accredited by the AFRC (Australian Fenestration Rating Council). The WERS logo indicates that the film is WERS accredited.

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 and are only intended for estimating purposes.

Architectural Window Film Range

* Sample included in this book

Solar Control

Interior

Reflective

Dual Reflective

Spectrally Selective

Neutral

Exterior

Reflective

R Silver 20X
R Silver 35X
R Silver 20X Poly
R Silver 20 XTRM
R SkyLite 20 XTRM
R SkyLite 20 XTRM Poly

Dual Reflective

DR Grey 10X
DR Grey 20X
DR Grey 35X
DR Grey 10 XTRM
DR Grey 20 XTRM
DR Grey 35 XTRM

Spectrally Selective

SP e-Lite 45X
SP e-Lite 70X

Design

Interior

DS Matte 2 mil i
DS Black i
DS White i
DS UV Filter i
DS Print SR 2 mil i

Exterior

DS Bronze 20X
DS Blue 35 XTRM

Safety & Security

Interior

Clear Films

SF Clear 4 mil i
SF Clear 7 mil i

SF Clear 12 mil i
SF Clear 15 mil i

Solar Films

R Silver 20 4 mil
NT PerLite Ceramic 35 6 mil

Design Films

SF Matte 5 mil i
SF Matte 12 mil i

Interior / Exterior

Anti-Graffiti Films

AG Clear 4 mil ix
AG Clear 6 mil ix

Exterior

Clear Films

SF Clear 4 mil X
SF Clear 7 mil X

Poly Films

Clear 4 mil poly X
Clear 6 mil poly X

Reflective

Avery Dennison's attractive Reflective Window Films for interior application deliver solar control, a strong visual statement, impressive heat rejection and return on investment, popular for upgrading sophisticated commercial projects.

Product Range

Interior

- R Silver 20i
- R Silver 35i

Exterior

- R Silver 20X
- R Silver 35X
- R Silver 20X Poly
- R Silver 20 XTRM
- R SkyLite 20 XTRM
- R SkyLite 20 XTRM Poly

Features and Benefits

99% UV block limits fading and damage from the sun

High level of heat rejection reduces environmental and financial costs associated with building cooling

Excellent solar heat and glare rejection for enhanced comfort and carbon footprint

Bold appearance upgrades building exterior and maintains daytime privacy

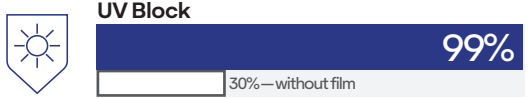
Works immediately - no waiting to enjoy return on investment

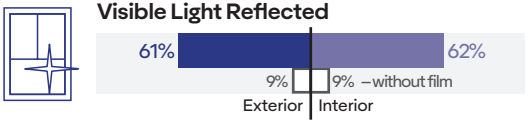
R Silver 20i

Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	18%	17%
Visible Light Reflected (interior)	62%	62%
Visible Light Reflected (exterior)	61%	61%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	55%	49%
Total Solar Energy Transmitted	13%	12%
Total Solar Energy Absorbed	32%	38%
Emissivity (Room Side)	0.71	0.71
Glare Reduction	80%	79%
Selective InfraRed Reduction (SIRR)	90%	90%
InfraRed Energy Rejection (IRER)	79%	79%
Shading Coefficient	0.25	0.35
Solar Heat Gain Coeff. (G-Value)	0.22	0.30
U-Value Winter (IP)	0.97	0.46
U-Value Winter (SI)	5.51	2.62
Luminous Efficacy	0.72	0.49
Total Solar Energy Rejected	78%	70%

R06922W - Water Activated Adhesive
R05822S - Pressure Sensitive Adhesive

R Silver i interior window films are designed for attractive appearance and sustainable solar heat rejection. Competitively priced, this range of window films are particularly popular for use in commercial projects.





AVERY DENNISON

Dual Reflective

Avery Dennison's Dual Reflective control films for interior application combine a warm, low-reflective and neutral interior with a sophisticated, high energy-rejecting exterior that provides daytime privacy without obscuring external views; ideal for residential projects.

Product Range

Interior

- DR OptiTune 05i
- DR OptiTune 15i
- DR OptiTune 20i
- DR OptiTune 30i
- DR OptiTune 40i
- DR OptiShade 15i
- DR OptiShade 25i
- DR OptiShade 35i

Exterior

- DR Grey 10X
- DR Grey 20X
- DR Grey 35X
- DR Grey 10 XTRM
- DR Grey 20 XTRM
- DR Grey 35 XTRM

Features and Benefits

99% UV block limits fading and damage from the sun

Based on nanotechnology which delivers excellent heat rejection which saves carbon emissions and costs associated with building cooling

Outstanding glare control for enhanced comfort and carbon footprint

Warm neutral interior with low reflectivity preserves ambiance and views
Bold appearance upgrades building exterior and maintains daytime privacy

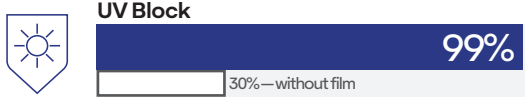
DR OptiTune 05i

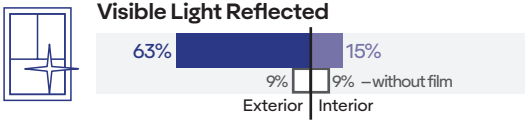
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	6%	6%
Visible Light Reflected (interior)	15%	15%
Visible Light Reflected (exterior)	63%	63%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	56%	50%
Total Solar Energy Transmitted	6%	6%
Total Solar Energy Absorbed	38%	44%
Emissivity (Room Side)	0.75	0.75
Glare Reduction	93%	93%
Selective InfraRed Reduction (SIRR)	94%	94%
InfraRed Energy Rejection (IRER)	82%	82%
Shading Coefficient	0.19	0.31
Solar Heat Gain Coeff. (G-Value)	0.16	0.27
U-Value Winter (IP)	0.99	0.47
U-Value Winter (SI)	5.62	2.66
Luminous Efficacy	0.32	0.19
Total Solar Energy Rejected	84%	73%

R070R0W - Water Activated Adhesive

AVERY DENNISON

DR OptiTune i sustainable dual reflective interior window film combines high solar heat rejection with low internal reflectance. Its attractive, warm neutral grey tone targets both residential and commercial use.





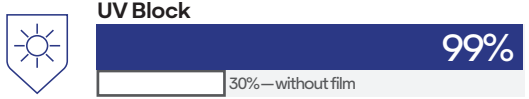
DR OptiTune 15i

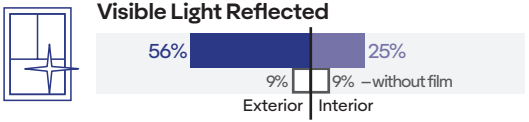
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	13%	13%
Visible Light Reflected (interior)	25%	24%
Visible Light Reflected (exterior)	56%	56%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	51%	46%
Total Solar Energy Transmitted	12%	11%
Total Solar Energy Absorbed	37%	43%
Emissivity (Room Side)	0.76	0.76
Glare Reduction	85%	85%
Selective InfraRed Reduction (SIRR)	88%	88%
InfraRed Energy Rejection (IRER)	77%	77%
Shading Coefficient	0.26	0.37
Solar Heat Gain Coeff. (G-Value)	0.22	0.32
U-Value Winter (IP)	1.00	0.47
U-Value Winter (SI)	5.68	2.67
Luminous Efficacy	0.50	0.34
Total Solar Energy Rejected	78%	68%

R070R1W - Water Activated Adhesive

AVERY DENNISON

DR OptiTune i sustainable dual reflective interior window film combines high solar heat rejection with low internal reflectance. Its attractive, warm neutral grey tone targets both residential and commercial use.





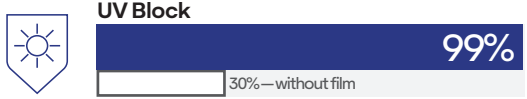
DR OptiTune 20i

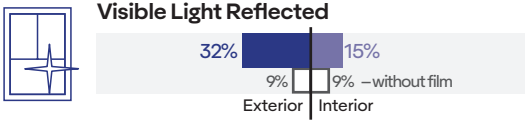
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	21%	19%
Visible Light Reflected (interior)	15%	15%
Visible Light Reflected (exterior)	32%	35%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	31%	31%
Total Solar Energy Transmitted	18%	16%
Total Solar Energy Absorbed	51%	53%
Emissivity (Room Side)	0.80	0.80
Glare Reduction	77%	76%
Selective InfraRed Reduction (SIRR)	83%	83%
InfraRed Energy Rejection (IRER)	68%	68%
Shading Coefficient	0.38	0.51
Solar Heat Gain Coeff. (G-Value)	0.33	0.44
U-Value Winter (IP)	1.02	0.48
U-Value Winter (SI)	5.79	2.70
Luminous Efficacy	0.55	0.38
Total Solar Energy Rejected	67%	56%

R069R2W - Water Activated Adhesive

AVERY DENNISON

DR OptiTune i sustainable dual reflective interior window film combines high solar heat rejection with low internal reflectance. Its attractive, warm neutral grey tone targets both residential and commercial use.





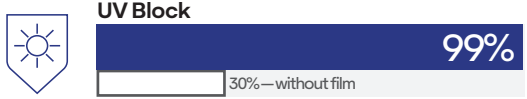
DR OptiTune 30i

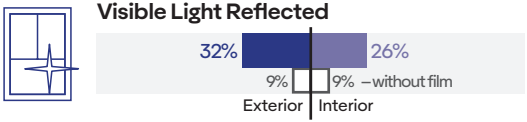
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	32%	30%
Visible Light Reflected (interior)	26%	27%
Visible Light Reflected (exterior)	32%	36%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	32%	31%
Total Solar Energy Transmitted	25%	22%
Total Solar Energy Absorbed	43%	47%
Emissivity (Room Side)	0.81	0.81
Glare Reduction	63%	63%
Selective InfraRed Reduction (SIRR)	79%	79%
InfraRed Energy Rejection (IRER)	65%	65%
Shading Coefficient	0.44	0.53
Solar Heat Gain Coeff. (G-Value)	0.37	0.46
U-Value Winter (IP)	1.03	0.48
U-Value Winter (SI)	5.85	2.71
Luminous Efficacy	0.75	0.57
Total Solar Energy Rejected	63%	54%

R069R3W - Water Activated Adhesive

AVERY DENNISON

DR OptiTune i sustainable dual reflective interior window film combines high solar heat rejection with low internal reflectance. Its attractive, warm neutral grey tone targets both residential and commercial use.





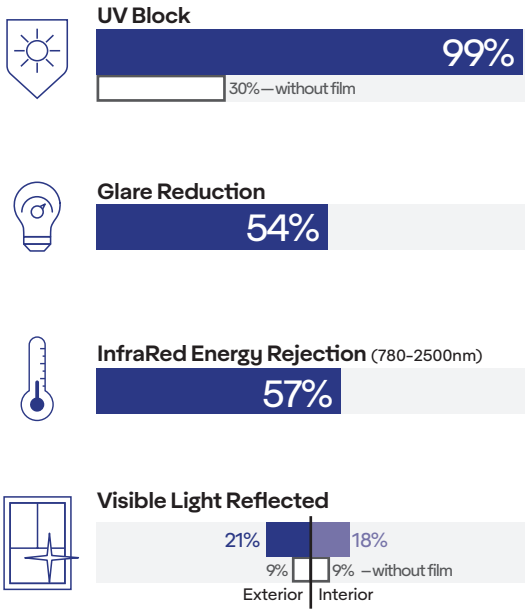
DR OptiTune 40i

Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	41%	38%
Visible Light Reflected (interior)	18%	19%
Visible Light Reflected (exterior)	21%	26%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	22%	24%
Total Solar Energy Transmitted	33%	29%
Total Solar Energy Absorbed	45%	47%
Emissivity (Room Side)	0.83	0.83
Glare Reduction	54%	54%
Selective InfraRed Reduction (SIRR)	71%	79%
InfraRed Energy Rejection (IRER)	57%	65%
Shading Coefficient	0.54	0.62
Solar Heat Gain Coeff. (G-Value)	0.46	0.54
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.72
Luminous Efficacy	0.77	0.60
Total Solar Energy Rejected	54%	46%

R069R4W - Water Activated Adhesive

AVERY DENNISON

DR OptiTune i sustainable dual reflective interior window film combines high solar heat rejection with low internal reflectance. Its attractive, warm neutral grey tone targets both residential and commercial use.



Spectrally Selective

Avery Dennison's Spectrally Selective Interior Films filter impressive levels of solar heat while maintaining a natural appearance thanks to its nanotechnology engineering. Spectrally Selective Interior Films are suitable for historical buildings, residential, retail and commercial application.

Product Range

Interior

- SP e-Lite 45i
- SP e-Lite 70i

Exterior

- SP e-Lite 4X
- SP e-Lite 70X

Features and Benefits

High visible light transmission that is barely discernible on glass - high levels of natural daylight

High heat rejection for enhanced building environmental impact, comfort and reduced cooling costs

Natural appearance maintains building's original façade

99+% UV block reduces fading and damage from the sun

SP e-Lite 45i

Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	44%	40%
Visible Light Reflected (interior)	12%	14%
Visible Light Reflected (exterior)	17%	23%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	24%	26%
Total Solar Energy Transmitted	26%	23%
Total Solar Energy Absorbed	50%	51%
Emissivity (Room Side)	0.83	0.83
Glare Reduction	51%	50%
Selective InfraRed Reduction (SIRR)	86%	86%
InfraRed Energy Rejection (IRER)	69%	69%
Shading Coefficient	0.47	0.58
Solar Heat Gain Coeff. (G-Value)	0.41	0.51
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.88	2.72
Luminous Efficacy	0.94	0.69
Total Solar Energy Rejected	59%	49%

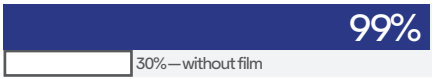
R081I4W - Water Activated Adhesive
RO81IS4 - Pressure Sensitive Adhesive

AVERY DENNISON

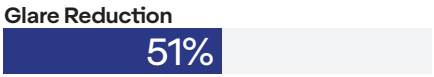
SP e-Lite i interior window films deliver excellent levels of heat rejection that maintain cool, comfortable interiors, whilst preserving the natural appearance of both the glass and the building exterior. The film's neutral color features low visible reflection inside and out, effectively reduces excessive solar heat and reduces the need to cool and associated carbon emissions.

NFRC National Fenestration Rating Council

UV Block

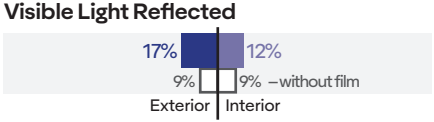


Glare Reduction



InfraRed Energy Rejection (780-2500nm)

Visible Light Reflected



SP e-Lite 70i

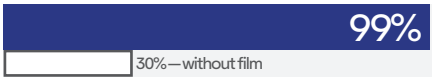
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	66%	61%
Visible Light Reflected (interior)	15%	18%
Visible Light Reflected (exterior)	16%	21%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	23%	25%
Total Solar Energy Transmitted	36%	33%
Total Solar Energy Absorbed	41%	42%
Emissivity (Room Side)	0.73	0.73
Glare Reduction	27%	25%
Selective InfraRed Reduction (SIRR)	87%	87%
InfraRed Energy Rejection (IRER)	71%	71%
Shading Coefficient	0.55	0.64
Solar Heat Gain Coeff. (G-Value)	0.48	0.56
U-Value Winter (IP)	0.98	0.46
U-Value Winter (SI)	5.59	2.64
Luminous Efficacy	1.20	0.95
Total Solar Energy Rejected	52%	44%

R081ISW - Water Activated Adhesive
RO81IS7 - Pressure Sensitive Adhesive

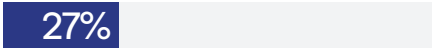
AVERY DENNISON

SP e-Lite i interior window films deliver excellent levels of heat rejection that maintain cool, comfortable interiors, whilst preserving the natural appearance of both the glass and the building exterior. The film's neutral color features low visible reflection inside and out, effectively reduces excessive solar heat and reduces the need to cool and associated carbon emissions.

UV Block

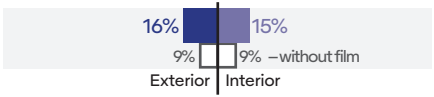


Glare Reduction



InfraRed Energy Rejection (780-2500nm)

Visible Light Reflected



Neutral

Avery Dennison's Neutral Window Films for interior application deliver outstanding solar control in a range of attractive neutral colors that provide a subtle appearance on glass windows. Neutral Window Films are suitable for both commercial and residential projects.

Product Range

Interior

- NT PerLite Ceramic 20i
- NT PerLite Ceramic 35i
- NT PerLite Ceramic 50i
- NT PerLite Ceramic 70i
- NT Natura 05i
- NT Natura 15i
- NT Natura 30i

Features and Benefits

High glare reduction - improves screen viewing, eases eye-strain and lowers associated carbon emissions

High glare reduction - improves screen viewing, eases eye-strain and lowers associated carbon emissions

Neutral color - provides natural gray appearance, inside and out

99% UV block limits fading and damage from the sun

NT PerLite Ceramic 20i

Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	22%	20%
Visible Light Reflected (interior)	24%	25%
Visible Light Reflected (exterior)	25%	31%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	29%	29%
Total Solar Energy Transmitted	14%	13%
Total Solar Energy Absorbed	57%	58%
Emissivity (Room Side)	0.76	0.76
Glare Reduction	76%	75%
Selective InfraRed Reduction (SIRR)	91%	91%
InfraRed Energy Rejection (IRER)	74%	74%
Shading Coefficient	0.36	0.51
Solar Heat Gain Coeff. (G-Value)	0.30	0.44
U-Value Winter (IP)	1.00	0.47
U-Value Winter (SI)	5.68	2.67
Luminous Efficacy	0.62	0.40
Total Solar Energy Rejected	70%	56%

R070L6W - Water Activated Adhesive

AVERY DENNISON

NT PerLite Ceramic's attractive neutral grey color delivers excellent solar energy rejection, with surprisingly low visible light reflectance. This makes it an ideal solution for sustainable energy-saving projects when it's also important to preserve view and retain a natural window appearance - both inside and out.

UV Block

99%

30% — without film

Glare Reduction

76%

InfraRed Energy Rejection (780-2500nm)

74%

Visible Light Reflected

25% 24%

9% 9% — without film

Exterior Interior

NT PerLite Ceramic 35i

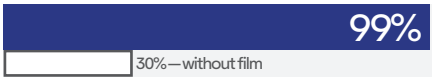
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	40%	37%
Visible Light Reflected (interior)	15%	16%
Visible Light Reflected (exterior)	17%	23%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	17%	20%
Total Solar Energy Transmitted	29%	25%
Total Solar Energy Absorbed	54%	55%
Emissivity (Room Side)	0.82	0.82
Glare Reduction	56%	55%
Selective InfraRed Reduction (SIRR)	78%	78%
InfraRed Energy Rejection (IRER)	60%	60%
Shading Coefficient	0.52	0.64
Solar Heat Gain Coeff. (G-Value)	0.45	0.55
U-Value Winter (IP)	1.03	0.48
U-Value Winter (SI)	5.85	2.72
Luminous Efficacy	0.75	0.57
Total Solar Energy Rejected	55%	45%

R070L5W - Water Activated Adhesive

AVERY DENNISON

NT PerLite Ceramic's attractive neutral grey color delivers excellent solar energy rejection, with surprisingly low visible light reflectance. This makes it an ideal solution for sustainable energy-saving projects when it's also important to preserve view and retain a natural window appearance - both inside and out.

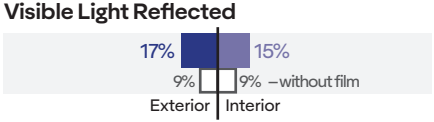
UV Block



Glare Reduction

InfraRed Energy Rejection (780-2500nm)

Visible Light Reflected



NT PerLite Ceramic 50i

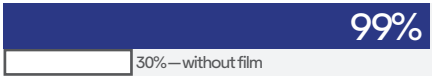
Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	51%	47%
Visible Light Reflected (interior)	16%	19%
Visible Light Reflected (exterior)	18%	24%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	20%	23%
Total Solar Energy Transmitted	40%	35%
Total Solar Energy Absorbed	40%	42%
Emissivity (Room Side)	0.84	0.84
Glare Reduction	43%	42%
Selective InfraRed Reduction (SIRR)	67%	67%
InfraRed Energy Rejection (IRER)	53%	53%
Shading Coefficient	0.60	0.66
Solar Heat Gain Coeff. (G-Value)	0.51	0.57
U-Value Winter (IP)	1.04	0.48
U-Value Winter (SI)	5.91	2.73
Luminous Efficacy	0.85	0.72
Total Solar Energy Rejected	49%	43%

R069L3W - Water Activated Adhesive

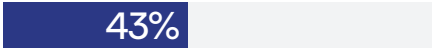
AVERY DENNISON

NT PerLite Ceramic's attractive neutral grey color delivers excellent solar energy rejection, with surprisingly low visible light reflectance. This makes it an ideal solution for sustainable energy-saving projects when it's also important to preserve view and retain a natural window appearance - both inside and out.

UV Block

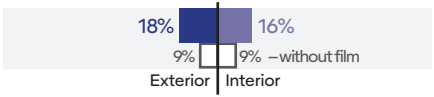


Glare Reduction



InfraRed Energy Rejection (780-2500nm)

Visible Light Reflected



NT Natura 05i

Optical & Solar Properties	Single Pane
Visible Light Transmitted	7%
Visible Light Reflected (interior)	11%
Visible Light Reflected (exterior)	14%
Ultra Violet Block	99%
Total Solar Energy Reflected	20%
Total Solar Energy Transmitted	12%
Total Solar Energy Absorbed	68%
Emissivity (Room Side)	0.78
Glare Reduction	92%
Selective InfraRed Reduction (SIRR)	82%
InfraRed Energy Rejection (IRER)	64%
Shading Coefficient	0.35
Solar Heat Gain Coeff. (G-Value)	0.30
U-Value Winter (IP)	1.01
U-Value Winter (SI)	5.73
Luminous Efficacy	0.20
Total Solar Energy Rejected	70%

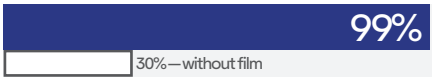
R058L7W - Water Activated Adhesive

AVERY DENNISON

NT Natura i low reflectance neutral grey, sustainable, solar control films are based on advanced nanotechnology that provides highly effective heat rejection, glare reduction and privacy.

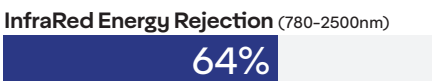
NFRC National Fenestration Rating Council

UV Block

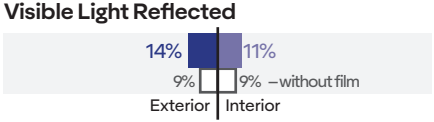


Glare Reduction

InfraRed Energy Rejection (780-2500nm)



Visible Light Reflected



NT Natura 15i

Optical & Solar Properties	Single Pane
Visible Light Transmitted	16%
Visible Light Reflected (interior)	11%
Visible Light Reflected (exterior)	9%
Ultra Violet Block	99%
Total Solar Energy Reflected	10%
Total Solar Energy Transmitted	15%
Total Solar Energy Absorbed	75%
Emissivity (Room Side)	0.86
Glare Reduction	83%
Selective InfraRed Reduction (SIRR)	85%
InfraRed Energy Rejection (IRER)	63%
Shading Coefficient	0.44
Solar Heat Gain Coeff. (G-Value)	0.38
U-Value Winter (IP)	1.05
U-Value Winter (SI)	5.80
Luminous Efficacy	0.36
Total Solar Energy Rejected	62%

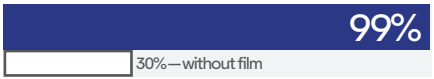
R058L9W - Water Activated Adhesive

AVERY DENNISON

NT Natura i low reflectance neutral grey, sustainable, solar control films are based on advanced nanotechnology that provides highly effective heat rejection, glare reduction and privacy.

NFRC National Fenestration Rating Council

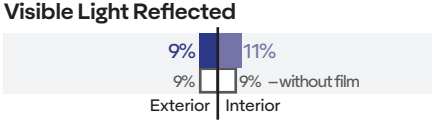
UV Block



Glare Reduction

InfraRed Energy Rejection (780-2500nm)

Visible Light Reflected



NT Natura 30i

Optical & Solar Properties	Single Pane	Double Pane
Visible Light Transmitted	31%	29%
Visible Light Reflected (interior)	9%	10%
Visible Light Reflected (exterior)	14%	21%
Ultra Violet Block	99%	99%
Total Solar Energy Reflected	15%	19%
Total Solar Energy Transmitted	33%	28%
Total Solar Energy Absorbed	52%	53%
Emissivity (Room Side)	0.87	0.87
Glare Reduction	65%	65%
Selective InfraRed Reduction (SIRR)	65%	65%
InfraRed Energy Rejection (IRER)	49%	49%
Shading Coefficient	0.56	0.66
Solar Heat Gain Coeff. (G-Value)	0.48	0.58
U-Value Winter (IP)	1.05	0.48
U-Value Winter (SI)	6.00	2.75
Luminous Efficacy	0.55	0.44
Total Solar Energy Rejected	52%	42%

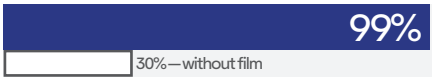
R069L8W - Water Activated Adhesive

AVERY DENNISON

NT Natura i low reflectance neutral grey, sustainable, solar control films are based on advanced nanotechnology that provides highly effective heat rejection, glare reduction and privacy.

NFRC National Fenestration Rating Council

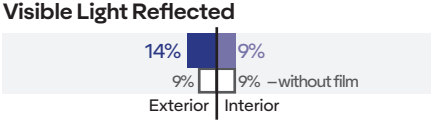
UV Block



Glare Reduction

InfraRed Energy Rejection (780-2500nm)

Visible Light Reflected



Clear Safety & Security Films

Avery Dennison safety and security films are suitable for building codes and insurance policies that often demand glazing that meets certain safety standards such as impact-resistant glass in schools, break-ins or blast protection for retail locations.

Product Range

Interior

- SF Clear 4 mil i
- SF Clear 7 mil i
- SF Clear 8 mil i
- SF Clear 12 mil i
- SF Clear 15 mil i

Exterior

- SF Clear 4 mil X
- SF Clear 7 mil X

Features and Benefits

Increased protection from glass shattered
by impact, blast, crime or natural disaster

Superb optical clarity for no compromise
vision

Up to 99% UV block to reduce fading and
sun damage

SF Clear 8 mil i

Mechanical Properties

Thickness	8 mil
Tensile Strength at Break	28,500 PSI
Break Strength	224 lb/inch
Elongation at Break	125 %
Peel Strength	7 lb/inch

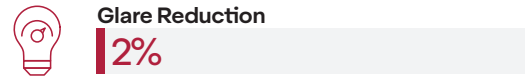
Optical & Solar Properties

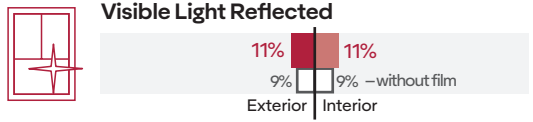
	3mm single
Visible Light Transmitted	88%
Visible Light Reflected (interior)	11%
Visible Light Reflected (exterior)	11%
Ultra Violet Block	99%
Total Solar Energy Reflected	9%
Total Solar Energy Transmitted	80%
Total Solar Energy Absorbed	11%
Glare Reduction	2%
Shading Coefficient	0.95
Solar Heat Gain Coeff. (G-Value)	0.83
U-Value Winter (IP)	1.07
U-Value Winter (SI)	6.07
Total Solar Energy Rejected	17%

R22301T- Pressure Sensitive Adhesive

AVERY DENNISON

Our safety and security films have outstanding transparency - the result of top grade polyester, our proprietary transparent adhesive, and tight adherence to demanding ISO 9001 quality-assurance standards.





Film to Glass Chart

March 2020

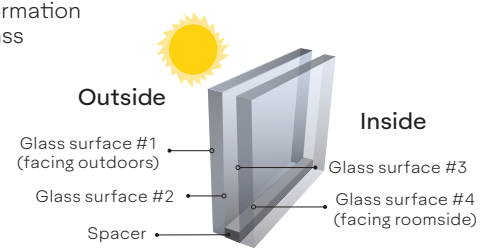
This Film To Glass (FTG) Application Chart is for guidance purposes only. For more information regarding the application of one of the products included in this FTG on a particular glass surface, please contact our technical team at **gs.technical@ap.averydennison.com**

✓ **Compatible**
Tinted glazing recommendations are based upon simulations done on 45% LT tinted glass. Film can be applied on darker tinted glass if glass is fully tempered or based on written approval from Avery Dennison technical support.

● **Conditional Compatibility**
Film can be applied if VLT is lighter than 45% or if glass is fully tempered.

▲ **Tempered / heat strengthened**
Film can be applied only if the glass is tempered, and not annealed (for IGU requirement for both panels).

× **Incompatible**



Interior

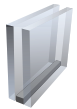
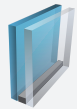
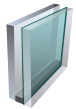
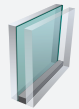
IMPORTANT:
This chart refers to annealed glass.
See terms and conditions

		Single Pane				IG Unit		Clear IG Unit - Low E	
		Clear	Tinted	Clear Laminated[3]	Tinted Laminated	Clear	Tinted	On #3	High Performance on #2
Reflective	R Silver 20i	✓	✓	✓	●	✓	●	✓	✓
	R Silver 35i	✓	✓	✓	✓	✓	●	✓	✓
Dual Reflective	DR OptiTune 05i	✓	✓	✓	▲	✓	●	▲	✓
	DR OptiTune 15i	✓	✓	✓	▲	✓	●	✓	✓
	DR OptiTune 20i	✓	✓	✓	▲	✓	●	▲	✓
	DR OptiTune 30i	✓	✓	✓	✓	✓	●	▲	✓
	DR OptiTune 40i	✓	✓	✓	✓	✓	✓	▲	✓
	DR OptiShade 15i	✓	✓	✓	▲	✓	●	▲	✓
	DR OptiShade 25i	✓	✓	✓	▲	✓	●	▲	✓
	DR OptiShade 35i	✓	✓	✓	▲	✓	●	▲	✓
Spectrally Selective	SP e-Lite 45i[1]	✓	✓	✓	✓	✓	✓	▲	✓
	SP e-Lite 70i[1]	✓	✓	✓	✓	✓	✓	✓	✓

Film to Glass Chart

March 2020

Interior (continued)

		Single Pane				IG Unit		Clear IG Unit - Low E	
		 Clear	 Tinted	 Clear Laminated[3]	 Tinted Laminated	 Clear	 Tinted	 On #3	 High Performance on #2
Netural	NT PerLite Ceramic 20i	✓	✓	▲	▲	▲	●	▲	▲
	NT PerLite Ceramic 35i	✓	✓	✓	▲	✓	✓	▲	✓
	NT PerLite Ceramic 50i	✓	✓	✓	●	✓	✓	✓	✓
	NT PerLite Ceramic 70i	✓	✓	✓	●	✓	✓	✓	✓
	NT Natura 05i	✓	▲	▲	▲	▲	▲	▲	▲
	NT Natura 15i	✓	▲	▲	▲	▲	▲	▲	▲
	NT Natura 30i	✓	●	✓	●	✓	●	▲	✓
Design	DS Matte 2 mil i	✓	✓	✓	▲	✓	●	✓	✓
	DS Black i	▲	▲	▲	×	×	×	×	×
	DS White i	✓	✓	✓	▲	✓	●	▲	▲
	DS UV Filter i	✓	✓	✓	✓	✓	✓	✓	✓
	DS Print SR 2/4 mil i[4]	✓	✓	✓	✓	✓	✓	✓	✓
Solar Safety	R Silver 20 4 mil	✓	✓	✓	●	✓	●	✓	✓
	NT PerLite Ceramic 35 6mil	✓	✓	✓	▲	✓	✓	▲	✓
Safety & Security	SF Clear 4/7/8/12/15 mil i	✓	✓	✓	✓	✓	✓	✓	✓
	SF Matte 5/12 mil i	✓	✓	✓	▲	✓	●	✓	✓
	AG Clear 4/6 mil ix	✓	✓	✓	✓	✓	✓	✓	✓

1. Must be sealed if within 10 miles / 16km of the ocean. Use neutral sealing agent Dow Corning 791 or 795, Max 5000 by GE or equivalent neutral silicone seal agent. No edge sealing required on such location in case of fixed/stationary/immovable windows that are not exposed to environment.
2. Projects larger than 5500 sqft (500 sqm) need prior written approval from Avery Dennison.
3. Laminated clear applies only to 1/4" + 1/4" (6.35mm + 6.35mm) structures and thinner.
4. Light and white inks are approved for print on DS Print SR films. Other colored or dark inks printed on DS Print SR films require prior approval from the Avery Dennison technical support team. DS Print SR films are not suitable for direct exposure to the sun.
5. Refers to application of clear safety films unless it's in combination with other Avery Dennison window films in which case the Safety Clear Mod film receives the characteristics and warranty of the film that is applied on it.
6. Window films are not warranted for seal failure.

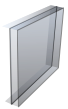
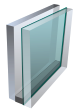
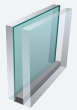
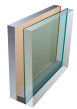
Film to Glass Chart (continued)

March 2020

Exterior

All exterior films require sealing! Use neutral sealing agent Dow Corning 791 or 795, Max 5000 by GE or approved equivalent neutral silicone seal agent for exterior applications.

^ Laminated clear applies only to 1/4" + 1/4" (6.35 mm + 6.35 mm) structures.

		Single Pane				IG Unit		Clear IG Unit - Low E		IG Unit Low E
		 Clear	 Tinted	 Clear Laminated^	 Tinted Laminated	 Clear	 Tinted	 On #3	 High Performance on #2	 Solar coated glass #2 + High Performance Low E #3
Reflective	R Silver 20X	✓	✓	✓	✓	✓	✓	✓	✓	✓
	R Silver 35X	✓	✓	✓	✓	✓	✓	✓	✓	✓
	R Silver 20X Poly	✓	✓	✓	✓	✓	✓	✓	✓	✓
	R Silver 20 XTRM	✓	✓	✓	✓	✓	✓	✓	✓	✓
	R SkyLite 20 XTRM	✓	✓	✓	✓	✓	✓	✓	✓	✓
	R SkyLite 20 XTRM Poly	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dual Reflective	DR Grey 10X	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DR Grey 20X	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DR Grey 35X	✓	✓	✓	✓	✓	✓	✓	✓	▲
	DR Grey 10 XTRM	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DR Grey 20 XTRM	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DR Grey 35 XTRM	✓	✓	✓	✓	✓	✓	✓	✓	▲
Spectrally Selective	SP e-Lite 45X	✓	✓	✓	✓	✓	✓	✓	✓	▲
	SP e-Lite 70X	✓	✓	✓	✓	✓	✓	✓	✓	✓
Design	DS Bronze 20X	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DS Blue 35X	✓	✓	✓	✓	✓	✓	✓	✓	▲
Clear Films	SF Clear 4/7 mil X	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Clear 4/6 mil poly X	✓	✓	✓	✓	✓	✓	✓	✓	✓
Surface Protection	AG Clear 4/6 mil ix	✓	✓	✓	✓	✓	✓	✓	✓	✓

Film to Glass Chart (continued)

March 2020

Important restrictions and limitations on installation:

- It is the installer's responsibility to ensure that the film chosen is compatible with the glazing system.
- All film types can be applied to tempered glass, except for DS Black i and DS White i - see chart for limitations.
- Pane size: for glass with an edge dimension over 11.5 ft (3.5 m), and/or the surface of double pane glass has more than 40 sqft (3.7 sqm) surface area- use only on tempered glass.
- Pane thickness: clear glass > 3/8" (9.5 mm), tinted glass > 1/4" (6 mm) - use only on tempered glass unless given special approval otherwise.
- FTG chart refers to altitude up to 1640 ft (500 m). Above this altitude please consult with our technical support team. Altitude > 7000 ft (2310 m) - installation requires prior written approval from Avery Dennison (unless specifically specified, e.g. clear laminate).
- Installation on laminated glass requires prior written approval from Avery Dennison.
- Interior of skylights - installation requires prior written approval from Avery Dennison. These installations require sealing on all four edges.

Warranty is invalid if:

- Installation practices do not conform to Avery Dennison's published installation policies and procedures.
- Two or more films are applied to the same glass surface (with the exception of Avery Dennison Modular Film).
- Automotive film is applied to flat glass constructions.
- The filmed windows are triple or more pane construction, textured, wire film glass, or an IG unit inclusive of a suspended film, unless approved otherwise.
- Film is applied to any glass on which there is paint, lettering, signs, stickers or other permanent or temporary ornamentation (with the exception of small safety labels).
- Filmed glass has prior damage, is chipped, has cracked edges, has holes in it, or light is visible between the frame and the glass.
- Film is applied to non-glass substrates (unless specifically specified, i.e. Poly Films).
- Film is only partially applied to glass.
- Pane is shaded by exterior overhangs, extensions, columns, pillars etc.
- Glass is architecturally odd-shaped, and larger than 20 sqft (1.8 sqm).
- Damage is caused by acts of nature (accidents, floods, fire, explosion etc.).
- Avery Dennison XTRM films are installed by non-Avery Dennison Certified installers.

Glossary

Visible Light Transmitted (VLT)

The percentage of total visible light (380-780 nanometers) that passes through a glazing system. Test method - ASTM E 903-96.

Visible Light Reflected (VLR)

The percentage of total visible light that is reflected by a glazing system. Test method - ASTM E 903-96.

Ultra Violet Block

The percentage of Ultra Violet radiation (300-380 nanometers) that is blocked by a glazing system. Ultraviolet is one portion of the total solar energy spectrum which greatly contributes to fading and deterioration of fabric and furnishings.

Total Solar Energy Reflected

The percentage of total solar energy (300-2500 nanometers) that is reflected by a glazing system. Test method - ASTM E 903-96.

Total Solar Energy Transmitted

The percentage of total solar energy (300-2500 nanometers) that passes through a glazing system.

Total Solar Energy Absorbed

The percentage of total solar energy (300-2500 nanometers) that is absorbed by a glazing system. Solar absorption is that portion of total solar energy neither transmitted nor reflected. Since solar transmittance and reflectance are measured directly, the following equation is used for calculating solar absorption. Test method - ASTM E 903.
Total solar energy absorbed = 100% - (Total solar energy reflected) - (Total solar energy transmitted).

Glare Reduction

Glare usually defined as being the difficulty of seeing in the presence of bright light such as direct or reflected sunlight or artificial light such as car headlights at night. Window film can provide glare reduction of up to 95%.

Selective InfraRed Rejection (SIRR)

The percentage of IR radiation that is not directly transmitted through a glazing system.
Calculated as %SIRR = 100% - % Transmission (@ 780-2500nm).

InfraRed Energy Rejection (IRER)

The percentage of Near Infrared Energy Rejection as measured between 780-2500nm. Calculated as the TSER over 780-2500nm: %IRER = 100% - 100*SHGC (@ 780-2500nm).

Shading Coefficient (SC)

The ratio of the solar heat gain through a given glazing system to the solar heat gain under the same conditions for clear, unshaded double strength window glass (DSA). Shading coefficient defines the sun control capability or efficiency of the glazing system.

Total Solar Energy Rejected (TSER)

Measures the window film's ability to reject solar energy in the form of visible light, infrared radiation and ultraviolet light. The higher the TSER number, the more solar energy is rejected away from the window.

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