

# 3M™ Window Film Selection Guide

# 3M Sun Control Window Films

Whether you're concerned about excessive heat, faded furnishings, glare or daytime privacy, we have a window film just for you.



Block out heat and improve comfort



Protect your furnishings from fading



Protect against skin cancer



Lower air-conditioning costs



Enhance daytime privacy



Reduce glare and improve screen viewing

## Areas of glass application



Windows



Skylights



Balcony Doors



Car Porch Roofs

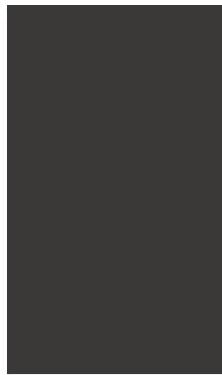


3M Prestige Series

# 3M

## Prestige Series

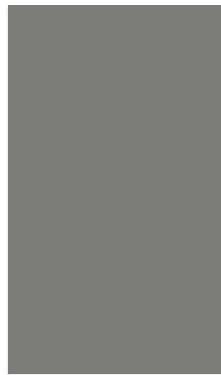
- These spectrally-selective films maximize natural light and outperform other darker films in terms of heat rejection
- The film uses metal-free nano-technology to create reflectivity that's lower than glass, so you get views with amazing clarity
- Up to 97% infrared rejection (IR) providing energy savings and enhanced comfort\*



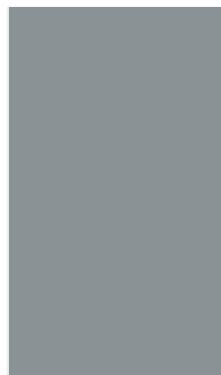
**PR20**  
Exterior Series  
available



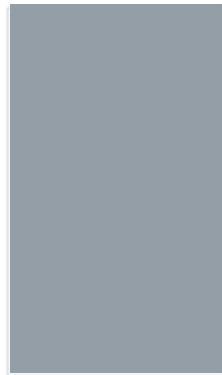
**PR40**  
Exterior Series  
available



**PR50**



**PR60**



**PR70**  
Exterior Series  
available

\*IR Rejection as measured from 900-1000nm

### Product Performance and Technical Data

Glass Type (All 6mm)	Film Type	Visible Light			Total Solar Energy Rejected		Solar Heat Gain Coefficient	U Value	UV Light Rejected	Glare Reduction
		Reflected (Interior)	Reflected (Exterior)	Transmitted	Normal	60 Degree Angle				
Clear	PR20	5%	6%	21%	62%	65%	0.38	1.02	99.9%	76%
	PR40	7%	7%	40%	60%	66%	0.41	0.99	99.9%	55%
	PR50	7%	8%	51%	56%	63%	0.44	0.99	99.9%	44%
	PR60	8%	7%	61%	52%	61%	0.48	0.99	99.9%	31%
	PR70	8%	8%	69%	49%	59%	0.51	0.99	99.9%	22%
Tinted	PR20	5%	5%	13%	64%	67%	0.36	1.02	99.9%	76%
	PR40	6%	5%	24%	62%	67%	0.38	0.99	99.9%	55%
	PR50	6%	6%	30%	61%	66%	0.39	0.99	99.9%	43%
	PR60	7%	6%	36%	58%	63%	0.42	0.99	99.9%	32%
	PR70	7%	6%	42%	56%	63%	0.44	0.99	99.9%	21%

\*Performance data is generated on a 6mm glass using applicable industry test methods and standards

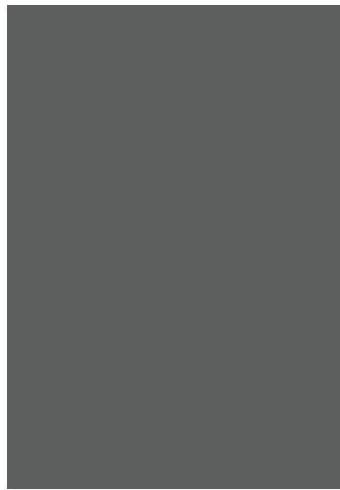


3M Ceramic Architectural Series



# Ceramic Architectural Series

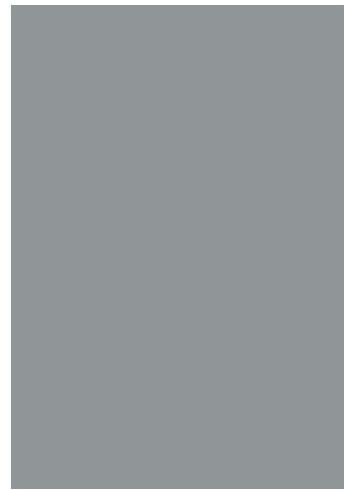
- High visible light transmission providing excellent aesthetics
- Non-metalized film with natural tone for amazing clarity
- Up to 91% infrared rejection (IR) providing energy savings and enhanced comfort\*



| CA35



| CA45



| CA60

\*IR Rejection measured in-house from 900-1000nm

## Product Performance and Technical Data

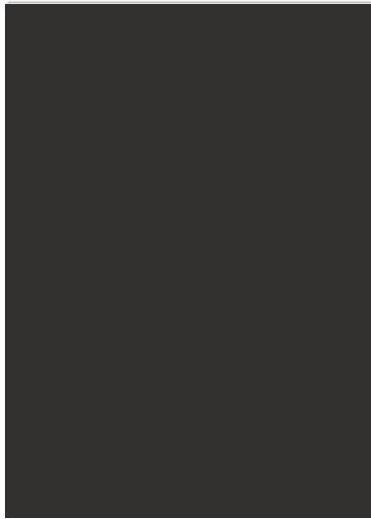
Glass Type (All 1/4")	Film Type	Visible Light			Total Solar Energy Rejected	Solar Heat Gain Coefficient	U Value	UV Light Rejected	Glare Reduction
		Reflected	Reflected	Transmitted					
Clear	CA35	6%	6%	37%	55%	0.46	1.02	99.8%	58%
	CA45	6%	6%	45%	52%	0.48	1.06	99.8%	49%
	CA60	7%	7%	62%	48%	0.53	1.06	99.7%	30%
Tinted	CA35	5%	6%	22%	60%	0.40	1.02	99.8%	58%
	CA45	5%	5%	27%	58%	0.42	1.06	99.9%	49%
	CA60	6%	6%	37%	55%	0.45	1.06	99.8%	30%



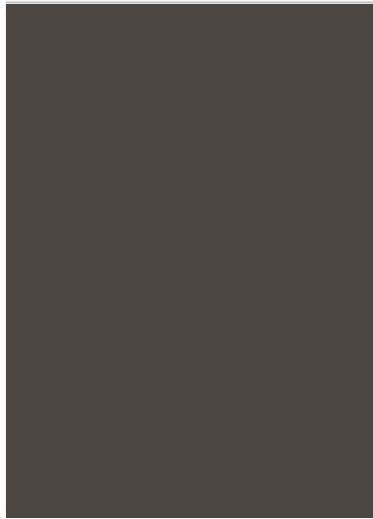
3M Night Vision Series

# 3M Night Vision Series

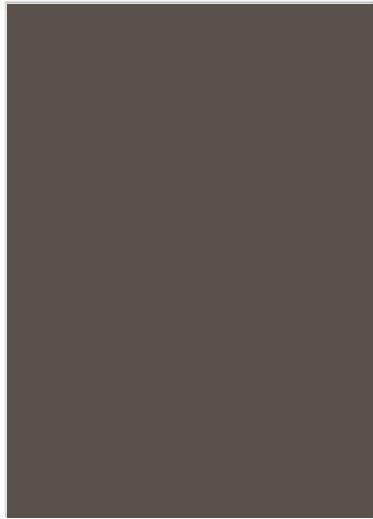
- These metallized films are excellent at reflecting the heat away from your windows
- They provide privacy so no one can see into your room or building during the day
- They also ensure clear, unobstructed views at night (for rooms with warm lighting only)



| NV15



| NV25



| NV35

## Product Performance and Technical Data

Glass Type (All 6mm)	Film Type	Visible Light			Total Solar Energy Rejected	Solar Heat Gain Coefficient	U Value	UV Light Rejected	Glare Reduction
		Reflected (Interior)	Reflected (Exterior)	Transmitted					
Clear	NV15	11%	38%	15%	72%	0.29	0.98	99%	83%
	NV25	7%	19%	24%	60%	0.40	1.00	99%	73%
	NV35	7%	13%	36%	51%	0.49	1.03	99%	59%
Tinted	NV15	11%	17%	9%	69%	0.31	0.98	99%	83%
	NV25	7%	10%	15%	63%	0.37	1.00	99%	74%
	NV35	6%	8%	22%	57%	0.43	1.03	99%	58%

\*Performance data is generated on a 6mm glass using applicable industry test methods and standards



3M Supreme Series

# 3M Neutral Series

- These high performing reflective films provide high heat and glare reduction for more comfort
- They provide privacy so no one can see into your room or building during the day



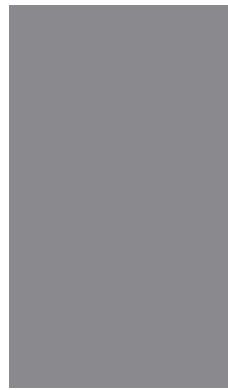
| RE20NEARL



| RE35NEARL



| RE50NEARL



| LE35\*



| P18ARL

\*LE35 film has been tested to be effective at electromagnetic interference (EMI) shielding.  
Test reports are available upon request.

## Product Performance and Technical Data

Glass Type (All 6mm)	Film Type	Visible Light			Total Solar Energy Rejected	Solar Heat Gain Coefficient	U Value	UV Light Rejected	Glare Reduction
		Reflected (Interior)	Reflected (Exterior)	Transmitted					
Clear	RE20NEARL	20%	21%	19%	67%	0.33	0.99	99%	78%
	RE35NEARL	18%	20%	36%	56%	0.45	0.99	99%	59%
	RE50NEARL	11%	12%	52%	43%	0.57	1.03	99%	41%
	LE35	62%	58%	26%	77%	0.23	0.84	99%	70%
	P18ARL	58%	56%	17%	77%	0.24	0.93	99%	81%
Tinted	RE20NEARL	19%	10%	9%	67%	0.33	0.99	99%	83%
	RE35NEARL	18%	10%	21%	60%	0.40	0.99	99%	60%
	RE50NEARL	10%	7%	31%	52%	0.48	1.03	99%	42%
	LE35	62%	24%	15%	74%	0.26	0.84	99%	72%
	P18ARL	58%	23%	10%	73%	0.27	0.93	99%	82%

\*Performance data is generated on a 6mm glass using applicable industry test methods and standards

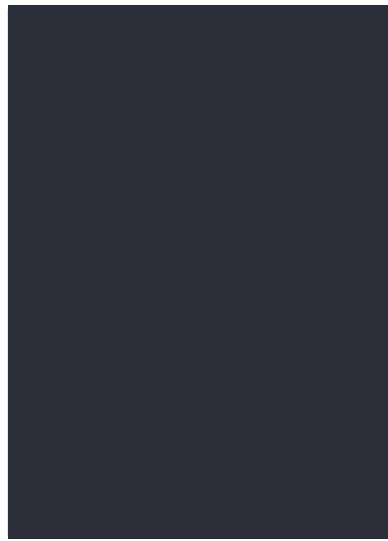


3M Color Stable Series

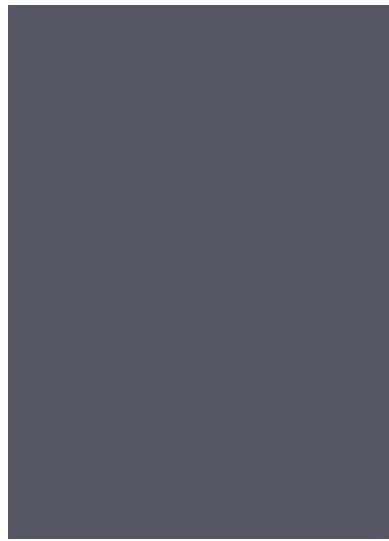


# Color Stable Series

- ▶ These films significantly reduce glare from blinding sunlight so you can see better
- ▶ Its revolutionary nano-carbon polyester technology gives the film a stylish look with outstanding colour stability so it never turns purple



| CS20



| CS35

## Product Performance and Technical Data

Glass Type (All 6mm)	Film Type	Visible Light			Total Solar Energy Rejected	Solar Heat Gain Coefficient	U Value	UV Light Rejected	Glare Reduction
		Reflected (Interior)	Reflected (Exterior)	Transmitted					
Clear 	CS20	5%	5%	19%	51%	0.49	1.03	99%	79%
	CS35	6%	5%	39%	40%	0.57	1.03	98%	56%

\*Performance data is generated on a 6mm glass using applicable industry test methods and standards



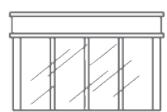
3M Safety & Security Window Film



# Safety & Security Window Films

- ▶ Glass is commonly used in interior spaces and architectural designs but pose as one of the greatest dangers when it is broken – be it from human impact, spontaneous breakage, accidental explosions or bomb blasts
- ▶ 3M™ Safety & Security Window Films are designed to hold broken glass in place and reduce the risk of injury caused by flying glass shards
- ▶ They also extend the life of furnishings by significantly blocking out harmful UV rays, the largest cause of fading

## Areas of glass application



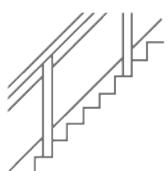
Entrances



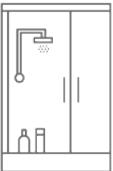
Windows



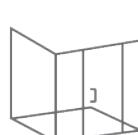
Balconies



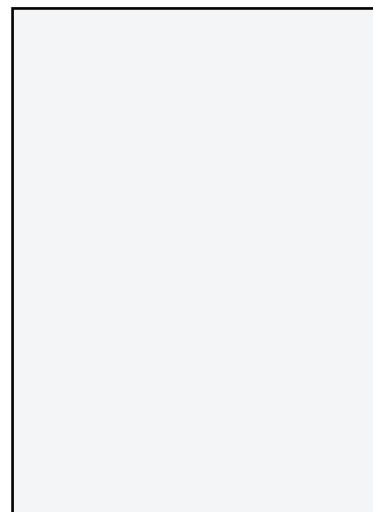
Balustrades



Shower Screens



Meeting Spaces



## Safety S40

Exterior Series available



### Upgrade Existing Glass to Code

- ▶ 3M Safety Window Films & Attachment Systems can help to meet safety glazing impact requirements quickly and easily without having to replace windows
- ▶ Keep people safe and upgrade to code with 3M's strong, micro-layered, tear-resistant films



### Protect Against Spontaneous Glass Breakage

- ▶ Tempered safety glass is routinely used because it's stronger than standard glass, but it also presents the risk of spontaneous glass breakage
- ▶ Use 3M Safety Window Films & Attachment Systems to secure the broken glass within the frame and prevent glass fragments from falling from windows and balconies



### Shield Against Blasts and Explosions

- ▶ Flying glass shards are one of the most common causes of blast related injuries and fatalities
- ▶ The 3M Ultra Series is specifically designed to help provide additional protection from blasts

# 3M Safety Series

- These clear, single layer polyester films rely on thickness to provide additional security benefits
- They help provide protection to people and property from flying glass shards
- You can improve the overall performance of 3M™ Safety & Security Window Films with the addition of 3M™ Impact Protection Attachment Systems



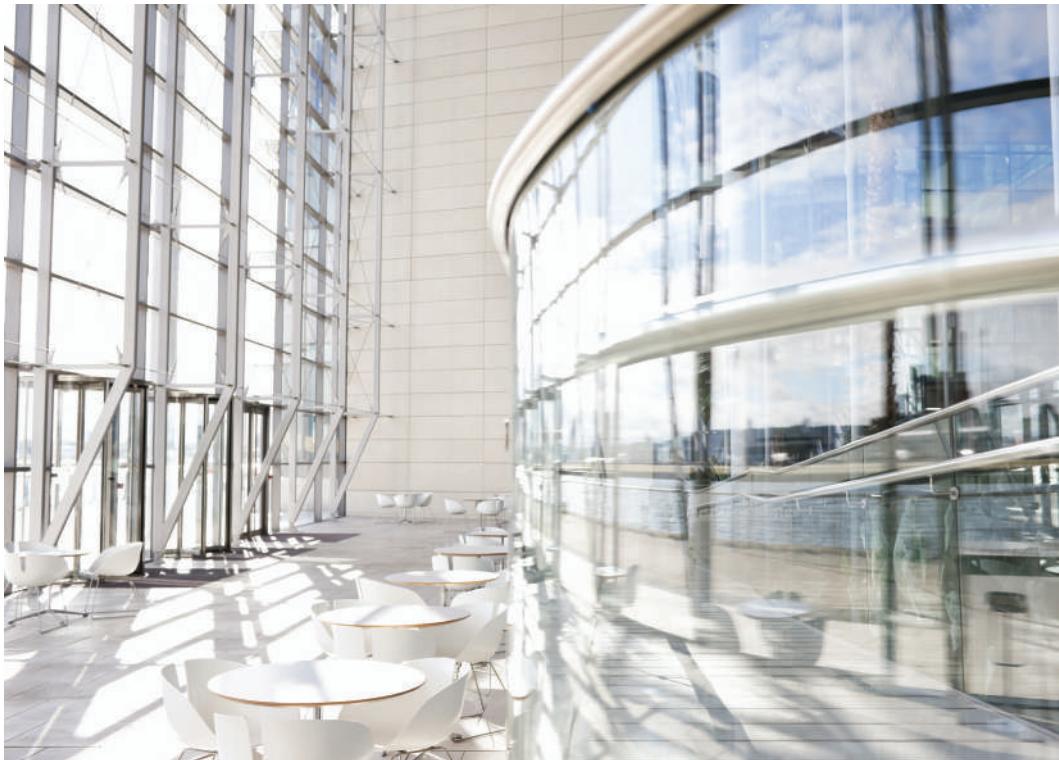
## Film Properties (nominal)

Film Type	Film Thickness	Construction	Tensile Strength	Break Strength	Elongation at Break	Abrasion Resistance
Safety S40	4 mil (0.10mm)	Single ply	25,000 psi	100 lbs/in	>125%	<5% haze increase
Safety S70	7 mil (0.18mm)	Single ply	25,000 psi	175 lbs/in	>125%	<5% haze increase
Safety S80	8 mil (0.20mm)	2-ply	25,000 psi	200 lbs/in	>125%	<5% haze increase

\*Please refer to the latest 3M Technical Data Sheet for more detailed product information and specifications.

# 3M Ultra Series

- The first of its kind, the 3M™ Ultra Series films are made from clear, tear-resistant film
- These films deliver superior performance over standard polyester films in blast and impact events; yet still maintain a high level of optical clarity
- You can improve the overall performance of 3M™ Safety & Security Window Films with the addition of 3M™ Impact Protection Attachment Systems



Ultra S800

## Film Properties (typical)

Film Thickness	8 mils (203 $\mu$ ) nominal*
Film Construction	Micro-layered
<b>Tensile Properties (ASTM D882)</b>	
Tensile Strength	31,500 psi
Break Strength	253 lbs/in
Elongation at Break	135%
Yield Strength	15,000 psi
Elongation at Yield	8%
Modulus	520 kpsi

\*Total thickness with adhesive is 9mils (230  $\mu$ )

Other Physical Properties	
Graves Area Tear Resistance (ASTM D1004)	1,100 lbs% (MD) / 1,050 lbs% (TD)
Puncture-Propagation-Tear Resistance (ASTM D2582)	9 lbf (MD) / 11 lbf (TD)
Puncture Strength (ASTM D4830)	190 lbf
Abrasion Resistance (ASTM D1044)	2.3% haze increase
Peel Strength (ASTM D3330)	9 lb/in
Flammability (ASTM E84)	Class A
Solar Properties - film applied to 6mm clear glass	
Visible Light Transmitted	87%
UV Light Rejected	99%

\*Please refer to the latest 3M Technical Data Sheet for more detailed product information and specifications.

# Why Choose 3M Window Films



## Best Window Film Adhesive

Fast drying, optically clear, durable and allows for clean removal



## Tested and Proven

3M Window Films have been rigorously tested and certified to meet international window film standards



## Peace of Mind

Enjoy a comprehensive warranty of up to 15 years directly from 3M Singapore

### 3M Window Film Certifications



National Fenestration  
Rating Council®



EXCELLENT



The Skin Cancer Foundation recommends many 3M Window Film products as effective UV Protectants.



3M Authorized Distributor & Certified Window Film Applicator

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**bizSAFE**<sub>3</sub>

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INTERNATIONAL  
WINDOW FILM  
ASSOCIATION