

Surface Coatings · Glass & Ceramics

Vetro Power Heat-Shield Glass Protect

Transparent heat reflective coating for glass. One coat on existing glass blocks UV and near-infrared heat and keeps the view clear: the coating alternative to solar control window film.



Up to 90%

infrared heat rejected

Up to 99%

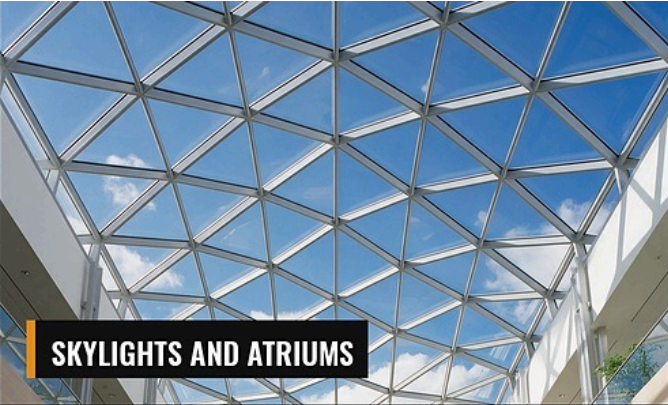
UV blocked

About 75%

visible light passes through



GLASS FACADES



SKYLIGHTS AND ATRIUMS



SHOPFRONTS



INTERIOR GLASS PARTITIONS

WHERE IT IS USED

LARGE GLASS AREAS WHERE SUNLIGHT THROUGH THE GLASS RAISES THE HEAT INSIDE

Applied to existing glass in place. A coating, not a window film.

What it is

Vetro Power Heat-Shield Glass Protect is a transparent heat reflective coating for glass. It is a liquid, applied in a single thin coat directly onto existing glass, where it cures into a clear film that blocks ultraviolet and near-infrared radiation and lets visible light through. Windows, facades, skylights and shopfronts keep their daylight and their view, with less solar heat and less fading coming through the glass.

The coating is solvent-based and is applied and cured in a ventilated space. It does the job that solar control window film and heat reflective window film are bought to do. There is no sheet to cut, no adhesive layer and no edges or joins on the glass. The film forms on the glass and bonds to it through silane-coupling chemistry, so no primer is needed.

Benefits

- Blocks up to 99% of UV-A and UV-B rays, protecting skin, furniture, fabrics and artwork from fading
- Rejects up to 90% of near-infrared heat (780 to 2500 nm) without darkening the glass
- Optically clear film, about 75% visible light transmittance, haze below 1.5% (ASTM D1003)
- Reduces condensation on glass in air-conditioned spaces
- Lowers the cooling load on HVAC systems by up to 30%
- A coating, not a film: no sheet, no adhesive, no edges or joins
- Applied to existing glass in a single coat by spray or roller, no primer
- Pencil hardness 3H to 5H, cross-cut adhesion 5B
- Over 2000 hours QUV weathering and over 500 hours salt spray
- 10-year limited warranty on inner-side application, subject to recommended care and maintenance

Performance and testing

- UV blocking up to 99%, IR rejection up to 90%: ASTM E903 / ISO 9050 on 5 mm clear float glass
- Visible light transmittance about 75%: ASTM E1084 / ISO 9050
- Haze after curing below 1.5% (ASTM D1003)
- Accelerated weathering (QUV-B): pass, over 2000 hours (ASTM G154)
- Salt spray: over 500 hours, no blistering (ASTM B117)
- Adhesion: 5B cross-cut, no removal (ASTM D3359)
- Abrasion: below 5% haze increase after 100 Taber cycles (ASTM D1044)
- Third-party test reports available on request

Results vary with the glass. There are no fixed single values for the UV, IR and visible light figures. Results move by about 5% either way with the glass they are applied to, which is why each is given as a range or an upper limit.



How the coating works

Sunlight arriving at a window is made up of ultraviolet, visible light and near-infrared heat. The cured film treats the three differently.

Band	What the film does
Ultraviolet (UV-A, UV-B)	Up to 99% is blocked in the film. This is the part of sunlight that fades furniture, fabrics and artwork, and the film protects skin behind the glass from it.
Near-infrared heat	Up to 90% of the radiation in the 780 to 2500 nm band, the part of sunlight felt as heat, is rejected. The glass is not darkened to do this.
Visible light	About 75% passes through. The cured film is optically clear with a blue hue, so daylighting and the view are kept.
Condensation	The film reduces the temperature difference at the inner surface of the glass, which reduces condensation on windows in air-conditioned spaces.

The film is a doped nano material in an acrylic-polysiloxane hybrid binder. It is 5 to 10 microns thick when dry, from a 20 to 60 micron wet coat, with a refractive index of 1.45 to 1.55, which is close to that of glass itself.

A coating instead of window film

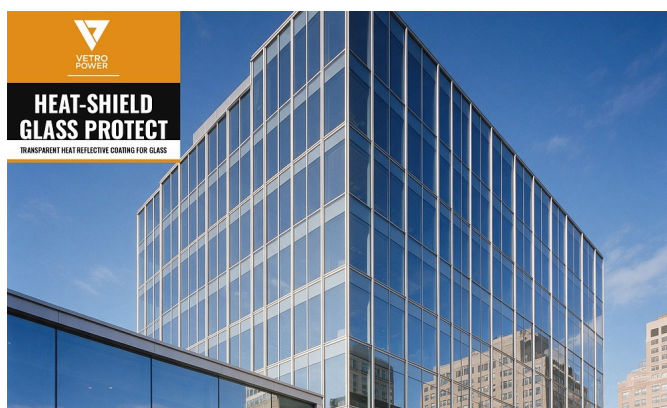
	Window film	Vetro Power Heat-Shield Glass Protect
Form	Self-adhesive polyester sheet, cut to the size of each pane	Liquid coating, applied wet and cured on the glass
How it goes on	Sheet is laid on wetted glass and squeegeed flat	Single coat by HVLP spray, microfibre applicator or short-nap microfibre roller
Edges and joins	Every pane has cut edges; large panes may need seams	Continuous film with no edges, seams or adhesive layer
Shapes	Cut to fit each pane	Sprayed or rolled onto any pane that can be reached, including polycarbonate sheets and skylights
Bond to glass	Pressure-sensitive adhesive	Chemical bond (silane coupling); cross-cut adhesion 5B with no removal (ASTM D3359)
Appearance	Depends on the film chosen	Optically clear, about 75% visible light transmittance; haze below 1.5% (ASTM D1003)
UV and heat	Depends on the film chosen	Up to 99% UV blocked, up to 90% infrared heat rejected, cooling load down by up to 30%
Surface hardness	Varies by film	Pencil hardness 3H to 5H (ASTM D3363); under 5% haze increase after 100 Taber cycles (ASTM D1044)
Weathering	Depends on the film chosen	Over 2000 hours QUV-B with no yellowing or delamination (ASTM G154); over 500 hours salt spray (ASTM B117)

Where old window film is already on the glass, it is stripped, the adhesive residue removed and the glass degreased before coating.

Where it is used

The coating goes on existing glass in place, so buildings and vehicles are treated without replacing the glass.

Commercial buildings	Glass facades, curtain walls, atriums and skylights. Lower cooling load, glare control.
Residential	Windows, sliding doors, balcony glass and sun-rooms. Thermal comfort and UV protection for interiors.
Hospitality and retail	Storefronts, hotel windows and restaurant glazing. Customer comfort, energy savings, fade protection.
Automotive	Cars, buses, trains and RV windows, not the front windshield. Cabin cooling and UV protection.
Greenhouses and horticulture	Polycarbonate sheets and greenhouse glass. Controlled solar gain, crop protection.
Healthcare and museums	Display cases, gallery windows and museum glazing. Artwork preservation, a UV-free environment.
Industrial and warehousing	Skylights, polycarbonate roofs and factory windows. Worker comfort and reduced HVAC load.
Marine	Yacht and boat glass, cabin windows. Cabin cooling with salt-air durability (over 500 hours salt spray, ASTM B117).



HEAT-SHIELD GLASS PROTECT
TRANSPARENT HEAT REFLECTIVE COATING FOR GLASS

UP TO 90%
INFRARED HEAT BLOCKED

UP TO 99%
UV BLOCKED
Figures from the product technical data sheet

ABOUT 75%
VISIBLE LIGHT PASSES THROUGH



HEAT-SHIELD GLASS PROTECT
TRANSPARENT HEAT REFLECTIVE COATING FOR GLASS

UP TO 30%
ENERGY SAVING
from the product technical data sheet

15+ YEARS
SERVICE LIFE
linear-slab application; 7 to 10 years outdoor

3H TO 5H
PENCIL HARDNESS
cured film pencil hardness test

CLEAR
FILM WITH A BLUE HUE
about 5% of visible light passes through

LESS HEAT LOAD, SAME VIEW.
FOR OFFICES, SHOWROOMS, SHOPFRONTS AND HOMES WITH LARGE GLASS AREAS
Figures from the product technical data sheet



NANO COATING FOR LARGE-AREA GLASS
Vetro Power Heat-Shield Glass Protect: a transparent coating applied to the inside of existing glass, one coat, no film

CHEMICAL BOND
Silane coupling to the glass, cross-cut adhesion 5B (ASTM D3359)

IR AND UV SCREEN
Up to 90% infrared heat rejected, up to 99% UV blocked

OPTICALLY CLEAR
About 75% visible light transmittance; haze below 15% (ASTM D1003)

HARD, DURABLE FILM
Pencil hardness 3H to 5H (ASTM D3363); 2000 h QUV-B with no yellowing

Figures and test methods from the product technical data sheet.



	WINDOW FILM	HEAT-SHIELD GLASS PROTECT
FORM	Self-adhesive polyester sheet, cut to the size of each pane	Liquid coating, applied wet and cured on the glass
EDGES	Every pane has cut edges; large panes may need seams	Continuous film with no edges, seams or adhesive layer
SHAPES	Cut to fit each pane	Sprayed or rolled onto any pane that can be reached, including polycarbonate sheets and skylights
BOND	Pressure-sensitive adhesive	Chemical bond (silane coupling); cross-cut adhesion 5B, ASTM D3359
APPEARANCE	Depends on the film chosen	Optically clear, about 75% visible light transmittance; haze below 15% (ASTM D1003)
UV AND HEAT	Depends on the film chosen	Up to 99% UV blocked, up to 90% infrared heat rejected, cooling

A COATING, NOT A FILM.
NO SHEET TO CUT, NO EDGES, NO ADHESIVE. ONE COAT ON THE GLASS YOU ALREADY HAVE.
From the comparison table on the product page. Test methods as listed in the technical data sheet.

Application

One coat, no primer. The work is in the preparation and in keeping the wet film even.

1. Clean the glass

The surface must be clean, dry and free of dust, oil, grease, silicone, fingerprints and adhesive residue. Old window film, old coatings and sealant residue are removed completely. Clean and degrease with IPA (isopropyl alcohol) or butyl acetate. Let the glass dry fully and do not touch it again before coating. Substrate temperature 15 °C to 35 °C, ambient humidity below 80%. Not if rain is expected within 24 hours. Indoors, dust-free, with stable temperature and humidity, is the recommended environment.

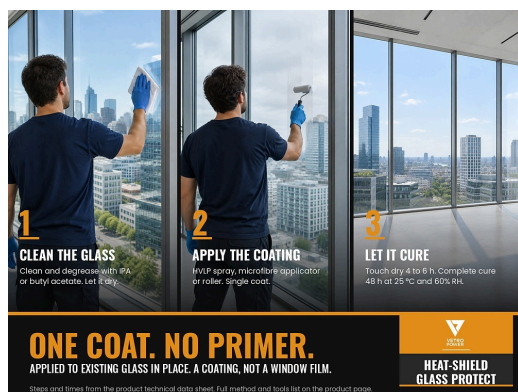
2. Apply the coating

Stir gently before use; shaking puts air bubbles into the liquid. HVLP spray: 1.0 to 1.3 mm nozzle, 2 to 3 bar, 200 to 250 mm from the glass, single coat. Or a microfibre applicator or short-nap microfibre roller, single coat; keep the wet film uniform, overlapping strokes leave visible streaks. Apply away from direct sunlight so the wet film does not flash-dry on the glass.

3. Let it cure

1 to 2 h	4 to 6 h	24 h	48 h	7 to 30 days
Bloom clear	Touch dry	Hard dry, handleable	Complete cure, functional	Full hardness

Times at 25 °C and 60% relative humidity. Low temperature and high humidity slow the cure; an IR lamp at 60 to 80 °C brings it to 30 to 60 minutes. Do not wash, wipe or touch the coated glass during the first 48 hours, and allow 7 days before the first cleaning.



Coverage and packaging

Pack size	Coverage, single coat	Typical use
500 ml	About 18.5 m ² (about 200 sq ft)	Trial or small project
1 litre	About 37 m ² (about 400 sq ft)	Standard pack
5 litre	About 185 m ² (about 2,000 sq ft)	Commercial projects
20 litre	About 740 m ² (about 8,000 sq ft)	Large facades, bulk

Coverage is theoretical at the recommended single-coat dry film thickness. Actual coverage varies with the substrate, the application method and the operator; allow 10 to 15% extra for spray or roller loss. Supplied in 1 L; 500 ml, 5 L and 20 L on request.

Technical data

Values for the liquid coating and the cured film, tested at 25 °C unless stated. Third-party test reports are available on request.

Property	Value	Test method
Technology / base	Doped nano in acrylic-polysiloxane hybrid	
Appearance (liquid)	Dark blue liquid	
Appearance (cured film)	Optically clear with a blue hue	
Base	Solvent-based	
Flash point (liquid)	54 °C, flammable liquid (GHS Category 3)	ASTM D93
VOC content	Up to 350 g/L	ASTM D3960
Odour	Mild solvent odour	
Solids content (by weight)	8 to 28%	ASTM D2369
Viscosity at 25 °C	6 to 30 mPa·s	ASTM D2196
Wet film thickness	20 to 60 microns	ASTM D4414
Dry film thickness	5 to 10 microns (single coat)	ASTM D7091
Refractive index	1.45 to 1.55	ASTM D542
Haze after curing	Below 1.5%	ASTM D1003
Pencil hardness	3H to 5H	ASTM D3363
Adhesion (cross-cut)	5B, no removal	ASTM D3359
Abrasion resistance (Taber CS-10, 500 g)	Below 5% haze increase after 100 cycles	ASTM D1044
Service temperature range	-20 °C to +120 °C	ASTM D2485
Heat resistance	120 °C for 4 hours, no change	ASTM D2485
Accelerated weathering (QUV-B)	Pass, over 2000 hours, no yellowing, no delamination	ASTM G154
Salt spray resistance	Over 500 hours, no blistering	ASTM B117
Chemical resistance (mild acid and alkali)	Resistant	ASTM D1308
Flammability of cured film	Non-flammable	
Full cure	7 days	
pH-value (undiluted)	7.0 to 10.0	
Density	1.00 to 1.05 g/ml	
Shelf life	12 months	

Care of coated glass

First 7 days: no cleaning until the film has fully cured.

Cleaning: soft microfibre cloth with plain water or a pH-neutral cleaner, light circular motions, no pressure. Every 3 to 6 months depending on exposure.

Not to be used: abrasive sponges, scrubbers or steel wool; ammonia, bleach, alcohol-based glass cleaners or solvents.

During building work: protect coated glass during construction, renovation and window cleaning. Do not scrape ice, stickers or paint splatter with metal blades; where the glass is exposed to site traffic, use a protective barrier film for the duration.

Storage, handling and safety

The liquid is solvent-based and flammable (flash point 54 °C): keep it away from open flames, sparks, hot surfaces and other ignition sources and use it only in a well-ventilated area. The cured film is non-flammable. Store in the original, tightly sealed container in a cool, dry, ventilated place at 5 °C to 30 °C, away from direct sunlight and heat sources. Do not freeze; keep upright. Once opened, reseal tightly and use within 30 days. Shelf life is 12 months from the date of manufacture in the unopened container.

During application wear safety goggles, nitrile gloves and a respirator with an organic vapour cartridge (P2/A2), and cross-ventilate the work area.

Limitations and warranty

- Not recommended for automotive front windshields; local traffic regulations on visible light transmittance may apply.
- Not a structural or safety glass coating; it provides no impact or shatter resistance.
- Performance reduces if applied below the recommended wet film thickness or if the film is uneven.
- Appearance may be affected if applied over scratched, etched or damaged glass.
- Not designed for continuous immersion or wet-area use, for example pool-side glass below the waterline.
- For tinted, low-E or laminated glass, confirm compatibility with a small patch trial before full application.

The coating is recommended for application on the inner side of the glass. Expected service life is 15 years and more on inner-side application, and 7 to 10 years on outdoor-exposed surfaces, depending on climate and maintenance.

A 10-year limited warranty against significant performance degradation applies to inner-side application when the coating is applied as per these guidelines and maintained as recommended. Exterior application carries a warranty of up to 5 years. The warranty does not cover mechanical impact, chemical abuse or improper application.

Frequently asked questions

Can heat reflective coating be applied to existing glass?

Yes. Vetro Power Heat-Shield Glass Protect is applied directly to glass that is already installed, in a single coat, with no primer. It is used on glass facades, curtain walls, atriums, skylights, windows, sliding doors, balcony glass, storefronts, hotel and restaurant glazing, vehicle windows other than the windshield, greenhouse glass and polycarbonate sheets, display cases and museum glazing, factory windows and boat cabin glass. For tinted, low-E or laminated glass a small patch trial is done first.

What is the difference between window film and a heat reflective glass coating?

Window film is a self-adhesive sheet cut to the size of each pane and squeegeed onto the glass, so every pane has edges and large panes may need seams. Vetro Power Heat-Shield Glass Protect is a liquid. It is applied by HVLP spray, microfibre applicator or short-nap microfibre roller and cures into a continuous film 5 to 10 microns thick that is bonded to the glass by silane coupling (cross-cut adhesion 5B, ASTM D3359). There is no adhesive layer, no edges and no joins. Any existing window film has to be removed completely before the coating is applied.

Does heat reflective glass coating darken the glass or reduce brightness?

No. The cured film is optically clear, with about 75% visible light transmittance (ASTM E1084 / ISO 9050) and haze below 1.5% (ASTM D1003). What it blocks is ultraviolet (up to 99%) and near-infrared heat (up to 90%). It is not used on automotive front windshields, where local traffic regulations on visible light transmittance may apply.

How much glass does one litre of heat reflective coating cover?

About 37 m² (about 400 sq ft) in a single coat at the recommended dry film thickness. A 500 ml pack covers about 18.5 m², 5 litres about 185 m² and 20 litres about 740 m². Coverage is theoretical; allow 10 to 15% extra for spray or roller loss.

How long does heat reflective glass coating take to cure?

At 25 °C and 60% relative humidity the film is touch dry in 4 to 6 hours, hard dry in 24 hours, functionally cured in 48 hours and at full hardness in 7 to 30 days. An IR lamp at 60 to 80 °C brings the cure to 30 to 60 minutes. Low temperature and high humidity slow it. The glass is not washed, wiped or touched for the first 48 hours.

How do I clean glass with a heat reflective coating?

Wait 7 days for full cure, then use a soft microfibre cloth with plain water or a pH-neutral cleaner, in light circular motions without pressure. No abrasive sponges, scrubbers or steel wool, and no ammonia, bleach, alcohol-based glass cleaners or solvents. For best results clean every 3 to 6 months, depending on how exposed the glass is.

Is there a warranty on the coating?

Yes. The 10-year limited warranty covers inner-side application, which is the recommended way to apply the coating. Exterior application is covered for up to 5 years. Both require application as per the guidelines and the recommended care, and exclude mechanical impact, chemical abuse and improper application. Service life is 15 years and more inner-side and 7 to 10 years outdoors, depending on climate and maintenance.

Does heat reflective glass coating block UV?

Yes. The cured film blocks up to 99% of UV-A and UV-B, the part of sunlight that fades furniture, fabrics, flooring and artwork. UV and IR transmittance are measured to ASTM E903 / ISO 9050 on 5 mm clear float glass; test reports are available on request.

Can heat reflective coating be applied to tinted, low-E or laminated glass?

Only after a patch trial. The coating is tested on clear float glass. On tinted, low-E or laminated glass, compatibility is confirmed with a small patch trial before the full area is coated. It is not applied over scratched, etched or damaged glass, where the appearance of the film may be affected.

Is a coating a replacement for heat reflective window film?

Yes. Heat reflective window film, solar control window film and sun control film are bought to cut heat and UV through existing glass. Vetro Power Heat-Shield Glass Protect does the same job as a liquid coating bonded to the glass surface, with no sheet, adhesive, edges or seams, and it is also applied to polycarbonate sheets and skylights.

Documents

Technical data sheet, product brochure and material safety data sheet are available on the product page at www.vetropoweramc.com/product/vetro-power-heat-shield-glass-protect. Third-party test reports are available on request.

Contact

Vetro Power Advanced Material Care

Manufactured for and marketed by Zyax Chem Pvt. Ltd.,
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www.vetropoweramc.com

Private label and bulk supply

Vetro Power Heat-Shield Glass Protect is available under your own brand and in bulk packs for applicators, glazing contractors and distributors. Ask for the OEM programme on the product page or write to customercare@vetropower.com.



HEAT-SHIELD GLASS PROTECT
TRANSPARENT HEAT REFLECTIVE COATING FOR GLASS

- UP TO 90%**
INFRARED HEAT REJECTED
- UP TO 99%**
UV BLOCKED
- ABOUT 75%**
VISIBLE LIGHT TRANSMITTANCE
haze below 1.5%, ASTM D1003

FIGURES WITH TEST METHODS.
RESULTS VARY ABOUT 5% WITH THE GLASS; THE DATA SHEET GIVES RANGES, NOT ONE NUMBER.
Figures from the product technical data sheet. Meter shown for illustration; no reading is claimed from this photo.