

VETRO POWER HEAT-SHIELD GLASS PROTECT

Transparent Heat Reflective Coating for Glass, IR and UV Blocking

Vetro Power Heat-Shield Glass Protect is a solvent-based, nano-engineered transparent heat reflective coating for glass. Formulated with rare earth nano-particles dispersed in a durable hybrid binder matrix, it forms a clear, optically transparent film that selectively blocks infrared (IR) and ultraviolet (UV) radiation while transmitting visible light. Engineered for harsh tropical and Middle East climatic conditions, it delivers HVAC cooling-load reduction, glare control, condensation reduction and fade protection for furniture, fabrics and interiors, in a single thin-film coat applied directly to existing glass.

APPLICATION AREA:

Commercial buildings (glass facades, curtain walls, atriums, skylights); residential (windows, sliding doors, balcony glass, sun-rooms); hospitality and retail (storefronts, hotel windows, restaurant glazing); automotive (cars, buses, trains, RV windows, non-windshield); greenhouses and horticulture (polycarbonate sheets, greenhouse glass); healthcare and museums (display cases, gallery windows, museum glazing); industrial and warehousing (skylights, polycarbonate roofs, factory windows); marine (yacht and boat glass, cabin windows).

PHYSICAL CHARACTERISTICS:

Property	Value
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
Density at 25 °C	1.00 to 1.05 g/ml (ASTM D1475)
pH	7.0 to 10.0 (ASTM E70)
Viscosity at 25 °C	6 to 30 mPa·s (ASTM D2196)
Solids content (by weight)	8 to 28% (ASTM D2369)
VOC content	≤ 350 g/L (ASTM D3960)
Flash point	54 °C, flammable liquid, GHS Category 3 (ASTM D93)
Wet / dry film thickness	20 to 60 µm wet; 5 to 10 µm dry, single coat
Refractive index	1.45 to 1.55 (ASTM D542)
Pencil hardness	3H to 5H (ASTM D3363)
Adhesion (cross-cut)	5B, no removal (ASTM D3359)
Abrasion (Taber CS-10, 500 g)	< 5% haze increase after 100 cycles (ASTM D1044)
Service temperature	-20 °C to +120 °C (ASTM D2485)
Accelerated weathering (QUV-B)	Pass, > 2000 h, no yellowing, no delamination (ASTM G154)
Salt spray	> 500 h, no blistering (ASTM B117)
Chemical resistance	Resistant to mild acid and alkali (ASTM D1308)
Flammability of cured film	Non-flammable
Shelf life	12 months at 5 °C to 30 °C, sealed original container

PERFORMANCE DATA:

Measured on 5 mm clear float glass coated at the recommended dry film thickness, tested per international glazing standards (UV and IR: ASTM E903 / ISO 9050; visible light: ASTM E1084 / ISO 9050).

Parameter	Value
UV blocked	up to 99% (UV transmittance ≤ 1%)
IR rejection (780 to 2500 nm)	up to 90%
Visible light transmittance	about 75%
Total solar energy rejection	65 to 75% (ASTM E903)
Solar heat gain coefficient	0.30 to 0.35 (ASTM E1424 / NFRC 200)
Shading coefficient	0.35 to 0.40 (ASTM E891 / E892)
Glare reduction	25 to 30% (ASTM E308)
Energy saving (HVAC cooling load)	up to 30% (ASHRAE 90.1, calc.)
Haze after curing	< 1.5% (ASTM D1003)

FEATURES:

- Blocks UV-A and UV-B rays; protects skin, furniture, fabrics and artwork from fading
- Selectively filters near-infrared radiation without darkening glass
- Optically clear finish; maintains natural daylighting and glass clarity
- Anti-condensation: reduces inner-surface temperature differential
- Lowers cooling load on HVAC systems
- Retrofit-friendly: applied directly to existing glass, no window replacement
- Single-coat application by spray or roller; no primer required

APPLICATION METHOD:

Surface preparation: Glass must be perfectly clean, dry and free from dust, oil, grease, silicone, fingerprints and adhesive residue. Clean and degrease with IPA or butyl acetate. Remove existing window film, old coatings or sealant residue completely. Allow to dry; do not touch the cleaned glass. Ambient humidity below 80%; substrate temperature 15 °C to 35 °C.

Priming: No primer required. Bonds directly to clean glass via silane-coupling chemistry.

Application: Stir gently before use; do not shake. Apply by HVLP spray (1.0 to 1.3 mm nozzle, 2 to 3 bar, 200 to 250 mm from glass), microfibre applicator or short-nap microfibre roller, single coat only. Maintain a uniform wet film; overlapping strokes cause visible streaks. Do not apply if rain is expected within 24 hours or humidity exceeds 85%. Apply away from direct sunlight, in an indoor, dust-free environment with stable temperature and humidity.

Curing at 25 °C / 60% RH: Bloom clear 1 to 2 h; touch dry 4 to 6 h; hard dry 24 h; complete cure 48 h; full hardness 7 to 30 days. IR lamp forced cure (60 to 80 °C): 30 to 60 minutes. Avoid washing, wiping or touching the surface during the first 48 hours.

CONSUMPTION:

Single coat, theoretical: 500 ml about 18.5 m² (200 sq ft); 1 litre about 37 m² (400 sq ft); 5 litre about 185 m² (2000 sq ft); 20 litre about 740 m² (8000 sq ft). Allow 10 to 15% additional for spray or roller loss.

CLEANING AND CARE:

Allow 7 days for full cure before cleaning. Clean with a soft microfibre cloth and plain water or a pH-neutral cleaner only, in light circular motions. No abrasive sponges, scrubbers or steel wool; no ammonia, bleach, alcohol-based glass cleaners or solvents. Clean every 3 to 6 months depending on exposure. Protect coated glass during construction and window cleaning; do not scrape with metal blades. Clean spray equipment immediately after use with butyl acetate or IPA; do not reuse rollers, applicator foils or mixing cups.

LIMITATIONS AND WARRANTY:

Not for automotive front windshields; not a structural or safety glass coating; not for continuous immersion or wet-area use. Performance reduces below the recommended film thickness

or if the film is non-uniform. Confirm compatibility on tinted, low-E or laminated glass with a patch trial. Application on the inner side of the glass is recommended. Expected service life 15+ years on inner-side application, 7 to 10 years on outdoor-exposed surfaces. Limited warranty: 10 years on inner-side application against significant performance degradation, up to 5 years on exterior application, subject to recommended care and maintenance; excludes mechanical impact, chemical abuse and improper application. Measured UV, IR and visible light values vary by about 5% either way with the glass, which is why they are given as ranges.

NOTE:

Solvent-based, flammable liquid (flash point 54 °C): keep away from open flames, sparks and ignition sources; use in a well-ventilated area. Wear safety goggles, nitrile gloves and a respirator with organic vapour cartridge (P2/A2) during application. Store at 5 °C to 30 °C; once opened, reseal and use within 30 days.

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

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