CNCGLASS
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CNCGLASS EVA Laminating Film, Colorless Transparent, with a 380 nm Ultraviolet Cut-off

CNCGLASS EVA laminating film in the colorless transparent grade with a 380 nm ultraviolet cut-off is an ethylene–vinyl acetate interlayer made for laminated safety glass and for decorative laminates in which a clear, UV-managed bond line is required. In the roll the sheet is colorless and translucent. Once it has been taken through a proper laminating cycle it becomes colorless and transparent, and a three-dimensional cross-linked network forms inside the interlayer. That network gives the film a thermoset character and is what allows the laminate to hold glass fragments and to carry the mechanical role expected of a safety interlayer.

The notes below describe the film as we supply it and as it behaves after a well-run vacuum or autoclave cycle. Typical figures are indications. They depend on the laminating process, and they do not by themselves constitute a listing, an approval, or a warranty for a particular glass makeup. The laminator remains responsible for confirming that a chosen thickness and cycle are suitable for the intended use.

How the film is processed and supplied

The useful laminating window for this grade runs from a minimum of 105 °C to a maximum of 160 °C. The film is intended for vacuum lamination or for a pre-bond step followed by an autoclave. Within that window the copolymer can develop the cross-linked structure that distinguishes a safety interlayer from a simple adhesive sheet. Temperatures below the minimum tend to leave the film under-cured; temperatures above the maximum risk optical and chemical degradation and should not be used as a shortcut to a shorter cycle.

Thickness is offered from 0.2 mm up to 1.14 mm, and width from 800 mm up to 2,400 mm, wound on a 76 mm cardboard core and packed in cartons. Other dimensions and packing arrangements can be discussed for a specific order. Keep rolls below 30 °C and below 80 % relative humidity, and use them within twelve months of delivery. Once a roll has been opened, protect the web from direct sun and from dust.

Typical material character

Density, measured by ISO 1183, lies in the range 0.95 to 0.97 g/cm³. After cross-linking, tensile strength by ISO 527-3 is typically greater than 20 N/mm² in both the machine and the cross direction, compared with more than 5 N/mm² in the uncross-linked sheet. Elongation at break, again by ISO 527-3, is typically greater than 700 % before cross-linking and remains greater than 400 % afterwards, in both directions. Hardness is typically greater than 65 Shore A by DIN 53505. The refractive index is 1.48. Light transmission of the laminated glass, over the visible window from 400 to 750 nm, is typically greater than 85 %. The ultraviolet cut-off of this grade is 380 nm, which is the feature that distinguishes it from our colorless transparent film with a 365 nm cut-off.

A compact view of the typical figures

The table gathers the figures already discussed, so that a process engineer can see the supply window and the mechanical and optical character in one place. Values after lamination assume a properly run cycle.

Topic	Typical figure
Density (ISO 1183)	0.95 – 0.97 g/cm³
Appearance, as supplied / after lamination	Colorless translucent / colorless transparent
Tensile strength, uncross-linked (ISO 527-3)	MD and CD greater than 5 N/mm²
Tensile strength, cross-linked (ISO 527-3)	MD and CD greater than 20 N/mm²
Elongation at break, uncross-linked (ISO 527-3)	MD and CD greater than 700 %
Elongation at break, cross-linked (ISO 527-3)	MD and CD greater than 400 %
Hardness (DIN 53505)	Greater than 65 Shore A
Refractive index	1.48
Light transmission, 400–750 nm, in laminated glass	Greater than 85 %
Ultraviolet cut-off	380 nm
Laminating temperature window	105 °C to 160 °C
Process route	Vacuum lamination, or pre-bond and autoclave
Thickness / width / core	0.2–1.14 mm / 800–2,400 mm / 76 mm cardboard
Storage	Below 30 °C, below 80 % RH, use within 12 months

Typical indications for this grade. Fitness for a given glass makeup and cycle must be confirmed by the processor.

Performance topics that matter for this class of interlayer

Laminated safety glass made with a cross-linked EVA interlayer of this class is commonly examined under the methods that building and façade practice already uses. Pendulum impact is assessed under DIN EN 12600, ball-drop and related impact work under DIN 52338 and DIN EN 356, and resistance to heat, humidity, and ultraviolet radiation under DIN EN ISO 12543-4. Optical durability is often followed with the ASTM family of methods that look at appearance, haze, yellowness, and color change after weathering, including ASTM G155, ASTM D1003, ASTM E313, and ASTM E308, sometimes together with ANSI Z97.1. Salt-spray exposure for long durations, for example 3,000 hours under ASTM B117 or ISO 9227, is used when the glass will live in a coastal or winter-salting climate. Airborne sound insulation is measured on the finished laminate under DIN EN ISO 10140-2; a 4 mm + 4 mm makeup with this class of interlayer is often discussed in the region of 37 dB, remembering that the glass thickness and the edge condition influence the result at least as much as the film.

Those methods describe the evaluations that a careful laminator and a careful specifier will want to have in view. They are not presented here as a listing or an approval held by CNCGLASS, and they are not a substitute for a test on the actual glass makeup, edge working, and process that will be used on the project. National technical approvals, glazing-council listings, and notice-of-acceptance programs are issued to named products and named fabricators; they should never be inferred from a typical data table.

A practical note on use

The figures and process remarks in this article are based on our development work and on our experience with EVA laminating film. We may refine a grade as the product develops. That does not relieve the user of the duty to try the film in the intended process. A statement by a purchaser of a planned use is binding on us only when we have confirmed in writing, at the time of the contract, that the supplied film is suitable for that use. The same reservation applies to the rights of third parties and to particular process methods. Please contact cnc@cncglass.com for pricing.

Contact Us

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Please contact cnc@cncglass.com to discuss thickness, width, and process support for CNCGLASS EVA laminating film with a 380 nm ultraviolet cut-off.