

Version #7 (0217)
Approved by J. S.

Product

MACal® 9700Pro
Translucent Vinyl Series

Product Description

MACal 9700Pro is a **translucent** high performance, 5-7 year outdoor film. The face is a **matte** finished 3-mil cadmium-free vinyl. This product is available in a wide variety of bright, consistent, uniform translucent colors. The film is coated with a durable permanent acrylic adhesive with excellent wet out characteristics for clarity. An 83# white kraft liner offers stability and layflat. The product has good dimensional stability and is designed for excellent cutting and weed ability. This product is specifically designed for backlit applications.

Physical Properties

Property	Typical Values	Test Method
Thickness in inches Film plus adhesive	0.0045 (115)	ASTM D-645
Peel Adhesion 180° on Stainless Steel - 20 min. - 24 hr. - 1 week	4.6 (20) 5.0 (22) 5.5 (24)	ASTM D-903
Face Material Data 68°F (20°C) Tensile strength lb. /in. (N/15mm) Elongation % at break	≥9.8 (28) ≥18%	DIN 53455
Dimensional Stability (shrinkage) in Percent	<0.02 (0.508)	FTM- 14 48 hours @ 158°F (70°C) 10" x 10" Sample Bonded to aluminum
Temperature Ranges Application: End Use:	50° to 104°F (10° to 40°C) -40° to 194°F (-40° to 90°C)	
Flammability	Self-extinguishing	ISO 3795

Durability

The durability of these films is indoor and 5-7 years outdoors. This use-life estimate is based upon accelerated age studies. Please note that exposure to severe temperatures, ultra-violet light and also tropical, sub-tropical or desert regions will cause more rapid deterioration. This also applies to polluted areas, high altitude and south facing exposure.

Shelf Life

Two years when stored at 75°F (24°C) and 50% relative humidity or less.

Chemical Resistance

A sample is prepared by adhering the film to a metal substrate 24 hours prior to immersion in the chemical solution or solvent. After a fixed period of time, the sample is removed, dried and examined for adhesion.

Chemical	Time Immersed	Observation
Water	24 hours	Excellent
5% Detergent	24 hours	Excellent
10% Hydrochloric Acid	24 hours	Excellent
10% Sulfuric Acid	24 hours	Excellent
10% Phosphoric acid	24 hours	Good
10% Sodium Hydroxide	24 hours	Excellent
10% Ammonium Hydroxide	24 hours	Excellent
Methanol	1 hour	Good

Glass Breakage

MACtac accepts no liability for glass breakage due to temperature differences across the glass which can be caused by sunlight on dark areas of the graphic. Size, thickness, quality of cut, edge treatment, tinting and frame design all effect temperature stress.

Application

Care should be taken when selecting a substrate for use in illuminated devices with pressure-sensitive materials. Some substrates, e.g. polycarbonate, can cause problems because of 'bubbling'. It is recommended that trials be conducted to establish the compatibility of MACal 9700Pro with the application surface. Application of MACal 9700 is made easier if MACtac application tape is used.

Thermal Forming

Thermal form using a temperature between 280°- 320°F (140° and 160°C). This temperature (and exposing time) differs according to:

- The thickness of the acrylic sheet
- The distance between the heat source & the panel
- The chemical nature of the panel (PMMA – PETG, etc.)

Note: it is important to apply 9700 on dry method and to wait few hours to get a right bond before forming.

Limitations

- 1) **The user is responsible for determining the product's suitability, including adhesion and if needed, removal characteristics when used in applications other than listed specifically in this Performance Guide.**
- 2) **If there are any questions about applications, please contact your Mactac sales representative to discuss your requirements for recommendations.**
- 3) **If this is a printed Performance Guide it is an uncontrolled document. Please check the Mactac website for the latest, most up-to-date version.**

- *Values given are typical and are not necessarily for use in specification.*

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