

▶ **AUTOTEX**

Polyester film is tougher and more durable than polycarbonate and PVC film. It offers enhanced chemical resistance and dramatically improved flex life. The advanced manufacturing techniques used by Autotype provide a controlled textured surface.

1. PRODUCT DESCRIPTION

Autotex is a high quality textured polyester film, consisting of a base polyester and a flexible chemically bonded, UV-cured textured coating. It is available in sheets and rolls.

Product range:

Autotex Fine	Fine texture
F150, F200, F280	150, 200 and 280 micron
Autotex Velvet	Velvet texture
V150, V200, V280	150, 200 and 280 micron

Primer:

Autotex has an ink adhesion primer on the second surface. This primer confers excellent adhesion to a wide range of solvent based graphic inks. The primer is not recommended for use with UV-cured graphic inks or a combination of solvent and UV graphic inks because the adhesion performance will be inconsistent. A special primer is available for use with UV inks upon request.

Windows:

Autotex can be screen printed with Windotex to obtain a clear window (see Windotex product data sheet). Autotex Fine, because of its lighter texture, will produce clearer windows than Autotex Velvet.

2. PRODUCT APPLICATIONS

Autotex is used as a substrate in the following markets:

Markets

Membrane switch overlays
Facia panels
Nameplates
Labels/Product marking

Major Benefits

- ▶ Long flex life
- ▶ Chemical and household cleaner resistance even at the edges
- ▶ Clear window facility
- ▶ Embossable
- ▶ Excellent scratch resistance
- ▶ Consistent low gloss, textured surface
- ▶ Attractive appearance

3. Chemical Properties

Property	Autotex	Test Method
Chemical Resistance	Resistant to: Alcohols Dilute acids Dilute alkalis Esters Hydrocarbons Ketones Household cleaning agents	DIN 42 115
Coefficient of hygroscopic expansion ¹	MD 8×10^{-6} (per 1% RH) TD 7×10^{-6} (per 1% RH)	DuPont Teijin Films Method ¹ Between 40-80% RH
Moisture vapour transmission rate (MVTR) ¹	3.57g/m ² /24hr	ASTM F372-73
Oxygen transmission rate ¹	8.2ml/m ² /24 hours	ASTM D1434-82 @ 25°C, 77% RH

¹ Data derived from DuPont Teijin Films literature for 125µ Melinex OD. The Autotex coating slightly enhances most properties. Autotex polyester films have limited long term resistance to UV light and therefore are not recommended for prolonged use outdoors (see Autotex UV).

4. Electrical Properties

Property	Autotex	Test Method
Dielectric strength ¹	125µ 175µ 250µ	125kV/mm = 15.6 kV 105kV/mm = 18.4 kV 84 kV/mm = 21 kV
Dissipation factor ¹	0.005	ASTM D150-70
Surface resistivity	$>10^{13}$ /sq 500Vd.c	ASTM D257-83 @ 20°C/54% RH
Volume resistivity ¹	10^{15} m 100Vd.c	ASTM D257-83 @ 25°C/1000s

¹ Data derived from DuPont Teijin Films literature for 125µ Melinex OD. The Autotex coating slightly enhances most properties.

5. Mechanical Properties

Property	Autotex	Test Method
Elastic modulus (1% secant) 175μ	4-5.5 GPa	ASTM D882-83 23°C, @ 50% RH Strain rate - 10%/1 minute
Elongation at break 175μ	MD 125% TD 80%	ASTM D882-83 23°C, @ 50% RH Strain rate - 50%/minute
MIT fold durability	>20,000 folds TD	ASTM D2176-69 ²
Switch life	>5 million flexes	Autotype Method ³
Tensile strength at break 175μ	160-250 MPa (160-250 N/mm ²)	ASTM D882-83
Yield point	6%	ASTM D882-83
Yield strength	95-140 MPa TD	ASTM D882-83

¹ Data derived from DuPont Teijin Films literature for Melinex OD ² Adapted to Autotype Method, see Test method manual

³ See Test method manual

6. Optical Properties

Property	Autotex	Test Method
Gardner Haze Fine Velvet	63% ±5% 69% ±5%	ASTM D1003-77 ¹
Gloss Level (60°) Fine Velvet	5.6% ±1% 4.3% ±0.5%	ASTM D2457-70 ¹
Texture profile Ra Fine Velvet Rtm Fine Velvet	1.9μ ±0.2μ 2.6μ ±0.2μ 10μ ±2μ 13.4μ ±2μ	Autotype Method ²
Total luminous transmission Fine Velvet	91% ±2% 91% ±2%	ASTM D1003-77 ¹
UV transmission density	0.09	Autotype Method ² 365nm narrowpass filter
Yellowness index ²	<4.5	ASTM D1925-70

¹ Adapted to Autotype method, see Test method manual ² See Test method manual

7. Physical Properties

Property	Autotex	Test Method
Relative density ¹	1.40	ASTM D1505-85 modified to DuPont Teijin Films method ¹ at 23°C
Pencil hardness	3H	Autotype Method ²
Thicknesses	F150 150μ ±10% F200 200μ ±10% F280 280μ ±10% V150 150μ ±10% V200 200μ ±10% V280 280μ ±10%	Autotype Method ²

¹ Data derived from DuPont Teijin Films literature for Melinex OD ² See Test method manual

8. Thermal Properties

Property	Autotex	Test Method
Coefficient of thermal expansion ¹	MD $19 \times 10^{-6} \text{ cm cm}^{-1} \text{ }^{\circ}\text{C}^{-1}$ TD $16 \times 10^{-6} \text{ cm cm}^{-1} \text{ }^{\circ}\text{C}^{-1}$	DuPont Teijin Films Method ¹ between 20-50°C
Dimensional stability	0.2% maximum shrinkage MD at 120°C [Typical result 0.1%]	Autotype Method ²
Maximum processing temperature	120°C	
Maximum and minimum use temperature	Maximum high humidity (10-95% RH) ≤60°C Low humidity (<10%RH) 85°C Minimum -40°C (-40°F)	Autotype Method ²

¹ Data derived from DuPont Teijin Films literature for Melinex OD ² See Test method manual

9. OZONE DEPLETING SUBSTANCES

EC Regulation 594/91 classifies ozone depleting substances into a number of different groups, I-VI. Autotex does NOT contain any substance classified in groups I-VI nor have any of the substances been used by Autotype during manufacture.

For details of the content of each of the groups, please see separate ozone depleting substances document.

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