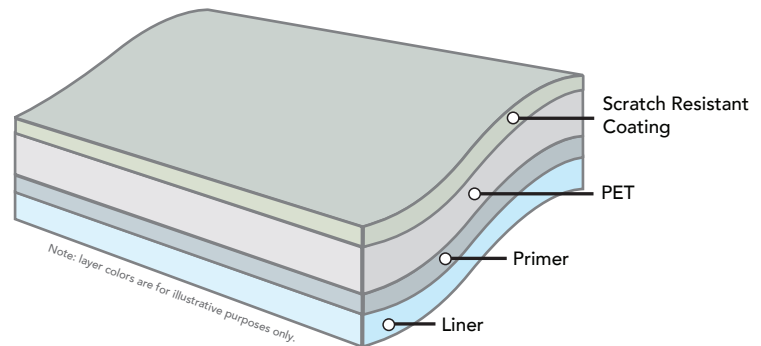


Anti-Spall Films for TPU

Madico Anti-Spall films are designed to improve ballistic glass and security glass products. These films offer an excellent solution for reducing weight, adding strength and increasing the safety of glazing. Madico Anti-Spall films are PET-based films made of various constructions designed to combine anti-spall properties with an excellent scratch resistant hard coat on the interior (air) side of the final product construction.

Material Construction - CL 700 SRB TPU:

Total laminate thickness7 mil
All thicknesses are based on nominal data.



Benefits:

- Spall protection
- Weight reduction
- Chemically resistant
- Excellent optical performance
- Similar to laminated glass
- Superior scratch-resistant hard coat

Available Widths:

- 91 cm / 36"
- 120 cm / 48"
- 150 cm / 60"
- 182 cm / 72"

Applications:

Automotive:

- Sunroofs
- Windshields
- Side and rear lites

Defense/Security:

- Bullet-resistant glazing
- Forced entry-resistant glazing
- Detention center glazing
- Blast-resistant glazing

Transportation:

- Rail car windscreens
- Mass transit vehicles
- Marine vessels

Architectural Glazing:

- Skylights
- Curtain walls
- Security doors



Anti-Spall Films for TPU

Madico's Anti-Spall films are used with TPU interlayers to produce a lighter weight product construction and improved spall protection on glazing systems.

Performance Measurements

Visible Light:

Transmitted >90%
Reflected Exterior 10%

Physical Properties:

Tensile Strength 28,500 PSI Average MD/TD
Elongation at Break 160% / 85% (MD/TD)
Scratch Resistance <1.0% Delta Haze ASTM D-1044-85
Peel Strength (ASTM D-3167 Results) >130lb / in.
Mounting Adhesive None

Haze:

Pre-processing (film only) ≤0.50%
Post-autoclaving (on 1/4" glass with 30 mil PVB) ≤0.40%

Cross-hatch Adhesion:

ASTM D3359, % Area Removed 0.0
Test B Rating 5B

Chemical Resistance:

Alcohols Resistant
Aldehydes Resistant
Hydrocarbons Resistant
Chlorinated Solvents Resistant

Acids:

Diluted (<10%) Resistant
(Includes Hydrofluoric Acid)
Concentrated Limited Resistance

Alkalies:

Diluted (<10%) Resistant
Concentrated Limited Resistance

The representations of performance and suitability for use contained in this datasheet are guidelines. Since only the user is aware of the specific conditions in which the product is to be used, responsibility to determine whether the product is suitable for that intended need belongs to the purchaser.

