



Technical Data Sheet

3M™ Scotchgard™ Multi-Layer Protective Film 1004

Product Description

3M™ Scotchgard™ Multi-Layer Protective Film 1004 is an optically transparent, pressure-sensitive polyester film tape designed to protect surfaces from intentional and unintentional damage caused by scratching, etching, abrasion and graffiti. A damaged film layer can be quickly and easily removed, exposing a fresh protective sheet.

Product Features

- Multi-layer construction reduces total application and removal costs versus single layer protection.
- Thick polyester film construction prevents typical scratches from affecting layers below.
- Film protects glass from chemical etching agents such as Bath Etch™ or Armour Etch™.
- Film on glass meets ASTM E162, ASTM E662, FMVSS-302 and Bombardier SMP 800-C requirements.
- Durable top-coat layer prevents light scratches caused by installation, wiping, cleaning or abrasion.
- Optimized adhesive provides easy, clean removal from glass and most other surfaces.
- Optimized inter-layer adhesive provides firm, adequate adhesion yet fast and easy removal.
- High clarity construction provides glass-like appearance.

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Physical Properties

Attribute Name	Test Method	Value
Adhesive Type		Acrylic
Backing		Polyester
Number of Layers		4
Total Thickness, 4 Layers	ASTM D3652	0.5 mm (19.5 mil)
Visible Light Transmission	ASTM D1003	90 %
Clarity	ASTM D1003	98 %
Haze	ASTM D1003	3 %

Typical Performance Characteristics

Attribute Name	Test Method	Value
Layer-to-Layer Adhesion	ASTM D3330	1.2 N/cm (11 oz/in)

Handling/Application Information

Application Examples

- 3M™ Scotchgard™ Multi-Layer Protective Film 1004MS protects glass, polycarbonate, acrylic and other surfaces from damage due to scratching, abrasion or chemical etching. Used for protecting smooth, flat surfaces such as public transportation windows and doors, modesty panels, transit kiosks, shelters, displays, mirrors and elevators.





Application Techniques

- For best results, surface must be clean and free of dirt, debris and oils and should be applied when surface temperature exceeds 50°F (10°C).
- Use of an application solution and 3M Heavy Duty Squeegee is suggested for easy positioning and squeegee application.
- Removal of film layers immediately after wet application is not recommended.
- Use of film removal tool is recommended for easy peel-back of target layer.
- For detailed Application Instructions and Tips, see 3M Technical Bulletin (70-0709-5334-7).

Application Examples

- Some acrylic and polycarbonate substrates have low surface energy coatings and/or may out-gas, leading to bubbling or adhesion issues. Test before use.
- Not approved as glazing material for windshields requiring conformance to Federal Code 49 CFR 571.205. This standard applies to passenger cars, multi- purpose passenger vehicles, trucks, buses, motorcycles, slide-in campers and pick-up covers.
- May be used outdoors for short term use (typically <1 year) with minimal change in haze, clarity, light transmission and minimal adhesive residue left on most surfaces. Some exposure conditions (e.g. direct sun facing, higher temperatures) may shorten performance.
- Blocks more than 98% of UV light that can degrade plastics and fabrics.
- Note: Removal of film layer generates static charge.

Industry Specifications

FMVSS-302
Bombardier SMP 800-C
[EN 45545 test report details \(ISO 5658-2\)](#)
[EN 45545 test report details \(ISO 5660-1, ISO 5659-2\)](#)
[EN 45545 test report details \(ISO 5660-1\)](#)
[EN 45545 test report details \(ISO 5659-2\)](#)

Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in the original packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

Information

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ISO Statement

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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