Science.
Applied to Life.™

3M™ Safety & Security Window Films

Applied to protect what is near and dear to you!

3M™ Safety and Security Films. Heritage. Technology. Warranty.

At 3M, we believe that science is just science until you apply it to life and use it to improve the world. We use science every day to improve lives and solve problems. We have 46 core technology platforms which range from adhesives and films to micro replication, abrasives and advanced materials.

Our teams have the ability and competence to combine and mix these core technologies in creative ways, to create new products that exactly meet the needs of many customers around the world.

Besides the fact that 3M invented the first reflective window film in 1966, people and businesses all over the world have been trusting in 3M's heritage of window films for decades. In 1998, the first multilayer window film was invented by 3M. In 2006, with the introduction of multilayer films, window film technology reached new levels applying a co-extrusion manufacturing process. 3M window films combine multiple key technologies including films, adhesives, coatings and nanotechnology.

Window films provide various advantages and add many benefits to existing building glazing. From glass shatter retention to protection against vandalism, from burglary to blast mitigation, 3M window films protect corporate offices, public buildings, transportation infrastructure and hospitals. Always to ensure a maximum level of safety for you.

3M proudly connects you with our network of authorized dealers, who are expertly trained to assist you in choosing the ideal window film for your needs. These partners have received training from 3M to help ensure a high-quality application. Along with the assurance of the 3M warranty, you can trust in a solution that aligns with your specific requirements.

Tested and re-tested.

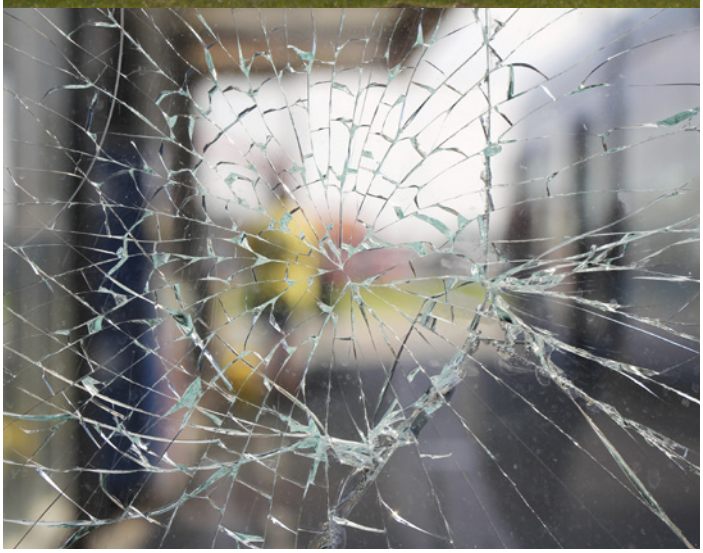
All 3M window films have been tested and re-tested according to European and other international standards. Tests defined by those standards try to simulate the hazards of real life in a reproducible testing environment.

Glass breakage
The test carried out according to EN 12600 uses a pendulum to simulate a slower moving but heavy object (50 kg) crashing into a glazing. In real life this could be people. It's not just about the shards being kept together, it is also about the person not "falling" through the glazing.

Resistance to manual attack
The glass film system is being tested for resistance to manual attack in accordance with the EN356 standard. This glass breakage can be the result of a stone being thrown at the window or of a baseball bat trying to smash the glazing in a riot or burglary. To simulate this impulse of a lighter but fast moving object, the sytem is tested horizontally with a falling ball. The glass film system is being tested for resistance to manual attack in accordance with the EN356 standard.

Blast test
The ASTM blast tests are real life explosions to determine the blast mitigation capabilities of the glass-film-system.

Spontaneous glass breakage
Glass can also break without any "direct" impulse being involved. Seismic incidents, thermal stress, nickel-sulfide particles or meteor strikes can break a glazing. Keeping the shards together and establishing the retention of the glazing may avoid injuries and casualties. This requires a product with a reliable adhesive and a superior tensile strength.



Film Properties - Safety

Product	Thickness [µm]	Film Type	Application	Typical Use	Impact Classification	Fire Testing*
S40	100	1 Ply, clear	interior	Vandalism protection Glass retention (basic)	EN12600: 2B2	EN 13501-1: B-s1, d0 EN 45545-2: HL1/HL2/HL3
S70	175	1 Ply, clear	interior	Vandalism protection Glass retention (basic)	EN12600: 2B2	EN 13501-1: B-s1, d0 EN 45545-2: HL1/HL2/HL3
S80	200	2 Ply, clear	interior	Vandalism protection Glass retention	EN12600: 1B1	EN 13501-1: B-s1, d0
S140	350	3 Ply, clear	interior	Vandalism protection Glass retention	EN356: P2A	EN 13501-1: B-s1, d0
S800	200	multilayer, clear	interior	Glass retention Blast mitigation	EN12600: 1B1 EN356: P1A	EN 13501-1: B-s1, d0 EN 45545-2: HL1/HL2/HL3
S2400	635	TPU, clear	interior	Break and entry incidents	EN12600: 1B1 EN356: P3A	EN 13501-1: B-s1, d0
S40EX	100	1 Ply, clear	exterior	Vandalism protection Spontaneous glass breakage Glass retention (basic)	EN12600: 2B2	EN 13501-1: B-s1, d0 EN 45545-2: HL1/HL2/HL3
S70EX	175	2 Ply, clear	exterior	Vandalism protection Spontaneous glass breakage Glass retention (basic)	EN12600: 2B2	EN 13501-1: B-s1, d0 EN 45545-2: HL1/HL2/HL3

* Information on tests according to local regulations on request

3M™ Scotchshield™ Security Film S2400

The Scotchshield S2400 solution is to provide additional security against break and entry. Its polyurethane construction provides greater tear strength and elongation than PET resin films (of similar thickness) allowing the film to absorb impact. This can help delay intruders and provide extra response time against smash and grab burglaries.

- Enhanced security
- Recommended solution for break & entry applications
- P3A classification according to EN 356 (4mm float glass)
- Helps prevent flying glass shards in intentional and accidental explosions
- Reduction of fading from UV light

3M™ Scotchshield™ Ultra Series

The Ultra Series Window Films utilize a co-extruded multilayer to provide immense strength and tear resistance compared to standard films. In case of glass breakage, fragments are retained on the film by a strong acrylic adhesive system. These products deliver superior performance over standard polyester films in blast and impacts and provide a high level of optical clarity.

- Enhanced security
- Protection from injuries or damage caused by fragments of broken glass
- Blast mitigation properties in combination with the 3M™ Impact Protection Attachment (IPA) Sealant anchorage system
- Resistance to vandalism or smash and grab burglaries
- Reduction of fading from UV light
- Abrasion resistance to keep the appearance of the film

3M™ Safety Series

3M Safety Series Films are composed of a transparent and weather stable polyester film with a scratch resistant surface and a strong acrylic adhesive. The films' high tensile strength and elongation at break increases resistance of the overall glazing system to impact and pressure. In case of glass breakage the fragments are retained by a strong acrylic adhesive.

- Protection from injuries or damage caused by fragments of broken glass
- Resistance to vandalism or smash and grab burglaries
- Reduction of fading from UV light
- Abrasion resistance to keep the appearance of the film

3M™ Safety Exterior Series

3M Safety Series Films are composed of a transparent and weather stable polyester film with an outdoor durable, scratch resistant surface and a strong acrylic adhesive. The films' high tensile strength and elongation at break increases resistance of the overall glazing system to impact and pressure. In case of glass breakage the fragments are retained by the strong acrylic adhesive.

- Protection against injuries to persons or damage to items caused by the fragmentation of glass
- Glass retention in case of spontaneous glass breakage
- Reduction of fading from UV light
- Outdoor durable and abrasion resistant coating to maintain its appearance

3M™ Ultra Combination Films

In addition to clear Safety and Security films, 3M offers a range of combination films that provide all the advantages of the Scotchshield Ultra Series in combination with the capabilities of a sun control film.

3M™ Safety & Security Films must be installed with the 3M™ Impact Protection Attachment (IPA) Sealant for all break and entry, windstorm and blast mitigation applications.

CAUTION: While 3M™ Window Films, when applied in accordance with 3M instructions, may help reduce the risk of injury from flying glass shards under certain conditions and may potentially delay intruders. **However, THESE FILMS DO NOT PREVENT PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH, WINDOW FILMS ARE NOT BULLETPROOF AND NOT DESIGNED TO STOP INTRUDERS.**

CAUTION: Certain 3M™ Window Films help block a percentage of UVA and UVB radiation and may have received The Skin Cancer Foundation Seal of Recommendation. However, the efficacy of these films in protecting against skin cancer has not been tested by 3M. **3M™ WINDOW FILMS DO NOT PREVENT SKIN CANCER.**

IMPORTANT PRODUCT AND APPLICATION LIMITATIONS: Many factors can contribute to potential hazards and damages arising from wind, impact, seismic, explosion, or break and entry incidents. These factors include without limitation the window film selected, type and thickness of glass, building construction, exterior pressure, proximity of impact occurrence, quality of window or door frames, intruder size and strength, and type of tools used to gain entry. Certain 3M™ Window Films require the use of 3M™ Impact Protection Attachment (IPA) Sealant on glass window and door frames for windstorm, break & entry, and explosion mitigation applications and for spontaneous glass breakage applications on single pane tempered glass. The sealant may also be recommended for certain other spontaneous glass breakage, safety glazing, and seismic applications. Always refer to the 3M Technical Data Sheets and 3M Technical Specifications to determine whether these combinations are required. **3M does not warrant fittness for use and you must always consult with security professionals and a 3M Authorized Window Film Dealer prior to selecting any window films to determine suitability for the intended application.**

Technical Information: Technical information, guidance, and other statements provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license to any intellectual property rights is granted or implied with respect to this technical information.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment, reviewing all applicable regulations and standards, and reviewing the product label and use instructions. Failure to properly evaluate, select, and use a 3M product in accordance with instructions or to meet all applicable safety regulations may result in injury, sickness, death, and/or harm to property.

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