

UL 972 and Safety Film

Burglary Protection Test Standard for Glazing



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Global Use

Document Summary

This bulletin describes the UL 972 test standard and introduces the CPMilms product that was used to obtain successful results under this standard.

The bulletin will explain the standard's importance and describe the "gap" filled by successfully passing the official UL 972 test. It will also introduce the reader to the new CPMilms product used to pass this test. It will discuss the previous product combinations that have been used in the past. Also, it will explain in detail what types of glass are covered on the official test report.



There will be a reference to installation tools and techniques that will facilitate the installation of the new product, tools and techniques that are now the recommended standards for all heavy gauge safety and security films.

Important Notice

The reader will notice that the official UL listing mentions that the film is intended "*for factory application only*" by trained professionals, since it does not have a testing category for professionally retrofitted products. Underwriting Laboratories (UL) considers the safety film used on the official test to be a *component* of a system and not a glazing system *per se*. A component is expected to be used in a system. For example, OEM glass is a component in a window assembly, the latter including the framing and mounting apparatus. The specifics of the glazing system and mounting apparatus are not defined, except in terms of their functional effectiveness as defined by the test standard. In other words, UL does not have a classification for a *retrofit product*, such as safety film, that is installed in the field by trained professionals on existing window systems. Bear in mind, therefore, that it is not correct to make a claim that a given *window film* passes UL972, but rather a given glazing system with a specific film as a component.

UL 972

The UL972 - Burglary-Resisting Glazing Material standard is one of the better known industry standards for anti-intrusion applications. It is used widely on project specifications in North America and other parts of the world.

Scope of UL 972

The scope of the UL 972 test standard (as defined by UL) is as follows:

1 Scope

1.1 These requirements cover clear, translucent, or opaque glazing material intended for indoor and outdoor use principally as a substitute for plate glass show windows or show case panels.

1.2 The material is intended to resist burglarious attacks of the "hit and run" type.

1.3 These requirements do not cover the glazing (mounting) methods used for the installation of burglary resisting glazing material.

Description of the Test

The test consists of two main parts: High Impact test and Multiple Impact test. There are also two classifications for products being tested: one for Indoor use and one for Outdoor use.

The glass test samples must have dimensions of 24" by 24" (610 by 610 mm) and must lie horizontally during testing. The impacts are to be conducted by using a smooth steel ball weighing 5 lbs (2.3 kg) and with a diameter of 3-1/4 inch (83 mm).

The High Impact part involves dropping the steel ball from a height of 40 ft (12.1 m). One impact per sample, three different samples must pass. The criterion for failure is the ball penetrating the sample on any of the three impacts. Penetration means the ball passing completely through the glazing material.

The Multiple Impact part involves dropping the steel ball from a height of 10 ft (3 m). Five impacts per sample, three different samples must pass. The criterion for failure is the ball penetrating the sample on any of the 5 impacts. If one sample fails the first try, three additional samples must be tested. If all samples pass, results are acceptable. If one sample fails on the second try, results are not acceptable.

The Multiple Impact part requires testing of samples conditioned at different temperatures. For Outdoor use: three samples at each of the following temperatures: 120 F (49 C), 75 F (23 C) and 14 F (minus 10 C). For Indoor use: three samples at each of the following temperatures: 95 F (35 C), 75 F (23 C) and 55 F (13 C).

What did we have before? and Why do we need this?

Prior to testing and achieving a UL 972 passing certification with a single layer of film, CPFilms recommended a combination of two films to achieve similar results.

This combination was tested in an independent laboratory. Samples were submitted to the laboratory to test according to UL 972. The samples consisted of a 4 mil – 1/4" (6mm) glass – 15 mil construction with the 4 mil towards the exterior (impact) side and the 15 mil to the interior (protected) side.

The obvious drawback of this combination is the need for two layers of film. Another drawback is the need for an exterior application of the 4 mil which is not recommended, except where windows are not sun-exposed (such as in a location where the pane itself is entirely within a building enclosure).

This above referenced testing was not conducted by UL and not considered "official." The need was evident for a product which, when applied on the interior surface in one layer only, would pass the stringent UL 972 standard.

It is important to note that some film manufacturers may claim their product was tested to meet the UL 972, but, unless the testing was in fact performed at UL or witnessed by a UL official, it has not received the official UL certification, and any associated performance claims related to UL are invalid. This certification is often requested by property insurers as proof of performance and often a condition of eligibility for coverage.

Introducing:

The SCL SR MPS15 is a new product, now available from CPFilms. It is a 15-mil clear

SCL SR MPS15

product similar in construction to the SCL SR PS15. It is meant to replace the SCL SR PS15.

The SCL SR MPS15 was used to successfully pass the official UL 972 test. One layer of film was installed on the interior (“sun-protected” or “non-impact”) side of a ¼” (6 mm) monolithic glass for this test. According to UL’s interpretation of their terminology, film applied to single, dual or triple pane glass is considered to be for Outdoor Use. Therefore, the SCL SR MPS15 was tested to Outdoor Use conditions.

It is worth mentioning that this listing is valid, not only for single pane glass, but also for dual and triple pane glass.

SCL SR MPS15 is a new product with significant advantages over its predecessor. Passing the UL 972 test is just one of those advantages.

Installation: SCL SR MPS15



Thor’s Hammer
10341046 with
5” Blue Narrow Blade
10333878



Installation Training DVD
#10341340

From an installation perspective, the new product should handle no differently than its predecessor and therefore there are no special installation instructions beyond what is specified in the LLumar Architectural Safety and Security Film Installation Training DVD (item # 10341340) and its associated written manual. The written manual is downloadable as a pdf file from the online Tool Catalog on www.llumartech.com.

Critical elements of installation include pre-trimming (given the difficulty of *in situ* cutting) and maximum application solution removal using Thor’s Hammer (pictured at left), using the methods prescribed in CPFilms official documentation.

UL Mark

The UL mark associated to Recognized Components is shown below. This mark will be displayed on any literature for the MPS15 and, also, on the packaging of the film.



You can find more information on UL marks and recognized components by visiting: www.ul.com.

Availability

The SCL SR MPS15 will be available in 60” and 72” widths. Due to the weight of the product, it will only be offered in 75 linear foot (22.86m) rolls.

IMPORTANT NOTICES:

CAUTION: Tinted motor vehicle windows must comply with local laws. Dark tinting may reduce outward visibility during poor lighting conditions. Use care to avoid accidents.

CAUTION: Do not apply residential / commercial film to plastic surfaces such as acrylic (Plexiglas™) or polycarbonate (Lexan™) sheeting (unless the film is designed specifically for that purpose) or to motor vehicle windows.

CAUTION: Always test glass surfaces for susceptibility to scratching before cleaning with metal tools. Soft glass, some types of tempered glass, and sputtered/low-e coatings may be damaged by defective, rusty, or nicked blades, or by applying excessive force to scraping tools. Be prepared to use non-scratching fabrics/pads for window preparation.

CAUTION: Always use absorbent dropcloths to protect sensitive surfaces from overspray, drips, or runs when cleaning windows and installing films.

All statements and recommendations in this document are based on tests and information the CPFilms Inc. believes are reliable and are offered in good faith. CPFilms Inc. cannot warrant or guarantee the accuracy or completeness of this information nor its relevance for a particular user's situation. It is essential that the user evaluate this information to determine its suitability for a given application.

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