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PERFORMANCE STANDARD FOR WINDOW FILM FOR DEPARMTENT OF STATE APPLICATIONS

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PERFORMANCE STANDARD FOR WINDOW FILM FOR DEPARMTENT OF STATE APPLICATIONS

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PREFACE

Various window system test standards have been utilized by the blast mitigation community to evaluate the effectiveness of Shatter Resistant Window Film (SRWF) in retaining glass shards during a blast event. However, these existing standards lack a unified test sample and installation methodology, making direct comparisons between different films challenging. This standard establishes a common test sample configuration and installation procedure, integrated within an existing ASTM International test protocol, to verify whether a given film meets the minimum performance requirements for Department of State applications.

Compliance with this standard does not guarantee the performance of an entire glazing system against any specific blast loads but ensures that the tested film meets baseline retention characteristics.

The U.S. Department of State Physical Security Program:

The Bureau of Diplomatic Security (DS) maintains a list of DS-Approved List of SRWF Products for Department of State Applications. Only SRWF that are on this list are permitted to be installed in Department facilities. SRWFs that meet the performance requirements outlined in this document are eligible to be included on that list.

SD-STD-03.01 is an integral component of the Department of State's program to verify that SRWF meets established performance criteria for use in Department facilities. This program aims to:

- Standardize the filmed glazing sample configuration and testing methodology for manufacturer use.
- Establish a baseline performance requirement for SRWF products to meet before approval for use in Department facilities.

1.0 SCOPE AND REQUIREMENTS

1.1 Intent

This document establishes performance testing requirements for Shatter Resistant Window Film (SRWF) for Department of State applications. It defines a standardized filmed glazing sample configuration for testing SRWF adhered to annealed glass, ensuring compliance with the minimum performance metrics necessary for Department facility use.

The objective is to validate a film's ability to retain and/or prevent glass shards from being generated during blast loading events.

1.2 POC and List of Approved Films

The Bureau of Diplomatic Security's Physical Security Programs Research and Development Section (DS/C/PSP/PSD/RD) serves as the technical point of contact and can be reached at DSPSPRD@state.gov.

DS/PSD/RD maintains the DS-Approved List of SRWF Products for Department of State Applications. Films meeting the requirements of this standard are eligible to be added to the list.

1.3 DS Performance Requirements

Testing must be conducted in accordance with Section 2.0 of this standard and ASTM F3007 Standard Test Method for Ball Drop Impact Resistance of Laminated Architectural Flat Glass. Because ASTM standards are periodically updated by the ASTM, testing shall utilize the current version of the ASTM F3007 standard at the time of testing.

1.4 Limitations of Approval

The Department of State does not certify films or convey any recommendation for use of any manufacturer's films based on passing of this test standard outside its use specific to the Department of States performance needs. Commercial SRWF products may have to compete against other similar products and comply with additional specifications and requirements, such as Overseas Buildings Operations (OBO) specifications and requirements for other properties not considered in this standard such as surface abrasion or flame spread and smoke density. Testing requirements may evolve over time, both for the Department of State and within the ASTM F3007 standard itself. Placement of a particular film on the DS-Approved SRWF List is subject to periodic review every four years, or if a vulnerability is discovered. DS/PSD/RD may remove a previously approved product from the list of approved films for any reason. Such reasons may include change of ownership for manufacturer, insufficient documentation, quality concern, or updated performance requirements.

2.0 TESTING

Testing must be conducted at an accredited independent testing facility in accordance with the version of the ASTM F3007 Standard Test Method for Ball Drop Impact Resistance of Laminated Architectural Flat Glass current at the time of testing and **Table 1**.

Attribute	Value
Glazing test sample glass type	Annealed
Glazing test sample glass thickness	3 mm
Glazing test sample glass size	12 x 12 inches
SRWF application on glazing test sample	Edge to edge

Ball drop height	8 feet
Number of Tests	5 tests
Test result required	Pass 4 of 5 tests with Retention Characteristics 1, 2, or 3

Table 1: Test Setup for SRWF for ASM F3007 for Department of State Applications

2.1 FILMED GLAZING SAMPLE

The sample must:

- Have glass thickness measured and recorded and be within industry tolerances (per ASTM C1036 Standard Specification for Flat Glass)
- Have film thickness measured and recorded to match manufacturer specifications
- Have total sample thickness recorded to confirm the film and glass thickness matches the separate measurements for each sample
- Have film properly applied per manufacturer specifications
- Meet required curing time per manufacturer specifications

3.0 REPORTING

Manufacturers must submit an ASTM F3007-compliant test report to DS/PSD/RD, including:

- Manufacturer's product and material details
- Photographic documentation of test setup, pre-test sample, and post-test sample (with scale)
- Measured thicknesses of all sample materials
- Video footage (recommended but not required)
- Written documentation of any deviations from ASTM F3007

DS/PSD/RD may decline to add manufacturer's product to the DS-Approved List of SRWF Products for Department of State Applications for non-compliance to this standard, missing documentation, incomplete reporting, dubious reporting, etc. Manufacturers may appeal DS/PSD/RD's decision to decline putting a given film on the list and request a resolution meeting with DS/PSD/RD.

4.0 SAFETY

4.1 Safety Considerations

This standard does not purport to address safety and environmental concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish

appropriate safety, health, and environmental practices in accordance with appropriate governing standards, organizational standards, and generally accepted practice and to determine the applicability of regulatory limitations prior to use.

It is recommended that the test facility consider matters such as: eye protection, inhalation of test-generated debris, slip and fall, cuts or abrasions from glass shards, biohazard containment (i.e. in case of an injury to a Test Team member), and various accidents. The preceding list is not a complete or exhaustive list of all considerations necessary for testing to this standard.

4.1.1 Responsibility for Safety

It is the responsibility of the testing facility to establish appropriate safety and health practices, including Personal Protective Equipment (PPE) policies, and to determine the applicability of regulatory limitations. Proper precautions should be taken by the test facility to protect workers, observers/witnesses, and the community.