

UL-972 TEST REPORT

Rendered to:

3M COMPANY

SERIES/MODEL: 3M Safety S140

PRODUCT TYPE: Safety and Security Window Film

Report No.: 97346.01-201-47
Test Dates: 12/30/09
Report Date: 01/08/10

UL-972 TEST REPORT

Rendered to:

3M COMPANY
3M Building and Commercial Services Division
Building 207-01-W-08
St. Paul, Minnesota 55414

Report No.: 97346.01-201-47
Test Dates: 12/30/09
Report Date: 01/08/10

Project Summary: Architectural Testing, Inc. was contracted by 3M Company to witness testing on 3M Safety S140 film applied to 1/4" glass, tempered and annealed. Test specimen description and results are reported herein. The samples were provided by the client.

Test Method: The test specimens were evaluated in part with the following method:

UL 972-06, Standard for Burglary Resisting Glazing Material. Section 6, Impact Tests. Paragraph 6.1, 6.2

Test Specimen Description:

Series/Model: 3M Safety S140

Product Type: Safety and Security Window Film

Sample #1: Three pieces of 0.25" thick annealed glass, measuring 24" x 24", were covered with 3M S140 film. They were placed in an oven and held at 115°F for two weeks. Upon removal they were stored in the lab for ten days at ambient conditions, 70°F.

Sample #2: Three pieces of 0.25" thick tempered glass, measuring 24" x 24", were covered with 3M S140 film. They were placed in an oven and held at 115°F for two weeks. Upon removal they were stored in the lab for ten days at ambient conditions, 70°F.

Test Procedure: Ball Impact Test (UL 972-06. Paragraph 6.2)

Each sample was placed in the test fixture, film side down, and clamped on all four sides. The 5 lb. ball was dropped from 10' through the top of a vertical PVC pipe that was used as a guide for the steel ball, producing a 50 ft-lb impact. After each drop the sample was evaluated and the fixture moved to achieve five hits in different locations within the 5" circle. Failure was classified as complete penetration by the steel ball.

Test Results: The following results have been recorded:

Sample #1: Annealed glass

<u>Impact #</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Unit 1	Pass	Pass	Pass*	Pass	Pass
Unit 2	Pass	Pass	Pass	Pass	Pass
Unit 3	Pass	Pass	Pass	Pass	Pass

* Note: Film tore on impact, 4-3/4" x 1/4", but no penetration through test unit.

Sample #2: Tempered glass

<u>Impact #</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Unit 1	Pass	Pass	Pass	Pass	Pass
Unit 2	Pass	Pass	Pass	Pass	Pass
Unit 3	Pass	Pass	Pass	Pass	Pass

Conclusion: Upon completion of all impacts both annealed and tempered samples with 3M Safety S140 film met the requirements for UL 972-06 paragraph 6.2 Ball Impact Test.

List of Official Observers:

<u>Name</u>	<u>Company</u>
Ken Smith	3M Company
Karl Lips-Eakins	Architectural Testing, Inc.

Data sheets, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

Karl A. Lips-Eakins
Technician

Daniel A. Johnson
Director - Regional Operations

KLE/jb

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix-A: Impact locations (1)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	01/08/10	N/A	Original report issue.

APPENDIX A

Impact Locations

Appendix A

Impact Locations

