

MADICO, INC.

TEST REPORT

SCOPE OF WORK

SAFETY GLAZING MATERIAL TESTING OF CL 400 PS SR FILM ON 1/4" GLASS

REPORT NUMBER

I1089.10-119-37

TEST DATE

02/13/18

ISSUE DATE

09/05/18

RECORD RETENTION END DATE

02/13/22

PAGES

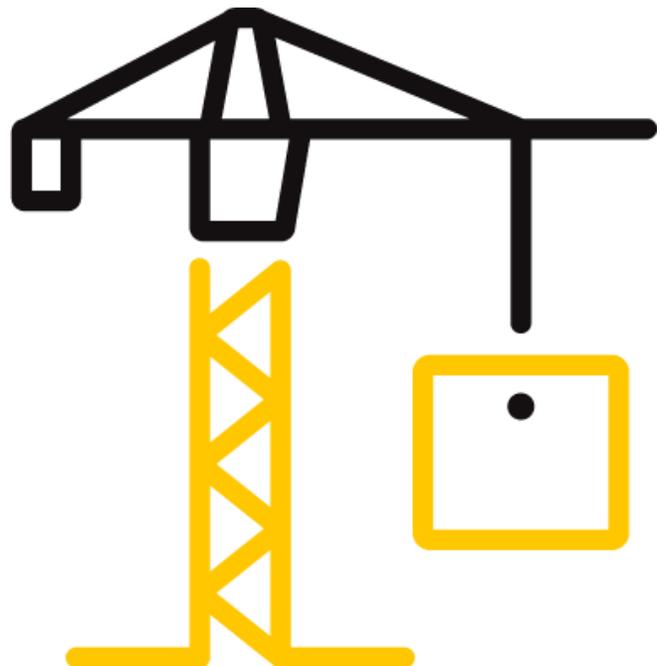
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TEST REPORT FOR MADICO, INC.

Report No.: I1089.10-119-37

Date: 09/05/18

REPORT ISSUED TO

MADICO, INC.

64 Industrial Parkway

Woburn, Massachusetts 01801

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Madico, Inc. - Woburn, Massachusetts to perform safety glazing material performance testing in accordance with ANSI Z97.1 and CPSC 16 CFR 1201 on their CL 400 PS SR Film on 1/4" thick annealed glass. Results obtained are tested values and were secured by using the designated test methods. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Film: CL 400 PS SR

Glass: 1/4" annealed glass

Glazing Type: Organic Coated Glass

| IMPACT TEST RESULTS | | | |
|---------------------|----------------|-----------------|---------------------|
| STANDARD | CLASSIFICATION | DROP HEIGHT | RESULT ¹ |
| ANSI | Class B | 18 in. (457 mm) | Pass |
| CPSC | Category I | 18 in. (457 mm) | Pass |

¹The performance evaluation of the product identified in this test report was isolated to impact testing only, accelerated weathering/aging and thermal tests were not performed.

For INTERTEK B&C:

| | | | |
|----------------------|-----------------|---------------------|------------------------------|
| COMPLETED BY: | Todd M. Wilt | REVIEWED BY: | Virgal T. Mickley, Jr., P.E. |
| TITLE: | Lead Technician | TITLE: | Senior Staff Engineer |
| SIGNATURE: | | SIGNATURE: | |
| DATE: | 09/05/18 | DATE: | 09/05/18 |

TMW:vtm/aaa

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SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ANSI Z97.1-2015, *For safety glazing materials used in buildings - safety performance specifications and methods of test*, American National Standard

CPSC 16 CFR 1201, *Safety Standard for Architectural Glazing Materials*, Consumer Product Safety Commission (16 CFR Ch. II, 1-1-03 Edition)

SECTION 4

MATERIAL SOURCE

Clear, annealed glass lites with CL 400 PS SR Film were delivered to Intertek from Madico - Woburn, Massachusetts on 02/09/18. The specimens were conditioned before and during testing between 68° to 85°F.

SECTION 5

SAMPLE RETENTION

All test specimens were destroyed by test or by personnel and have been disposed of as trash.

SECTION 6

EQUIPMENT

| ASSET # | DESCRIPTION | CAL DUE DATE |
|----------|--------------------------|--------------|
| 63303 | Impact Frame | 09/22/18 |
| 65882 | Impactor (100lb.) | 11/22/18 |
| 65852 | Calipers/Thickness Gauge | 09/13/18 |
| INT00433 | Thermometer | 01/28/19 |
| 62039 | Weight Scale | 09/13/18 |

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SECTION 7

LIST OF OFFICIAL OBSERVERS

| NAME | COMPANY |
|----------------|--------------|
| Lance Cullen | Madico, Inc. |
| Todd M. Wilt | Intertek B&C |
| Cory E. Straub | Intertek B&C |

SECTION 8

TEST PROCEDURE

Specimens were clamped into a steel frame and impacted with a 100 Lb. impactor from a drop height of 18 inches from the center of the impactor to the centerline of the test specimen. Specimens were examined for openings and glass loss after impact in accordance with the interpretation of results per the referenced standards.

SECTION 9

TEST SPECIMEN DESCRIPTION

Product: CL 400 PS SR on 1/4" Glass

Glazing Type: Organic Coated Glass

Glass Type: Clear Annealed Glass

Size Classification: Unlimited (U)

Glass Manufacturer: Unknown

Film/Organic Coating Manufacturer: Madico, Inc. - Woburn, Massachusetts

Film/Organic Coating Brand Name: CL 400 PS SR

Film Thicknesses: 4 mil

Nominal Glass Thickness: 1/4"

Sample Dimensions: 34" wide x 76" high (Impact)

Glazing Composition Details

| THICKNESS (in.) | | | Method of Film Measurement: The overall glazing thickness was measured, then the film was separated and removed and the glass thickness, exclusive of the film, was measured. The film thickness was calculated by subtracting the measured glass thickness from the measured overall thickness. |
|-----------------|-------|-------|--|
| Overall | Glass | Film | |
| 0.236 | 0.232 | 0.004 | |

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SECTION 10 TEST RESULTS

Test Date: 02/13/18

Lab Temperature: 69°F

Impact Drop Height: 18 inches

| SPECIMEN NUMBER | THICKNESS (IN.) | IMPACT SIDE (G / F) ¹ | OBSERVATIONS | LARGEST FRAGMENT | TOTAL FRAGMENTS | PASS /FAIL |
|-----------------|-----------------|----------------------------------|-----------------------|------------------|-----------------|------------|
| 1 | 0.236 | F | No openings | N/A | N/A | Pass |
| 2 | 0.236 | F | 1/4" x 7" openings | N/A | N/A | Pass |
| 3 | 0.235 | G | 1" x 19-1/2" openings | N/A | N/A | Pass |
| 4 | 0.236 | G | No openings | N/A | N/A | Pass |

¹ Impact Side: G = Glass Side Impacted F = Film/Organic Coated Side Impacted

Acceptance Criterion:

No detached fragments over 1 in².

No single detached particle shall weigh more than 6.82 in².

Total weight of detached particles >1 in² shall not weigh more than 15.5 in².

No shear or opening through which a 3" sphere can freely pass with 4 lbs. force.

Limit

9.13 grams

62.30 grams

141.58 grams

Note 1: Acceptance criteria limits were calculated using the nominal glass thickness identified in the 'Glazing Composition Details' section.

Note 2: The 'Limit' presented for each item in the 'Impact Test Acceptance Criteria' identifies the allowable weight of the particle/fragment size for the specified item in the 'Criterion' section.

SECTION 11 CONCLUSION

The specimens meet the impact performance requirements set forth in the referenced test procedures.

SECTION 12 REVISION LOG

| REVISION # | DATE | PAGES | REVISION |
|------------|----------|-------|-----------------------|
| 0 | 09/05/18 | N/A | Original Report Issue |