

# GAMCO CORPORATION TEST REPORT

**SCOPE OF WORK**

AAMA/WDMA/CSA 101/I.S.2/A440-22 (MODIFIED - NO WATER PENETRATION) TESTING ON TD350 SIDE HINGED DOOR

**REPORT NUMBER**

R2622.01-525-44 R0

**TEST DATE(S)**

11/15/23 - 01/11/24

**ISSUE DATE**

04/23/24

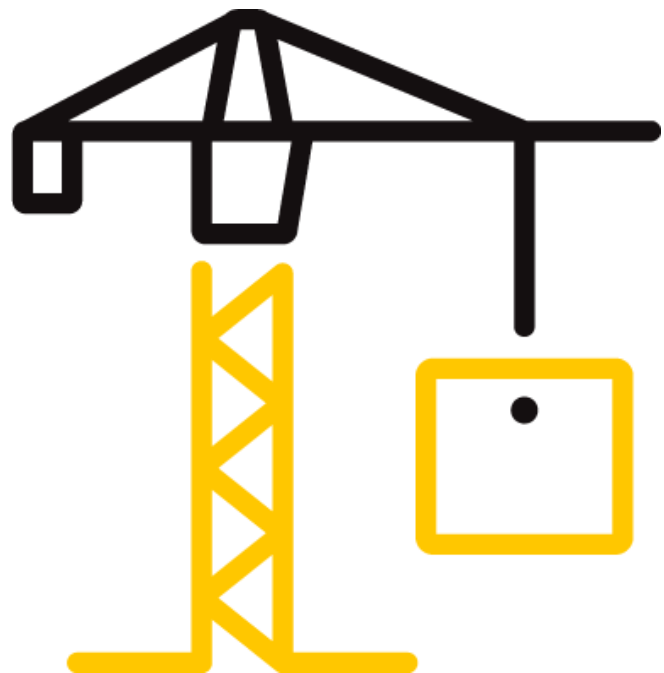
**PAGES**

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**DOCUMENT CONTROL NUMBER**

RT-R-AMER-Test-2807 (02/16/24)

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## TEST REPORT FOR GAMCO CORPORATION

Report No.: R2622.01-525-44 R0

Date: 04/23/24

### REPORT ISSUED TO GAMCO CORPORATION

131-10 Maple Avenue  
Flushing, NY 11355

### SECTION 1 SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by GAMCO Corporation, to perform testing in general accordance with AAMA/WDMA/CSA 101/I.S.2/A440 (MODIFIED - NO WATER PENETRATION) on their TD350, FG451IS side hinged outswing door. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek test facility in Farmingdale, NY.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

For INTERTEK B&C:

<b>COMPLETED BY:</b>	Brett Brown	<b>REVIEWED BY:</b>	Stephen Shank, FMPC
<b>TITLE:</b>	Project Coordinator	<b>TITLE:</b>	Regional Manager Laboratory & Field Testing
<b>SIGNATURE:</b>		<b>SIGNATURE:</b>	
<b>DATE:</b>	04/23/24	<b>DATE:</b>	04/23/24

JK/SS:krs

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## TEST REPORT FOR GAMCO CORPORATION

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### SECTION 2

#### SUMMARY OF TEST RESULTS

TITLE	RESULTS
AAMA/WDMA/CSA 101/I.S.2/A440-22	CW (Modified - No Water Penetration)
Design Pressure	±2394.01 Pa (±50.00 psf)
Negative Design Pressure	-2394.01 Pa (-50.00 psf)
Air Infiltration	5.10 L/s/m <sup>2</sup> (0.18 cfm/ft <sup>2</sup> )
Water Penetration Resistance Test Pressure	N/A (client opted out of water penetration)

### SECTION 3

#### TEST METHOD(S)

The specimens were evaluated in general accordance with the following:

**AAMA/WDMA/CSA 101/I.S.2/A440-22**, North American Fenestration Standard/Specification for Windows, Doors, and Skylights

**AAMA 920-11**, Specification for Operating Cycle Performance of Side-Hinged Exterior Door Systems

**AAMA 925-13**, Specification for Determining the Vertical Loading Resistance of Side-Hinged Doors

**AAMA 1304-02**, Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems

**ASTM E330/E330M-14**, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

**ASTM E283/E283M-19**, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen

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### SECTION 4

#### MATERIAL SOURCE/INSTALLATION

Test specimen was provided by the client. The specimen was witnessed during production and tagged prior to shipment on 11/15/23, (Reference Intertek B&C Test Specimen Selection Report No. R2622.01-525-44, dated 03/26/24. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The specimen was installed into a steel buck. The rough opening allowed for a 3/8" shim space. The exterior perimeter of the door was sealed with sealant. Installation of the tested product was performed by the client.

### SECTION 5

#### EQUIPMENT

Calibration of test equipment was performed by Intertek B&C in accordance with AAMA 205-15.

The following equipment was utilized to apply Forced Entry Resistance (FER) loading in accordance with AAMA 1304:

EQUIPMENT	ASSET NUMBER(S)	CALIBRATION DUE DATE
Load Cell	WLE191	02/10/24
Force Gauge	INT02408	12/04/24

A FER tool kit containing the following tools was also utilized:

- 24-gauge 0.024" thick x 0.78" wide x 3.5" long stainless-steel spatula/putty knife/non-cutting tool, unwrapped.
- 6" Phillips head screwdriver [unpowered, 6 in max]
- 6" standard slot-type pliers [max 6 to 7 in (150 to 175 mm) overall length]
- Black annealed 16-gauge straight wire, length: X"

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### SECTION 6

#### LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Davidson Chen	GAMCO Corporation
Ronald Chow	GAMCO Corporation
Brett Brown	Intertek B&C
Steve Shank	Intertek B&C

### SECTION 7

#### GATEWAY

Reference Intertek B&C Report No. R2622.01-525-44, dated 04/11/24 for complete *Gateway* test specimen description and test results.

### SECTION 8

#### TEST SPECIMEN DESCRIPTION

**Product Type:** Side-Hinged Door (Out-Swing)

**Series/Model:**

**Product Size(s):**

#### Test Specimen #1

OVERALL AREA:	WIDTH		HEIGHT	
	millimeters	inches	millimeters	inches
2.26 m <sup>2</sup> (24.33 ft <sup>2</sup> )				
Overall Size	1028.7mm	40-1/2"	2200.275mm	86-5/8"
Leaf Size	908.05mm	35-3/4"	2114.55mm	83-1/4"
Leaf Size	908.08mm	35-3/4"	2114.55mm	83-1/4"

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The following descriptions apply to all specimens.

**Frame Construction:**

FRAME MEMBER	MATERIAL	DESCRIPTION
ISO19	Aluminum	Vertical door frame
ISO19	Aluminum	Header door frame
	JOINERY TYPE	DETAIL
All corners	Square cut	Butt jointed

**Panel:**

PANEL MEMBER	MATERIAL	DESCRIPTION
TD001	Aluminum	Vertical hinge stile
TD007	Aluminum	Vertical lock stile
TD003	Aluminum	Top rail
TD005	Aluminum	Bottom rail
	JOINERY TYPE	DETAIL
All corners	Square cut	Butt jointed

**Weatherstripping:**

DESCRIPTION	QUANTITY	LOCATION
EPDM Door stop gasket		204" Doorstop
Weather piles		204" Door jamb
Hager 750s bottom sweep	2	36" bottom rail

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**Glazing:** *No conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) can be made.*

GLASS TYPE	SPACER TYPE	INTERIOR LITE	EXTERIOR LITE	GLAZING METHOD
1" IG	½" Aluminum	1/4"	1/4"	Dry glazed

**Drainage:**

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Weep holes	5/16"	N/A	N/A

**Hardware:**

DESCRIPTION	QUANTITY	LOCATION
A.R. 1850 Lockset	1	34" A.F.F.
Push & pull handles	1	37" A.F.F.
Offset pivot	2	

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**SECTION 9  
TEST RESULTS**

The temperature during testing was 18.33°C (65°F). The results are tabulated as follows:

**Test Specimen #1:**

TITLE OF TEST	RESULTS	ALLOWED	NOTE
<b>Force to Latch Side-Hinged Door System,</b> per ASTM E2068	Initiate motion: 71.20 N (16 lbf) Maintain Motion: 08.90 N (2lbf)	Report only	
<b>Air Leakage,</b> Infiltration per ASTM E283 at 75 Pa (1.57 psf)	5.10 L/s/m <sup>2</sup> (0.18 cfm/ft <sup>2</sup> )	1.5 L/s/m <sup>2</sup> (0.3 cfm/ft <sup>2</sup> ) max.	
<b>Water Penetration (Not Performed)</b>	Client opted out of water penetration	N/A	
<b>Uniform Load Deflection,</b> per ASTM E330	N/A	N/A	2
<b>Uniform Load Structural,</b> per ASTM E330 Permanent set taken +3591.02 Pa (+75.00 psf) -3591.02 Pa (-75.00 psf)	<0.01 mm (<0.01") <0.01 mm (<0.01")	0.3% 6.10 mm (0.24") max. 2.80 mm (0.11") max.	2
<b>Operation/Cycling Performance,</b> per AAMA 920 250,000 cycles	Pass	Meets as stated	3
<b>Forced Entry Resistance,</b> per AAMA 1304, 1330 N (300 lbf) point load	Pass	No entry	

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**Test Specimen #1:**

TITLE OF TEST	RESULTS	ALLOWED	NOTE
<b>OPTIONAL PERFORMANCE</b>			
<b>Uniform Load Deflection,</b> per ASTM E330 Deflections taken +2394.01 Pa (+50.00 psf) -2394.01 Pa (-50.00 psf)	1.50 mm (0.06") 0.76 mm (0.03")	12.19 mm (0.48") max. 5.08 mm (0.20") max.	2
<b>Uniform Load Structural,</b> per ASTM E330 Permanent set taken +3591.02 Pa (+75.00 psf) -3591.02 Pa (-75.00 psf)	<0.01 mm (<0.01") <0.01 mm (<0.01")	6.10 mm (0.24") max. 2.80 mm (0.11") max.	2

**Note 1:** The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.

**Note 2:** The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

**Note 3:** At the conclusion of the test, there were no signs of damage to the door panel, frame, construction, fasteners, glazing, weatherstripping, or system assembly.

**Note 4:** Reference Intertek B&C Report No. Q4654.01-525-32, dated 04/10/24 for complete Gateway test specimen description and test results.

**SECTION 10  
ALTERATIONS**

No alterations were required.

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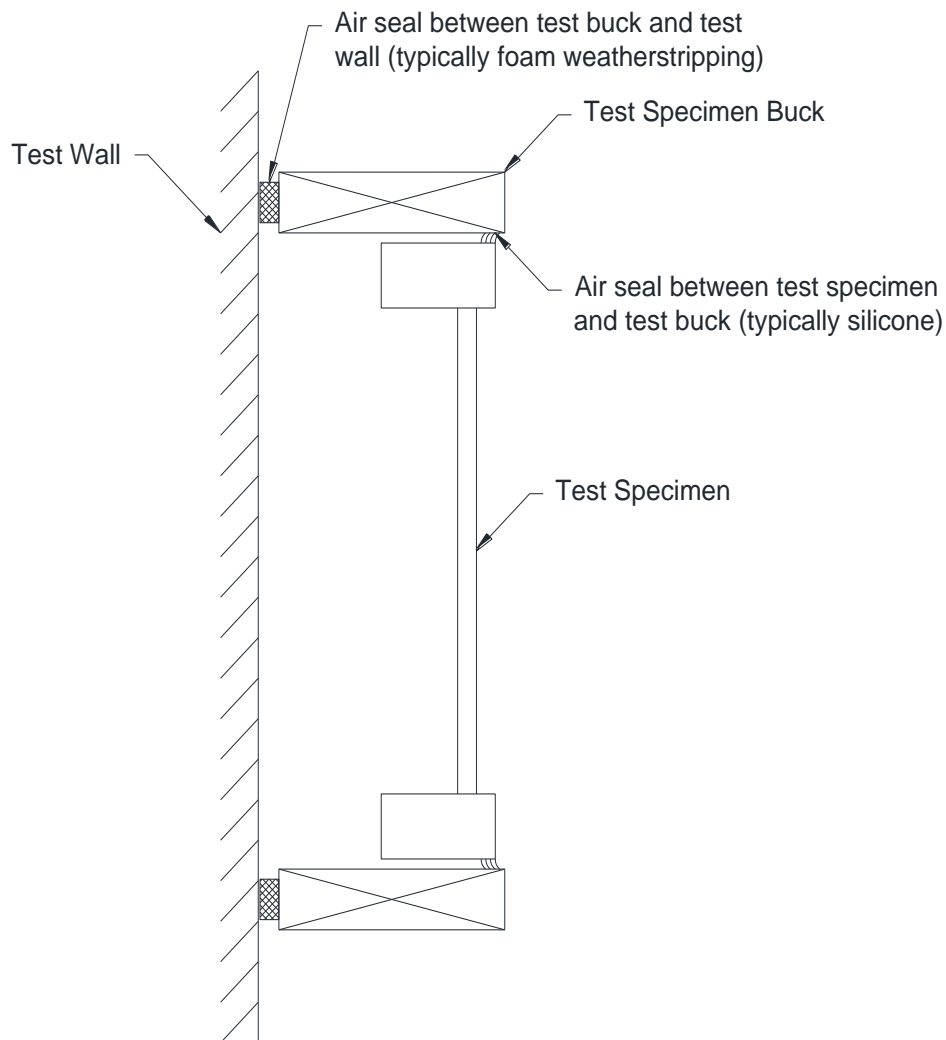
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### SECTION 11

#### LOCATION OF AIR SEAL

The air seal between the test specimen and the test wall is detailed below. The seal is made of foam weatherstripping and is attached to the edge of the test specimen buck. The test specimen buck is placed against the test wall and clamped in place, compressing the weatherstripping and creating a seal.





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The specimen tested successfully met the performance requirements for a CW rating (Modified - No water penetration).

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### SECTION 12 PHOTOGRAPH(S)



**Photo No. 1  
Life Cycle Test**



**Photo No. 2  
Structural Test**



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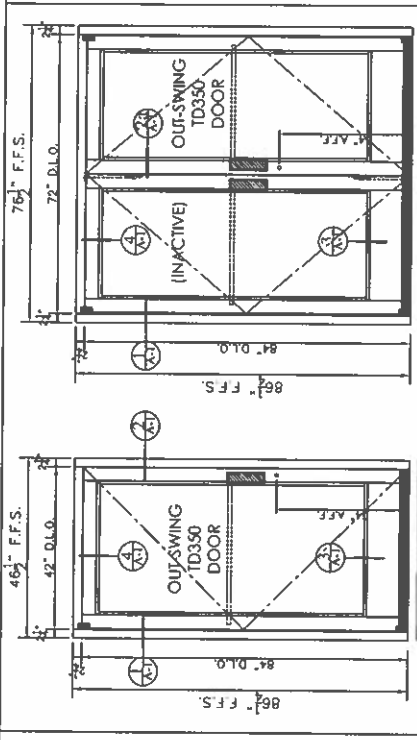
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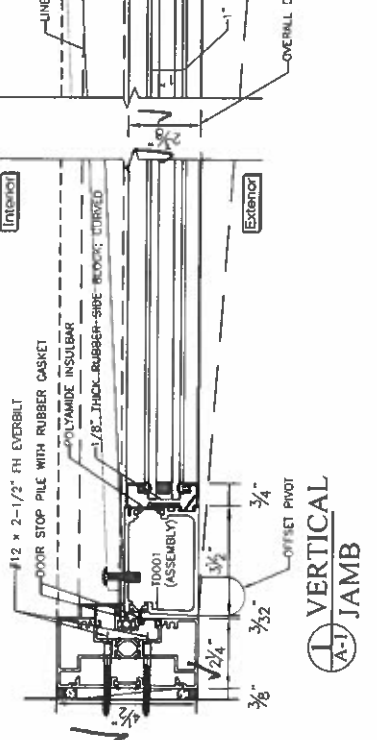
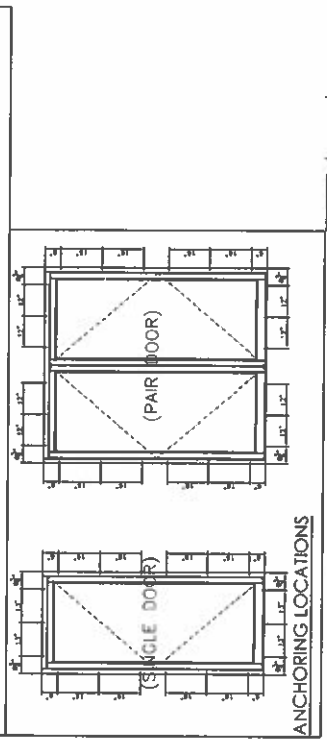
**SECTION 13  
DRAWING(S)**

The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

*Verified*

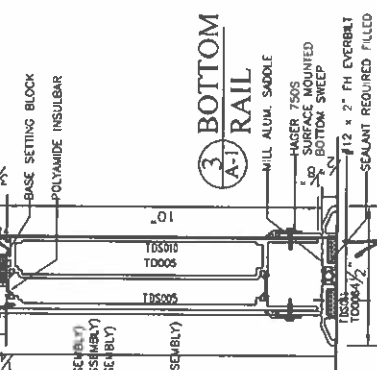
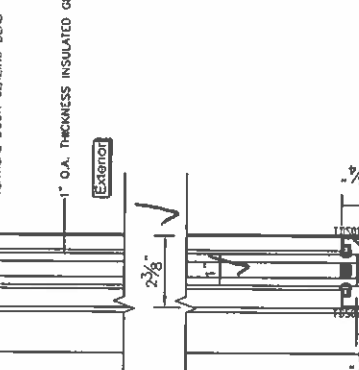
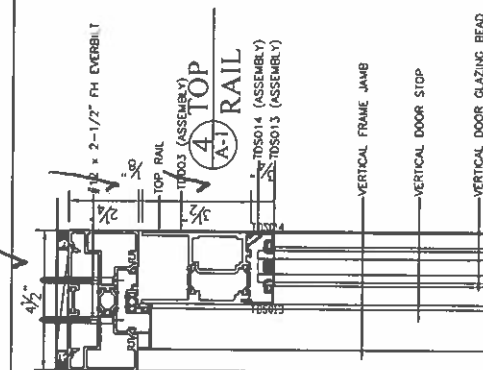


**PLAN**  
 QTY: 1 UNIT  
 ALUMINUM STOREFRONT ELEVATIONS



**HORIZONTAL SECTIONAL DETAILS**  
 S.C.A.I.F. = 1'-0"

**AAMA/WDMA/CSA 101 I.S.2/A440**  
**MODEL TESTED: TD350 + FG451S**  
**GLAZING SET-UP FOR 1" O.A.**  
 GLASS SIZE IS D.L.O. + 1.000  
 DESIGN PRESSURE:  
 SINGLE DOOR - +50 PSF / -50 PSF  
 PAIR DOOR - +50 PSF / -33 PSF  
**HARDWARE:**  
 SINGLE DOOR:  
 -ADAMS RITE 4016 LOCKSET  
 -OFFSET PIVOTS  
 PAIR DOOR:  
 -ADAMS RITE 4016 LOCKSET  
 -OFFSET PIVOTS  
 -FLUSH BOLTS AT INACTIVE DOOR



**VERTICAL SECTIONAL DETAILS**  
 S.C.A.I.F. = 1'-0"

<b>GENERAL NOTES</b> ALL DIMENSIONS TO BE VERIFIED IN FIELD BY CONTRACTOR. D.L.O. = DAYLIGHT OPENING R.O. = ROUGH OPENING F.F.S. = FINISH FRAME SIZE F.W.S. = FINISH WINDOW SIZE F.D.S. = FINISH DOOR SIZE		<b>ARCHITECT:</b>  <b>CLIENT:</b>  <b>TEL:</b>  <b>FAX:</b>
<b>REVISION</b> No.   Date   Description   Approve _____   _____   _____   _____ _____   _____   _____   _____	<b>DRAWING NO:</b> A-1 <b>DATE:</b> 08/04/2023 <b>SCALE:</b> AS SHOWN <b>CHECKED BY:</b> CH61 <b>DRAWN BY:</b> CH61	<b>PROJECT:</b> TEST PRODUCTS - SF+DOOR <b>TITLE:</b> COMMERCIAL TD350 ENTRANCE ELEVATION & DETAILS (AWS)

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**SECTION 14  
REVISION LOG**

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