



**E6085.01-113-11-R0**  
**ACOUSTICAL PERFORMANCE TEST REPORT**  
**ASTM E90**

**Rendered to:**

**GAMCO CORPORATION**

**Series/Model: CW250**

**Type: Two-Lite Curtain Wall System**

<b>Summary of Test Results</b>			
<b>Data File No.</b>	<b>Glazing (Nominal Dimensions)</b>	<b>STC</b>	<b>OITC</b>
E6085.01	1" IG (1/4" tempered exterior, 1/2" argon, 1/4" laminated interior), 1/4" tempered interior secondary glass panel, Glass temperature 75°F	40	32

Reference should be made to Intertek-ATI Report No. E6085.01-113-11 for complete test specimen description. This page alone is not a complete report. Flanking limit tests and reference specimen tests are available upon request.



## Acoustical Performance Test Report

GAMCO CORPORATION  
131-10 Maple Avenue  
Flushing, New York 11355

Report No	E6085.01-113-11
Test Date	04/24/15
Report Date	05/13/15

### Project Scope

Architectural Testing, Inc., an Intertek company (Intertek-ATI), was contracted to conduct a sound transmission loss test. The complete test data is included as Appendix B of this report. The client provided the test specimen.

### Test Methods

Testing for this project was conducted in accordance with the following standards. The equipment listed in the attachments meets the requirements of the following standards.

ASTM E90-09, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E413-10, *Classification for Rating Sound Insulation*

ASTM E1332-10a, *Standard Classification for Rating Outdoor-Indoor Sound Attenuation*

ASTM E2235-04 (2012), *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*

### Test Procedure

All measurements were conducted in the HT test chambers at Intertek-ATI located in York, Pennsylvania. The sensitivity of the microphones was checked before measurements were conducted.

The transmission loss values were obtained for a single direction of measurement. Two background noise sound pressure level and twenty-five sound absorption measurements were conducted at each of five microphone positions.

Two sound pressure levels were made simultaneously in the receive and source rooms at each of five microphone positions.

The air temperature and relative humidity conditions were monitored and recorded during all measurements.

### Specimen Installation

A sound transmission loss test was initially performed on a filler wall.

The specimen plug was removed from the filler wall assembly. The specimen was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the specimen to the test opening on both sides. The interior side of the specimen frame, when installed, was approximately 1/4" from being flush with the receive room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing. Operable portions of the test specimen, if any, were cycled at least five times prior to testing.

### Test Calculations

Transmission loss (TL) at each 1/3 octave frequency is the average source room sound pressure level minus the average receive room sound pressure level, plus, 10 times the log of the specimen area divided by the sound absorption of the receive room with the sample in place.

### STC Rating

To obtain the Sound Transmission Class (STC), read the TL of the contour curve at 500 Hz. The sum of the deficiencies below the contour curve may not exceed 32. The maximum deficiency at any one frequency may not exceed 8.

### OITC Rating

The Outdoor-Indoor Transmission Class (OITC) is calculated by subtracting the logarithmic summation of the TL values from the logarithmic summation of the A-weighted transportation noise spectrum stated in ASTM E1332.

### Specimen Descriptions

		Primary Frame
<b>Size</b>		78-3/4" by 78-3/4"
<b>Thickness</b>		7-3/8"
	Corners	Butted
	Fasteners	Screws
	Seal Method	Sealant
<b>Material</b>		Aluminum
	Reinforcement	N/A
	Thermal Break Material	N/A
<b>Daylight Opening Size X2</b>		35-5/8" by 73-5/8"

*N/A-Not Applicable*

**Specimen Descriptions (Continued)**

		<b>Secondary Frame X2</b>
<b>Size</b>	35-5/8" by 73-5/8"	
<b>Thickness</b>	1-5/8"	
	Corners	Butted
	Fasteners	Screws
	Seal Method	Sealant
<b>Material</b>	Aluminum	
	Reinforcement	N/A
	Thermal Break Material	N/A
<b>Daylight Opening Size</b>	34-1/8" by 72-1/8"	

**Primary Glazing**

<b>Measured Overall Insulation Glass Unit Thickness</b>	0.944"
<b>Spacer Type</b>	Stainless steel

	<b>Exterior Sheet</b>	<b>Gap</b>	<b>Interior Sheet</b>
<b>Measured Thickness</b>	0.224"	0.470"	0.110", 0.030", 0.110"
<b>Muntin Pattern</b>	N/A	N/A	N/A
<b>Material</b>	Tempered	Argon*	Laminated
<b>Laminate Material</b>	N/A	N/A	PVB

<b>Glazing Method</b>	Exterior pressure
<b>Glazing Material</b>	Compression gasket
<b>Glazing Bead Material</b>	Aluminum pressure plate with compression gasket

\* - Stated per Client/Manufacturer, N/A-Not Applicable

**Specimen Descriptions (Continued)**

**Secondary Interior Glazing**

	<b>Exterior Sheet</b>
<b>Measured Thickness</b>	0.224"
<b>Muntin Pattern</b>	N/A
<b>Material</b>	Tempered
<b>Laminate Material</b>	N/A

<b>Glazing Method</b>	Channel
<b>Glazing Material</b>	1/4" Diameter bulb gasket
<b>Glazing Bead Material</b>	Aluminum

<b>Type</b>	<b>Quantity</b>	<b>Location</b>
<b>Weatherstrip</b>		
No weatherstrip		
<b>Hardware</b>		
No hardware		
<b>Drainage</b>		
No drainage		

<b>Total Weight (lbs)</b>	<b>Average Weight (lbs/ft<sup>2</sup>)</b>
502	11.6

\* - Stated per Client/Manufacturer, N/A-Not Applicable

**Comments**

The client did not supply a report drawing of the test specimen. Intertek-ATI will store samples of test specimens for four years.

Intertek-ATI will service this report for the entire test record retention period. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained by Intertek-ATI for the entire test record retention period. The test record retention period ends four years after the test date.

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 specimen tested. This report is intended to help in the client's quality assurance program, but it does not represent a continuous or exhaustive evaluation of the specimen tested or of other products or materials that were not evaluated. The statements and data provided herein do not constitute approval, disapproval, certification, or acceptance of performance or materials.

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For INTERTEK-ATI:

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Daniel P. Platts  
Senior Technician - Acoustical Testing

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Todd D. Kister  
Laboratory Supervisor – Acoustical Testing

DPP:jmc

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (2)
- Appendix-C: Photographs (1)



### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
R0	05/14/15	N/A	Original Report Issue

## Appendix A

### Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number	Date of Calibration
Data Acquisition Unit	National Instruments	PXI-1033	Data Acquisition card	65127	04/14 *
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64902	12/14
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64903	12/14
Source Room Microphone	PCB Electronics	378B20	Microphone and Preamplifier	65103	05/14
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64905	12/14
Source Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64906	12/14
Receive Room Microphone	PBC Piezotronics	378B20	Microphone and Preamplifier	64907	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64908	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64909	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64910	11/14
Receive Room Microphone	PCB Piezotronics	378B20	Microphone and Preamplifier	64911	11/14
Receive Room Environmental Indicator	Vaisala	HMW92	Temperature Humidity Sensor	64286	06/14
Source Room Environmental Indicator	Vaisala	HMW60Y	Temperature and Humidity Sensor	Y002653	06/14
Microphone Calibrator	Larson Davis	Cal 200	Pistonphone Calibrator	065327	04/15

\*- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.

### Test Chamber:

	Volume	Description
Receive Room	234 m <sup>3</sup> (8291.3 ft <sup>3</sup> )	Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor
Source Room	206.6 m <sup>3</sup> (7296.3 ft <sup>3</sup> )	Stationary diffusers only Temperature and humidity controlled

	Maximum Size	Description
TL Test Opening	4.27 m (14 ft) wide by 3.05 m (10 ft) high	Vibration break between source and receive rooms

N/A-Non Applicable





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## **Appendix B**

### **Complete Test Results**



**AIRBORNE SOUND TRANSMISSION LOSS**  
ASTM E 90

<b>Test Date</b>	04/24/15						
<b>Data File No.</b>	E6085.01						
<b>Client</b>	Gamco Corporation						
<b>Description</b>	Series/Model: CW250, two-lite curtain wall system with 1" IG (1/4" tempered exterior, 1/2" argon, 1/4" laminated interior), 1/4" tempered interior secondary glass panel, Glass temperature 75°F						
<b>Specimen Area</b>	4.00 m <sup>2</sup>	Receive Temp.	22.1 °C		Source Temp.	22.1 °C	
<b>Technician</b>	Daniel P. Platts	Receive Humidity	51%		Source Humidity	50%	

Freq (Hz)	Background SPL (dB)	Absorption (m <sup>2</sup> )	Source SPL (dB)	Receive SPL (dB)	Specimen TL (dB)	95% Confidence Limit	Number of Deficiencies
80	39.4	5.1	105	86	18.7	1.93	-
100	37.0	5.6	105	81	24.2	1.47	-
125	38.6	5.0	106	80	24.9	1.28	0
160	41.6	4.5	107	79	26.9	1.37	0
200	39.4	4.4	107	79	27.6	0.77	2
250	35.2	4.9	106	77	27.8	0.81	5
315	27.5	5.5	102	69	31.3	0.37	5
400	24.3	5.8	102	64	36.2	0.28	3
500	20.4	5.9	101	60	39.0	0.55	1
630	17.8	5.6	102	62	38.5	0.28	3
800	16.3	5.9	101	60	39.6	0.26	2
1000	12.6	6.0	100	58	40.7	0.26	2
1250	10.2	6.7	98	53	43.2	0.25	1
1600	7.4	7.0	102	56	43.2	0.28	1
2000	5.8	7.4	100	56	40.7	0.21	3
2500	5.9	8.3	98	53	41.9	0.16	2
3150	6.0	9.9	99	45	49.1	0.33	0
4000	6.8	12.0	97	41	51.8	0.23	0
5000	7.4	15.1	96	34	55.6	0.20	-

**STC Rating**      **40**      *(Sound Transmission Class)*  
**Deficiencies**      30      *(Sum of Deficiencies)*  
**OITC Rating**      **32**      *(Outdoor-Indoor Transmission Class)*

**Notes:**  
1) Receive Room levels less than 5 dB above the Background levels are highlighted in yellow.  
2) Specimen TL levels listed in red indicate the lower limit of the transmission loss.  
3) Specimen TL levels listed in green indicate that there has been a filler wall correction applied



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<b>Description</b>	Series/Model: CW250, two-lite curtain wall system with 1" IG (1/4" tempered exterior, 1/2" argon, 1/4" laminated interior), 1/4" tempered interior secondary glass panel, Glass temperature 75°F					
<b>Specimen Area</b>	4.00 m <sup>2</sup>	Receive Temp.	22.1 °C		Source Temp.	22.1 °C
<b>Technician</b>	Daniel P. Platts	Receive Humidity	51%		Source Humidity	50%



**Appendix C**

**Photographs**



**Receive Room View of Installed Specimen**



**Source Room View of Installed Specimen**