

## **SERIES 4500T THERMAL FLUSH GLAZE FRAMING SPECIFICATIONS**

**PRODUCT DESCRIPTION:** 2" x 4 1/2" THERMALLY BROKEN FLUSH GLAZING FRAMING SYSTEM, WITH FLUSH APPLIED GLAZING STOPS. 2" FACE FOR 1" GLAZING BY 4 1/2" DEEP MULLIONS. DOOR AND FRAME SYSTEMS ARE AN ENGINEERED COMPONENT OF THIS GLAZING SYSTEM.

### **SECTION 08400 ALUMINUM STOREFRONTS**

#### **PART 1 - GENERAL**

##### **1.01 WORK INCLUDED (SCOPE OF WORK)**

**A. FURNISH AND INSTALL ARCHITECTURAL ALUMINUM STOREFRONT SYSTEM COMPLETE WITH RELATED ENTRANCE AND FLASHING SYSTEMS AS SHOWN ON DRAWINGS AND SPECIFIED HERE IN.**

**B. STOREFRONT SHALL BE LEED\HIMMEL Series 4500T FOR 1" GLAZING. ALL MAIN EXTRUSIONS ARE TO BE MINIMUM .125" EXTRUSIONS. OTHER MANUFACTURES SUBSTITUTIONS MUST BE SUBMITTED TEN DAYS PRIOR TO BID DATE.**

- 1. SUBSTITUTES MUST PROVIDE DETAILED PRODUCT INFORMATION IN COMPLIANCE TO THIS SPECIFICATION.**
- 2. TEST DATA DOCUMENTING COMPLIANCE WITH REQUIREMENTS OF SECTION 1.05 OF THIS SPECIFICATION.**

##### **C. GLASS AND GLAZING**

REFER TO GLASS AND GLAZING SECTION 08800.

##### **1.02 RELATED WORK**

REFER TO SECTION 05500, 07600, 08900, AND 08700

##### **1.03 ITEMS FURNISHED BUT NOT INSTALLED**

REFER TO SCOPE OF WORK 1.01 ABOVE

##### **1.04 ITEMS INSTALLED BUT NOT FURNISHED**

REFER TO HARDWARE SPECIFICATIONS 08700

##### **1.05 TESTING AND SYSTEM PERFORMANCE REQUIREMENTS**

###### **A. PROVISIONS FOR THERMAL MOVEMENT**

STOREFRONT FRAMING SYSTEM SHALL BE DESIGNED TO PROVIDE FOR THERMAL MOVEMENT OF ALL COMPONENT MATERIALS RESULTING FROM SURFACE TEMPERATURE RANGING FROM [ ] DEGREES F TO [ ] DEGREES F STRUCTURAL ELEMENTS DAMAGING LOADS ON FASTENERS, REDUCTION OF PERFORMANCE, OR OTHER DETRIMENTAL EFFECTS. OPERATING DOORS SHALL FUNCTION NORMALLY OVER THE TEMPERATURE RANGE.

###### **B. TEST PROCEDURES AND PERFORMANCE**

###### **1. AIR INFILTRATION TEST**

- a. TEST UNIT IN ACCORDANCE WITH ASTM E 283 AT STATIC AIR PRESSURE DIFFERENCE OF 1.56 PSF.**
- b. AIR INFILTRATION SHALL NOT EXCEED .06 CFM PER SQUARE FOOT OF FIXED WALL AREA.**

###### **2. WATER RESISTANCE TEST**

- a. TEST UNIT IN ACCORDANCE WITH ASTM E 313.**
- b. THERE SHALL BE NO UNCONTROLLED WATER LEAKAGE AT A STATIC TEST PRESSURE OF 6.24 PSF.**

###### **3. UNIFORM LOAD DEFLECTION TEST**

- a. TEST IN ACCORDANCE WITH ASTM E 330.**
- b. THE SYSTEM SHALL WITHSTAND THE FOLLOWING DESIGN WIND PRESSURE NORMAL TO THE PLANE OF THE WALL [ ] PSF. BOTH POSITIVE AND NEGATIVE AS DETERMINED BY THE ARCHITECT AND THE GOVERNING BUILDING CODES AS CALCULATED IN ACCORDANCE WITH ANSI A58.1 OR AS DETERMINED BY WIND TUNNEL TESTING.**
- c. DEFLECTION UNDER DESIGN LOAD SHALL NOT EXCEED L/175 OF THE CLEAR SPAN.**

###### **4. UNIFORM LOAD STRUCTURAL TEST**

- a. TEST IN ACCORDANCE WITH ASTM E 330 AT 150% OF THE DESIGN WIND PRESSURE AS SPECIFIED IN 1.05 B.3.B**
- b. AT THE CONCLUSION OF THE TEST, THERE SHALL BE NO GLASS BREAKAGE, PERMANENT DAMAGE TO FASTENERS, STOREFRONT PARTS, OR ANY OTHER DAMAGE WHICH WOULD DEEM THE CURTAIN WALL TO BE DEFECTIVE.**

###### **5. CONDENSATION RESISTANCE TEST (CRF)**

- a. TEST IN ACCORDANCE WITH ASTM 1502.7**
- b. CONDENSATION RESISTANCE FACTOR SHALL NOT BE LESS THAN 55.**

###### **6. THERMAL TRANSMITTANCE TEST (U VALUE)**

- a. TEST IN ACCORDANCE WITH ASTM 1503.1**
- b. CONDUCTIVE THERMAL TRANSMITTANCE (U VALUE) SHALL NOT BE MORE THAN .65 BTU/HR/DEGREE F/SF**

##### **1.06 QUALITY ASSURANCE**

PROVIDE TEST REPORTS FROM AAMA ACCREDITED LABORATORIES CERTIFYING THE PERFORMANCE AS REQUIRED PER ITEM 1.05 ABOVE.

##### **1.07 REFERENCE**

PROVIDE LIST OF COMPLETED PROJECTS, AND OWNER INFORMATION AS DEEMED NECESSARY BY ARCHITECT.

## 1.08 Submittals

### A. Shop Drawings

[ ] COPIES OF ALL SHOP DRAWING SHALL BE SUBMITTED FOR ARCHITECTURAL APPROVAL. DRAWINGS SHALL SHOW SCALE ELEVATIONS AND SECTIONS. HALF SIZE STANDARD DETAILS AND FULL SIZE DETAILS WHEN DEEMED NECESSARY TO CLARIFY SPECIAL DESIGN CONDITIONS. DRAWINGS SHALL SHOW CONSTRUCTION OF ALL PARTS OF THE WORK; INCLUDING METAL AND GLASS THICKNESS, METHOD OF JOINERY, DETAIL OF ALL FIELD CONNECTIONS, AND ANCHORAGE. FASTENERS AND FINISHES MUST BE CLEARLY IDENTIFIED ALONG WITH ALL OTHER PERTINENT INFORMATION DEEMED NECESSARY IN ORDER TO PROVIDE FOR A PROPER INSTALLATION. NOW WORK SHALL BE FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE ARCHITECT AND FIELD DIMENSIONS HAVE BEEN CONFIRMED BY THE INSTALLING CONTRACTOR.

## 1.09 Delivery, Storage, and Handling

## 1.10 Warranties

### A. Total Curtain Wall System

1. THE RESPONSIBLE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY AND WARRANTY FOR ONE YEAR THE SATISFACTORY PERFORMANCE OF THE TOTAL STOREFRONT INSTALLATION. THIS INCLUDES THE GLASS, GLAZING, ANCHORAGE, SETTING SYSTEM, SEALS AND FLASHING AS THEY RELATE TO THE AIR, WATER AND STRUCTURAL REQUIREMENTS AS STATED IN THIS SPECIFICATION AND AS NOTED ON THE APPROVED SHOP DRAWINGS.
2. ANY DEFICIENCIES DUE TO SUCH ELEMENTS NOT MEETING THE SPECIFICATION SHALL BE CORRECTED BY THE RESPONSIBLE CONTRACTOR AT HIS EXPENSE DURING THE WARRANTY PERIOD.

## PART 2 - PRODUCTS

## 1.01 Materials

### A. Aluminum

EXTRUDED ALUMINUM SHALL BE 6063-T5 OR T6 ALLOY AND TEMPERED AS REQUIRED.

### B. Glass and Glazing

THE STOREFRONT SYSTEM SHALL BE AVAILABLE WITH 1/4", 3/8", 1/2", AND 1" GLAZING THICKNESS REFER TO SECTION 08800.

### C. Dissimilar Metals

ALL DISSIMILAR MATERIALS MUST BE PROPERLY ISOLATED AND INSULATED TO PREVENT GALVANIC CORROSION.

### B. Fasteners

ALL EXPOSED FASTENERS ARE TO BE 316 STAINLESS STEEL.

## 2.02 Fabrication

ALL MAIN STOREFRONT GLAZING MULLIONS ARE TO HAVE A MINIMUM PRIMARY WALL THICKNESS OF .125" SECONDARY GLASS AND DOOR STOP EXTRUSIONS SHALL BE A MINIMUM OF .060"

## 2.03 Finish Assurance

ALL FINISHES WHETHER ANODIC OR ORGANIC ARE TO BE FACTORY APPLIED BY THE STOREFRONT MANUFACTURER'S IN HOUSE, EPA APPROVED FINISHING FACILITIES.

## 2.04 Finishes

### A. Anodic

FINISHES ALL EXPOSED AREAS OF ALUMINUM ENTRANCE AND STOREFRONT COMPONENTS WITH ELECTRICALLY DEPOSITED COLOR IN ACCORDANCE WITH ALUMINUM ASSOCIATION DESIGNATION AA-[ ], COLOR TO BE [ ]. ((AVAILABLE COLORS ARE CLEAR, CHAMPAGNE, LIGHT, MEDIUM, AND DARK BRONZE, AND BLACK (AA-M12-C22\_A31 CLEAR ANODIZED))

### B. Organic

FINISH ALL EXPOSED AREAS OF ALUMINUM ENTRANCE AND STOREFRONT WITH [ ], COLOR IS TO BE [ ]. BOTH HIGH PERFORMANCE POWDER COAT BY TIGER DRY-LAC AND KYMAR BASED FINISHES AS MANUFACTURED BY PPG INDUSTRIES ARE AVAILABLE (UC [ ] XL SILVER METALLIC)

## PART 3 - EXECUTION

## 3.02 Inspection

### A. Job Conditions

ALL OPENINGS SHALL BE PREPARED BY OTHERS TO THE PROPER SIZE AND SHALL BE PLUMB, LEVEL, AND IN THE PROPER LOCATION AND ALIGNMENT AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

## 3.03 Installation

- A. THE STOREFRONT FRAMING SHALL BE SECURELY INSTALLED ACCORDING TO THE MANUFACTURERS' RECOMMENDATIONS AND THE APPROVED SHOP DRAWINGS.
- B. ALL JOINTS BETWEEN FRAMING AND THE BUILDING STRUCTURE SHALL BE SEALED IN ORDER TO SECURE A WEATHER TIGHT INSTALLATION.

## 3.04 Protection and Cleaning

THE GENERAL CONTRACTOR SHALL PROTECT THE ALUMINUM ENTRANCE/STOREFRONT MATERIAL AND FINISH AGAINST DAMAGE FROM CONSTRUCTION ACTIVITIES AND HARMFUL SUBSTANCES. THE GENERAL CONTRACTOR SHALL CLEAN THE ALUMINUM SURFACES AS RECOMMENDED FOR THE TYPE OF FINISH APPLIED, AND SHALL BE RESPONSIBLE FOR FINAL CLEANING.



# ARCHITECTURAL TESTING INC.

130 Derry Court • York, PA 17402-9405  
web www.testati.com • Facsimile 717-764-4129 • Telephone 717-764-7700

May 15, 1998

Mr. Rick Green  
Leed Himmel  
P.O. Box 4275  
75 Leeder Hill Drive  
Hamden, Connecticut 06514

RE: Test Results

Dear Mr. Green:

Tests have been completed by Architectural Testing, Inc. (ATI) on Leed Himmel's 4500T Series four lite fixed wall unit. The test specimen measuring 8' 0" wide by 8' 0" high was tested for air infiltration, water penetration, and uniform load structural performance. Test data is reported below. A complete test report, ATI No. 01-31698.01, is forthcoming.

<u>Test Method</u>	<u>Title of Test</u>	<u>Results</u>
ASTM E 283	Air Infiltration @ 1.56 psf (25 mph) @ 6.24 psf (50 mph)	<0.01 cfm/ft <sup>2</sup> <0.01 cfm/ft <sup>2</sup>
ASTM E 331	Water Penetration WTP = 9.00 psf	No entry
ASTM E 330	Uniform Load Structural @ 80.0 psf (exterior) Deflection Perm. Set @ 80.0 psf (interior) Deflection Perm. Set	0.820" 0.030" 0.410" 0.030"

If you have any questions regarding this or any other test matter, please feel free to contact me at your convenience.

Sincerely yours,

ARCHITECTURAL TESTING, INC.



Benjamin E. Myers  
Technician

BEM:cat  
01-31698

# ARCHITECTURAL TESTING INC.

130 Derry Court • York, PA 17402-9405 • Facsimile 717-764-4129 • Telephone 717-764-7700

May 13, 1998

Rick Green  
Leed Himmel Industries  
75 Leeder Hill Drive  
Hamden, Connecticut 06514

Dear Rick:

Your complete thermal test results are as follows:

Control Number	Specimen Type	U-value	CRF
01-31796	4500T Four-Lite Curtain Wall	0.64	53
01-30197	250 Four-Lite Pressure Wall	0.68	60

A formal thermal test report for each specimen is forthcoming. If you have any questions, please call at your convenience.

Sincerely,



Matthew J. Sindlinger

Technician  
MJS

RECEIVED

MAY 20 1998

LEED/HIMMEL  
INDUSTRIES, P.A.