

**PRODUCT CW3700 Casement Window**

**TEST RESULTS**

AAMA/WDMA/CSA 101/I.S.2/A440-08 (NAFS 08) CLASS-GRADE		<b>CW-PG60</b>
Air Infiltration and Exfiltration	ASTM E283	<b>0.10 cfm/ft<sup>2</sup> @ 6.24 psf</b>
Static Pressure Water Resistance	ASTM E331	<b>12 psf</b>
Cyclic Static Pressure Water Resistance	ASTM E547	<b>12 psf</b>
Structural – Design Load	AAMA E330	<b>60 psf</b>
Structural – Overload	AAMA E330	<b>90 psf</b>
Forced Entry	ASTM F588	<b>Grade 10</b>
Life Cycle Testing	AAMA 910-93	<b>2500 hardware cycles</b>
Test Unit: Single lite - 36" x 60"		
Note: Test specimen met all requirements for an AW rating with the exception of the Sash Torsion Test.		

**TEST LAB**

**Architectural Testing Inc.**  
**(ATI)**  
 York, PA 17406

Report Number	A4233.01-109-44
Test Date	10/8/10
Report Date	12/9/10

Reference above report, for complete test specimen description and data.

Tubelite Representative:

  
 Tim Fookes - Vice President of Engineering

(sign) 5/25/2018 (date)

(title)

## TEST METHODS

**AAMA/WDMA/CSA 101/I.S.2/A440-08 (NAFS 08):** *North American Fenestration Standard/Specification for Windows, Doors, and Skylights.* Testing was conducted for the Architectural Window (AW) class at Performance Grade (PG) 60: CW-PG60

**Air Leakage Resistance:** *ASTM E283, Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.* Testing was conducted at 6.24 psf positive and negative static air pressure difference.

**Static Pressure Water Resistance:** *ASTM E331, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, Curtain Walls by Uniform Static Air Pressure Difference.* Testing was conducted at 12 psf positive static air pressure difference for 15 minute duration. Water applied at a minimum rate of 5 gal/ft<sup>2</sup>/hr.

**Cyclic Pressure Water Resistance:** *ASTM E547, Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference.* The test was performed at 12 psf positive pressure differential and a water spray rate of at least 5.0 US gal/ft<sup>2</sup> per hour. Each cycle consisted of five minutes with the pressure applied and one minute with the pressure released, during which the water spray was continuously applied.

**Structural Performance:** *ASTM E330, Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.* Testing was conducted at +/- 60 psf design loads and +/- 90 psf overloads. Allowable Criteria: Design – No deflection of unsupport L in either positive or negative direction at design pressure. Overload – No glass breakage, permanent damage to make windows inoperable, or permanent deformation of main frame or sash member in excess of 0.2% of its clear span.

**Life Cycle Testing:** *AAMA 910-93, Voluntary "Life Cycle" Specifications and Test Methods for Architectural Class Windows and Doors.*

**Forced Entry Resistance:** *ASTM F588, Standard Methods for Measuring the Forced Entry Resistance of Window Systems, Excluding Glazing Impact.* Testing was conducted at a Grade 40 resistance level.