



NATIONAL CERTIFIED TESTING LABORATORIES

FIVE LEIGH DRIVE • YORK, PENNSYLVANIA 17406 • TELEPHONE (717) 846-1200
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AAMA/WDMA/CSA 101/I.S.2/A440-05
AAMA/WDMA/CSA 101/I.S.2/A440-08

STRUCTURAL PERFORMANCE TEST REPORT SUMMARY

RENDERED TO:

Remodelers Supply Center
2622 North Pulaski
Chicago, IL 60639

MODEL/TYPE: "1199 ClimateGuard" Tilt Double Hung

TITLE	SUMMARY OF RESULTS
Primary Product Designator	2005: H-LC40 1118 x 1905 mm (44x75) 2008: Class LC-PG40: Size tested 1118 x 1905 mm (44x75in)-Type H
Air Infiltration/Exfiltration	Infiltration Rate: 1.0 L/s/m ² (0.2 cfm/ft ²) (0.21 cfm/ft ² measured)
Water Penetration Resistance	290 pa (6.0 psf)
Design Pressure	± 1920 pa (40.0 psf)
Uniform Load Structural Test	± 2880 pa (60.0 psf)
Forced Entry Resistance	Passed ASTM F588-07 Grade 10

Test Completion Date: 07/11/11

Test Expiration Date: 07/11/15

Reference must be made to NCTL Report Number NCTL-110-14145-1 dated 07/13/11 for complete test sample description and data.

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DIGITAL SIGNATURE

JAY LEADER
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STRUCTURAL PERFORMANCE TEST REPORT

NCTL-110-14145-1

REPORT TO:
Remodelers Supply Center
2622 North Pulaski
Chicago, IL 60639

ORIGINAL REPORT NUMBER: NCTL-110-14145-1
ORIGINAL REPORT DATE: 07/13/11
TEST EXPIRATION DATE: 07/11/15

MODEL/TYPE: "1199 ClimateGuard" Tilt Double Hung



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REPORT NCTL-110-14145-1TO: Remodelers Supply Center
2622 North Pulaski
Chicago, IL 60639

STARTING TEST DATE: 07/11/11
ENDING TEST DATE: 07/11/11
TEST EXPIRATION DATE: 07/11/15

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-05, "Standard/Specification for Windows, Doors and Unit Skylights."
AAMA/WDMA/CSA 101/I.S.2/A440-08, "NAFS-North American Fenestration Standard/Specification for Windows, Doors and Skylights."

PERFORMANCE CLASS: 2005: H-LC40 1118 x 1905 mm (45x75)
2008: Class LC-PG40: Size tested 1118 x 1905 mm (45x75in)-Type H

DESCRIPTION OF SAMPLE TESTED

MODEL/TYPE: "1199 ClimateGuard"

CONFIGURATION: Tilt double hung

FRAME SIZE: 1117.6 mm (44") wide by 1905 mm (75") high

TOP SASH SIZE: 1025.53 mm (40-3/8") wide by 946.15 mm (37-1/4") high

BOTTOM SASH SIZE: 1041.4 mm (41") wide by 966.79 mm (38-1/16") high

FRAME & SASH TYPE: Extruded aluminum with poured urethane thermal breaks

JOINT CONSTRUCTION
FRAME: (2) Screw butt-type
SASH: (2) Screw butt-type

GLAZING COMPONENTS
OVERALL: 19.05 mm (0.75") nominal
GLASS THICKNESS: (2) Lites of 2.5 mm (0.091") nominal annealed
SPACER TYPE/SIZE: Coated steel U-shaped (CU-D) 14.43 mm (0.568")

GLAZING SYSTEM: Channel gazed with a flexible vinyl gasket

WEATHERSTRIP
TYPE: (1) Strip center fin
SIZE: 6.86 mm (0.270") high
LOCATION: Head, sill, top and bottom rail
TYPE: (2) Strips center fin
SIZE: 6.86 mm (0.270") high
LOCATION: Stiles and interior meeting rail
TYPE: (1) Strip bulb vinyl
LOCATION: Bottom rail

OPERATING HARDWARE**LOCKS**

TYPE: Metal cam-type
LOCATION: 336.55 mm (13.25") from each end of the interior meeting rail

KEEPER

TYPE: Metal
LOCATION: Exterior meeting rail at the lock positions

BALANCE & PIVOT BAR**BALANCE**

TYPE: (1) Spiral balance system
LOCATION: Each jamb track

PIVOT BAR

TYPE: Metal U-shaped
LOCATION: Each end of the exterior meeting rail and bottom rail fastened with (1) screw

AUXILIARY

TYPE: Rigid vinyl sash stop
LOCATION: Top of each interior jamb track and the bottom of each exterior jamb track

TYPE: Rigid parting vinyl
LOCATION: Each center jamb leg

TYPE: Rigid vinyl filler/weatherstrip holder
LOCATION: Bottom rail

TYPE: Urethane foam
LOCATION: Frame webbing

TYPE: Plastic lockable tilt latch with thumb actuator
LOCATION: Each end of the top rail and interior meeting rail

REINFORCEMENT

None employed

WEEP HOLES

No apparent weeps employed

INTERIOR & EXTERIOR

SURFACE FINISH: White painted aluminum

SEALANT

LOCATION: Frame and sash corners
MATERIAL: Small joint sealant

INSECT SCREEN

SIZE: 1066.8 mm (42") wide by 954.09 mm (37.563")
CORNER CONSTRUCTION: Mitered with plastic corner key
MATERIAL: Fiberglass mesh with a flexible hollow vinyl spline with (2) jamb retainer springs and (1) strip of single leaf vinyl weatherstrip at the top rail and (1) strip of 4.32 mm (0.170") polypile weatherstrip at the bottom rail.

INSTALLATION METHOD:

The window was installed in a 50.8 mm x 254 mm (2" x 10") wood buck and with 25.4 mm (1") x 12.7 mm (0.5") wood blind stops at the interior and exterior perimeter of the frame. Each blind stop was secured with 31.75 mm (1.25") long brad nails located at 76.2 mm (3") from each end and 254 mm (10") on center thereafter. The exterior perimeter was sealed with a silicone sealant.

TEST RESULTS**5.3.1.1. OPERATING FORCE**

ASTM E2068	<u>Measured</u>	<u>Allowed</u>
Top Sash		
Initiate Open	160.0 N (36 lbf)	-----
Initiate Close	151.0 N (34 lbf)	155.0 N (35 lbf) _{.05} 180.0 N (40 lbf) _{.08}
Maintain Open	98.0 N (22 lbf)	-----
Maintain Close	80.0 N (18 lbf)	155.0 N (35 lbf) _{.05} 180.0 N (40 lbf) _{.08}
Bottom Sash		
Initiate Open	133.0 N (30 lbf)	-----
Initiate Close	107.0 N (24 lbf)	155.0 N (35 lbf) _{.05} 180.0 N (40 lbf) _{.08}
Maintain Open	160.0 N (36 lbf)	-----
Maintain Close	147.0 N (33 lbf)	155.0 N (35 lbf) _{.05} 180.0 N (40 lbf) _{.08}
Latch Operation	40.0 N (9 lbf)	100.0 N (22.5 lbf)

5.3.2 AIR LEAKAGE RESISTANCE AT 75 PA (1.6 PSF)

ASTM E283	<u>Measured</u>	<u>Allowed</u>
Infiltration Rate	1.0 L/s/m ² (0.2 CFM/ft ²) (0.21 CFM/ft ² measured)	1.5 L/s/m ² (0.3 CFM/ft ²)

The Tested Specimen Meets Or Exceeds the Performance Levels Specified in AAMA/WDMA/CSA 101/1.S.2/A440-05/08

5.3.3 WATER RESISTANCE TEST

ASTM E547

No Leakage after 4 cycles of 5 minutes @ 290 pa (6.0 psf)

** Tested with and without insect screen*

5.3.4.2 UNIFORM LOAD DEFLECTION AT DESIGN PRESSURE

ASTM E330

No Damage After Positive 1920 pa (40.0 psf)

No Damage After Negative 1920 pa (40.0 psf)

	<u>Measured</u>	
Measured Deflection Positive	1.88 mm	(0.074 inches)
Measured Deflection Negative	2.18 mm	(0.002 inches)

5.3.4.3 UNIFORM LOAD STRUCTURAL TEST

ASTM E330

No Damage After Positive 2880 pa (60.0 psf)

No Damage After Negative 2880 pa (60.0 psf)

	<u>Measured</u>	
Measured Permanent Set Positive	0.18 mm	(0.007 inches)
Measured Permanent Set Negative	0.05 mm	(0.002 inches)
Maximum Allowed 0.4% for R Rating	4.04 mm (0.159 inches)	

*** No glass breakage or permanent damage causing the unit to be inoperable*

5.3.5 FORCED ENTRY RESISTANCE.

Passed ASTM F588-07 Grade 10

See Appendix for results.

TEST RESULTS (continued)**5.3.6.3 DEGLAZING.**

ASTM E987

Top Sash		<u>Measured</u>		
Top Rail	320 N (70 lbf)	15.4 %	1.96 mm	(0.077 inches)
Meeting Rail	320 N (70 lbf)	13.6 %	1.73 mm	(0.068 inches)
Left Stile	230 N (50 lbf)	8.6 %	1.09 mm	(0.043 inches)
Right Stile	230 N (50 lbf)	9.4 %	1.19 mm	(0.047 inches)
Bottom Sash		<u>Measured</u>		
Meeting Rail	320 N (70 lbf)	14.6 %	1.85 mm	(0.073inches)
Bottom Rail	320 N (70 lbf)	15.4 %	1.96 mm	(0.077 inches)
Left Stile	230 N (50 lbf)	8.4 %	1.07 mm	(0.042 inches)
Right Stile	230 N (50 lbf)	8.8 %	1.12 mm	(0.044 inches)

The tested specimen meets (or exceeds) the performance level specified in AAMA/WDMA/CSA 101/I.S.2/A440-05 and AAMA/WDMA/CSA 101/I.S.2/A440-08 for air leakage resistance. The listed results were secured by using the designated test methods and indicate compliance with the performance requirements of the referenced specification paragraphs for the 2005: H-LC40 1118 x 1905 (44x75) and 2008: Class LC-PG40: Size tested 1118 x 1905 mm (44 x 75 in)-Type H product designations.

This test report was prepared by National Certified Testing Laboratory (NCTL), for the exclusive use of the above named client and it does not constitute certification of this product. The results are for the particular specimen tested and do not imply the quality of similar or identical products manufactured or installed from specifications identical to the tested product. The test specimen was supplied to NCTL by the above named client. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen are to be drawn from the ASTM E330 test. Forced entry resistance test equipment used is in compliance with Section 7 of the ASTM F588-07 test method. Foam tape is mounted to the perimeter of the test buck prior to clamping to the test wall. NCTL is a testing lab and assumes that all information provided by the client is accurate and does not guarantee or warranty any product tested or installed.

Detailed drawings were available for laboratory records and compared to the test specimen at the time of this report. Component drawings were reviewed for product verification. The bill of materials contains details with any deviations noted. Ambient conditions during the referenced testing are available upon request. A copy of this report along with representative sections of the test specimen will be retained by NCTL. This report does not constitute certification or approval of the product, which may only be granted by a certification program validator or recognized approval entity. All tests were conducted in full compliance with the referenced specifications and/or test methods. This report may not be reproduced, except in full, without the written consent of NCTL.

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ROBERT H. ZEIDERS

Vice-President Engineering & Quality

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Attachments

- Appendix A – Forced Entry Test Results
- Appendix B – Drawing & Revision Summary
- Appendix C – Drawings

APPENDIX A
Forced Entry Resistance Test Results

Test Method: ASTM F 588-07, "Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact". Grade 10

TEST RESULTS

<u>Paragraph No.</u>	<u>Loads</u>	<u>Duration</u>	<u>Measured</u>	<u>Allowed</u>
A2.1 –Disassembly Test	N/A	5 Minutes	No Entry	No Entry
A2.2-Lock Manipulation	N/A	5 Minutes	No Entry	No Entry
A2.3 –Sash Manipulation	N/A	5 Minutes	No Entry	No Entry
A2.5.2-Test A1	L1= 667 N (150 lbf)	1 Minute	No Entry	No Entry
A2.5.3-Test A2	L1= 667 N (150 lbf) L2= 333 N (75 lbf) interior	1 Minute	No Entry	No Entry
A2.5.4-Test A3	L1= 667 N (150 lbf) L2= 333 N (75 lbf) exterior	1 Minute	No Entry	No Entry
A2.5.5-Test A4	L1= 667 N (150 lbf) L2= 333 N (75 lbf) interior	1 Minute	No Entry	No Entry
A2.5.6-Test A5	L1= 667 N (150 lbf) L2= 333 N (75 lbf) exterior	1 Minute	No Entry	No Entry
A2.5.8-Test A7	L1= 667 N (150 lbf) L2= 333 N (75 lbf) interior L3= 111 N (25 lbf) interior	1 Minute	No Entry	No Entry
A2.2 - Lock Manipulation	N/A	5 Minutes	No Entry	No Entry
A2.3 –Sash Manipulation	N/A	5 Minutes	No Entry	No Entry

APPENDIX B

Section 1:

Component Drawings, with Applicable Part Numbers, Manufacturing and Modeling Details, were reviewed (as submitted) for Product Verification
(Reference: NCTL-110-14145-1)

See Attached Documentation;
any deviations noted.

Note: The above referenced component drawings along with representative sections of the test specimen will be retained per procedure by NCTL. This testing facility assumes that all information provided by the client is accurate.

Section 2:

<u>Identification</u>	<u>Date</u>	<u>Page & Revision</u>
Original Issue	07/13/11	Not Applicable