

TAYLOR BROTHERS DOOR LOCK, LLC FIRE TEST REPORT

SCOPE OF WORK

UL 10C (2016) TESTING ON TAYLOR BROTHER'S NIGHTLOCK SYSTEMS W/ A 20 MIN FIRE
DOOR

REPORT NUMBER

103690911MID-002

TEST DATE

01/17/19

ISSUE DATE

01/30/19

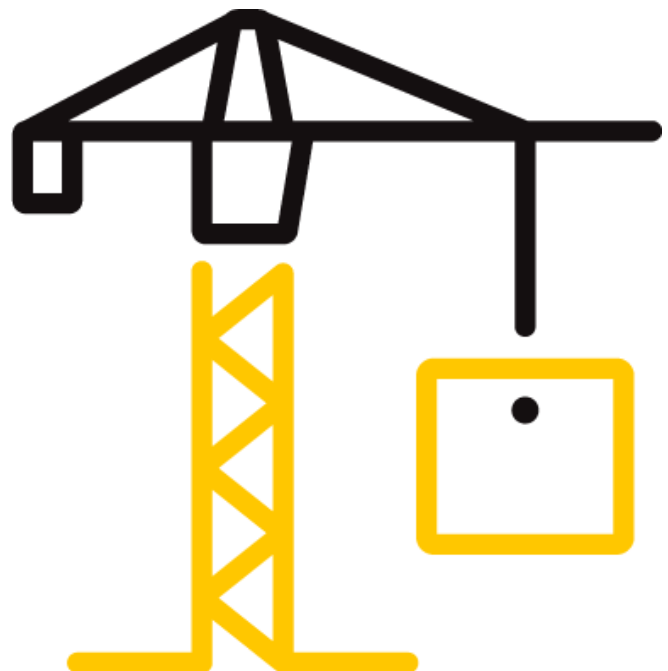
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14

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-3311 (03/29/18)

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TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

REPORT ISSUED TO

Taylor Brothers Door Lock, LLC

11701 Union St

Mount Morris, MI 48458

Contact: Joseph Taylor

E-mail: joe@nightlock.com

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Taylor Brothers Door Lock, LLC to evaluate the fire performance of the assembly described in Section 6 of this report. Testing was conducted at the Intertek B&C test facility in Middleton, WI for R&D purposes and not for certification. Results obtained are tested values and were secured by using the designated test method. A summary of test results is reported herein and the complete assembly construction details are included in this report.

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.

SECTION 2

SUMMARY OF TEST RESULTS

For INTERTEK B&C:

COMPLETED BY:	Christopher Zimbrich
TITLE:	Technician I –
DEPARTMENT:	Fire Resistance
SIGNATURE:	
DATE:	01/30/19

REVIEWED BY:	Chad Naggs
TITLE:	Technical Team Lead –
DEPARTMENT:	Fire Resistance
SIGNATURE:	
DATE:	01/30/19

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TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 2 (CONTINUED)

SUMMARY OF TEST RESULTS

Product Tested: Taylor Brother's Nightlock Lockdown and Nightlock Lockdown 2 on a 20 Min Fire Door.

UL 10C (2016) Test Results

Assembly 2 (Door 2): The assembly described and tested in this report **met** the Conditions of Acceptance of UL 10C (2016) when exposed to a fire-resistance rating of **20 minutes with Hose-Stream**. Construction summary of the full assembly is located in Section 6 of this test report.

SECTION 3

TEST METHOD

The assembly was evaluated in accordance with the following:

UL 10C (2016), "Positive Pressure Fire Tests of Door Assemblies"

SECTION 4

TEST INSTALLATION AND PROCEDURES

The test assembly was installed per the installation instructions of the door and frame manufacturer in a fire rated wall constructed in a furnace frame. The door frame was held in place per the installation instructions of the frame manufacturer. The average door clearances to the frame were measured and recorded within the allowable limit as follows (unit: inches):

Assembly 2 (Door 2)

<u>Top</u>	<u>Hinge Stile</u>	<u>Latch Stile</u>	<u>Bottom</u>
0.038	0.025	0.018	0.375

After positioning the assembly frame over the furnace opening, the burners were ignited and a timer was started. Temperatures within the furnace were monitored using thermocouples and the data was recorded. The burners were controlled to keep the furnace temperatures within the allowable limits specified in the test standards. This temperature data is included in this report.

Periodic observations were made of the exposed and unexposed surfaces of the test assembly during the fire endurance test. These observations are included in this report.

Pressure taps were installed through the furnace wall adjacent to the test assembly at two heights (top and 40" above the sill) to measure furnace pressure. The neutral pressure plane within the furnace was maintained at 40" above the sill as specified in the test standards. This pressure data is included in this report.

TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 4 (CONTINUED)

TEST INSTALLATION AND PROCEDURES

Per UL10C (2016) two 1/4-in inside diameter stainless steel tubes containing eight 1/16-inch diameter holes were installed in the damper plenum. The tubes were connected to an oxygen analyzer and the data was recorded. This oxygen content data is included in this report.

Per UL10C (2016), immediately after the Fire Endurance Test the assembly frame was moved into position for a Hose-Stream Test. The exposed surface of the test assembly was subjected to the impact, erosion, and cooling effects of a hose stream as described in the test standards.

The following test equipment was used to collect and monitor test conditions.

FULL-SCALE TEST EQUIPMENT	INVENTORY NUMBER	MEASUREMENT UNCERTAINTY	CALIBRATION DUE DATE
Omega DAQ	1164	±2°F at 95% C.L.	10/09/2019
Pressure Transducer	1314	±0.005" w.c. at 95% C.L.	09/04/2019
Pressure Transducer	1315	±0.005" w.c. at 95% C.L.	09/04/2019
Accusplit Timer	1399	±0.001% (over 3hr. period)	01/08/2020
Accusplit Stopwatch	1485	±0.001% (over 3hr. period)	10/08/2019
Tape Measure	1470	N/A	04/03/2019
Water Pressure Gauge	1166	Grade C	10/08/2019
Oxygen Analyzer	1178	Better than 1.0% of Full Scale BB	01/17/2019

SECTION 5

MATERIAL SOURCE/INSTALLATION

The test specimen was submitted to Intertek directly from the client. Samples were not independently selected for testing. Intertek has not verified the composition, manufacturing techniques or quality assurance procedures. The specimens, identified as Nightlock Lockdown Part# 16000 and Nightlock Lockdown 2 Part # 25003, and assigned Sample Tracker ID numbers MID1809270730-001 and MID1812071035-001, were received in good order at the Evaluation Center on 09/27/18.

TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 6

TEST SPECIMEN DESCRIPTION

ASSEMBLY 2		
Door 2	Size/Configuration	Nominal 3'0" wide × 7'0" tall × 1 ¾" thick 20 minute particleboard core door.
Frame	Frame	Nominal 3'0" wide × 7'0" tall steel frame. UL 63 construction.
	Wall Type	8" CMU, frame not grouted.
	Anchors	(3) wire masonry anchors per side, at hinge heights.
Hardware	Latch Set	B101S cylindrical, ½" throw.
	Hinges	(3) 4 ½" × 4 ½" × 0.134" fully mortised butt type hinges.
	Edge Seal	(1) strip Technofire 2000 around perimeter of door.
	Additional	Nightlock Lockdown 2 installed at the bottom latch corner of the unexposed face, Nightlock Lockdown installed at the bottom hinge corner of the unexposed face.

SECTION 7

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Chris Zimbrich	Intertek B&C
Evan Sorge	Intertek B&C

TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 8**TESTING AND EVALUATION OF RESULTS****Observations: (17 Jan 2019)**

TIME (Min:Sec)	EXPOSED FACE OBSERVATIONS
00:00	Burners ignited.
02:35	Flash over.
20:00	Test stopped.

TIME (Min:Sec)	UNEXPOSED FACE OBSERVATIONS
00:00	Assembly tight to frame.
03:34	Smoke from top of door.
03:40	Smoke from perimeter of door.
04:26	Smoke from perimeter has slowed.
10:00	No significant change.
15:00	No significant change.
20:00	Test stopped.

TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 8 (CONTINUED)

TESTING AND EVALUATION OF RESULTS

AMBIENT TEMPERATURE

The ambient temperature at the beginning of the test was 62.7°F.

DOOR DEFLECTION

Door deflection relative to the frame, where applicable, was monitored throughout the test. The door deflections did not exceed the allowable limit of one times the door thickness, and thus met the requirements of the test standards.

FLAMING AND PENETRATION

During the fire exposure period there was no flaming of the unexposed face of the assembly in excess of that allowed by the standard. The assembly met the criteria of the test standards for flaming.

HOSE STREAM TEST OBSERVATIONS AND RESULTS

Per UL 10C (2016) a Hose-Stream Test was conducted for 14 seconds based on a total assembly area of 23.9 square feet and a required duration of 0.6 seconds per square foot of assembly area at 30 psi.

At the conclusion of the hose stream test there were no through openings and the latch was engaged to the strike. Both Nightlock Lockdown assemblies remained in place. This assembly met the requirements of the standard for the Hose-Stream test.

TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

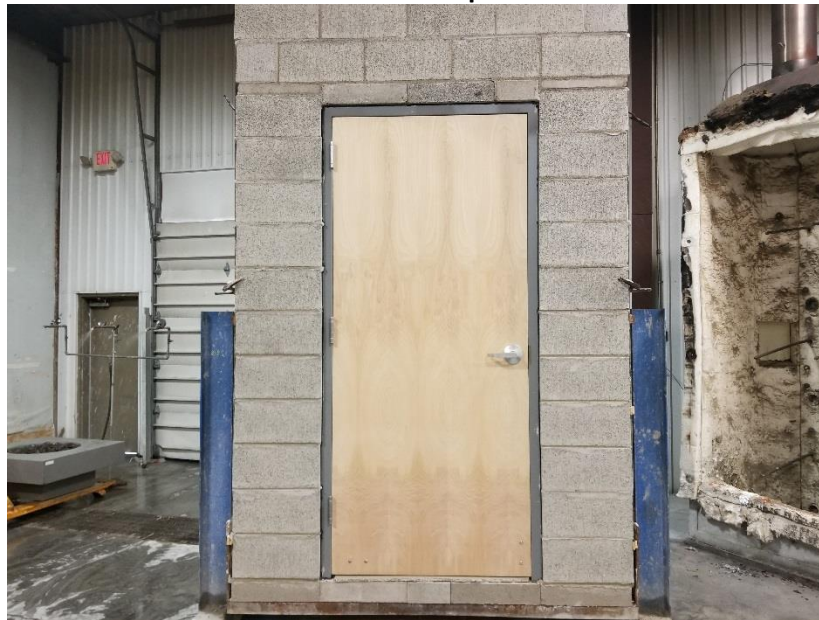
Report No.: 103690911MID-002

Date: 01/30/19

SECTION 9

PHOTOGRAPHS

Before Test Exposed



Before Test Unexposed



TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 9 (CONTINUED)

PHOTOGRAPHS

Nightlock Lockdown Systems in Place Before Test



End of Fire Endurance Unexposed



TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 9 (CONTINUED)

PHOTOGRAPHS

End of Fire Endurance Exposed



Post Hose-Stream Test Exposed



TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 9 (CONTINUED)

PHOTOGRAPHS

Post Hose-Stream Test Unexposed



Nightlock Lockdown Systems Post Hose-Stream



TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 10

GRAPHS

Figure 1
Time-Temperature Curve

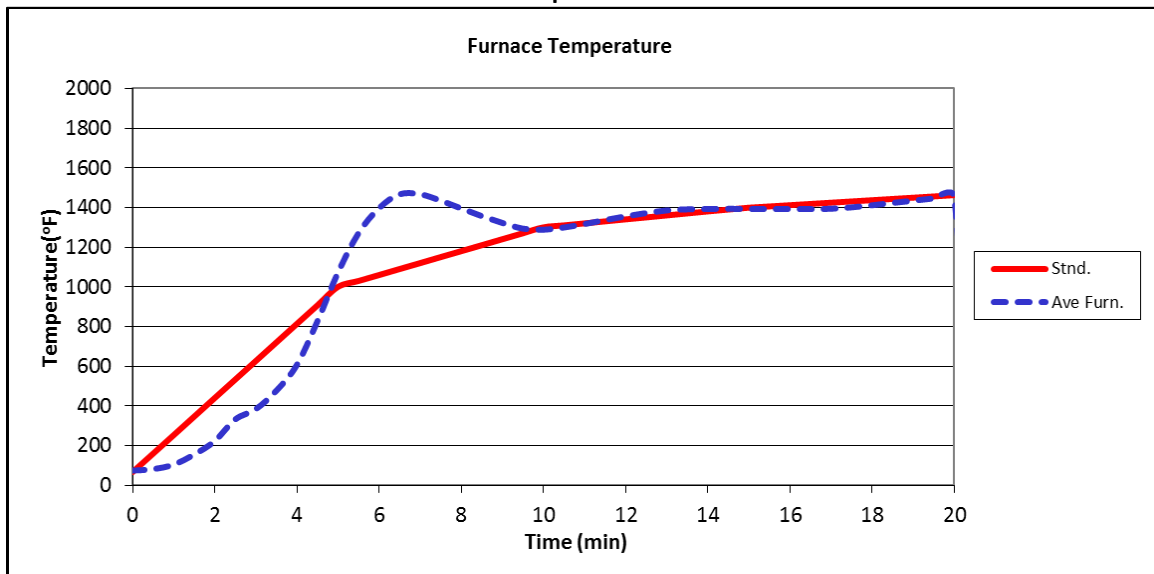
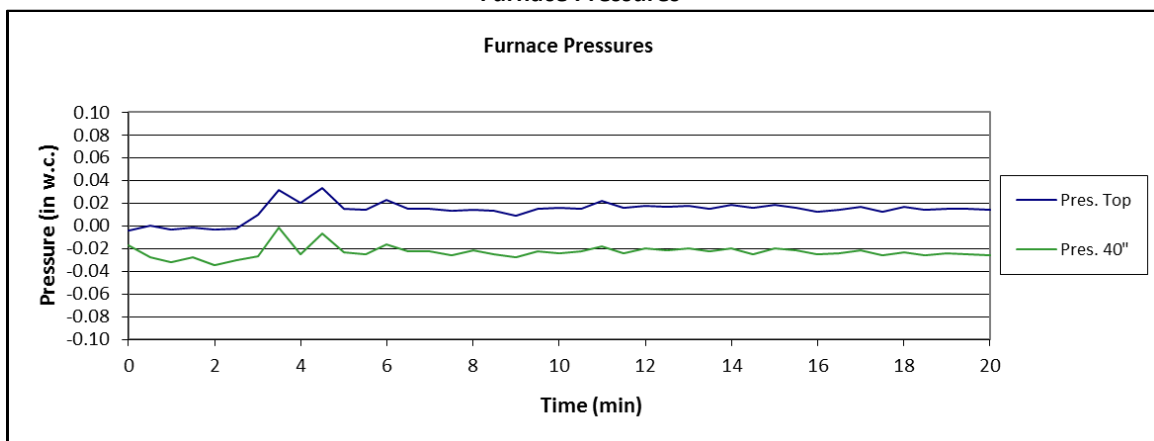


Figure 2
Furnace Pressures



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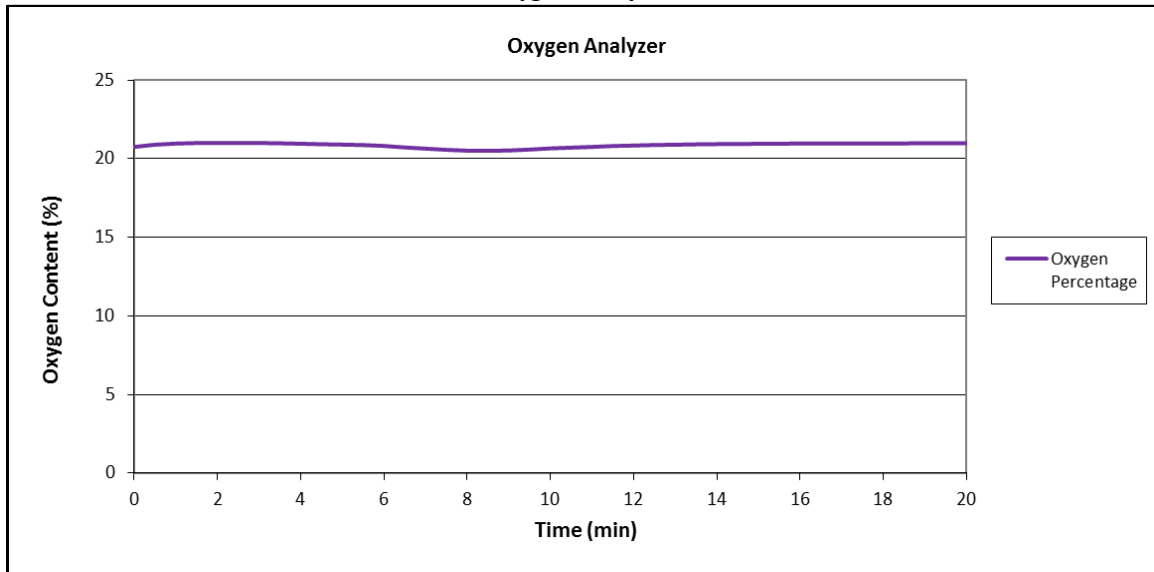
Report No.: 103690911MID-002

Date: 01/30/19

SECTION 10 (CONTINUED)

GRAPHS

**Figure 3
Oxygen Analyzer**





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TEST REPORT FOR TAYLOR BROTHERS DOOR LOCK, LLC

Report No.: 103690911MID-002

Date: 01/30/19

SECTION 11

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	01/30/19	14	Original Report Issue