**LOK-N-BLOK**

**Wall Assembly Test Report**
**Out-of-Plane Flexural Test**

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# Wall Assembly Test Report
# Out-of-Plane Flexural Test

## *Test Standard*

Testing was performed following ICC-ES AC447 (June 2018) *Acceptance Criteria for Fiber Reinforced Plastic (FRP) Modular Wall Systems* Section 4.4.3 and ASTM E72-15 *Standard Test Methods of Conducting Strength Tests of Panels for Building Construction* Section 11. Transverse load tests on a horizontal wall specimen were conducted using the "Bag Method" to apply a uniform load, as permitted in ASTM E72-15 Section 11.3.1.2. The loading procedure and instrumentation were modified from the requirements of AC447 and ASTM E72-15 as described below.

## *Objective*

The tests were undertaken to evaluate the out-of-plane flexural response of a wall built with Lok-N-Blok (LNB) fiber-reinforced plastic block units, as well as to investigate the effect of pretensioning force on this flexural response.

## *Test Specimen*

Four out-of-plane flexural tests were conducted on a single LNB wall specimen. The wall specimen was 5 blocks (61 inches) wide and 14 blocks (113 inches) tall (Figure 1) and was constructed using LNB units produced in 2017. The blocks were placed in a running bond pattern. Due to the absence of adhesives or mortars, the LNB wall assembly requires the application of a precompression force to engage and bind the blocks together as a wall. For this purpose, the wall was clamped down using two 3/4-10 threaded rods (low-strength steel, grade 50), spaced at 3 feet, 9 inches on center about the center of the wall and running through the block cavities. The rods were threaded into a base steel plate (Figure 1), bolted through two 2x6 wood top plates (*Figure 2*), and pretensioned to provide a clamping force to the wall system. The initial tension force in the rods was varied for each test, see below.

## *Test Setup*

The LNB wall specimen was placed horizontally over four deflated airbags resting on the laboratory floor. The top and bottom of the wall specimen were simply supported using roller-type steel supports, which were anchored to the strong-floor with the use of the steel framing shown in Figure 1 and Figure 2. The clear span between supports was approximately 9 feet, actual measurement 107.25 inches.

Instrumentation consisted of the following:

- One laser displacement sensor was used to continuously measure the out-of-plane displacement of the geometric center of the wall specimen. ASTM E72 requires two out-of-plane displacement measurements, one on each vertical edge of the wall panel; however, AC447 requires displacement measurements to be taken at the wall assembly's mid-width and mid-length. These additional displacement measurements will be added in future out-of-plane wall panel testing.
- One linear potentiometer attached with adhesive to the tension face of the wall at the geometric center of the wall specimen was used to continuously measure the in-plane opening of the mid-span joint between blocks.
- Two load cells, one in line with each pretensioning threaded rod, were used to continuously measure the tension in each rod.
- Four digital pressure gauges attached to each of the four airbags were used to measure the applied pressure at each loading stage.

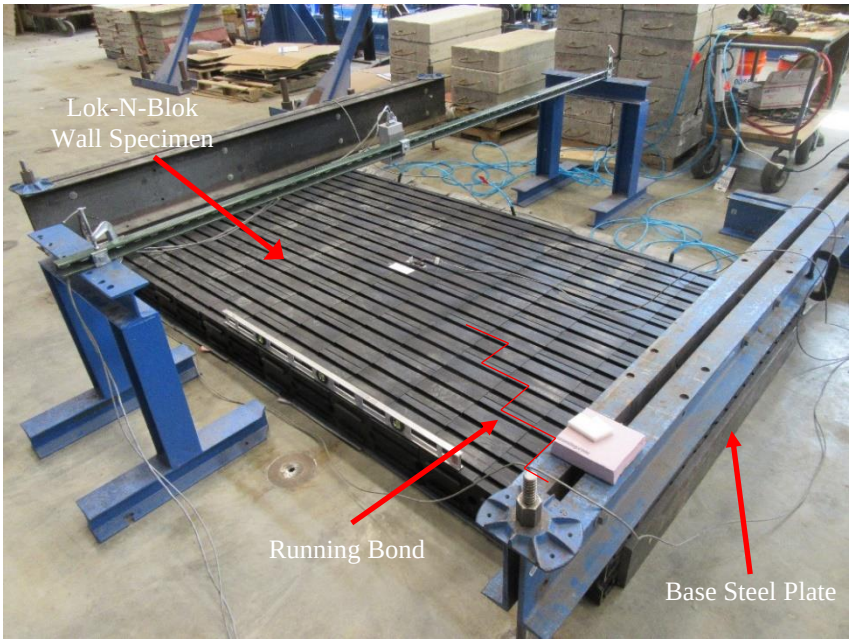


*Figure 1. Transverse Load Testing Frame and Lok-N-Blok Wall Assembly*

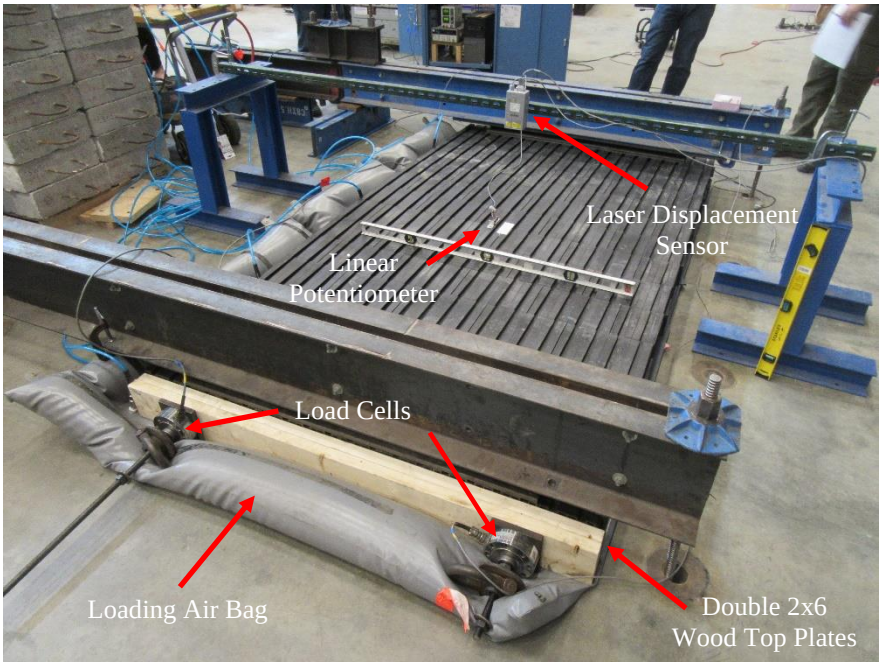


*Figure 2. Instrumentation and Loading Bags for Out-of-Plane Flexural Test*

### *Test Procedure*

For each of the four tests, the loading procedure was as follows:

1. The threaded rods were tensioned using wrenches to an initial tension load that was slightly higher than the target pretension load for that test. See Table 1 below for the target pretension forces applied to each rod.
2. Measurements of rod pretension, mid-span out-of-plane displacement, and mid-span in-plane joint opening were recorded prior to the application of the first pressure increment.
3. Pressure was applied to the wall specimen in increments of 0.05 psi (pausing momentarily to record applied pressure, compression force on each load cell, and displacement measurements) up to a pressure of 0.30 psi, followed by increments of 0.10 psi up to a peak pressure of at least 0.70 psi. The wall was not loaded to failure.
4. The peak pressure was held for 10 minutes before unloading. Air pressure in each bag, threaded rod tension, mid-span displacement, and mid-span joint opening were recorded at 1-minute intervals during the 10-minute peak pressure hold.
5. The air pressure in the bags was released and the tension in the rods was removed. Final "set" measurements were taken.

ASTM E72-15 requires that the load be held at each load stage for 5 minutes, and that unloading be performed and "set" measurements be taken between each load stage. Also, AC447 requires testing of a minimum of three replicate assemblies for each level of wall precompression.

## Results

For each test, the net applied pressure at a deflection of L/240 (0.45 inches), with L taken as the wall span between supports, and the peak net applied pressure are reported in Table 1. The net applied pressure at a deflection of L/240 was estimated by linear interpolation between recorded data. Note that the reported net applied pressures are taken as an average of the pressure measured in each of the four bags and are also adjusted to account for the self-weight of the wall assembly. The outermost loading bags failed during Test 2; therefore, the pressures for Tests 3 and 4 are the average of the remaining three bags. The recorded data for each of the four tests are provided in Appendix A.

**Table 1. Net Applied Pressure Results**

| Test | Target Single Rod Pretension Force (lbs) | Target Wall Precompression (lbs/ft) | Net Applied Pressure at L/240 (0.45 in.) [1] (psf) | Peak Net Applied Pressure (psf) |
|---|---|---|---|---|
| 1 | 5500 | 2165 | 43.0 | 105.7 [2] |
| 2 | 4000 | 1575 | 31.5 | 86.8 [2] |
| 3 | 3000 | 1180 | 24.7 | 88.7 [3] |
| 4 | 2000 | 785 | 20.3 | 94.4 [3] |

Notes:
1. Pressures estimated by linear interpolation of the recorded data.
2. Reported pressures are the average reading of 4 pressure gauges, adjusted for wall self-weight.
3. Reported pressures are the average reading of 3 pressure gauges, adjusted for wall self-weight.

The pressure-displacement response of the wall specimen for each of the four out-of-plane flexural tests is shown in Figure 3. Figure 4 shows the tension side joint-opening displacement at the mid-height of the wall versus the net applied pressure. As the wall deflected out of plane, the joints between each course of blocks on the tension face of the wall began to open under increasing tension. The displacement across the mid-span joint was continuously measured throughout the tests so that wall performance could be compared to requirements for future waterproofing, air barrier, or cladding systems.

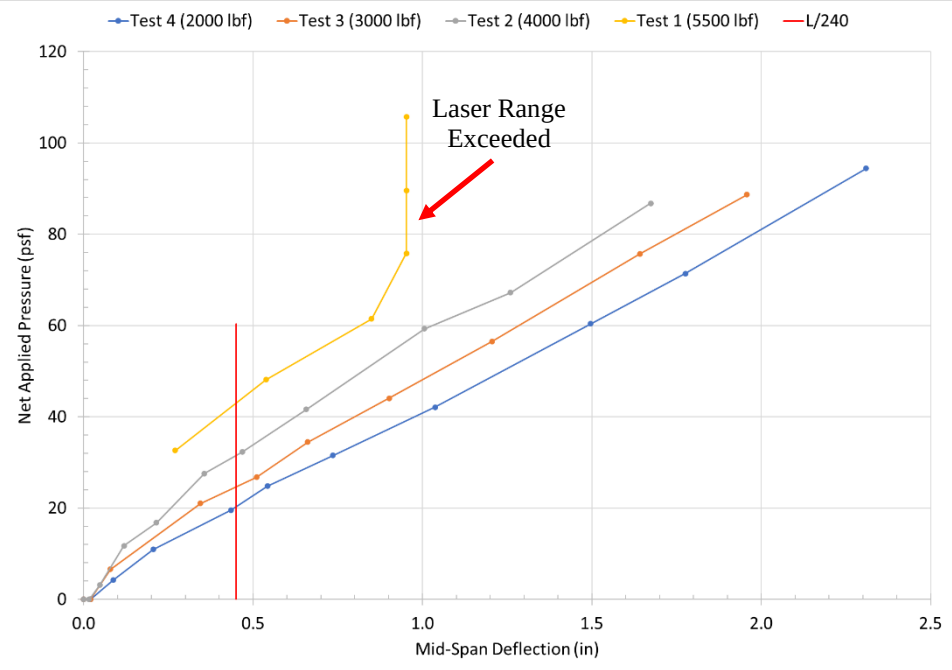


*Figure 3. Net Applied Pressure versus Mid-Span Deflection (Test 1 to Test 4).*

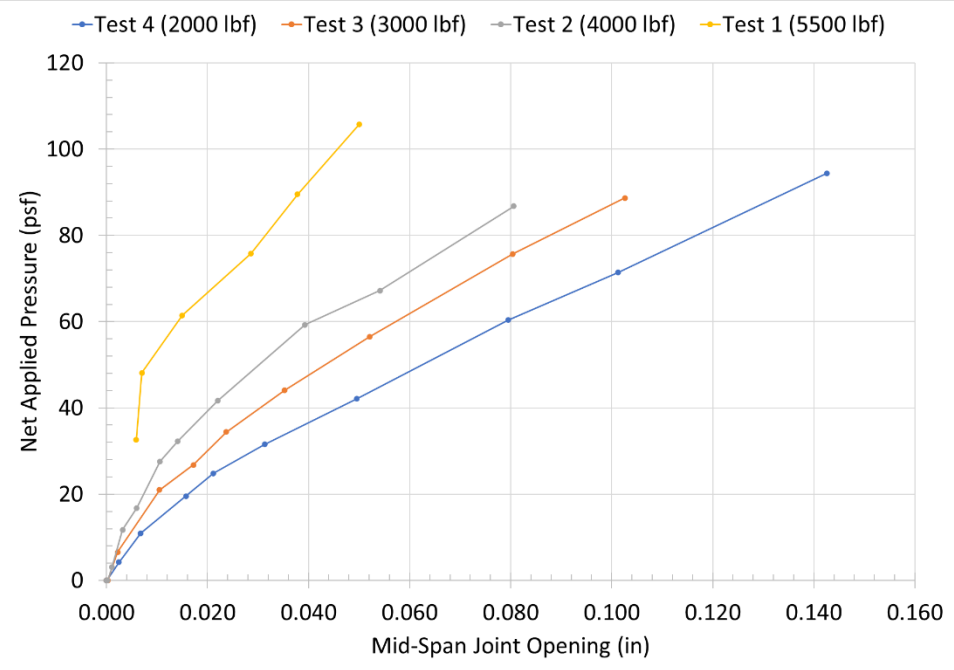


*Figure 4. Net Applied Pressure versus Mid-Span Joint Opening (Test 1 to Test 4).*

## Discussion

Flexural tests on a LNB wall assembly were conducted to investigate the out-of-plane behavior of the wall system and the effect of the precompression force on the out-of-plane response of the wall system. Per AC447 Section 4.4.3.4, the allowable uniform transverse load for wall assemblies is defined as the minimum of one-third (safety factor of 3) of the maximum test load in out-of-plane bending tests or the load associated with the deflection limit prescribed in the 2018 edition of the International Building Code (IBC) Table 1604.3, whichever is more restrictive. To determine the allowable uniform transverse loads for serviceability, the test results were compared to the deflection criteria in IBC for exterior walls with brittle finishes other than plaster or stucco, which is L/240 (0.45 inches for the tested span). Table 2 summarizes the allowable uniform transverse loads for each test, according to the strength and deflection criteria in AC447.

**Table 2. Summary of Allowable Uniform Transverse Loads (Pressures) per AC447 Criteria**

| Test | Target Single Rod Pretension Force (lbf) | Target Wall Precompression (lbf/ft) | Allowable Pressure per Strength Criteria (psf) | Allowable Pressure per Serviceability Criteria (psf) | Allowable Pressure (psf) |
|---|---|---|---|---|---|
| 1 | 5500 | 2164 | 35.2 | 43.0 | 35 |
| 2 | 4000 | 1574 | 28.9 | 31.5 | 29 |
| 3 | 3000 | 1180 | 29.6 | 24.7 | 24 |
| 4 | 2000 | 787 | 31.5 | 20.3 | 20 |

Because the wall specimen was not loaded to failure in any of the tests, the lower allowable transverse load per the strength criteria of Test 2 relative to Tests 3 and 4 is due to a lower peak applied pressure and

therefore is not an accurate assessment of the wall's ultimate strength at that level of precompression. The allowable pressure in Table 2 above is reported based on the wall testing results given in this report. Where the AC447 strength criteria controlled (Tests 1 and 2), the allowable pressures given do not represent the allowable pressures at failure. Allowable pressures for the wall at rod pretensions where the strength criteria controlled will likely be greater when the wall is tested to failure.

The applied pressure vs. deflection curves for the various wall assemblies (Figure 3) show that the initial wall stiffness is dependent on the magnitude of the precompression force applied to the LNB wall assembly. The deflection of the LNB wall was greater for assemblies that had less precompression at the same load levels. Because of the imposed deflection limits for serviceability, this means that the allowable uniform load of the wall assembly is dependent on the precompression force. Greater precompression forces resulted in higher allowable uniform pressures.

To provide context to the test results, allowable design wind speeds were determined based on the allowable pressures shown in Table 2 and several design assumptions common to a typical low-rise building. Allowable design winds speeds were calculated per IBC and ASCE 7-16, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, based on the following assumptions:

1. Wind load analysis for components and cladding
2. Enclosed building type
3. Exposure Category B (Surface Roughness B corresponds to urban and suburban areas)
4. Topographic Factor, Kzt = 1.0 (no abrupt changes in topography)
5. Maximum roof height of 20 feet (one- or two-story structure)
6. Typical wall section away from wall ends (wall end-zone regions not considered because of additional restraint from perpendicular wall)
7. Wind pressures calculated using allowable strength design (ASD)

The calculated allowable design wind speeds are summarized in the table below.

**Table 3. Summary of Calculated Design Wind Speeds Corresponding to Allowable Uniform Transverse Loads (Pressures) per AC447 Criteria**

| Test | Target Single Rod Pretension Force (lbf) | Target Wall Precompression (lbf/ft) | Design Wind Speed Corresponding to Allowable Pressure per Strength Criteria (psf) | Design Wind Speed Corresponding to Allowable Pressure per Serviceability Criteria (psf) |
|---|---|---|---|---|
| 1 | 5500 | 2164 | 190 | 251 |
| 2 | 4000 | 1574 | 172 | 215 |
| 3 | 3000 | 1180 | 174 | 190 |
| 4 | 2000 | 787 | 180 | 172 |

# Appendix A. Tabulated Testing Measurements and Results

## Test 1 – 5,500 lb

# WJE Project Number: 2017.6646.0

# Lok-N-Blok Out-of-Plane Bending Wall Tests

| | | | |
|---|---|---|---|
| **WEIGHT OF 1 BLOCK** | 6.76 lbf | **SPAN LENGTH** | 107.25 in |
| **WEIGHT OF THREADED ROD** | 1.24 lbf/ft | **WALL WIDTH** | 61 in |
| **BLOCK WIDTH** | 12.13 in | **TOTAL SELF-WEIGHT** | 0.071 psi |
| **BLOCK HEIGHT (EXCLUDES POSTS)** | 8.0625 in | | |

Table 1. Load Step

| **Load Step (psi)** | **Air Pressure (psi)** | | | | **Rod Tension (lbf)** | | **Displacements** | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North | South | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | | | | |
| 0.10 | 0.07 | 0.07 | 0.05 | 0.05 | | | | |
| 0.15 | | | | | | | | |
| 0.20 | 0.23 | 0.23 | 0.24 | 0.24 | | | | |
| 0.25 | | | | | | | | |
| 0.30 | 0.31 | 0.28 | 0.31 | 0.29 | 5386 | 5320 | 0.270 | 0.0059 |
| 0.40 | 0.41 | 0.39 | 0.41 | 0.41 | 5502 | 5396 | 0.538 | 0.0070 |
| 0.50 | 0.50 | 0.48 | 0.50 | 0.51 | 5650 | 5497 | 0.850 | 0.0150 |
| 0.60 | 0.60 | 0.59 | 0.60 | 0.60 | 5970 | 5840 | | 0.0286 |
| 0.70 | 0.70 | 0.67 | 0.69 | 0.71 | 6260 | 6126 | | 0.0378 |
| 0.80 | 0.80 | 0.79 | 0.81 | 0.82 | | | | 0.0500 |
| 0.90 | 0.91 | 0.90 | 0.92 | 0.93 | | | | |
| 1 | | | | | | | | |

## Test 3 – 3,000 lb

# WJE Project Number: 2017.6646.0

# Lok-N-Blok Out-of-Plane Bending Wall Tests

| | | | |
|---|---|---|---|
| **WEIGHT OF 1 BLOCK** | 6.76 lbf | **SPAN LENGTH** | 107.25 in |
| **WEIGHT OF THREADED ROD** | 1.24 lbf/ft | **WALL WIDTH** | 61 in |
| **BLOCK WIDTH** | 12.13 in | **TOTAL SELF-WEIGHT** | 0.071 psi |
| **BLOCK HEIGHT (EXCLUDES POSTS)** | 8.0625 in | | |

Table 1. Load Step

| Load Step (psi) | Air Pressure (psi) | | | | Rod Tension (lbf) | | Displacements | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North | South | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 0 | | | | | 3008 | 3028 | 0.0038 | -0.0057 |
| 0.05 | 0.05 | 0.05 | 0.04 | | 2950 | 2967 | 0.0233 | -0.0055 |
| 0.10 | 0.13 | 0.11 | 0.11 | | 2936 | 2929 | 0.0826 | -0.0035 |
| 0.15 | | | | | | | | |
| 0.20 | 0.22 | 0.22 | 0.21 | | 3023 | 2912 | 0.3480 | 0.0048 |
| 0.25 | 0.26 | 0.25 | 0.26 | | 3116 | 3049 | 0.5140 | 0.0115 |
| 0.30 | 0.32 | 0.31 | 0.30 | | 3226 | 3174 | 0.6648 | 0.0180 |
| 0.40 | 0.39 | 0.37 | 0.37 | | 3462 | 3473 | 0.9050 | 0.0295 |
| 0.50 | 0.48 | 0.45 | 0.46 | | 3823 | 3900 | 1.2100 | 0.0464 |
| 0.60 | 0.61 | 0.59 | 0.59 | | 4556 | 4670 | 1.6460 | 0.0747 |
| 0.70 | 0.69 | 0.68 | 0.69 | | 5237 | 5456 | 1.9620 | 0.0969 |
| 0.80 | | | | | | | | |
| 0.90 | | | | | | | | |
| 1 | | | | | | | | |

Table 2. Holding Load

| Holding Load | Air Pressure (psi) | | | | Rod Tension (lbf) | | Displacements | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North | South | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 0 min | 0.73 | 0.69 | 0.68 | | 5195 | 5438 | 2.0330 | 0.1066 |
| 1 min | 0.72 | 0.68 | 0.67 | | 5152 | 5392 | 2.0370 | 0.1066 |
| 2 min | 0.72 | 0.67 | 0.66 | | 5124 | 5361 | 2.0270 | 0.1067 |
| 3 min | 0.71 | 0.67 | 0.65 | | 5100 | 5335 | 2.0338 | 0.1067 |
| 4 min | 0.71 | 0.67 | 0.64 | | 5077 | 5310 | 2.0292 | 0.1067 |
| 5 min | 0.70 | 0.67 | 0.63 | | 5063 | 5291 | 2.0290 | 0.1067 |
| 6 min | 0.69 | 0.67 | 0.62 | | 5040 | 5270 | 2.0202 | 0.1067 |
| 7 min | 0.69 | 0.67 | 0.61 | | 5020 | 5248 | 2.0220 | 0.1067 |
| 8 min | 0.69 | 0.67 | 0.61 | | 5002 | 5231 | 2.0225 | 0.1067 |
| 9 min | 0.68 | 0.67 | 0.60 | | 4985 | 5215 | 2.0225 | 0.1067 |
| 10 min | 0.67 | 0.67 | 0.60 | | 4968 | 5197 | 2.0172 | 0.1067 |
| Residual | | | | | 2326 | 2429 | 0.1140 | -0.0009 |

## Test 2 – 4,000 lbf

# WJE Project Number: 2017.6646.0

# Lok-N-Blok Out-of-Plane Bending Wall Tests

| | | | |
|---|---|---|---|
| **WEIGHT OF 1 BLOCK** | 6.76 lbf | **SPAN LENGTH** | 107.25 in |
| **WEIGHT OF THREADED ROD** | 1.24 lbf/ft | **WALL WIDTH** | 61 in |
| **BLOCK WIDTH** | 12.13 in | **TOTAL SELF-WEIGHT** | 0.071 psi |
| **BLOCK HEIGHT (EXCLUDES POSTS)** | 8.0625 in | | |

Table 1. Load Step

| **Load Step (psi)** | **Air Pressure (psi)** | | | | **Rod Tension (lbf)** | | **Displacements** | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North | South | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 0 | | | | | 4123 | 4073 | 0.0060 | 0.0036 |
| 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 4071 | 4020 | 0.0218 | 0.0038 |
| 0.10 | 0.10 | 0.08 | 0.09 | 0.10 | 4042 | 3982 | 0.0537 | 0.0047 |
| 0.15 | 0.15 | 0.16 | 0.15 | 0.15 | 4060 | 3970 | 0.1250 | 0.0068 |
| 0.20 | 0.18 | 0.19 | 0.20 | 0.18 | 4090 | 3978 | 0.2208 | 0.0096 |
| 0.25 | 0.27 | 0.26 | 0.26 | 0.26 | 4173 | 4027 | 0.3620 | 0.0142 |
| 0.30 | 0.30 | 0.30 | 0.28 | 0.30 | 4246 | 4086 | 0.4736 | 0.0177 |
| 0.40 | 0.37 | 0.36 | 0.35 | 0.36 | 4400 | 4248 | 0.6633 | 0.0256 |
| 0.50 | 0.50 | 0.48 | 0.47 | 0.48 | 4814 | 4710 | 1.0120 | 0.0429 |
| 0.60 | 0.55 | 0.54 | 0.53 | 0.53 | 5174 | 5115 | 1.2660 | 0.0577 |
| 0.70 | 0.71 | 0.63 | 0.68 | * | 5732 | 5807 | 1.6800 | 0.0842 |
| 0.80 | | | | | | | | |
| 0.90 | | | | | | | | |
| 1 | | | | | | | | |

* Bag 4 failed at this pressure.

Table 2. Holding Load

| Holding Load | Air Pressure (psi) | | | | Rod Tension (lbf) | | Displacements | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North | South | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 1 min | 0.71 | 0.63 | 0.66 | | 5672 | 5752 | 1.627 | 0.0847 |
| 2 min | 0.71 | 0.63 | 0.65 | | 5643 | 5723 | 1.673 | 0.0848 |
| 3 min | 0.71 | 0.62 | 0.64 | | 5630 | 5711 | 1.668 | 0.0854 |
| 4 min | 0.70 | 0.62 | 0.63 | | 5607 | 5689 | 1.665 | 0.0855 |
| 5 min | 0.70 | 0.61 | 0.63 | | 5593 | 5676 | 1.661 | 0.0855 |
| 6 min | 0.69 | 0.61 | 0.62 | | 5575 | 5659 | 1.665 | 0.0855 |
| 7 min | 0.68 | 0.63 | 0.61 | | 5560 | 5646 | 1.657 | 0.0855 |
| 8 min | 0.67 | 0.61 | 0.60 | | 5544 | 5633 | 1.657 | 0.0855 |
| 9 min | 0.66 | 0.61 | 0.60 | | 5534 | 5621 | 1.653 | 0.0854 |
| 10 min | 0.65 | 0.61 | 0.59 | | 5519 | 5607 | 1.653 | 0.0854 |
| Residual | | | | | 3503 | 3579 | 0.089 | 0.0072 |

## Test 4 – 2,000 lbf

# WJE Project Number: 2017.6646.0

# Lok-N-Blok Out-of-Plane Bending Wall Tests

| | | | |
|---|---|---|---|
| **WEIGHT OF 1 BLOCK** | 6.76 lbf | **SPAN LENGTH** | 107.25 in |
| **WEIGHT OF THREADED ROD** | 1.24 lbf/ft | **WALL WIDTH** | 61 in |
| **BLOCK WIDTH** | 12.13 in | **TOTAL SELF-WEIGHT** | 0.071 psi |
| **BLOCK HEIGHT (EXCLUDES POSTS)** | 8.0625 in | | |

Table 1. Load Step

| Load Step (psi) | Air Pressure (psi) | | | | Rod Tension (lbf) | | Displacements | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North Rod | South Rod | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 0 | | | | | 2060 | 2055 | 0.004 | -0.0036 |
| 0.05 | 0.05 | 0.04 | 0.04 | | 2056 | 2032 | 0.023 | -0.0036 |
| 0.10 | 0.11 | 0.09 | 0.10 | | 2065 | 1994 | 0.091 | -0.0011 |
| 0.15 | 0.15 | 0.15 | 0.14 | | 2100 | 2002 | 0.209 | 0.0032 |
| 0.20 | 0.21 | 0.20 | 0.21 | | 2228 | 2090 | 0.439 | 0.0121 |
| 0.25 | 0.25 | 0.24 | 0.24 | | 2324 | 2174 | 0.546 | 0.0176 |
| 0.30 | 0.29 | 0.30 | 0.28 | | 2505 | 2373 | 0.740 | 0.0277 |
| 0.40 | 0.37 | 0.36 | 0.36 | | 2840 | 2702 | 1.041 | 0.0459 |
| 0.50 | 0.51 | 0.48 | 0.48 | | 3466 | 3411 | 1.500 | 0.0759 |
| 0.60 | 0.58 | 0.57 | 0.55 | | 3968 | 3978 | 1.780 | 0.0976 |
| 0.70 | 0.73 | 0.72 | 0.73 | | 4876 | 5034 | 2.313 | 0.1390 |
| 0.80 | | | | | | | | |
| 0.90 | | | | | | | | |
| 1 | | | | | | | | |

Table 2. Holding Load

| Holding Load | Air Pressure (psi) | | | | Rod Tension (lbf) | | Displacements | |
|---|---|---|---|---|---|---|---|---|
| | Bag 1 | Bag 2 | Bag 3 | Bag 4 | North Rod | South Rod | Out-of-Plane at Mid-Span (in) | In-Plane Joint at Mid-Span (in) |
| 1 min | 0.73 | 0.69 | 0.72 | | 4832 | 4986 | 2.313 | 0.1394 |
| 2 min | 0.73 | 0.68 | 0.71 | | 4953 | 4805 | 2.309 | 0.1390 |
| 3 min | 0.73 | 0.68 | 0.70 | | 4777 | 4916 | 2.305 | 0.1393 |
| 4 min | 0.73 | 0.68 | 0.68 | | 4754 | 4890 | 2.302 | 0.1393 |
| 5 min | 0.72 | 0.68 | 0.67 | | 4732 | 4866 | 2.305 | 0.1393 |
| 6 min | 0.72 | 0.68 | 0.66 | | 4711 | 4843 | 2.302 | 0.1394 |
| 7 min | 0.71 | 0.68 | 0.66 | | 4689 | 4818 | 2.298 | 0.1393 |
| 8 min | 0.71 | 0.68 | 0.65 | | 4673 | 4800 | 2.293 | 0.1394 |
| 9 min | 0.70 | 0.68 | 0.64 | | | | | |
| 10 min | 0.69 | 0.67 | 0.63 | | 4638 | 4761 | 2.293 | 0.1393 |
| Residual | | | | | 1614 | 1508 | 0.071 | 0.0015 |