



February 24, 2021

Mr. Billy Meade  
Johnson Concrete Products  
514 Burgin Dr.  
Lexington, NC 27292

Subject: Concrete Masonry Unit Water Repellency Certification  
for Lexington, NC  
Mix Design: #4777-020421

Dear Billy,

Congratulations on successfully passing ACM Chemistries' Certification Program for manufacturing water repellent concrete masonry units. I am pleased to certify that the Lava Rock concrete masonry units manufactured at your Lexington, NC location using RainBloc® 80 water repellent admixture at a dosage rate of 4 oz/cwt of cementitious material fully comply with the water repellency standards established by our company. The test results showing that the units comply with ACM Chemistries' water repellency standards and ASTM C90 are attached.

As a reminder, be sure to follow the quality control procedures recommended by ACM Chemistries for on-going production. This will provide additional assurance to you that the concrete masonry units are manufactured correctly and will perform as expected.

This certification is valid from January 22, 2021 until March 31, 2022, providing that the water repellent CMU's are manufactured with the same mix design and density as those measured for this certification report.

If we at ACM Chemistries can be of assistance to you or your staff, please contact us at 1-877-226-1766.

Certified by:

A handwritten signature in black ink that reads 'Alison Blavesciunas'.

Alison Blavesciunas  
Technical Services Coordinator



# **Water Repellency Certification Report**

for

**JOHNSON CONCRETE PRODUCTS  
LEXINGTON, NC**



# Spray Bar Test Report

for

## JOHNSON CONCRETE PRODUCTS LEXINGTON, NC

MANUFACTURE DATE:  
January 22, 2021

Lava Rock CMU  
Concrete Masonry Unit(s)  
Mix Design No. 4777-020421

### Results

Unit ID	Admixture Dosage	Inside Front Faceshell	Inside Outer Webs	Center Web	Inside Back Faceshell	Outside Back Faceshell
1	RainBloc 80 4 oz/cwt	< 1% damp	Dry	< 1% damp	Dry	Dry
2	RainBloc 80 4 oz/cwt	< 1% damp	Dry	Dry	Dry	Dry

### Definitions:

Dry – no darkening of the surface due to moisture.

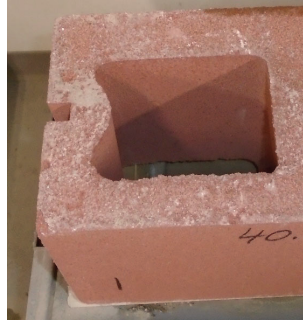
Damp – darkening of the surface with no glistening of water.

Wet – darkening of the surface with glistening water present.

Pin Holes – small points where moisture passes through the concrete.

# 4777-020421 Johnson Concrete Products – Lexington, NC Lava Rock CMU

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Left Cell

**RainBloc® 80**  
4 oz/cwt  
FS: < 1% damp  
OW: Dry  
CW: < 1% damp  
IBFS: Dry  
OBFS: Dry  
  
**Pass**



Right Cell

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Left Cell

**RainBloc® 80**  
4 oz/cwt  
FS: < 1% damp  
OW: Dry  
CW: Dry  
IBFS: Dry  
OBFS: Dry  
  
**Pass**



Right Cell



4350 River Green Pkwy, Suite 200 Duluth, Georgia 30096  
(770-476-3555 phone (770) 476-0213 fax

## ACM Chemistries Water Repellency Testing

**Customer:** Johnson Concrete  
**Location:** Lexington, North Carolina

**ACM Lab No:** 4777-020421  
**Unit Type:** Lava Rock CMU

**Apparatus:** Spray Bar  
**Flow Rate:** 120 gal/hr  
**Duration:** 4 hours minimum  
**Test Surface:** Split-face

**Date Manufactured:** January 22, 2021  
**Date Tested:** February 9, 2021  
**S&ME Job No:** 1803-10-111  
**S&ME Report No:** 003111  
**Submitted by:** B. O'Dell

Unit ID	Inside Front Faceshell	Inside Outer Webs	Center Web	Inside Back Faceshell	Outside Back Faceshell	Pass / Fail
Unit 1	< 1% damp	Dry	< 1% damp	Dry	Dry	Pass
Unit 2	< 1% damp	Dry	Dry	Dry	Dry	Pass

### ACM Chemistries RainBloc Certification Requirements:

- no more than 10% dampness and no more than 5 pinholes on the inside of the front face shell
- no more than 5% dampness on the center web, inside of the outer webs, or inside of back face shell
- no dampness on the outside of the back face shell

Unit ID:	1	2
Initial Wt:	40.19	40.00
4 hr Spray Bar Wt:	40.30	40.12
24 hr Submerged Wt:	41.35	41.14
Suspended Wt:	22.92	22.76
Oven Dry Wt:	39.28	39.14
Initial Moisture (%):	44.0	43.0
Spray Bar Moisture (%):	49.3	49.0
% Chg In Moisture (4 hr):	5.3	6.0
Absorption (PCF):	7.0	6.8
Density (PCF):	133.0	132.9



## On-Going Water Repellency Quality Assurance Program

In order to verify that the RainBloc® water repellent concrete masonry units are manufactured with proper control and admixture dosage, it is very important that the following quality assurance procedures be followed.

### **Water Droplet Test**

Within 48 hours after manufacture, randomly select 3 water repellent concrete masonry units from production and place them on a horizontal surface with a faceshell facing upward. Using a syringe or other accurate method of measure, place 5 drops of water (approx. 1 to 5 ml each) on each of the three faceshells and measure the length of time required for the water to absorb into the units to the point where no glistening water is present on the surface or the water droplets evaporate away.

### **Pass/Fail Criteria**

If at least three of the five water droplets remain on the surface for over 30 minutes, it is reasonable to assume that the concrete masonry units were manufactured properly for water repellency.

If water does not remain on the surface for at least 30 minutes, verify that all subsequent production is receiving the proper amount of RainBloc® admixture by checking the dosage and performance of the dispensing system. Also immediately contact your ACM Chemistries RainBloc® technical service representative for assistance. The concrete masonry units may not be sufficiently water repellent.

Note that concrete masonry units exposed to dust and dirt will lose their ability to bead water on their concrete surfaces over time. When this occurs, it may appear that the CMU's are not water repellent. This is not the case, and spray bar testing can confirm the units are properly water repellent. Consult your RainBloc® technical service representative if any questions arise.

**ASTM C90  
Compliance  
Report**

**Concrete Masonry Unit Testing**

ASTM C90 / C140



S&amp;ME, Inc. - Atlanta 4350 River Green Pkwy, Suite 200 Duluth, GA 30096

Project No.:	1803-10-111	Report No.	003111	Report Date:	2/22/2021
Client:	ACM Chemistries, Inc.			Received Date:	2/8/2021
Attention:	Mr. Craig Walloch				
Manufacturer:	Johnson Concrete - Lexington, North Carolina			Manufactured Date:	1/22/2021
Sampled by:	Johnson Concrete - Lexington, North Carolina				
Specification:	ASTM C90-16a			Test Procedure:	ASTM C140-20a
Unit I.D.	<b>ACM NO. 4777-020421: Lava Rock CMU</b>				
	Test Date: 2/19/2021 at 28 days of age				

**SUMMARY OF AVERAGE TEST RESULTS**

	Result	Required		Result	Required
<b>Net Compressive Strength:</b>	4,050 psi	<b>2,000 min.</b>	<b>Normalized Web Area:</b>	31.0 in <sup>2</sup> /ft <sup>2</sup>	<b>6.5 in.<sup>2</sup>/ft.<sup>2</sup></b>
<b>Density:</b>	133.0 pcf	-	<b>Minimum Faceshell Thickness:</b>	1.26 in.	<b>1.25 min.</b>
<b>Absorption:</b>	7.1 pcf	<b>13 max.</b>	<b>Minimum Web Thickness:</b>	1.21 in.	<b>0.75 min.</b>
<b>Absorption:</b>	5.3 %	-	<b>Equivalent Web Thickness:</b>	2.8 in.	-
<b>Percent Solid:</b>	56.1 %	-	<b>Net Cross-sectional Area:</b>	67.3 in <sup>2</sup>	-
<b>Dimensional Variance:</b>	0.07 in.	<b>0.125 max.</b>	<b>Gross Cross-sectional Area:</b>	120.1 in <sup>2</sup>	-

**Individual Test Results**

Specimen No.	1	2	3	Average
Received weight, lbs	40.19	40.00	40.34	40.18
Width, inches	7.70	7.74	7.67	7.70
Height, inches	7.55	7.58	7.59	7.57
Length, inches	15.59	15.58	15.59	15.59
Immersed weight, lbs	22.92	22.76	23.10	22.93
Saturated weight, lbs	41.35	41.14	41.53	41.34
Dry weight, lbs	39.28	39.14	39.35	39.26
Normalized Web Area, in. <sup>2</sup> /ft. <sup>2</sup>	30.9	30.7	31.3	31.0
Minimum Faceshell Thickness, inches	1.27	1.26	1.26	1.26
Minimum Web Thickness, inches	1.21	1.21	1.22	1.21
Equivalent Web Thickness, inches	2.8	2.8	2.8	2.8
Equivalent Thickness, inches	4.3	4.3	4.3	4.3
Absorption, %	5.3	5.1	5.5	5.3
Absorption, pcf	7.0	6.8	7.4	7.1
Density, pcf	133.0	132.9	133.2	133.0
Gross Area, in <sup>2</sup>	120.0	120.6	119.6	120.1
Net Area, in <sup>2</sup>	67.6	67.1	67.2	67.3
Percent Solid, %	56.3	55.7	56.2	56.1
Specimen No.	4	5	6	Average
Received weight, lbs	40.75	40.56	39.68	40.33
Maximum Applied Load, lbs	282,130	259,840	275,720	272,560
Gross Area Compressive Strength, psi	2,350	2,160	2,300	2,270
Net Area Compressive Strength, psi	4,190	3,860	4,100	4,050

**References / Comments / Deviations:**

These results meet the compressive strength, absorption, and dimensional requirements of ASTM C90 for Normal Weight units.

Brian O'Dell

Technical Responsibility

Signature

Masonry Laboratory Manager

Position

2/22/2021

Date

This report shall not be reproduced, except in full without the written approval of S&amp;ME, Inc.

# **WATER REPELLENCY CERTIFICATION**

**AWARDED TO  
JOHNSON CONCRETE PRODUCTS  
LEXINGTON, NC**

**FOR SUCCESSFULLY MEETING THE CRITERIA FOR QUALIFICATION AS AN  
ACM CHEMISTRIES  
RAINBLOC® WATER REPELLENT MASONRY UNIT PRODUCER**

**THIS 24<sup>TH</sup> DAY OF FEBRUARY 2021**



  
**CRAIG WALLOCH**  
**VICE PRESIDENT, TECHNICAL SUPPORT & EDUCATION**  
**ACM CHEMISTRIES, INC.**

**VALID FROM JANUARY 22, 2021 UNTIL MARCH 31, 2022**