



EUCLID CHEMICAL

Technical Center

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Customer: Bilco Brick
Submitted By: Jerry Miller
Location: Lancaster, TX
Request: Masonry Testing, (Water Repellency)

TSR# 18-04-23-02

Dates: 4/30/2018

RELATED DOCUMENTS:

Water Repellency Test Methods (NCMA TEK 19-7)

CMU – WR1 Standard Test Method for Water Droplet and Water Bottle Tests of Concrete Masonry Units

CMU – WR2 Standard Test Method for Spray bar Test of Concrete Masonry Units

PRODUCTS TESTED: 1 set of eight inch, hollow core, normal weight block, were submitted as follows:

Sample Set A – Eucon Blocktite (24.0 oz/c wt.), admixture

Physical Requirements:

Performance measures for water repellency test methods

Test Method	Time Scale	Excellent	Good	Marginal	Poor
Water Bead	1 hours	15 drops remaining	10-14 drops remaining	5-9 drops remaining	0-4 drops remaining
Spray Bar	4 hours	No dampness or pinholes observed	Avg. of 20 % or less dampness, and for each unit 5 pinholes or less	Avg. of 20-60 % dampness, and for each unit 6-10 pinholes	Avg. greater than 60 % dampness, and for each unit greater than 11 pinholes
			Pass		
				Fail	

Summary of Test Results:

Physical Properties	Sample Set A
Water Bead Test @ 1 hour	Excellent
Spray Bar Test @ 4 hours	Good

**Water Bead Test Report
NCMA CMU-WR1-09**

Test Method: Water Bead Test
(per NCMA Method CMU-WR1-09)
Unit Specification: NCMA TEK 19-7
Unit Description: 8x8x16 inch Concrete Masonry Units

Summary of Test Results

<u>Physical Properties</u>	<u>Specified Values</u>	<u>Test Results</u>
Average Water Drops Remaining at 5 Minutes	min. 9	15
Average Water Drops Remaining at Conclusion of Testing	****	15

Unit ID	<u>Drops Remaining</u>				
	1 Minute	5 Minutes	15 Minutes	30 Minutes	60 Minutes
A	5	5	5	5	5
B	5	5	5	5	5
C	5	5	5	5	5
Total	15	15	15	15	15



Water Bead @ 1 Hour

Note: These Units Comply With NCMA TEK 19-7 Water Bead Criteria

Spray Bar Test Report
NCMA CMU-WR2-09

Test Method:

Spray Bar Test

(per NCMA Method CMU-WR2-09)

Unit Specification:

NCMA TEK 19-7

Unit Description:

8x8x16 inch Concrete Masonry Units

Summary of Test Results

Physical Properties

	Specified Values	Test Results
Average Total Face Shell Area	****	91.6 in. ²
Average Total Web Area	****	151.4 in. ²
Average Dampness Inside Face Shell at Conclusion of Testing	20% max.	5.7%
Maximum Pinholes per Unit at Conclusion of Testing	5 max.	2 count
Average Dampness on Webs at Conclusion of Testing	****	0.0%
Average Water Absorbed During Testing	****	0.45 lb.

Individual Unit Results - Note: Measurements and weights below are obtained from cut specimens.

Measured Dimensions

Unit ID	Unit Length in.	Unit Height in.	Length Inside Face Shell		Total Inside Face Shell Surface Area in. ²
			Left (L _{FS (left)}) in.	Right (L _{FS (right)}) in.	
A	15.63	7.61	6.03	6.00	91.5
B	15.66	7.64	5.97	6.00	91.5
C	15.63	7.66	6.00	5.97	91.7
Average	15.64	7.64	6.00	5.99	91.6

Unit ID	Total Inside Web Surface Area				
	Web 1 (L _{web1}) in.	Web 2 (L _{web2}) in.	Web 3 (L _{web3}) in.	Web 4 (L _{web4}) in.	Total Inside Web Surface Area in. ²
A	4.94	4.94	5.00	4.97	151.1
B	4.94	4.97	4.97	4.94	151.4
C	4.91	4.94	4.97	4.97	151.6
Average	4.93	4.95	4.98	4.96	151.4

Measured Weights, Absorbed Water, Dampness, and Pinhole Measurements at Conclusion of Spray Bar Testing (4 hours)

Unit ID	Weight at Start of Test lb.	Weight at End of Test lb.	Water Absorbed in Test lb.	Dampness Inside Face Shell in. ²	Dampness Inside Face Shell %	Pinholes Inside Face Shell #	Dampness Total Webs in. ²	Dampness Total Webs %
A	28.48	29.02	0.54	10.1	11.0	4	0.0	0.0
B	28.60	29.06	0.46	3.7	4.0	2	0.0	0.0
C	29.04	29.38	0.34	1.8	2.0	1	0.0	0.0
Average	28.71	29.15	0.45	5.2	5.7	2	0.0	0.0



Unit A @ 4 Hours



Unit B @ 4 Hours



Unit C @ 4 Hours

Note: These Units Comply With NCMA TEK 19-7 Spray Bar Criteria