Technical Services Laboratory Report
for

Bilco Brick
(Classic Brick)

ASTM C1634 of Concrete Masonry Units

Lancaster, Texas

AASHTO Accredited & ISO 9001:2015 Certified

Master Builders Solutions Admixtures US LLC
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INTRODUCTION

The Technical Services Laboratories of Master Builders Solutions Admixtures US, LLC received one set of normal weight concrete brick units, each measuring 2.625 x 2.75 x 9.625 inches, on 12/27/23. The units were identified as Classic Brick. Testing was requested to evaluate compliance with ASTM C1634-23, Concrete Facing Brick and Other Concrete Masonry Facing Unit. The submitted mix design is shown in Appendix A.

SAMPLE PREPARATION AND METHODS

Compressive strength, density, and absorption characteristics were determined in accordance with the testing procedures outlined in ASTM C140-22, Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units. Compressive strength specimens were capped with high strength gypsum prior to testing per ASTM C1552-23, Standard Practice for Capping Concrete Masonry Units, Related Units and Masonry Prisms for Compression Testing.

RESULTS OF PHYSICAL TESTING

A summary of the average compressive strength, density and absorption results can be found in Table 1; more detailed results can be found in Appendix B.

Table 1 – Classic Brick Compressive Strength, Density, and Absorption Results ASTM C1634

Strength (psi)	Density (pcf)	Absorption (%)
9040	139.2	6.9

CONCLUSION

The units tested meet the specifications for absorption, compressive strength and density for block set forth in ASTM C1634-23, Concrete Facing Brick and Other Concrete Masonry Facing Units.

APPENDIX B – ASTM C140 Results

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ASTM C140/C140-20 Test Report **Work Order #:** 24-0001
Sampling and Testing Concrete Masonry Units and Related Units

Client: Bilco Brick
Address: Lancaster, TX

Testing Agency: Master Builders Solutions US LLC
Date Samples Received: 12/27/2023

Unit Spec: ASTM C1634
Project ID: Classic Brick

Description: King-size Concrete Brick Classic Brick
2.625 x 2.75 x 9.625

Summary of Test Results: **Classic Brick**

Physical Property	ASTM C1634 Specified Values	Average Test Results	
Net Compressive Strength	3500 min	9040	psi
Gross Compressive Strength	---	8610	psi
Density (Oven Dry Condition)	#N/A	139.2	pcf
Absorption	10 max	6.9	pcf
Absorption %		4.9	%
Percent Solid	---	100.0	%
Net Cross-Sectional Area	---	24.2	$in.^2$
Gross Cross-Sectional Area	---	25.5	$in.^2$

Full Size Unit Measurements

Date Tested:		Avg. Width (in.)	Avg. Height (in.)	Avg. Length (in.)
11/2/2023	A	2.7	2.8	9.6
	B	2.7	2.8	9.5
	C	2.7	2.8	9.5
	Average	**2.69**	**2.83**	**9.54**

Compression Specimens

Date Tested:		Avg. Width (in.)	Avg. Height (in.)	Avg. Length (in.)	Cross-Sectional Area Gross ($in.^2$)	Cross-Sectional Area Net ($in.^2$)	Max. Load (lb)	Compressive Strength Gross (psi)	Compressive Strength Net (psi)
11/2/2023	A	2.7	2.8	9.6	25.6	24.1	224980	8790	9320
	B	2.7	2.8	9.5	25.3	24.1	209210	8260	8690
	C	2.7	2.8	9.5	25.4	24.5	223180	8770	9120
	Average	**2.67**	**2.83**	**9.54**	**25.5**	**24.2**	**219123**	**8610**	**9040**

Absorption Specimens

Date Tested:		Avg. Width (in.)	Avg. Height (in.)	Avg. Length (in.)	Min. Equivalent thickness (in.)
	A	2.7	2.8	9.6	2.5
	B	2.7	2.8	9.5	2.5
	C	2.7	2.8	9.5	2.6
	Average	**2.69**	**2.83**	**9.54**	**2.5**

Date Tested: to		Received Weight (lb)	Immersed Weight (lb)	Saturated Weight (lb)	Oven-Dry Weight (lb)	Absorption (pcf)	Absorption (%)	Net Volume (ft^3)	Moisture Content (%)	Density (pcf)
	A	5.6	3.2	5.7	5.4	6.9	5.0	0.04	51.9	138.0
	B	5.7	3.3	5.8	5.5	6.8	4.9	0.04	51.9	139.5
	C	5.8	3.4	5.9	5.6	7.0	5.0	0.04	53.6	140.2
Average		**5.7**	**3.3**	**5.8**	**5.5**	**6.9**	**4.9**	**0.04**	**52.4**	**139.2**

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