



Mirpur Cantonment, Dhaka-1216

Centre for Advisory and Testing Services (CATS-MIST) Military Institute of Science and Technology

Compressive Strength of Concrete Blocks

CATS Reference : 2376/39515/Con/03/2024 Date : 21.03.2024
Client : Eco-Friendly Green Bricks Ltd.
Project Name : Japan-Bangladesh Friendship Retirement Home
Sample Brought By : Engr. Md. Afzalul Islam Chowdhury, Senior Executive (Technical)
Test Method : ASTM C1386 Date of Receiving : 11.03.2024
Sample Type : Autoclave Aerated Concrete (AAC) Block Date of Test : 20.03.2024
Sample Size : 600mm x 200mm x 120mm Sample Condition : Unsealed
Quantity of Sample : 03 Pcs

Test Results:

Sl No.	Sample ID	Sawed Length	Sawed Width	Thickness	Area	Crushing Load	Crushing Strength	
		mm	mm	mm	mm ²	kN	MPa	psi
1	Block 1	200.0	195.0	120.0	39000	150.7	3.9	560
2	Block 2	200.0	196.0	120.0	39200	138.7	3.5	510
3	Block 3	200.0	196.0	120.0	39200	151.7	3.9	560

Average Crushing Strength: 3.8 MPa 540.0 psi
Standard Deviation: 0.2 MPa 20.0 psi

Remarks:

1. All information displayed above (other than the test results) was provided by the client.
2. CATS-MIST did not verify whether the samples are representative or not.

Test Supervised By:

Md. Jahidul Islam, PhD, Engrs
Lt Col
Instructor Class-A
CE Department, MIST
Mirpur Cantonment, Dhaka

Countersigned By:

Khondaker Sakir Ahmen, PhD, PEng
Lt Col & Associate Professor
Department of Civil Engineering
MIST, Mirpur Cantonment

Note: Samples as supplied to us have been tested in our laboratory. CATS-MIST does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples to be sent in secure and sealed cover/packet/container under signature of the competent authority in order to fraudulent fabrication of test results. It is recommended to collect all test reports by duly authorized person and not by the contractor/supplier himself.

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)



DEPARTMENT OF CIVIL ENGINEERING

Mobile: 01819557964; PABX: 55167100 Ext. 7226
http://brtc.ce.buet.ac.bd/#/home



STRENGTH OF MATERIALS LABORATORY

BRTC No. : 1103-19107 /CE/23-24; Dt: 2/4/2024
Sent by : Sr. Executive Technical, Eco-Friendly Green Bricks Ltd.
Ref. No. : Letter; Dt: 2/4/2024
Project : ---
Sample : Autoclave Aerated Concrete (AAC) Block (600×200×120 mm)
Test Specimen : Autoclave Aerated Concrete (AAC) Block
Test : Dry Bulk Density (ASTM C1386)
Date of Test : 25/4/2024 to 2/5/2024

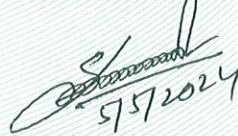
TEST REPORT

Sl. No.	Nominal Size of Block	Specimen Length (mm)	Specimen Width (mm)	Specimen Height (mm)	Specimen Weight (gm)	Dry Bulk Density (kg/cu.m)	Average Dry Bulk Density (kg/cu.m)
1	600×200×120 mm	112.0	120.0	121.0	1,060	652	642
2		119.0	126.0	118.0	1,121	634	
3		120.0	122.0	118.0	1,107	641	

Note: Samples were received in unsealed condition.


Dr. Hasib Mohammed Ahsan
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed by:


Dr. Shameem Ahmed
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Client : Mr. Mohammad Anwarul Alam
Manager-Brand & Marketing
Eco-Friendly Green Bricks Ltd.
29, Bangabandhu Avenue
2nd Floor, Dhaka-1000

Client's Reference : Nil; Date : 26/07/2022

BRTC Reference : 1102-67077/MME/2022-23; Date : 27/07/2022

Subject : Test of Concrete Blocks

Sample Condition : Not Sealed

27 August 2022
MME 0111/2022-23



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Please note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.

TEST REPORT

Fire Endurance Test (ASTM E 119)

Sample Description	Wall Size	Wall Thickness	Test Temperature	Maximum Temperature recorded	Test Duration
	mm ²	mm	°C	°C	minute
Autoclaved Aerated Concrete Block Wall	1000 × 610	120	As per Fig. 1	1250±5	275

Observations	Passage of Flame and Smoke	Maximum Temperature at Unexposed Side (°C)	Post Test
		Nil	60

* Concrete blocks turned brownish and numerous cracks appeared at the exposed surface (Fig. 2).

Rashid 27/8/22

Dr. A.K.M. Bazlur Rashid
Professor and Head

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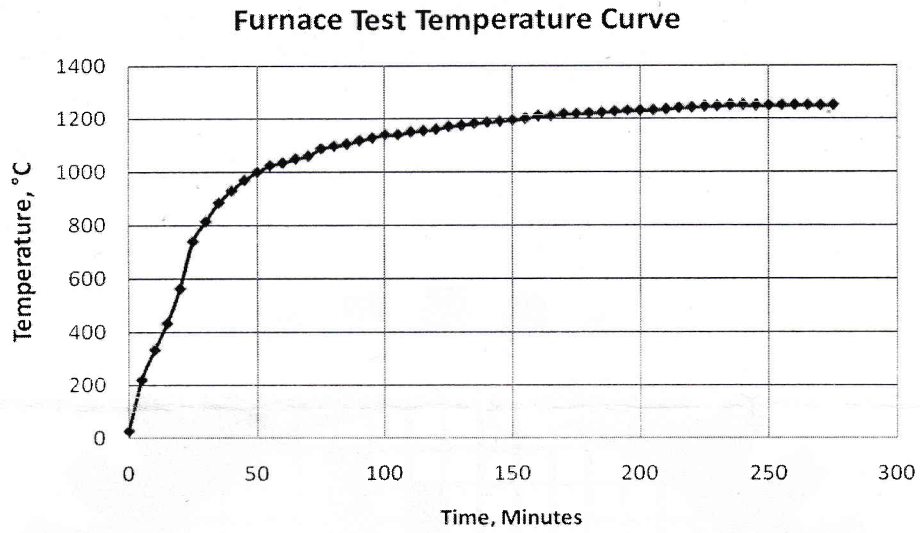
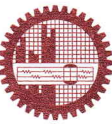


Fig. 1: Showing the temperature rise of the furnace with time during the test.

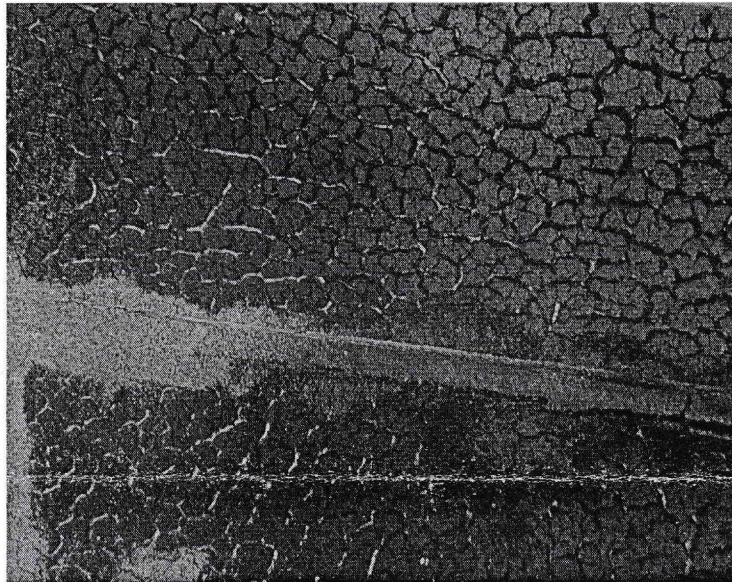


Fig. 2 Section of the block wall showing cracks in the concrete blocks.

Rashid 27/8/22

Dr. A.K.M. Bazlur Rashid
Professor and Head



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STRENGTH OF MATERIALS LABORATORY

BRTC No. : 1103-19107 /CE/23-24; Dt: 2/4/2024
Sent by : Sr. Executive Technical, Eco-Friendly Green Bricks Ltd.
Ref. No. : Letter; Dt: 2/4/2024
Project : ---
Sample : Autoclave Aerated Concrete (AAC) Block (600×200×120 mm)
Test Specimen : Autoclave Aerated Concrete (AAC) Block
Test : Moisture Content (ASTM C1386)
Date of Test : 25/4/2024 to 2/5/2024

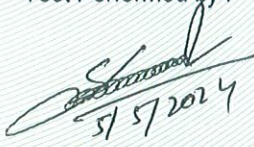
TEST REPORT

Sl. No.	Nominal Size of Block	Specimen Weight (gm)	Specimen Dry Weight (gm)	Weight of Water (gm)	Moisture Content (%)	Average Moisture Content (%)	Remarks
1	600×200×120 mm	1066	1,060	6	0.6	0.7	-
2		1130	1,121	9	0.8		-
3		1113	1,107	7	0.6		-

Note: Samples were received in unsealed condition.


Dr. Hasib Mohammed Ahsan
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed by:


Dr. Shameem Ahmed
Professor
Department of Civil Engineering
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Important Notes: Samples as supplied to us have been tested in our laboratory. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples are sent in a secure and sealed cover/packet/container under signature of the competent authority. In order to avoid fraudulent fabrication of test results, it is recommended that all test reports are collected by duly authorized person, and not by the Contractor/Supplier.

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ENVIRONMENTAL ENGINEERING LABORATORY

ANALYSIS OF SALINITY OF SAND SAMPLE

BRTC No. : 1102-96004/CE/23-24 **Date:** 17/07/2023
Sent By : Engr Md Afzalul Islam Chowdhury, Executive Technical Sales, Eco-Friendly Green Bricks Ltd.
Kashem Center (3rd Floor), 34 Bir Uttam CR Dutta Road, Hatirpool, Dhaka
Your Ref. : Letter **Date :** 17/07/2023
Project : Sand Salinity Test **Source :** Sand Sample
Sample Id : ... **Date of Testing :** 17-24 July 2023

TEST RESULT

Sl. No.	Sand Quality Parameter	Unit	Concentration Present
1	Water Soluble Chloride	%	0.0024

Note: The sample was received in unsealed condition.

Countersigned by:

Prof. Dr. Hasib Mohammed Ahsan
Test-In-Charge
Dept. of Civil Engineering, BUET

Test Performed by:

25/07/23

Dr. Md. Abdul Jalil
Professor
Dept. of Civil Engineering, BUET



Warning:

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Client : Mr. Mohammad Anwarul Alam
Manager-Brand & Marketing
Eco-Friendly Green Bricks Ltd.

Client's Reference : Nil; Date 24/02/2022

BRTC Reference : 1102-55189/MME/2021-22; Date 24/02/2022

Subject : Test of Autoclaved Aerated Concrete

Sample Condition : Not Sealed

20 March 2022
MME 0861/2021-22



Orglsju1fw

Please note: The client supplied the sample and the result given herewith corresponds to the sample tested only. The Department of Materials and Metallurgical Engineering of BUET takes no responsibility regarding the misidentification, if any, of the sample.

TEST REPORT

Sample Name (As per Client's Letter)	Autoclave Concrete Block
Dimension	600 mm x 250 mm x 200 mm

1. Thermal Conductivity

Sample Description	Sample No.	Test Method	Thermal Conductivity	Average Thermal Conductivity
			W/ (m K)	W/ (m K)
Autoclaved Aerated Concrete Block (600 mm x 250 mm x 200 mm)	1	ASTM D 7340 (Lee's Disc Method)	0.11	0.11
	2		0.11	
	3		0.12	

2. Sound Absorption (Test Method ASTM E 90)

Sample Description	Wall Size	Wall Thickness	Sound Measuring Apparatus	Maximum Sound recorded at source	Maximum Sound Transmitted through Wall	Transmission Loss
	mm	mm		dB	dB	%
Un-plastered Brick Wall with Autoclaved Aerated Concrete Block	1420 x 1200	250	Extech 407730 Digital Sound Level Meter	105	67	36

M. HASAN
20.3.22

Dr. Mahbub Hasan
Professor and Head