



Caribbean Industrial Research Institute

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## REPORT

**Attn:** -

**Project Code:** EC03826717/25

**Client:** TRINIDAD AND TOBAGO BUREAU OF STANDARDS

**Client Address:** Century Drive, Trincity Industrial Estate

**Report Title:** Testing of 8 inch concrete blocks

**Report No:** 0914/25/01

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**Date:** 2025/05/22

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**Date:** 2025/05/22

**Copy No:**

1 of 1

**Appendices:**

**Report Version:**

**ORIGINAL**

**RE-ISSUE**

**AMENDED**

## Introduction

The client submitted twelve (12) 8 inch concrete blocks for determination of parameters identified in Table 1. The samples were submitted on April 14, 2025 and were assigned CARIRI Identification numbers T251083 to T251094.

Table 1: Sample identification and tests requested

CARIRI ID	Client ID	Test
T251083 to T251085	B-8"-1 to B-8"-3	Compressive strength
T251086 to T251088	B-8"-4 to B-8"-6	Water absorption
T251089 to T251091	B-8"-7 to B-8"-9	Dimensional checks
T251092 to T251094	B-8"-10 to B-8"-12	Surface finish

## Approach

Guidelines given in *ASTM C140-18a: Standard test method for sampling and testing of concrete masonry units* were used in the investigation. Gypsum capping was used for end preparation.

## Results

Testing period: May 07 to 15, 2025

Test results are presented in Tables 2 and 5.

Table 2: Compressive strength results of 8 inch concrete blocks

CARIRI ID	Client ID	Avg. overall dimensions LxBxH (mm)	Net cross-sectional area (mm <sup>2</sup> )	Load (N)	Net area compressive strength (N/mm <sup>2</sup> )	Requirements of ASTM C90-16a
T251083	B-8"-1	392.5×190.0×190.0	32 750	787 550	24.0	<b>Min. net area compressive strength</b> Average of 3 units - 13.8 N/mm <sup>2</sup>
T251084	B-8"-2	390.0×190.0×190.0	35 600	756 300	21.2	
T251085	B-8"-3	392.5×190.0×190.0	36 150	681 200	18.8	
				Average	21.3	Individual unit - 12.4 N/mm <sup>2</sup>

Date tested: May 15, 2025

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Table 3: Water absorption results of 8 inch concrete blocks

CARIRI ID	Client ID	Oven dry density (kg/m <sup>3</sup> )	Water absorption (kg/m <sup>3</sup> )	Requirements of ASTM C90-16a
T251086	B-8"-4	2138	125	<b>Max. water absorption</b> For conc. density >2000 kg/m <sup>3</sup> Average of 3 units - 208 kg/m <sup>3</sup> Individual unit – 240 kg/m <sup>3</sup>
T251087	B-8"-5	2122	134	
T251088	B-8"-6	2139	127	
	Average	2133	129	

Date tested: May 07 to 09, 2025

Table 4: Dimensional check results of 8 inch concrete blocks

CARIRI ID	Client ID	Dimensions (mm)						Normalized Web Area (mm <sup>2</sup> /m <sup>2</sup> )
		Average Length	Average Breadth	Average Height	Average Shell Thickness	Average Web Thickness	Average Web Height	
T251089	B-8"-7	395.0	190.0	190.0	28.25	27.75	187.5	189 500
T251090	B-8"-8	395.0	190.0	190.0	28.25	28.75	190.0	198 500
T251091	B-8"-9	392.5	190.0	190.0	27.50	29.00	190.0	200 500

Date tested: May 14, 2025

Table 5: Surface finish results

CARIRI ID	Client ID	Chips (>25.4mm)		Cracks (>0.5mm)		Imperfections visible from 20ft away	
		Yes	No	Yes	No	Yes	No
T251092	B-8"-10		✓		✓		✓
T251093	B-8"-11		✓		✓		✓
T251094	B-8"-12		✓		✓		✓

Date tested: May 14, 2025

☐ Test Laboratory: CARIRI Materials Laboratory, Trincity West Industrial Estate, Macoya

**END OF REPORT**

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