DEPARTMENT OF CIVIL ENGINEERING
Bangladesh University of
Engineering and Technology
Dhaka - 1000, Bangladesh
Head of the Department
Professor Dr. Abu Siddique

পুরকৌশল বিভাগ
বাংলাদেশ প্রকৌশল বিশ্ববিদ্যালয়, ঢাকা-১০০০
Tel: 02223365639; PABX: 55167228-57 Ext. 7284 Fax: (8802) 9665639, **Mobile: 01711 673982**

No. CEB/5689/17634

Date: 01/11/2023

Mr. Fahim Shahriar Turza
Key Accounts Manager
Samuda Construction Limited
13 Karwan Bazar, 9th T. K. Bhaban, Dhaka
E-mail: sales.construction@scclbd.com; ahad.samudaconstruction@scclbd.com

Your Reference: SCL/PHC/LT/BUET/2023/08-002; dt. 22nd August 2023
Our References: (i) No. CEB/5689/17544; date: 28/08/2023
(ii) No. CEB/5689/17573; date: 12/09/2023

Subject: Submission of Final Partial Report on Performing Bearing Capacity and Crack Control Index Properties of PHC Pile.

Dear Sir,

Please, find enclosed herewith the Final Partial Report on Performing Bearing Capacity and Crack Control Index Properties of PHC Pile.

You are requested to contact Dr. Mohammad Shariful Islam (Cell: 01713301392, email: msharifulbd@gmail.com) for any further queries.

Thank you very much for requesting services from BRTC, BUET.

Yours sincerely,

1/11/2023

Dr. Abu Siddique
Professor and Head

Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Encl: As stated

Copy to: (i) Director, BRTC, BUET.
(ii) Dr. Mohammad Shariful Islam, Professor, Department of Civil Engineering, BUET.

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

Mobile: 01819 557 964; PABX: 966 5650-80 Ext. 7226; www.buet.ac.bd/ce/

BRTC Bureau of Research, Testing & Consultation

GEOTECHNICAL ENGINEERING LABORATORY

No. CEB/5689/ 17634

1st November, 2023

Report on
Bending Capacity of Pile Shaft

BRTC No. : 1102-99450/CE/2023-24 **Date:** 31-08-2023

Client: SAMUDA Construction Ltd., 13 Kawran Bazar, 9th T.K. Bhaban, Dhaka.

Ref. No.: SCL/PHC/LT/BUET/2023/08-002 **Date:** 22-08-2023

Location: Zone-16, Bangabandhu Sheikh Mujib, Shilpa Nagar, Mirsarai, Chattogram.

Description of Test: Bending Capacity of Pile Shaft (According to JIS A 5337 and GB 13476-2009)

Date of Testing: 06-09-2023

Results of Bending Capacity Test

Pile Geometry	Performance Property	Applied Load (kN)	Bending Moment (kN-m)	Remarks
Diameter: 300 mm and Length: 12 m	Cracking Resistance Bending Moment	30.14	67.62	> Design Value (31 kN-m)
	Ultimate Bending Moment	34.6	74.98	> Design Value (40 kN-m)

Details of the Test Pile

Pile Type	Pre-tensioned High-Performance Concrete Spun Pile
Pile Diameter	300 mm
Pile Length	12 m
Pile Wall Thickness	70 mm
Pile Casting Date*	07-08-2023
Pile Curing Method*	Steam (6hrs) and water (28 days)
Concrete Compressive Strength (Cube)*	80 N/mm² (at 28 days)
Concrete Compressive Strength (Cube) at transfer of Pre-stress*	30 N/mm²
Pre-stressing Bar*	6 - Ø9 mm
Yield Strength of Pre-stressing Bars*	1510 N/mm²
Tensile Strength of Pre-stressing Bars*	1590 N/mm²
Pre-stress Applied*	10 N/mm²

**Disclaimer*

Information provided by client

Disclaimer

Samples as supplied to us has been tested on the location mentioned on this report. BRTC does not have any responsibility as to the representative character of the samples required to be tested.

Report Prepared by

01.11.2023

Dr. Mohammad Shariful Islam
Professor
Department of Civil Engineering
BUET, Dhaka

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BRTC Bureau of Research, Testing & Consultation

No. CEB/5689/ 17634

1st November, 2023

Report on
Shear Capacity of Pile Shaft

BRTC No. : 1102-99450/CE/2023-24 **Date:** 31-08-2023

Client: SAMUDA Construction Ltd., 13 Kawran Bazar, 9th T.K. Bhaban, Dhaka.

Ref. No.: SCL/PHC/LT/BUET/2023/08-002 **Date:** 22-08-2023

Location: Zone-16, Bangabandhu Sheikh Mujib, Shilpa Nagar, Mirsarai, Chattogram.

Description of Test: Shear Capacity of Pile Shaft (According to JIS A 5337 and GB 13476-2009)

Date of Testing: 06-09-2023

Results of Shear Capacity Test

Pile Geometry	Performance Property	Applied Load (kN)	Applied Shear (kN)	Remarks
Diameter: 300 mm and Length: 2.6 m	Shear Capacity	284.74	142.37	> Design Value (94kN)

Details of the Test Pile

Pile Type	Pre-tensioned High-Performance Concrete Spun Pile
Pile Diameter	300 mm
Pile Length	2.6 m
Pile Wall Thickness	70 mm
Pile Casting Date*	07-08-2023
Pile Curing Method*	Steam (6hrs) and immersion in water (28 days)
Concrete Compressive Strength (Cube)*	80 N/mm^2 (at 28 days)
Concrete Compressive Strength (Cube) at transfer of Pre-stress*	30 N/mm^2
Pre-stressing Bar*	6 - Ø9 mm
Yield Strength of Pre-stressing Bars*	1510 N/mm^2
Tensile Strength of Pre-stressing Bars*	1590 N/mm^2
Pre-stress Applied*	10 N/mm^2

**Information provided by client*

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GEOTECHNICAL ENGINEERING LABORATORY

BRTC Bureau of Research, Testing & Consultation

No. CEB/5689/ 17634

1st November, 2023

Report on
Bending Capacity of Pile Shaft

BRTC No. : 1102-99450/CE/2023-24 **Date:** 31-08-2023

Client: SAMUDA Construction Ltd., 13 Kawran Bazar, 9th T.K. Bhaban, Dhaka.

Ref. No.: SCL/PHC/LT/BUET/2023/08-002 **Date:** 22-08-2023

Location: Zone-16, Bangabandhu Sheikh Mujib, Shilpa Nagar, Mirsarai, Chattogram.

Description of Test: Bending Capacity of Pile Shaft (According to JIS A 5337 and GB 13476-2009)

Date of Testing: 13-09-2023

Results of Bending Capacity Test

Pile Geometry	Performance Property	Applied Load (kN)	Bending Moment (kN-m)	Remarks
Diameter: 400 mm and Length: 12 m	Cracking Resistance Bending Moment	74.87	122.99	> Design Value (90 kN-m)
	Ultimate Bending Moment	114.47	184.38	> Design Value (123 kN-m)

Details of the Test Pile

Pile Type	Pre-tensioned High-Performance Concrete Spun Pile
Pile Diameter	400 mm
Pile Length	12 m
Pile Wall Thickness	80 mm
Pile Casting Date*	07-08-2023
Pile Curing Method*	Steam (6hrs) and water (28 days)
Concrete Compressive Strength (Cube)*	80 N/mm^2 (at 28 days)
Concrete Compressive Strength (Cube) at transfer of Pre-stress*	30 N/mm^2
Pre-stressing Bar*	10 - Ø9 mm
Yield Strength of Pre-stressing Bars*	1510 N/mm^2
Tensile Strength of Pre-stressing Bars*	1590 N/mm^2
Pre-stress Applied*	10 N/mm^2

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GEOTECHNICAL ENGINEERING LABORATORY

BRTC Bureau of Research, Testing & Consultation

No. CEB/5689/ 17634

1st November, 2023

Report on
Bending Capacity of Pile Shaft Joint

BRTC No. : 1102-99450/CE/2023-24 **Date:** 31-08-2023

Client: SAMUDA Construction Ltd., 13 Kawran Bazar, 9th T.K. Bhaban, Dhaka.

Ref. No.: SCL/PHC/LT/BUET/2023/08-002 **Date:** 22-08-2023

Location: Zone-16, Bangabandhu Sheikh Mujib, Shilpa Nagar, Mirsarai, Chattogram.

Description of Test: Bending Capacity of Pile Shaft (According to JIS A 5337 and GB 13476-2009)

Date of Testing: 13-09-2023

Results of Bending Capacity Test

Pile Geometry	Performance Property	Applied Load (kN)	Bending Moment (kN-m)	Remarks
Diameter: 400 mm and Length: 12 m	Cracking Resistance Bending Moment	62.98	104.57	> Design Value (90 kN-m)
	Ultimate Bending Moment	90.71	147.55	> Design Value (123 kN-m)

Details of the Test Pile

Pile Type	Pre-tensioned High-Performance Concrete Spun Pile
Pile Diameter	400 mm
Pile Length	12 m
Pile Wall Thickness	80 mm
Pile Casting Date*	07-08-2023
Pile Curing Method*	Steam (6hrs) and water (28 days)
Concrete Compressive Strength (Cube)*	80 N/mm^2 (at 28 days)
Concrete Compressive Strength (Cube) at transfer of Pre-stress*	30 N/mm^2
Pre-stressing Bar*	10 - Ø9 mm
Yield Strength of Pre-stressing Bars*	1510 N/mm^2
Tensile Strength of Pre-stressing Bars*	1590 N/mm^2
Pre-stress Applied*	10 N/mm^2

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