

Taharat Composite Ltd. (Extension) (previously Fabrica Knit Composite Ltd)

(Ahamed Plaza) Zerabo. Pukurpar, Ashulia, Savar.

(23.913431, 90.307762)

26 December 2023

Structural Inspection Report

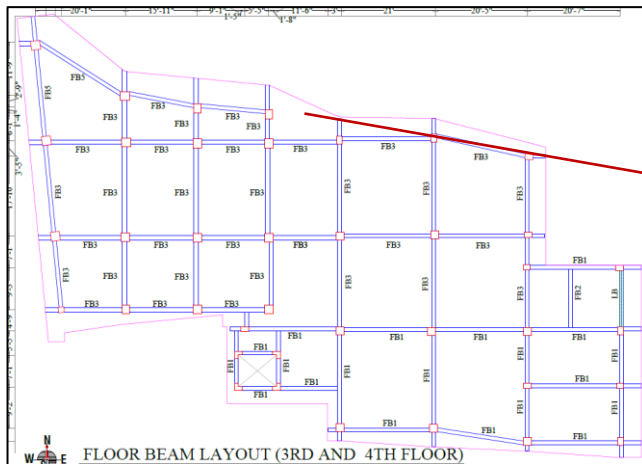


1. Building Information:

Building-1 (Extension): The building is a seven-storied (G+6) reinforced concrete (RC) structure.

2. Observations:

Observation-1: Discrepancies in as-built structural drawings (Building-1 (Extension)).



Typical beam layout plan



Roop top beam slab level

Description: One floor beam wasn't shown in the typical beam layout plan of the structural drawing. The building engineer is required to survey the full structure and produce accurate as-built drawings.

Observation-2: Concrete strength confirmation from the 2nd phase construction. (Building-1 (Extension)).

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

Report Number: **2376/Con/2013-2016/09/19**

Compressive Strength of Concrete Drilled Cores

CATS Reference		2376/Con/2013-2016/09/19		Date		09.09.2019			
Client		BD Technology							
Project Name & Address		Taharat Composite Ltd. at Zirabo, Ahulia, Savar, Dhaka-1341							
Sample Brought By		Engr. Mijanur Rahman		Date of Receiving		02.09.2019			
Test Method		ASTM C 42/C 42-M		Date of Test		08.09.2019			
Type of Sample		Drilled Core		Sample Condition		Unsealed			
Location of Sample		Ground Floor Column, Grid: A-1, C-8, C-3 & D-3		Quantity of Sample		04 nos			
Construction Year		2016		Type of Aggregate		Stone chips			
No of Story		07 (Seven) Stories		Type of Aggregate					
Sl No.	Sample Identification Mark	Original Length mm	Sawed Length mm	Diameter mm	Crushing Load kN	Crushing Strength MPa	Failure Type	Failure Type	
1	Core-1	160.0	136.0	69.0	86.9	23.2	3360	Combined	Shear
2	Core-2	140.0	133.0	69.0	105.0	28.1	4070	Combined	Cone and Split
3	Core-3	145.0	136.0	69.0	178.7	47.8	6930	Combined	Cone and Shear
4	Core-4	140.0	133.0	69.0	138.3	37.0	5370	Combined	Cone and Split

REMARKS:

- All information displayed above was provided by the client. CATS-MIST did not verify any of those.
- Samples are received in unsealed condition without signatures from the competent authority. Therefore, authenticity of these samples and their history could not be verified.
- Please compare the results with your corresponding design values and consult with your design engineer.

Test Supervised By:

Md. Jannatullah, PhD Engg
Senior Engineer
CATS-MIST
Military Institute of Science and Technology

Counterstamped By:

MORAMMAD NUR HOSSAIN
Colonel
Senior Engineer
Civil Engineering Department
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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 facilitate fabrication of test results. It is recommended to collect all test reports by duly authorized person and not by the contractor/supplier himself.

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Concrete strength considered in DEA (column)



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Test Method		ASTM C 42/C 42-M		Date of Test		08.09.2019									
Type of Sample		Drilled Core		Sample Condition		Unsealed									
Location of Sample		3rd Floor Beam, Grid: (A-B), (A-B), (C-1 & 4) & (D-7, 3)		Quantity of Sample		04 nos									
Construction Year		2016		Type of Aggregate		Stone chips									
No of Story		07 (Seven) Stories													
Sl No.	Sample Identification Mark	Original Length mm	Sawed Length mm	Diameter mm	Crushing Load kN	Crushing Strength MPa	Failure Type	Failure Type	Failure Type						
1	Core-1	130.0	126.0	69.0	122.2	32.7	4740	Combined	Shear						
2	Core-2	130.0	124.0	69.0	156.0	41.7	6050	Combined	Cone and Split						
3	Core-3	150.0	136.0	69.0	79.6	21.3	3090	Combined	Cone and Split						
4	Core-4	150.0	132.0	69.0	114.7	30.7	4450	Combined	Cone and Split						

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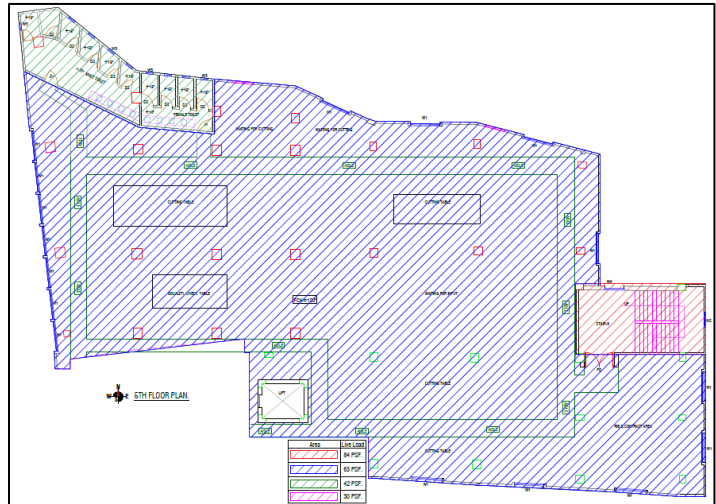
Concrete strength considered in DEA (beam)

Description: In the available DEA Report, 8 sets of the concrete core test (4 nos for the column from 1st phase construction and 4 nos for the beam from 2nd phase construction) have been considered. However, no material test report for the columns from 2nd phase was available. The building engineer is required to revise the DEA report as per in-situ material strength from 2nd phase constructed area by taking 100 mm diameter cores (min 4 nos) from columns and revise the software-based analysis and submit it to RSC for review.

Observation-3: Storage live load does not comply BNBC requirements. (Building-1 (Extension)).

INDUSTRIAL, STORAGE & HAZARDOUS (Occupancy - G, H & J)	Workshop, factory, warehouse	1 Light workroom without storage	3.0	2.7
		2 Machinery hall & circulation area	4.0	4.5
		3 Factory, workshop etc.	5.0	4.5
		4 Manufacturing : light	6.0	4.5 ^(S)
		heavy	12.0	9.0 ^(S)
		ice	15.0	9.0 ^(S)
		5 Printing plant :		
		Press room	7.0	11.0 ^(S)
		Composing and linotype room	5.0	9.0 ^(S)
		Paper storage room	12.0	9.0 ^(S)
		6 Motor room, fan room etc. including the weight of machinery	7.5	4.5
		7 Cold storage, grain storage	15.0	9.0 ^(S)
		8 Storage warehouses : light	6.0	4.5 ^(S)
		heavy	12.0	9.0
		9 Foundries	20.0	12.0

Live load table (BNBC part-6)



Typical floor load plan

Description: Live load on the finished goods storage area of the 1st and 4th floor is considered as 3 kPa in the prepared load plan. As per BNBC-2006, live load for light storage areas is required to be considered minimum 6 kPa. Therefore, the factory engineer is required to revise the load plan as per BNBC requirements and check the design accordingly.

Observation-4: Unbraced nonstructural elements. (Building-1 (Extension))



Unbraced storage racks on floors

Description: During inspection, unbraced storage racks on different floors were observed. The building engineer is required to brace/anchor all nonstructural elements to avoid falling hazards during lateral loading.

3. Action Plan:

Observation	Action Plan	Timeline
Discrepancies in as-built structural drawings. (Building-1 (Extension))	The building engineer is required to survey the full structure and produce accurate as-built drawings.	within 6 weeks
Concrete strength confirmation from the 2nd phase construction. (Building-1 (Extension)).	The building engineer is required to revise the DEA report based on the in-situ material strength capacity & software-based analysis model and submit the documents to the RSC for review.	within 6 weeks
	Verify in-situ material strength by taking minimum 4 concrete cores from the lower-tier columns to confirm the design strength.	within 6 weeks
	Carry out suggested remedial works if required.	within 6 months
Storage live load does not comply BNBC requirements. (Building-1 (Extension))	Building engineer is required to revise the load plan as per BNBC requirements and check the design accordingly.	within 6 weeks
	Implement remediation work if required.	within 6 months
Unbraced nonstructural elements. (Building-1 (Extension))	Building engineer is required to brace/anchor all nonstructural elements to avoid falling hazards during lateral loading.	within 6 months