Alliance Knit Composite Ltd.

Holding-08/118, Pukurpar, Ashulia, Savar, Dhaka
(23.910103, 90.311687)
8th November 2021

RSC RMG SUSTAINABILITY COUNCIL

Buildings Information

1. Building 1 (Main Building) (G+5)
2. Building 2 (Utility) (G+1)
3. Building 3 (Store) (G+5)
4. Building 4 (Office) (G+5)
5. Building 5 (ETP) (G+1)
6. Building 6 (RMS) (single storied)
7. Building 7 (Security) (single storied)
8. Building 8 (CP) (single storied)
9. Building 9 (New Utility) (G+5)
10. Building 10 (Substation) (single storied)

Observations

Verify insitu concrete strength

Observations: (Building-1, Building-3, Building-4)

DESTRUCTIVE AND NON-DESTRUCTIVE TESTING:

SUMMARY OF CORE TEST RESULT COLUMN:

Number of core taken	Original Length (mm)	Sawed length (mm)	Dia. (mm)	Crushing Strength (psi)	Average (psi)	Standard Deviation	Kc	V	F'c eq(psi)	Corrected as per ACI 214 (psi)
4	168	128	70	4420	5067.5	700.45	1.28	0.14	3997.00	4396.70
	162	135	70	5450						
	185	133	70	4540						
	178	133	70	5860						

Test result analysis for column core result:

No of sample n = 4, Mean =5067.5, Standard Deviation= 700.45

Coefficient of variation, V = Std. deviation / mean = 700.45/5067.5 = 0.14

Core test data used for Building 1&3

In prepared Detail Engineering Assessment (DEA) report of the building 1 ,3,& 4, concrete core test and cylinder test data has been considered for concrete strength. However no copy of core test or cylinder test report was available onsite.

Factory engineer is required to Verify insitu concrete strength by taking 100 mm diameter (min 4 nos) cores from lower tier columns and review the design, load and stresses by considering the core test value.

BEAM:

Number of core taken	Original Length (mm)	Sawed length (mm)	Dia. (mm)	Crushing Strength (psi)	Average (psi)	Standard Deviation	Kc	V	F'c eq(psi)	Corrected as per ACI 214 (psi)
2	168	128	70	6000	6960	1357.65	2.4	0.20	5215.97	5737.57
	162	135	70	7920						

Test result analysis for beam core result:

No of sample n = 2, Mean = 6960.00, Standard Deviation= 1357.65

Coefficient of variation, V = Std. deviation / mean = 1357.65/6960.00 = 0.20

According to **ACI 562-12, Article 6.4.3**

Equivalent specified concrete strength

Core test data used for Building 1&3

1.5 MATERIAL TESTING & RESULTS

Concrete Cylinder Test has been performed. Minimum values recommended are considered during analysis.

1) Minimum value is considered that is 4000 psi.
2) Soil test to determine the strength of soil. (supplied by client)

1.6 Table: Compressive Strength data.

No	f'c (psi)
RCC Shear Wall & MAT	3500
All RCC BEAM	3000

Core test data used for Building 4

Observations: (Building-1, Building-3, Building-4)

Floor load plan not available

Observations: (Building-1, 2, 3, 4, 5 & 9)

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Building 1

Building 2

Building 3

Building 4

Building 5

Building 9

Load plan of these buildings were not produced. Also, load management program was not implemented. Produce and actively manage a loading plan for all floor plates within the factory considering the floor capacity and column capacity.

Observations: (Building-1, 2, 3, 4, 5 & 9)

No design report was available

Observations: (Building-2, Building-5, Building-9)

Building-2

Building-5

Building-5

As per BNBC every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. During the inspection, design report was not available which is required to be prepared in compliance with section 1.9.1 (part-6, BNBC).

Observations: (Building-2, Building-5, Building-9)

Lack of as-built drawing

Observation: (Building-6, Building-7, Building-8)

Building-6 (RMS)

Building-8 (CP)

Building-7 (Security)

No as-built drawing was provided for those aforementioned structures. Factory engineer is required to prepare full set of as-built drawing for all of these structures.

Observation: (Building-6, Building-7, Building-8)

Priority Action

Problems Observed

Building-1, Building-3, Building-4

01: Verify insitu concrete strength.

(Building-1, 2, 3, 4, 5 & 9)

02: Floor load plan not available.

Building-2, Building-5, Building-9

03: No design report was available.

Building-6, Building-7, Building-8

04: Lack of as-built drawing.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Verify insitu concrete strength (Building-1, Building-3, Building-4)	Verify insitu concrete strength by taking 100 mm diameter (min 4 nos.) cores from lower tier column.	6-weeks
02	Verify insitu concrete strength (Building-1, Building-3, Building-4)	Factory engineer is required to review the design, load and stresses by considering the core test value.	6-months
03	Verify insitu concrete strength (Building-1, Building-3, Building-4)	Factory engineer to update the DEA document including a report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks
04	Verify insitu concrete strength (Building-1, Building-3, Building-4)	Implement the recommendations of DEA.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
05	Floor load plan not available (Building-1, 2, 3, 4, 5 & 9)	The factory engineer is required to produce floor loading plan for each floor considering floor & column capacity.	6-weeks
06	Floor load plan not available (Building-1, 2, 3, 4, 5 & 9)	Implement floor load management program (Posting load plan, load restriction height marking, signage, maintaining load resister).	6-weeks
07	No design reports were available. (Building-2, Building-5, Building-9)	Factory engineer to prepare the design Report for the structures in compliance with section 1.9.1.1 as per BNBC.	6-weeks
08	No design reports were available. (Building-2, Building-5, Building-9)	Complete implementation of any remedial works deemed necessary by the design report.	6-months
09	Lack of as-built drawing (Building-6, Building-7, Building-8)	Factory engineer is required to prepare full set of as-built drawing for all these structures.	6-weeks