

Magpie Composite Textile Ltd. (Extension)

832/833, Dewan Idris Road, Amtoli, Ashulia, Savar, Dhaka.

Geographic Coordinates: 23.909931, 90.289623

28 May 2023



Building Information

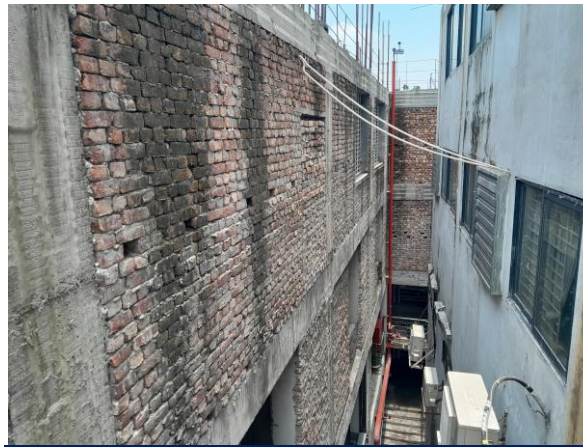
1. Production building is a four storied (G+3) reinforced concrete (RC) structure.
2. Generator building is a two storied (G+M+1) RC structure.
3. ETP building is a three storied (G+2) RC structure.
4. Lab building is a single storied RC structure.
5. Boiler shed is a single storied steel shed.
6. Generator Control Room is a single storied RC building.
7. Dyeing Shed Extension is a single storied individual steel shed.
8. Wastage shed is a single storied steel tin shed.
9. Tea Room is a single storied steel tin shed.
10. Gate House is a two storied RC building.

Observation

**Absence of building permit drawings for all
building except Building-2**



Building-3



Building-4



Lab Building



Boiler Shed



Dyeing Shed
Extension



Ancillary



Permit drawing was not available for the structures. The factory is required to collect building permit drawing from local authority.

Water ponding on the roof



Water ponding on the roof

The building engineer is required to provide adequate slope and outlet.



Water ponding on the roof

The building engineer is required to provide adequate slope and outlet.

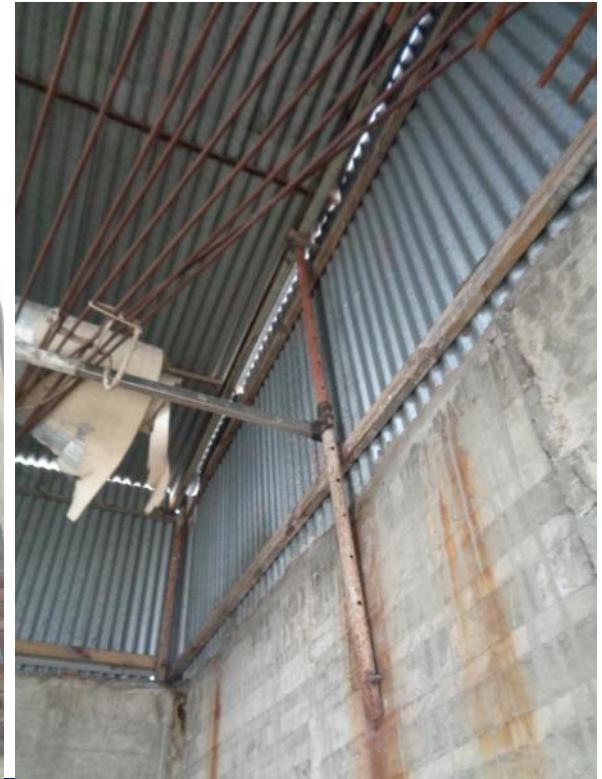
Exposed rebar prone to accident



Exposed rebar and very low clear height to stair which may cause accident

The building engineer is required to provide fall protection (barrier/railing) to avoid falling hazard from roof and stair.

Non-engineered steel roof on the stair



Non-engineered steel roof on the stair

The building engineer is required to check the connection and stability of the stair and suggest proper remedial actions.

Improper connection of connecting bridge



Anchorage of undocumented connecting bridge between building 2 & building 4 has not flexibility for movement of the buildings.

The building engineer is required to provide adequacy of the connection for lateral forces and suggest proper remedial measures.

Crack on brick walls



Crack on walls

The building engineer is required to investigate the reason of crack and carry out proper remedial works accordingly.

Dampness on brick walls



Dampness on walls

The building engineer is required to investigate the reason of dampness and carry out proper remedial works accordingly.

**Lack of anchorage of non-structural elements
(storage racks, water tank)**



Lack of anchorage of storage racks and water tank

The building engineer is required to anchor all non-structural elements within the factory.

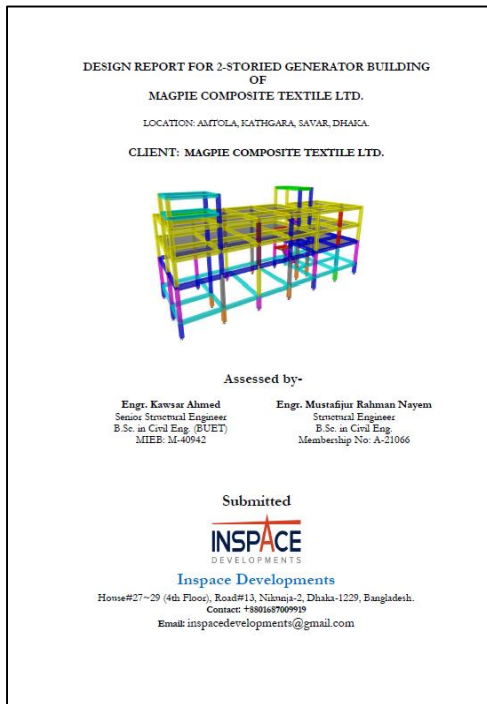
Trolley impact on columns and walls



Sign of trolley impact on column and wall

The building engineer is required to provide adequate protection/barrier for the columns & walls.

Design report to be revised for irregularity check



Irregularity check has not incorporated in the design report of Building-3

The building engineer is required to incorporate the irregularity in the design report.

Water ponding on the roof



Water ponding on the roof

The building engineer is required to provide adequate slope and outlet on the roof.

Inadequate and corroded steel ladder



Inadequate and corroded steel ladder

The building engineer is required to repair or replace the ladder

Water ponding on the roof



Water ponding on the roof

The factory is required to provide adequate slope and outlet.

Falling hazard



Lack of fall protection in the roof and open stair

The factory is required to provide fall protection barrier/railing to avoid falling hazard.

**Design report to be updated for in-situ
material strength**

2.3 MATERIAL PROPERTY

As per investigation and design drawings, the following material properties has been used:

- ❖ Yield strength of Rebar, f_y = 72,500 lb/in²
- ❖ Compressive strength of column, Footing, f_c' = 3,500 lb/in²
- ❖ Compressive strength of Beam, Slab f_c' = 3,500 lb/in²
- ❖ Young's modulus of concrete, E_c = 57,000√ f_c'

Material strength considered in design report
for proposed 4-storied Lab Building



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

Compressive Strength of Concrete Cylinders

General Information
CATS Reference : 2376/Cat/31121/09/2022 Date : 26.09.2022
Client : Magpie Composite Textile Ltd
Name of the Project : Magpie Composite Textile Ltd (Lab Building-1) at 832/833 Dewan Edris Road, Amtala, Kuthigara, Savar, Dhaka
Sample Brought By : Md. Abdul Baten Sarder
Test Method : ASTM C 39/C 39M
Type of Sample : Concrete Cylinders
Location of Sample : Ground Floor Column, C3/C4 G-09/A1.C1-A2
Date of Receiving : 19.09.2022
Sample Condition : Unsealed
Mixture Proportion : 1:1.5:3
Date of Casting : 24.08.2022
Date of Crushing : 20.09.2022
Age in days : 27 days
Curing in days : - days
Admixtures : Not Mentioned
Design Strength : Not Mentioned
Type of Cement : Not Mentioned
Brand of Cement : Shah Cement
Type of Aggregate : Stone Chips

Sl No.	Sample Identification Mark	Length mm	Diameter mm	Crushing Load kN	Crushing Strength MPa	Average Strength MPa	Failure Type	Fracture Type
1	Sub-3	202	102.0	294.2	36.6	33.4 4840	Combined	Columnar
2		201	101.0	268.3	32.2		Combined	Shear
3		202	102.0	260.5	31.9		Combined	Shear

Remarks
1. All information displayed above other than the test results are provided by the client.

Test Supervised By
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Countersigned By
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Note: The results shown in this test report refer only to the samples tested, unless otherwise stated. It is recommended that samples are to

Provided Cylinder test
report(1set)

Concrete strength considered 3,500 psi in the design report. Only one set test report dated 26-Sep-2022 was available onsite which doesn't satisfy frequency of testing requirement of BNBC. The building is under construction. The factory has no permit drawing for the building. But the design report is prepared following BNBC-2006 building code. The building engineer is required to check the applicable building code and revise the design documents based on in-situ material strength.

Observation: Lab Building

Incomplete lateral stability system



Absence of load transfer media along long direction of the shed

The building engineer is required to check the stability system and suggest proper remedial actions.

Lack of anchorage of steel roof for uplift forces



Lack of anchorage of steel roof

Building engineer is required to produce as built drawing and upgrade the roof connections for uplift force.

Non-engineered structure



Non-engineered structures

Building engineer is required to replace the non-engineered sheds with engineered structures.

Problems Observed

All building except Building-2:

Item-01: Absence of building permit drawings for all building except Building-2.

Building-2:

Item-02: Water ponding on the roof.

Item-03: Exposed rebar prone to accident.

Item-04: Non-engineered steel roof on the stair.

Item-05: Improper connection of connecting bridge.

Item-06: Crack on brick walls.

Item-07: Dampness on brick walls.

Item-08: Lack of anchorage non-structural elements (storage racks, water tank).

Item-09: Trolley impact on columns and walls.

Building-3:

Item-10: Design report to be revised for irregularity check.

Item-11: Water ponding on the roof.

Item-12: Inadequate and corroded steel ladder.

Building-4:

Item-13: Water ponding on the roof.

Problems Observed

Lab Building:

Item-14: Design report to be revised for in-situ material strength

Item-15: Falling Hazard

Boiler Shed:

Item-16: Incomplete lateral stability system.

Tea Room:

Item-17: Lack of anchorage of steel roof for uplift forces.

Ancillary structures (Wastage Shed & ETP Sludge Shed):

Item-18: Non-engineered structure.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Absence of building permit drawings for all building except Building-2.	The factory is required to collect building permit drawing for the structures from the government authorized institutions.	6-months
02	Water ponding on the roof. Building-2	The Building engineer is required to develop proper drainage system on the roof with adequate slope and outlets.	6-months
03	Exposed rebar prone to accident. Building-2	The factory is required to provide fall protection barrier at roof to avoid falling hazard.	6-weeks
04	Exposed rebar prone to accident. Building-2	The factory is required to provide fall protection railing at stair to avoid falling hazard.	6-weeks
05	Non-engineered steel roof on the stair. Building-2	The building engineer is required to check the adequacy of the steel roofing and suggest necessary remedial actions.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Non-engineered steel roof on the stair. Building-2	Carry out suggested remedial works.	6-months
07	Improper connection of connecting bridge. Building-2	The building engineer is required to provide adequacy of the connection for lateral forces and suggest proper remedial measures.	6-weeks
08	Improper connection of connecting bridge. Building-2	Carry out suggested remedial works.	6-months
09	Crack on brick walls. Building-2	The building engineer is required to investigate the reason of crack and carry out proper remedial works accordingly.	6-weeks
10	Dampness on brick walls. Building-2	The building engineer is required to investigate the reason of dampness and carry out proper remedial works accordingly.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Lack of anchorage of non-structural elements (storage racks, water tank). Building-2	Provide anchorage/bracing for all non-structural elements including storage tanks & water tanks within the factory to resist effect of seismic forces.	6-weeks
12	Trolley impact on columns and walls. Building-2	The building engineer is required provide adequate barrier/protection to the columns & walls.	6-weeks
13	Design report to be revised for irregularity check. Building-3	The building engineer is required to incorporate the irregularity in the design report and suggest remedial works if required.	6-weeks
14	Design report to be revised for irregularity check. Building-3	Carry out suggested remedial works.	6-months
15	Water ponding on the roof. Building-3	The building engineer is required to develop proper drainage system on the roof with adequate slope and outlets.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Inadequate and corroded steel ladder. Building-3	The building engineer is required to replace the corroded ladder with a new one.	6-months
17	Water ponding on the roof. Building-4	The building engineer is required to develop proper drainage system on the roof with adequate slope and outlets.	6-months
18	Design report to be revised for in-situ material strength. (Lab Building)	The building engineer is required to check the applicable building code and revise the design documents based on in-situ material strength.	6-weeks
19	Design report to be revised for in-situ material strength. (Lab Building)	Carry out suggested remedial works as per design report if required.	6-months
20	Falling Hazard. (Lab Building)	The building engineer is required to provide fall protection (barrier/railing) to avoid falling hazard from roof and stair.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
21	Incomplete lateral stability system. Boiler Shed	The building engineer is required to check the stability of structure and suggest necessary remedial actions.	6-weeks
22	Incomplete lateral stability system. Boiler Shed	Carry out suggested remedial works.	6-months
23	Lack of anchorage of steel roof for uplift forces. Tea Room	Building engineer is required to produce as built drawing and upgrade the roof connections for uplift force.	6-weeks
24	Non-engineered structure. (Wastage Shed & ETP Shed)	The factory is required to replace the non-engineered sheds with engineered structures.	6-months