

Standard Stitches Ltd. (Unit-2) (Extension)

10/4, Karnapara, Genda, Savar, Dhaka.

(23.825425 N, 90.260697E)

05 June 2022



Building Information

B-2, Main Production Building (Extension Part):

Six storied (G+5) building.

B-3, Office Building:

Four storied (G+3) building.

B-6 to B-13, Ancillary structures:

8 single storey ancillary structures named Boiler Shed, Compressor Shed, Childcare Shed, RMS Room, New Guard Room, Main Gate Guard Room, Fire Pump Room and Substation Shed.

Observations

Lack of floor load plan for steel storage racks



Steel storage rack

Heavy loading observed on the steel racks. There is no floor load plan for the steel racks. The building engineer is required to prepare allowable floor loading plan for the steel racks.



More than 4 kN/m² loading on steel racks

Observation: Main Production Building (Extension Part)

Incomplete DEA report

Observation: Office Building

Detailed Engineering Assessment (DEA)
 Of 4-storied Garments Factory Building of Standard Stitches Limited, Unit-2 At 10/4 Genda, Karnapara Ulail Bazar, Savar, Dhaka.



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DEA report

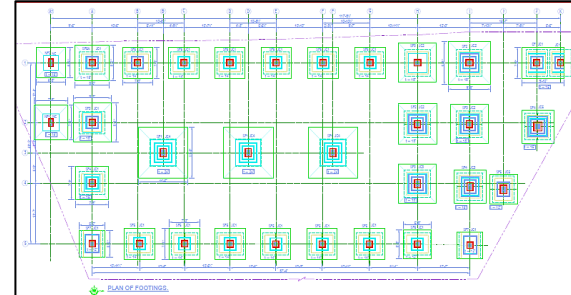
DEA of four storied factory building for Standard Stitches Ltd

4. **Seismic Load:** As per BNBC-1993.(2.5.1) Base Shear $V = ZIC/R$ where Seismic Zone co-efficient $Z = 0.15$ for zone 2 for Standard stitches Ltd at Ulail Bazar, Savar. Importance factor $I=1.0$, $C=1.25S/T^{(2/3)}$. $S=1.2$, $T=Ct(hn)^{(3/4)}$ where $Ct=0.073$ in SI unit for RC moment resisting frame. **$R=8$ for intermediate moment resisting RC frame.**

5. Load Combinations:

BNBC standard

1. DL+LL
2. DL+0.6LL
3. 1.4DL+1.7LL
5. 1.05DL+1.275LL+1.4025Ex
6. 1.05DL+1.275LL+1.4025(-Ex)
7. 1.05DL+1.275LL+1.4025Ez
8. 1.05DL+1.275LL+1.4025(-Ez)
9. 1.05DL+1.275LL+1.275Wx
10. 1.05DL+1.25LL+1.275(-Wx)
11. 1.05DL+1.275LL+1.275Wz
- 12. 1.05DL+1.275LL+1.275(-Wz)**



Retrofitting footing layout

Load combination in DEA

The provided DEA report found incomplete. Almost all columns, footings and beams were retrofitted which has not mentioned in the DEA report. IMRF ($R=8$) framing system is considered without proper justifications. Retrofitting material strength/test report was not available. All BNBC-2006 load combinations were not mentioned in the report. The building engineer is required to complete the DEA report and submit to RSC for review.

Observation: Office Building

3. MATERIALS USED AND THEIR PROPERTIES

SL No	Item	Locations
1.	Concrete made by cement, chips of 1 st class brick ¾" down size and sand	Foundation, Columns, Grade beams, Floor beams and floor slabs.
2.	Concrete strength($f'c$ 1730 psi-5930 $f'c$) based on MIST core test report. 2,100 psi based on ACI-562 Code	Columns and other R.C. members.
3.	Steel rebar (60 grade deformed) based on MIST test report.	All R.C. members
4.	M.S. sheet, Upvc,	Door
5.	Aluminum with glass	Window
6.	Brick wall	Exterior and Interior wall with adequate plaster and painting

Material properties in DEA

Discrepancy in floor occupancies

Observation: Office Building



Ground floor- dining



1st floor- hanger storage



2nd floor- office



Roof- steel water tank (2000 L)

The floor use of the building did not match with the floor layout plan. The ground floor was being used for dining instead of cutting & finish good store, 1st floor used for hanger storage instead sewing and 2nd floor used for office instead of finish good store. Also, there was a steel water tank on the roof which has not mentioned the drawings.

Observation: Office Building

Dampness on exterior façade

Observation: Office Building



Dampness on exterior façade

Water dampness observed on the exterior facade of the building. The factory is required to repair the damp areas with suitable method.

Lack of as-built documents

Observation: Ancillary Structures (B-6 to B-13)



6. Boiler Shed



7. Compressor Shed



8. Childcare Shed



9. RMS room



10. New Guard Room



11. Main Gate Guard Room



12. Fire Pump Room



13. Sub-station Shed

There are 8 ancillary structures in the factory premises which have no as-built documents. The factory is required to prepare as-built drawings for two Guard Rooms & RMS Room. And prepare as-built drawing along with design report for the Boiler, Compressor, Childcare, Sub-station and Fire Pump Room.

Observation: Ancillary Structures (B-6 to B-13)

Lack of as-built documents

Observation: Steel Connecting Bridge



Steel Connecting Bridge

There is a steel connection bridge between Main Building (Extension Part) and Office Building at 1st floor level which have design documents. The factory is required to prepare as-built drawings along with design report for the structure.

Corrosion on steel members

Observation: Steel Connecting Bridge



Corrosion on steel members

Corrosion found on the column of steel connecting bridge. The factory is required to remove the corrosion and apply corrosion resistance coating to the steel member.

Problems Observed

Main Production Building (Extension Part):

Item 01: Lack of floor load plan for steel storage racks.

Office Building:

Item 02: Incomplete DEA report.

Item 03: Discrepancy in floor occupancies.

Item 04: Dampness on exterior façade

Ancillary Structures (B-6 to B-13):

Item 05: Lack of as-built documents.

Steel Connecting Bridge:

Item 06: Lack of as-built documents.

Item 07: Corrosion on steel members.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Lack of floor load plan for steel storage racks. (Main Production Building-Extension Part)	The building engineer is required to survey the steel racks & prepare as-built drawings with structural details.	6-weeks
02	Lack of floor load plan for steel storage racks. (Main Production Building-Extension Part)	Prepare allowable floor loading plan for the steel racks.	6-weeks
03	Lack of floor load plan for steel storage racks. (Main Production Building-Extension Part)	Continue to implement floor loading plan.	6-months
04	Incomplete DEA report. (Office Building)	The building engineer is required to revise the DEA report based on the observations and submit to RSC for review.	6-weeks
05	Incomplete DEA report. (Office Building)	Produce and actively manage floor loading plan based on capacity of floor, column and foundation.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Incomplete DEA report. (Office Building)	Carry out required remedial actions as per revised DEA.	6-months
07	Incomplete DEA report. (Office Building)	Continue to implement floor loading plan.	6-months
08	Discrepancy in floor occupancies. (Office Building)	The building engineer is required to check the floor occupancies and prepare a set of architectural layout and floor live loading plan for the building.	6-weeks
09	Discrepancy in floor occupancies. (Office Building)	Continue to implement floor loading plan.	6-months
10	Dampness on exterior façade. (Office Building)	The factory is required to repair the damp areas with suitable method.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Lack of as-built documents. (Boiler Shed)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks
12	Lack of as-built documents. (Boiler Shed)	Carry out Engineering Assessment (EA) to verify the stability of the structure for lateral and uplift forces.	6-weeks
13	Lack of as-built documents. (Boiler Shed)	Carry out required remedial works as per EA.	6-months
14	Lack of as-built documents. (Compressor Shed)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks
15	Lack of as-built documents. (Compressor Shed)	Carry out Engineering Assessment (EA) to verify the stability of the structure for lateral and uplift forces.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Lack of as-built documents. (Compressor Shed)	Carry out required remedial works as per EA.	6-months
17	Lack of as-built documents. (Childcare Shed)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks
18	Lack of as-built documents. (Childcare Shed)	Carry out Engineering Assessment (EA) to verify the stability of the structure for lateral and uplift forces.	6-weeks
19	Lack of as-built documents. (Childcare Shed)	Carry out required remedial works as per EA.	6-months
20	Lack of as-built documents. (Fire Pump Room)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
21	Lack of as-built documents. (Fire Pump Room)	Carry out Engineering Assessment (EA) to verify the stability of the structure for lateral forces.	6-weeks
22	Lack of as-built documents. (Fire Pump Room)	Carry out required remedial works as per EA.	6-months
23	Lack of as-built documents. (Substation Shed)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks
24	Lack of as-built documents. (Substation Shed)	Carry out Engineering Assessment (EA) to verify the stability of the structure for lateral and uplift forces.	6-weeks
25	Lack of as-built documents. (Substation Shed)	Carry out required remedial works as per EA.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
26	Lack of as-built documents. (Guard Rooms & RMS Room)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks
27	Lack of as-built documents. (Steel Connecting Bridge)	The building engineer is required to survey the structures and prepare as-built drawings.	6-weeks
28	Lack of as-built documents. (Steel Connecting Bridge)	Carry out Engineering Assessment (EA) to verify the stability of the structure for lateral and uplift forces.	6-weeks
29	Lack of as-built documents. (Steel Connecting Bridge)	Carry out required remedial works as per EA.	6-months
30	Corrosion on steel members. (Steel Connecting Bridge)	The factory is required to remove the corrosion and apply corrosion resistance coating to the steel members.	6-weeks