S.Suhi Industrial Park Ltd. (New Building)

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(23.933847N, 90.289518E)
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ACCORD
on Fire and Building Safety in Bangladesh

Observations

Steel columns to be stressed above normal design limits

Observations: Sweater Building

Cursory calculations indicate that the working stress of the highlighted columns at ground floor level appear to be stressed in excess of normal design limits.

Floor Layout Plan

Toilet Build-up

Toilet Partition wall

Observations: Sweater Building

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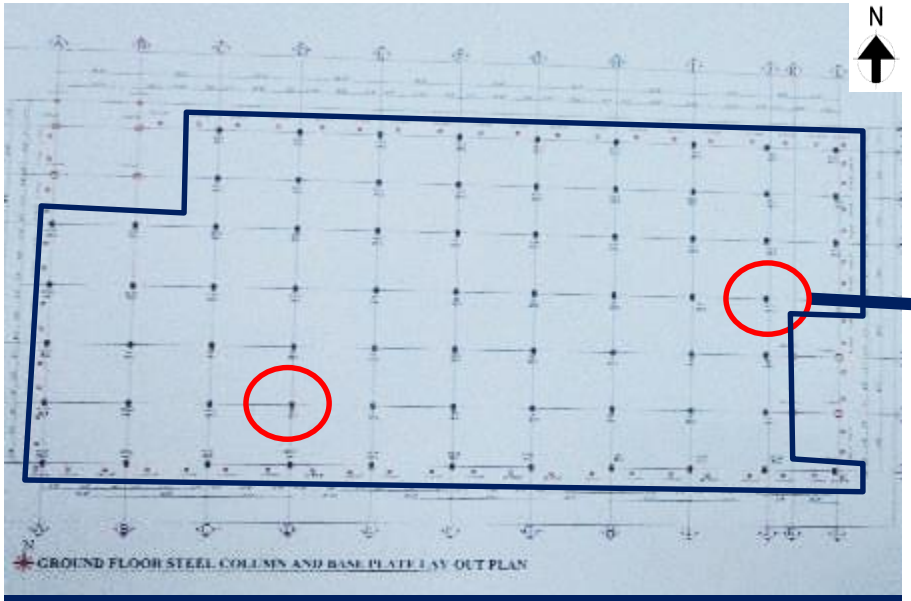
Discrepancy observed between provided drawing & on-site condition

Observations: Sweater Building



Column Layout Plan

Depth of web was observed 315 mm instead of 325 mm

During inspection, Steel section of the highlighted columns were found undersized at ground floor and 1st floor level.

Observations: Sweater Building

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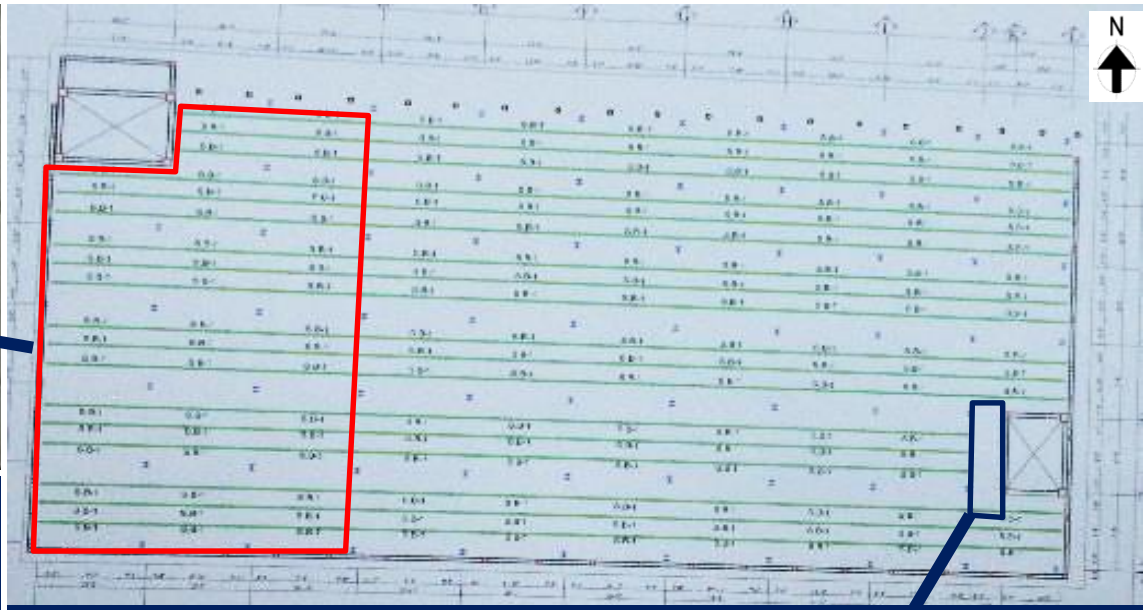
Width of flange of the highlighted portion was observed 150 mm instead of 175 mm.

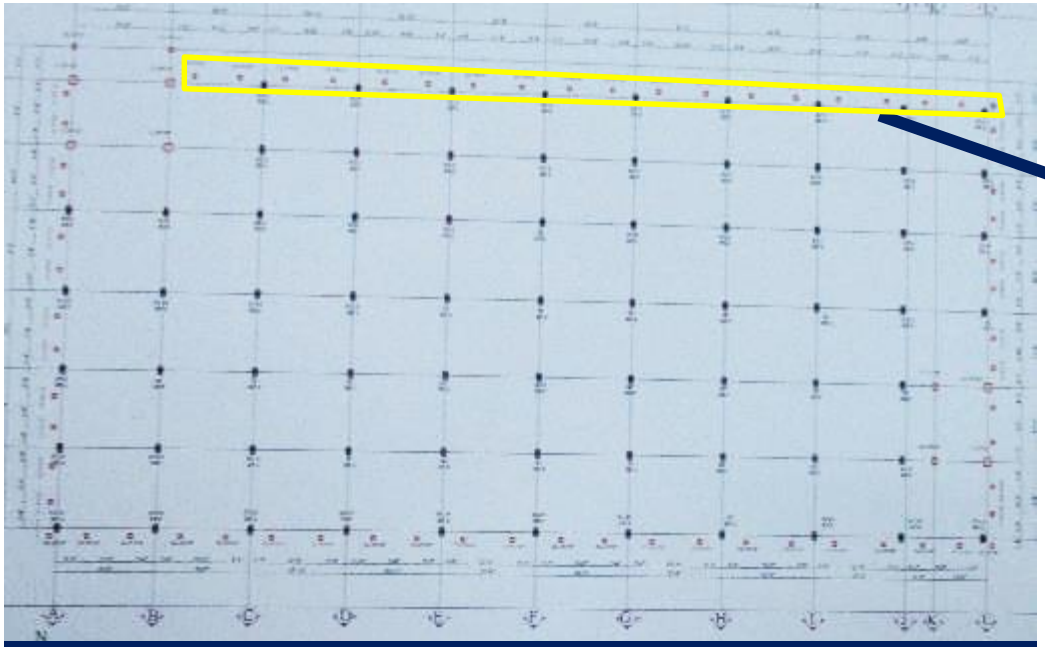


Sub- Beam Layout Plan

During inspection, Steel main beam and sub-beam were found under-sized of the highlighted portion at 1st floor and 2nd floor level. Also some sub-beams near north-east staircase were not indicated in sub-beam layout plan.

Steel Sub Beam was observed on the highlighted portion at ground floor roof which was not included in As –Built drawing.

Observations: Sweater Building



Column Layout

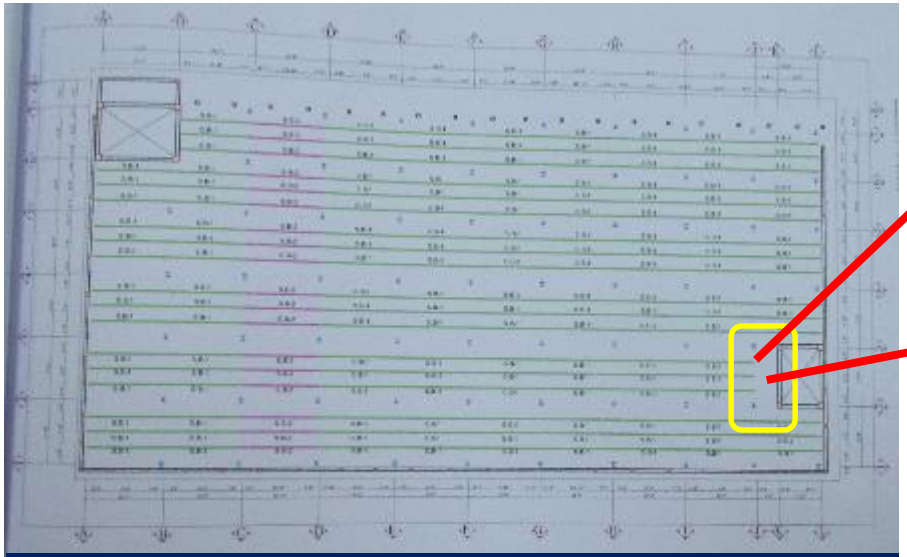
In drawing, RCC columns were mentioned on ground floor for the highlighted portion. But Brick columns were observed on site.

Observations: Sweater Building

Deck slab without sub-beam

Almost 5 feet width deck slab found near Eastside stair without sub-beam on 1st , 2nd and 3rd floor. Factory engineer is required to confirm that deck has adequate capacity to take the floor load otherwise provide additional beams.

Deck without sub-beam



Sub beam layout

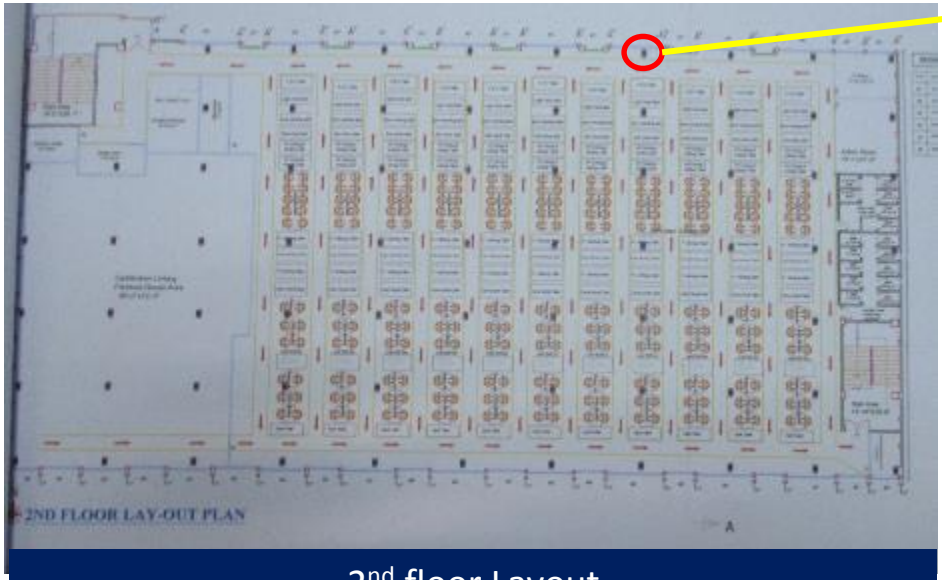
Deck without sub-beam

Observations: Sweater Building

Distorted steel column

Observations: Sweater Building

A distorted steel column found on 2nd & 3rd floor of the main production building. Stability for the distorted columns and related elements need to be checked. Factory Engineer to review design, loads and column stress in the area identified above.



2nd floor Layout

Distorted column

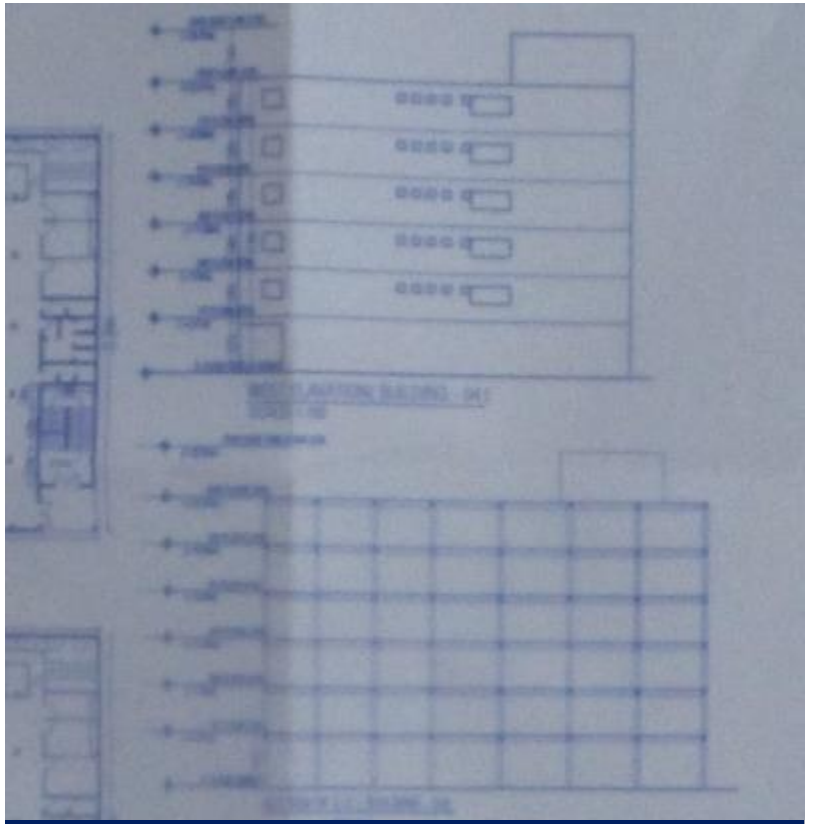
Observations: Sweater Building

Future extension to be carried out

Observations: Sweater Building

Currently the building is 4 storied. There is a possibility of one storey extension in future. Factory engineer is required to carried out a Detail Engineering Assessment considering BNBC provision prior to commencement of any extension work.

Elevation



Local authority Permit drawing shown 6 storied

Observations: Sweater Building

Bolt missing and light connection

Observations: Sweater Building

Welded joints instead of bolt joints

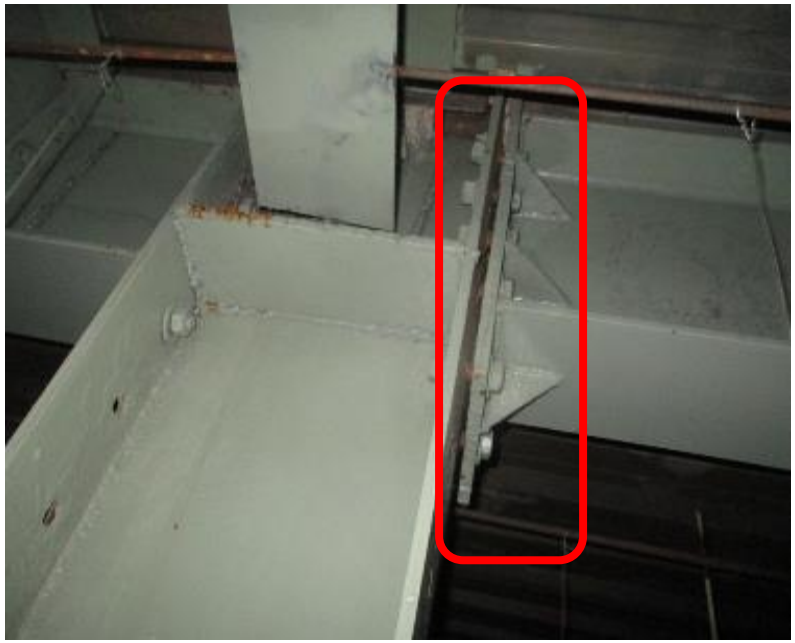
Missing bolt

Loose nuts on some bolted joints

Missing bolts and loose nuts found on several bolted joints. Factory Engineer to check the member joints and install missing bolts.

Observations: Sweater Building

Gap found at ground floor beam-column joint. Factory Engineer to take remedial actions for repairing the connections where required.



Gap in between beam-column joint

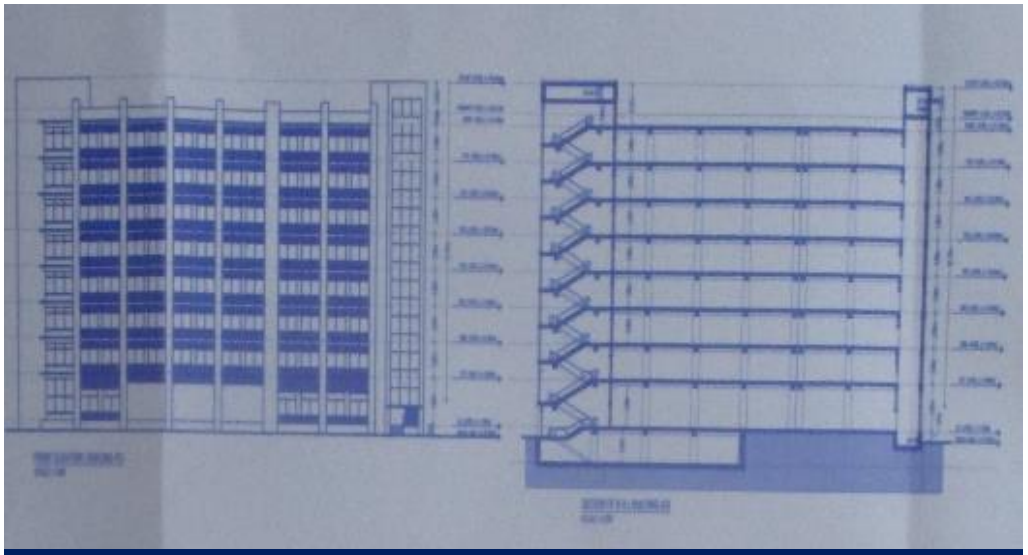
Observations: Sweater Building

Future extension to be carried out

Observations: Dining & Ware house Building

This building is permitted for 8 storeys with a basement (B+G+7) from local authority. Currently the building is partially single (B+G) storied. Factory owner has a plan to extend the building both vertically and horizontally up to 7th floor in future. Factory engineer is required to carry out a Detail Engineering Assessment considering BNBC provision prior to commencement of any extension work.

Current condition of the building



Local authority Permit drawing shows (B+G+7)

Observations: Dining & Ware house Building

Exposed rebar and stacking of construction material at roof

Observations: Dining & Ware house Building

Currently the exposed reinforcement is prone to corrosion. All exposed reinforcement must have adequate protection. There is no parapet on first floor which may cause falling hazard. Also, stacked materials need to be removed from roof and develop proper drainage system.

Ground floor roof.

Stacked materials.

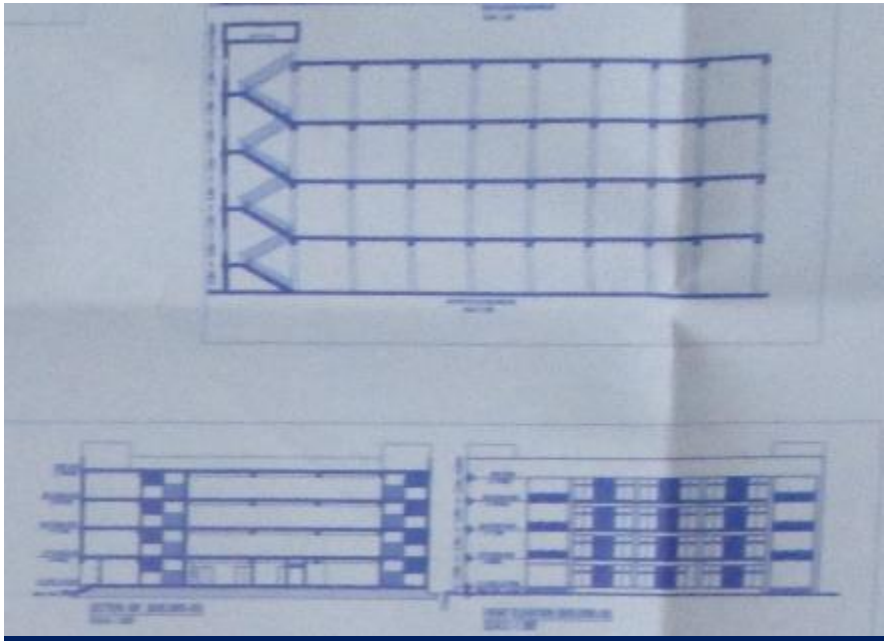
Observations: Dining & Ware house Building

Future extension to be carried out

Observations: Utility Building

This building is permitted for 4 storied from local authority. Currently the building is single storied. Factory owner has a plan to extend the building both vertically and horizontally up to 4 storey in future. Factory engineer is required to carried out a Detail Engineering Assessment considering BNBC provision prior to commencement of any extension work.

Current condition of utility building



Local authority Permit drawing shown 4 storeys

Observations: Utility Building

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Apparently non-engineered ancillary sheds

Observations: Ancillary Sheds

Poor connection between steel members was observed in the non-engineered ancillary sheds. Building engineer to check the stability of the lightweight steel roofs against uplift forces due to lateral loading. Otherwise demolish/replace with engineered shed.

Soft Winding Shed

Hanks Winding Shed

Auto placket shed

Jhut Shed

Observations: Ancillary Sheds

Problems Observed

Sweater Building

Item 01: Steel columns to be stressed above normal design limits.

Item 02: Discrepancies between provided drawings and on site condition.

Item 03: Deck slab with out sub-beam.

Item 04: Inclined steel column .

Item 05: Future extension to be carried out.

Item 06: Bolt missing and light connection.

Dining & Ware house Building

Item 07: Future extension to be carried out.

Item 08: Exposed rebar and stacking of construction material at roof.

Utility Building

Item 09: Future extension to be carried out.

Ancillary Sheds

Item 10: Apparently non-engineered ancillary sheds.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	(Sweater Building) Steel columns to be stressed above normal design limits	Building engineer to review design, loads and column stresses of the existing steel columns.	**6-weeks**
2	(Sweater Building) Steel columns to be stressed above normal design limits	Produce and actively manage a loading plan for all floor plates within the factory, giving consideration to floor capacity and column capacity	**6-weeks**
3	(Sweater Building) Steel columns to be stressed above normal design limits	Carry out any remedial measures recommended by above mentioned engineering assessment.	**6-months**
4	(Sweater Building) Steel columns to be stressed above normal design limits	Continue to implement load plan.	**6-months**
5	(Sweater Building) Discrepancies between provided drawings and on site condition	Building Engineer to survey as-built structure and prepare accurate as-built survey information for the building	**6-weeks**
6	(Sweater Building) Deck slab with out sub-beam	Factory engineer is required to confirm that deck has adequate capacity to take the floor load otherwise provide additional sub-beams.	**6-weeks**

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	(Sweater Building) Distorted column	Building Engineer to review design of distorted steel column taking into account the as-built condition of the column.	**6-weeks**
8	(Sweater Building) Future extension to be carried out	Prior to commencement of any extension, factory engineer to be carried out further analysis and update design report following BNBC requirement.	**6-weeks**
9	(Sweater Building) Bolt missing and light connection	Factory Engineer to check the member joints and install missing Bolts.	**6-weeks**
10	(Sweater Building) Bolt missing and light connection	Factory Engineer to take remedial actions where required.	**6-weeks**
11	(Dining & Ware house Building) Future extension to be carried out	Prior to commencement of any extension, factory engineer to be carried out further analysis and update design report following BNBC requirement.	**6-weeks**

Item No.	Observation	Recommended Action Plan	Recommended Timeline
12	(Dining & Ware house Building) Exposed rebar and stacking of construction material at roof	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	**6-weeks**
13	(Dining & Ware house Building) Exposed rebar and stacking of construction material at roof	Stacked materials need to be removed.	**6-weeks**
14	(Dining & Ware house Building) Exposed rebar and stacking of construction material at roof	Drainage system to be developed on roof.	**6-months**
15	(Utility Building) Future extension to be carried out	Prior to commencement of any extension, factory engineer to be carried out further analysis and update design report following BNBC requirement.	**6-weeks**
16	(Ancillary Sheds) Apparently non-engineered ancillary sheds	Ancillary sheds should be designed and upgraded to support code vertical and wind loads by the building Engineer, or they should be replaced/removed.	**6-weeks**