

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Armin Sweaters (BD.) Ltd.
Address of the Factory	: Plot # 10, Road # 5, Barabag, Section # 2, Mirpur, Dhaka
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 23 rd September 2014

BASIC INFORMATION:

The present garment factory is a residential building with beam-column frame system in lower three floors and flat plate system in the upper two floors, against its approval as a residential building with beam-column frame system. The following information were noted:

- i. Building Usage Type : Primarily as Garments Factory.
- ii. Structural System : RC beam column frame structure GF-2F, RC Flat Plate system 3F-4F.
- iii. Floor System : Edge supported RC solid floor slab system GF-2F, Flat Plate 3F-4F.
- iv. Floor Area : Approx. 2400sft/floor (as per approval drawing), Approx. 3100sft/floor (as per as built drawing).
- v. No. of Stories : Five story.
- vi. Construction Year : Phase 1 (GF to 2nd Floor): 2001-2002; Phase 2 (3rd Floor to 4th Floor): 2006-2007.
- vii. Foundation Type : Individual footing of different sizes (5ft × 5ft to 8ft × 8ft as per approval drawing), however column layout of the approval drawing do not match with the column layout of the constructed building and the as-built drawings.
- viii. Design Drawings : Approval Drawing Available [A. K. M. MAZHARUL ALAM, Reg No-744 (ctg), Unique Engineering Consultants, Baisakhi Super Market, Mirpur-1].
- ix. Soil Investigation Report : Available (Reported By: Nirman Shoilee, 67 Sangbadik Housing Society, Section-11, Mirpur, Dhaka, February 1998).
- x. Construction Materials : Reinforced Concrete with brick chips and steel plain rebars 40 Grade (as reported).
- xi. Generator : One Generator is located in the Ground Floor of the building.

RECOMMENDATIONS FOR CORRECTIVE ACTION:

The recommendations of corrective action for both Structural and Fire & Electrical Safety comprises in Short Term, Mid Term and Long Term basis.

The recommendations for **Structural Safety** corrective action are:

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| Short Term (Immediate) | : The factory owner has been instructed to prepare and submit a load plan for all floors. |
| Mid Term (6-weeks) | : A Detail Engineering Assessment (DEA) has to be completed. |
| Long Term (6-months) | : Necessary remediation's after completion of DEA. |

The recommendations for **Fire & Electrical Safety** corrective action are:

Name of the Factory	: Armin Sweaters (BD.) Ltd.
Fire & Electrical assessment conducted by	: BUET
Date of Fire & Electrical Inspection	: 25 th September 2014

(A): Recommendations for Fire Safety corrective actions:

Fire Safety Issues	
Immediate (the factory should not continue to be occupied until these non-conformities have been rectified):	N/A

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<p>Short Term <i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	<p>Remove all temporary obstructions from all escape routes, aisles and passageways. Ensure minimum width of corridors, passageways and aisles. Ensure adequate numbers of fire drills. Make sure that portable extinguishers are maintained as per the Guidelines. Ensure easy access to fire fighting equipments and monitor and maintain the same at required interval as per guidelines. Provide proper directional sign and exit sign in Bangla and English as per guidelines.</p>
<p>Mid Term <i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<p>Produce drawings to demonstrate how stairways are to be made of adequate dimensions and appropriate specifications and to be converted into fire-rated enclosures equipped with fire-rated doors. Design to ensure proper separation of high risk areas (e.g., generator, boiler rooms) as per guidelines. Remove all collapsible gates/roller shutters/sliding doors. Produce design drawings to demonstrate how stairways are to be made of adequate dimensions and appropriate specifications and to be converted into fire-rated enclosures equipped with fire-rated side swinging doors of required dimensions opening in the direction of travel at each floor. Prepare plan to ensure all exit access doors are side- swinging type and open to the direction of traffic flow. Provide design to install proper detection and alarm system.</p>
<p>Long Term <i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<p>Install horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and assembly areas, offices, work areas. Ensure proper fire separation of high risk areas (e.g., generator, boiler rooms) as per approved design. Install fire rated enclosure and doors of appropriate dimensions at exit to the stairs to prevent smoke and fire propagation as per approved design. Ensure all exit access doors are side-swinging type and open to the direction of traffic flow. Install proper detection and alarm system. Provide fire rated enclosure, install self-closing fire rated door as per guidelines.</p>

(B): Recommendations for Electrical Safety corrective actions:

Electrical Safety Issues	
<p>Immediate <i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i></p>	<p>N/A</p>

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<p>Short Term <i>(Actions that must be incorporated into a Fire Safety Management Plan immediately (a week) and should be a regular activity)</i></p>	<p>Provide instructions for first aid and artificial respiration from exposure to electrical shock. Provide rubber mat in front of the panel. Ensure well-dressed cabling with lugs and remove loose cabling. Ensure earthing of panel body & door with fitted condition. Provide distribution board as per guideline and put identification mark on distribution panel.</p>
<p>Mid Term <i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<p>Provide new Emergency Lighting system. Provide appropriate Lightening Protection System as per guidelines.</p>
<p>Long Term <i>(The remedial works indicated must be carried out within a period of 6 months)</i></p>	<p style="text-align: center;">N/A</p>