

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: Surma Apparels Limited
Address of the Factory	: Misco Super Market, 4 Darussalam Road, Mirpur, Dhaka
Present Status of the Factory	: Under Operation
Structural Assessment Conducted by	: BUET
Date of Structural Inspection	: 31 st October 2014

BASIC INFORMATION:

The garments factory building was approved by RAJUK as a 6 (six) storied commercial building in 1990 with ground floor as the bottom most floors. The following important points were noted for the building.

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|--------|----------------------------|---|
| (i) | Building usage type: | Commercial shops, restaurant and garments factory |
| (ii) | Structural system: | Column beam frame structure |
| (iii) | Floor system: | RC slab supported on beam columns. Typical floor heights are 9'-5" (1 st to 5 th Floor); Ground floor height is 9'-9". |
| (iv) | Floor area: | Building plan dimensions are Approx. 425'-0" × 80'-0". Approximate floor area is 34000 sft per floor with a total floor area of 204000 sft. |
| (v) | No. of stories: | 6 (six) |
| (vi) | Construction Year: | Unknown |
| (vii) | Foundation Type: | Isolated spread footing (Square footing 9'-0" × 9'-0" at a depth of 10'-0") |
| (viii) | Design Drawings: | Approval drawings (RAJUK) were available. |
| (ix) | Soil Investigation Report: | Not available |
| (x) | Construction Materials: | Reinforced Concrete. No test reports of construction materials were available. <ul style="list-style-type: none">• Coarse Aggregate Brick chips• Reinforcement 40-grade plain & 60 grade deformed steel rods |
| (xi) | Generator | 160 kVA located at ground floor |

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:

Short Term (Immediate) : The live load, temporary or long term duration, must be restricted within 40 psf (2.0 kN/m²) at all the places of the building. Proper measures should be taken to eradicate dampness of the building walls.

Mid Term (6-weeks) : None

Long Term (6-months) : A Detail Engineering Assessment (DEA) has to be completed. Necessary remediation's after completion of DEA.

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

Name of the Factory : Surma Apparels Ltd.

Fire & Electrical assessment conducted by : BUET

Date of Fire & Electrical Inspection : 25th September 2014

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(A): Recommendations for Fire Safety corrective actions:

Fire Safety Issues	
Immediate <i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i>	N/A
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>Remove all temporary obstructions from all escape routes, aisles and passageways.</p> <p>Remove all combustible materials from transformer/ substation/ boiler/ generator room.</p> <p>Ensure minimum width of corridors, passageways and aisles.</p> <p>Ensure easy access to portable extinguishers and monitor and maintain the same at required interval as per guidelines.</p> <p>Provide proper directional sign and exit sign in Bangla and English as per guidelines.</p>
Mid Term <i>(The remedial works indicated must be carried out within a period of 6 weeks)</i>	<p>Remove temporary structure from roof top.</p> <p>Produce proper drawing and plans to create horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and offices, work areas. Also design to ensure proper separation of high risk areas (e.g., generator room) as per guidelines.</p> <p>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.</p> <p>Provide design to install proper detection and alarm system.</p>
Long Term <i>(The remedial works indicated must be carried out within a period of 6 months)</i>	<p>Install horizontal and vertical fire-rated separation for stairways of appropriate specifications, grills, storage and offices, work areas.</p> <p>Ensure proper fire separation of high risk areas (e.g., generator room) as per approved design.</p> <p>Install fire rated enclosure and doors of appropriate dimensions at exit to the stairs to prevent smoke and fire propagation as per approved design.</p> <p>Install proper detection and alarm system.</p> <p>Provide fire rated enclosure, install self-closing fire rated door as per guidelines.</p>

(B): Recommendations for Electrical Safety corrective actions:

Electrical Safety Issues	
Immediate <i>(the factory should not continue to be occupied until these non-conformities have been rectified):</i>	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>Provide instructions for first aid and artificial respiration from exposure to electrical shock.</p> <p>Provide cover on the cable trench and rubber mat in front of the panel.</p> <p>Ensure well-dressed cabling with lugs and remove loose cabling.</p> <p>Ensure earthing of panel body & door with fitted condition.</p> <p>Provide distribution board as per guideline and put identification mark on distribution panel.</p> <p>Remove burnt/broken/loose MCB/MCCB box/socket.</p>
<p>Mid Term <i>(The remedial works indicated must be carried out within a period of 6 weeks)</i></p>	<p>Provide separate service ducts for electrical cables.</p> <p>Provide new Emergency Lighting system.</p> <p>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>N/A</p>