

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

Name of the Factory	: BEKA GARMENTS & TEXTILES LTD.
Address of the Factory	: Adamjee EPZ, Siddirgonj, Narayangonj, Bangladesh
Dhaka Present Status of the Factory	: Under Operation
Structural assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Structural Inspection	: 23 April, 2014
Fire & Electrical assessment conducted by	: Accord (Full report available at bangladeshaccord.org)
Date of Fire & Electrical Inspection	: 20 May, 2014

Basic Information: The present garment factory is a commercial building with beam-column frame system. The following general information was noted:

i.	Building Usage Type	: Garment factory
ii.	Structural System	: R.C. Beam and column frame with a 2-way solid slab
iii.	Floor System	: Beam slab
iv.	Floor Area	: The factory has total floor area of 9084.68sqm
v.	No. of Stories	: 4 storied
vi.	Construction Year	: 2010
vii.	Foundation Type	: Piled foundation
viii.	Design Drawings	: Available (Permit drawing)
ix.	Soil investigation Report	: Unavailable
x.	Construction Materials	: Unavailable
xi.	Generator	: Ground floor separate shed building

Recommendations for Corrective Action: The recommendations of corrective action for both Structural and Fire & Electrical Safety are as follows:

The recommendations for Structural Safety corrective actions are:

Immediate (Now): NA

Mid Term (Within 6 Weeks): NA

Long Term (Within 6 Months): NA

The recommendations for Fire Safety corrective actions are:

Immediate (Within 1 month):

1. Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
2. Replace all gates and sliding doors along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.
3. Remove manual on/off switches from emergency lighting and exit signage units to prevent them from being switched off.

Short Term (Within 3 Months):

1. Separate the boiler room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

2. Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:

-Maximum height of 2.4m and maximum area of 23m²

-If sprinkler protected: maximum height of 3.66m and maximum area of 93m²

Separate areas of unenclosed combustible storage by a minimum clear distance of 3m.

3. Provide minimum 1.5-hr fire rated doors and seal all unprotected openings to separate the exit stairs from work areas and ramp on all floor levels. Ensure that the fire doors are self-closing and positive latching and that they are provided with fire exit (panic) hardware where serving production floors. If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.
4. Provide a minimum 2-hr fire rated construction to separate the ramp from each floor level.
5. Modify the egress door to swing in the direction of egress travel.
6. Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.
7. Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site.

Mid Term (within 6 Months):

1. Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas).
2. Replace the single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72.

Long Term (More than 6 months):

1. Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72.

The recommendations for Electrical Safety corrective actions are:

Immediate (Within 1 month):

1. Cables terminating at distribution boards must be supported in cable tray and protected throughout its length till the panel base or top plate.
2. Metallic cover should be provided on cable duct to prevent the damage of cable insulation and ingress of dust.
3. Large exhaust fans must be connected through control device such that it will not restart automatically when power is restored.
4. Periodic inspection is needed to identify all the loose connection and tighten up all the connections.
5. Cables connecting to bus-bars inside panel must be connected firmly with cable lugs. Cable terminating to the bus-bars must be fixed with proper size nuts, bolt and washer.
6. Combustible materials used inside panel must be removed. Adhesive tape other than electrically rated insulating tapes must be removed.

Summary of Preliminary Assessment on Structural, Fire and Electrical Safety

7. All control devices must be protected in non-combustible enclosures an enclosed panel made of metallic sheet of minimum 20 SWG thickness.
8. Panel including its door must be connected with dedicated earth connection. Practice earth continuity test to insure earth continuity to panel and loads enclosure and keep record. Provide earthing connection to panel as per BNBC ((min size 14SWG, 16mm² for main conductor sizes 16-35mm² Main conductor size above 35mm², the earth conductor must be half the main conductor).
9. Cables must be terminated providing individual lug according to the respective cable size for termination at bus bar.
10. Multiple cable shall not be terminated into single terminal of MCB which may induce loose connection and overheat.

Short Term (Within 3 Months):

1. Cables must be protected in trench with cover from all sides.
2. The PVC/rigid pipe used for surface wiring must be continuous through-out its length and properly supported (clamped with saddle, at regular interval of 600 mm).The conduit shall run vertically or horizontally, shall never at angle.
3. Construct a cable trench to terminate the generator output cables and provide covers made of non-combustible material preferably concrete slab to protect the cables' insulation from physical damage as well as prevent entering debris, dust and lint.
4. Cable terminated to generator output panel must be firmly fixed with cable glands.
5. Cable passing through permanent wall must be protected in steel pipes and the remaining hole around the pipe must be sealed by fire resistant material.

Mid Term (Within 6 months): NA

Long Term (More than 6 months): NA