

FIRE SAFETY INSPECTION REPORT

SATURN TEXTILE LTD.

**13/1, ABDUS SATTAS MASTER ROAD, GAZIPUR,
TONGI**

OTHER FACTORIES: NONE



ACCORD
on Fire and Building Safety in Bangladesh

Bangladesh Accord
Foundation

July 10, 2014

SUMMARY

Saturn Textile Ltd. was surveyed for fire safety on 7/10/2014 by Hughes Associates, Inc. This summary identifies the major deficiencies that were identified during the inspection.

The purpose of this survey was to identify significant fire safety issues and to provide recommendations for remediation based on applicable standards specified by the Accord. The scope of this initial fire safety inspection was limited to the review and identification of major fire safety issues. The inspection did not include identification of minor deficiencies, which will be further addressed as part of follow-up inspections.

Table 1 summarizes the major fire safety issues identified during the inspection. Recommendations have been provided to address each issue.

An implementation schedule shall be developed by the factory to remediate each of the findings. The specific timing of improvements, including any requested extensions due to design / installation constraints, shall be submitted to the Accord for approval.

Table 1. Findings And Recommendations

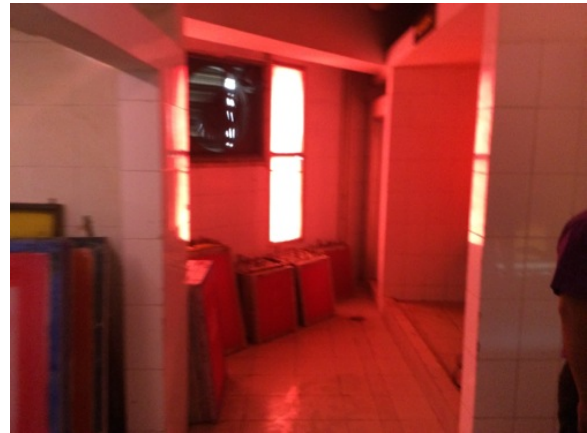
| No. | Category | Finding | Recommendation | Remediation Timeframe |
|-----|----------------------------|--|--|--------------------------|
| F-1 | Fire Rated Construction | <p>The exit stairs are not separated from work areas and other spaces on each floor by fire-rated construction. Portions of the the stair enclosure at the east central (south) stair are non-rated window wall construction and should be replaced with fire-rated construction on each floor and at the ground floor to discharge.</p> | <p>Provide minimum 1.5-hr fire rated doors, seal all unprotected openings, and provide rated walls to separate the exit stairs from work areas and other building spaces 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.</p> <p>If fire doors are required to be held open for functional reasons, provide automatic-closing devices tied to the fire alarm system.</p> | Within 3 months |



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| F-2 | Fire Rated Construction | Areas used for combustible storage are not separated by fire-rated construction. Location: Mezzanine through 8th floors. | 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 23m ² - If sprinkler protected: maximum height of 3.66m and maximum area of 93m ² Separate areas of unenclosed combustible storage by a minimum clear distance of 3m. | Within 3 months |
| F-3 | Fire Rated Construction | Rooms used for combustible storage are not separated by fire-rated construction. Some combustible materials were stored right up to the ceiling. Location: All floors. | Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Do not store combustible materials within 18 inches of the ceiling. | Within 3 months |



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| F-4 | Fire Rated Construction | <p>Hazardous materials storage area is not separated by fire-rated construction (openings, non-rated doors, penetrations).</p> <p>Location: Chemical stores and printing materials in several storage rooms.</p> | <p>Separate the hazardous materials storage room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations. Do not store hazardous or flammable materials in any areas other than hazardous material storage.</p> | Within 3 months |
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| F-5 | Fire Rated Construction | The boiler, generator, transformer, EMR rooms are not separated by fire-rated construction (openings, non-rated doors, penetrations). | Separate the boiler, generator, transformer, EMR rooms by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations | Within 3 months |
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Location: Generator in basement, boiler (near exit) and transformer on ground floor, electrical rooms and IPS system on all floors, and equipment under the southwest stair at ground floor.





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| F-6 | Fire Rated Construction | Unsealed penetrations and openings are located in the fire-rated floor/ceiling assemblies. Electrical room penetrations occur at all floors. | Provide a minimum 2-hr fire-rated shaft to separate the utility risers from each floor level. | Within 3 months |
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| F-7 | Fire Rated Construction | Unsealed penetrations and openings are located in exit stair enclosures and in the shaft for the future elevator adjacent to the the east central (south) exit stair. | Seal all penetrations and openings in exit stair enclosure walls and shaft for future elevator to maintain the fire separation. | Within 3 months |
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| F-8 | Fire Rated Construction | The exit discharge path to the south from the day-care and medical rooms is less than 10 ft wide and is not separated from the building interior from the exit to the point where the exit path re-enters the building and proceeds through the building to the east side. Also see the day-care finding and the common path of travel finding. | Seal all penetrations and openings to the interior of the building along the discharge path, up to a height of 10 ft., to provide a minimum 1-hr fire separation. | Within 6 months |
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F-9 Egress

Egress doors / gates with locking features are provided at building exits, exit stairs, and along egress routes.

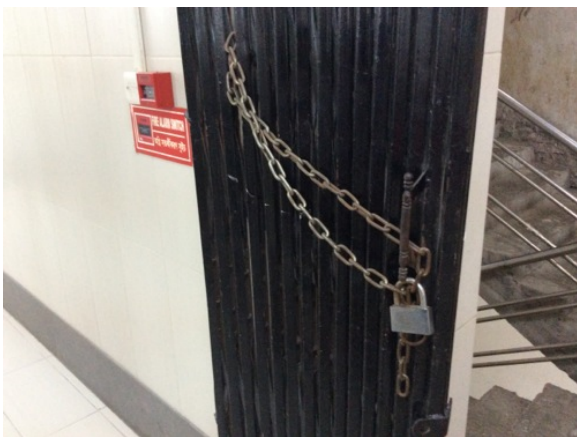
Location: All floors.

All gates/doors were open and unlocked during the inspection.

Remove locking features from all egress doors / gates.

If locks are required for security reasons, utilize special door locking features complying with NFPA 101.

Immediate



F-10 Egress

Storage was located in the egress path.

Keep egress paths and stairs clear of storage.

Immediate

Location: Most production floors and storage rooms. The discharge for the southwest stair also contains storage.



F-11 Egress Storage was located in the exit stair. Remove all storage from exit stairs and egress paths. Immediate

Location: All primary exit stairs at multiple floors.



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| F-12 | Egress | Collapsible gates / sliding doors are provided at building exits, exit stairs, and along egress routes. Location: All floors. | Replace all gates / 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. | Within 1 month |
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| F-13 | Egress | The width of egress aisles is less than 36-in. Location: 8th floor production and in storage areas on most floors. The discharge from the southeast stair at ground floor needs steps from the discharge opening down to grade to complete the required egress path. | Provide minimum aisle widths of 36-in. Provide steps from the floor of the southeast stair down to grade to complete the egress path. | Within 3 months |
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F-14 Egress

Exit stair door does not swing in the direction of egress travel.

Modify the egress door to swing in the direction of egress travel.

Within 3 months

Location: Northwest stair at roof.



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| F-15 | Egress | <p>A single means of egress is provided from the prayer rooms (under construction) on the roof, the mezzanine office area, and the west portion of the ground floor where the occupant load exceeds 49 persons.</p> <p>For the west portion of the ground floor see the common path of travel finding.</p> | <p>Provide additional means of egress for the prayer rooms on the roof and mezzanine office area.</p> <p>The door into the production area on the south end of the mezzanine office can be used as a second exit if a double-egress door and exit signage is provided.</p> | Within 3 months |
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F-16 Egress

The day-care room does not have direct access to an exit within the maximum travel distance of 9m (30 ft).

Relocate day-care room to a ground floor location with a maximum travel distance of 9m (30 ft).

Within 3 months

Location: The day-care is in the southwest corner of the building and the nearest exit is on the east side of the building.



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| F-17 | Egress | <p>Common path of egress travel exceeds 30 m.</p> <p>Location: The area on the west portion of the ground floor containing warehouse, offices, medical, day-care, and interior discharge of the southwest stair has only one effective path to reach the center discharge to the east side of the building. The discharge from the southwest corner reenters the building and follows the same interior egress route to the discharge.</p> | <p>Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas). or Provide sprinkler protection for discharge floor in accordance with NFPA 13.</p> | Within 3 months |
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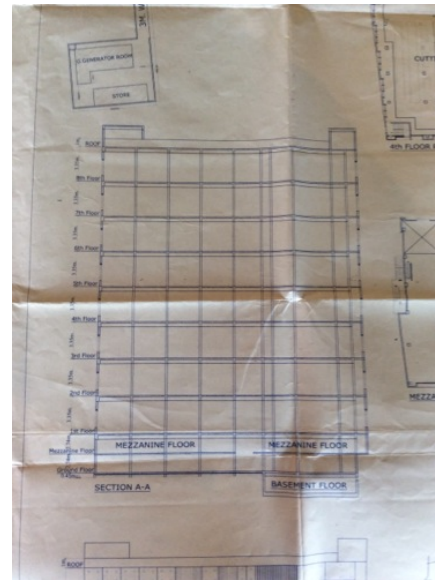


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| F-18 | Egress | <p>Exit stairs discharge inside the building.</p> <p>Location: The northwest exit stair discharges inside on the 2nd floor and egress is directed to the north exit stair. The southwest exit stair discharges inside on ground floor and egress is through an unprotected path to the east side. The convenience stair from mezzanine to interior discharge on the ground floor in a warehouse is neither adequate nor required as an exit.</p> | <p>Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas).</p> <p>or</p> <p>Provide sprinkler protection for discharge floor in accordance with NFPA 13.</p> <p>Remove exit signage marking the convenience stair as an exit.</p> | Within 6 months |
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| F-19 | Fire Protection | The fire alarm system is antiquated, not a listed system, and does not provide alarm and notification features consistent with acceptable standards. | Replace the fire alarm system with a new, listed addressable fire alarm system in accordance with NFPA 72. | Design within 4 months, install within 9 months |
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| F-20 | Fire Protection | The high-rise building has an occupied floor greater than 23m (75 ft) and is not provided with automatic sprinkler protection. The large occupant loads, heavy fuel loading, and anticipated extended egress times warrant sprinkler protection. | Provide automatic sprinkler protection throughout the building in accordance with NFPA 13. | Design within 6 months, install within 12 months |
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| F-21 | Fire Protection | Inspection, testing, and maintenance for the fire alarm system were not in accordance with NFPA 72. | Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72. | Within 3 months |
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| F-22 | Fire Protection | The building is equipped with single-station smoke alarms. Smoke alarm activation sounds only a local alarm and does not provide automatic fire alarm notification of occupants. | Remove single-station smoke alarms. Provide automatic smoke detection throughout the building in accordance with NFPA 72. | Within 6 months |
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| F-23 | Egress Lighting | <p>Exit signs and emergency evacuation plans not provided at exit.</p> <p>Location: Exit signs missing from the southeast exit stair at most floors of the addition section of the building. Emergency egress signs need to be updated to show the addition. Emergency evacuation plans are missing from the east central (south) stair and the southwest stair.</p> | <p>Provide exit signs above all exits to the exterior and all doors to the exit stairs.</p> <p>Provide updated emergency egress plans at all exits to the exterior and all doors to the exit stairs.</p> | Within 1 month |
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| F-24 | Egress Lighting | <p>Manual on-off switch is provided for emergency lighting units.</p> <p>Location: All exit stairs.</p> | <p>Remove manual on/off switches from emergency lighting units to prevent them from being switched off.</p> | Within 1 month |
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| F-25 | Egress Lighting | Inspection, testing, and maintenance for the emergency lighting system were not in accordance with The ACCORD standard. | Inspect, test and maintain the emergency lighting system in accordance with The ACCORD standard. Keep written records on-site. | Within 3 months |
| F-26 | Egress Lighting | Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. No lights in warehouse rooms. Location: All floors. | Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles. | Within 3 months |

