

FIRE SAFETY INSPECTION REPORT

DANNY'S KNITWEAR LTD.

ACCORD ID: 12228

SURABARI, GAZIPUR, SADAR, GAZIPUR

Other Factories: None



October 17, 2015

Fire Safety Inspection Report Danny's Knitwear Ltd.

Introduction

Danny's Knitwear Ltd. manufacturing complex was surveyed for fire safety on 10/17/2015 by Jensen Hughes.

The purpose of the 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.

Limitations

The information in this fire safety inspection report was obtained during a visit to the facility and during interviews with local factory management. It has not been possible to provide independent verification for all the information and data collected, and, therefore, Jensen Hughes cannot accept general responsibility for omissions or errors arising from inaccuracies in this report from the information obtained.

The findings and recommendations in this report are not intended to imply, guarantee, ensure or warrant compliance with any government regulations. Additionally, the results do not imply in any way that compliance with the findings or recommendations as stated in this report will eliminate all hazards, risks or exposures or that hazards, risks or exposures not referred to in this report do not exist. Compliance with the findings and recommendations stated in this report does not relieve the factory owner from obligation to comply with specific project requirements, industry standards, or the provisions of any local government regulations.

General Factory Information

Factory Building Name(s):

Danny's Knitwear Ltd.

Factory Address:

Surabari, Gazipur, Sadar, Gazipur

Points of Contact:

Abdullah Al Mamun, Manager- Admin, HR & Compliance

Dany's Knitwear Ltd.

01915-652409

mamun@danysknitwear.com

Md. Shahidul Islam, Director

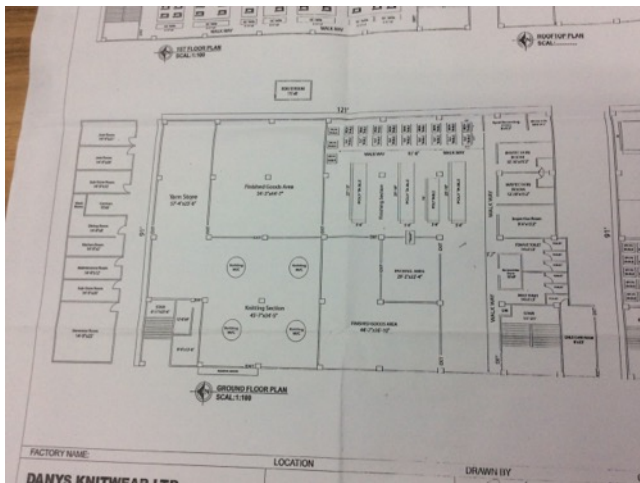
Dany's Knitwear Ltd.

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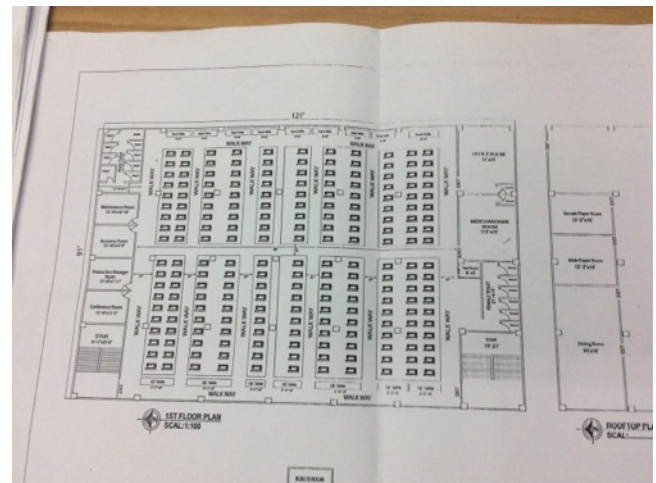
shahidul@danysknitwear.com

General Building Information - Dany's Knitwear Ltd.

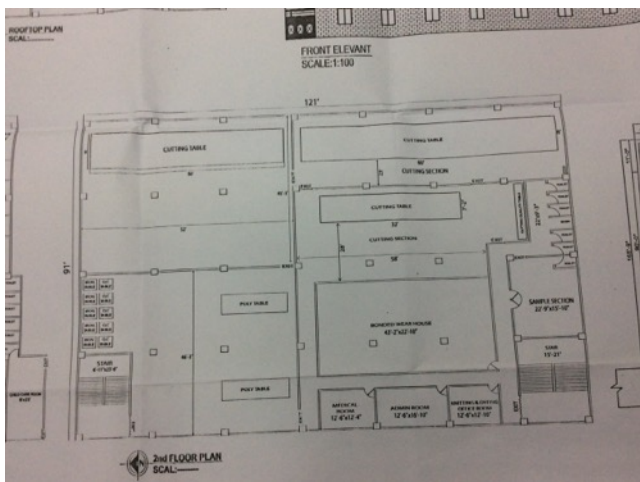
Number of Stories Below / Above Grade	0 / 3
Highest Occupied Floor Level / Height	R / 30 ft.
High Rise (Accord 3.2.1)	No
Occupiable Roof (Accord 3.2.2)	Yes
Occupiable Roof Provided with Adequate Parapets / Guards (Accord 6.12.2.4)	No
Occupancy Classifications	G2 Industrial F Business B Day Care H2 Storage
Floor Plans Available	Yes



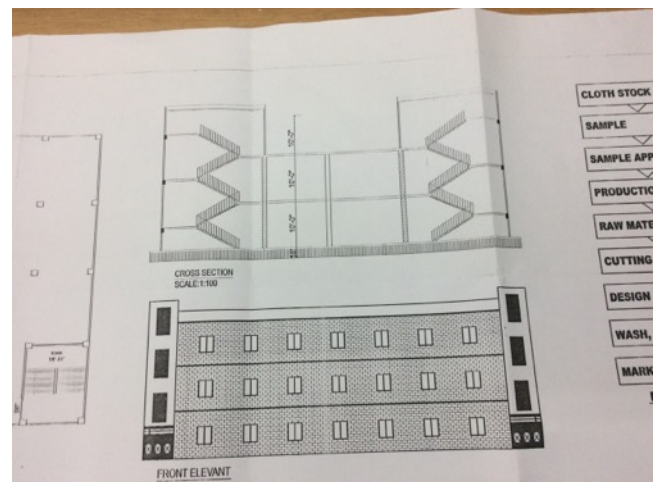
Ground floor plan



First floor plan



Second floor plan



Elevation

Date Of Construction 2013

Major Renovations / Additions Yes

Comments 50 % of the floor area of the 2nd floor were under construction. Reportedly the factory building were planned to be completed as a G+ 5 (six stories) building in the near future.

Other Tenants In Building No

**Floors Occupied By
Factory** G, 1, 2, R

Floor	Use	Occupant Load
G	Finishing, Store, Knitting, Inspection room	70
1	Sewing, Office, Merchandising	200
2	Cutting, Sample, Office, Warehouse	60
R	Dining , Prayer	100

Construction Features

**Non-Combustible
Construction** Yes

**Fire-Resistive
Construction** Yes

Building Exposures

North Open area, separation approximately 20 meters from factory building.

South Open area, separation approximately 20 meters from factory building.

East Open area, separation approximately 20 meters from factory building.

West Main road, separation approximately 10 meters from factory building.

Vertical Openings

**Exit Stairs Enclosed in
Fire-Rated Construction
(Accord 6.14)** Yes

**Exit Stair Penetrations
are Fire Rated (Accord
6.14)** No

**Exit Stair Openings are
Fire Rated (Accord 6.14)** No

Exterior Exit Stairs Separated From Building (Accord 6.3.1.3)	N/A
Shafts Enclosed in Fire- Rated Construction (Accord 4.5.7)	N/A
Openings / Penetrations in Fire-Rated Floors are Protected (Accord 4.5.3)	Yes
Atrium Protected As Required (Accord 3.7)	N/A

Egress Features

Two (2) exit stairs serve the three story building. Egress from the ground floor was provided by three (3) exits. Each floor had an adequate number of exits with sufficient exit capacity based on occupant load. All exits were remotely located. All exits discharged to the exterior of the building. All exit stairs were open on all floors due to unprotected openings. The exit stairs on all floors were open to factory areas due to unenclosed stairwells. There were obstructions located in the northwest exit stair on the 2nd floor and southwest exit stair on the ground floor. Handrails were not present on both sides of the northwest and southwest exit stairs on all floors. Electrical panels were not located in the stairs.

Collapsible gates and sliding doors were used at building exits , exit stairs, along egress routes and exit discharge. Egress doors with locking features were present at building exits, exit stairs, along egress routes, and exit discharge. All gates and doors were open and unlocked during the inspection. The egress door for storeroom on the ground floor and accounts room on the 1st floor does not swing in the direction of egress travel. There was storage and obstructions located in egress paths on the ground and 2nd floors. Inadequate egress path widths were present on the 2nd floor factory floors. Exit access corridors were not provided with the proper fire protection and fire separation. Emergency evacuation plans were within northwest and southwest exit stair. There were no stair designation signs, occupant load signs and no smoking were not provided in the building. Fire drills are conducted every two (2) months, records were provided during the inspection. Daycare is located on the ground and is provided with the proper travel distance and fire protection requirements. The building was three stories and re-entry was not required within Accord standard.

Floor	Occupant Load	No. Exits	Exit Capacity
G	70	3	1,085
1	200	2	475
2	60	2	478
R	100	2	269

General

Number of Exits Per Floor is Compliant (Accord 6.6)	Yes
Capacity of Exits Per Floor Is Compliant (Accord 6.5.3)	Yes
Exits Remotely Located (Accord 6.6.6)	Yes

Exit Doors

Egress Doors are Side-Hinged (Accord 6.8.1)	No
Egress Doors Swing Correctly (Accord 6.8.1)	No
Egress Doors Without Locking Hardware in Direction of Travel (Accord 6.8.2)	No

Exit Stairs

All Exit Stairs Discharge Directly to the Exterior (Accord 6.17)	Yes
Handrails Provided on Both Sides (Accord 6.9.2.4)	No
Exit Stairs Free of Storage and Obstructions (Accord 6.3.8, 6.3.9)	No

Electrical Panels Located Outside of Exit Stairs Yes

Exit Stairs Serving More than 5 Stories Provided with Re-Entry (Accord 6.8.3) N/A

Exit Access & Arrangement

Means of Egress Free of Storage & Obstructions (Accord 6.3.8, 6.3.9) No

Means of Egress of Adequate Width (Accord 6.5) No

Travel Distances, CPT, DE's Within Limits (Accord 6.13) Yes

Exit Access Corridors Provided with Proper Fire Protection / Separation (Accord 6.3.1.1) No

Daycare Within Limits (Accord 3.4.2.1.1) Yes

Egress Court Provided With Adequate Fire Rated Separation (Accord 6.17.2) N/A

Utility / Storage Rooms Adequately Separated from Exit Enclosures (Accord 6.14.3) N/A

Emergency Planning

Emergency Evacuation Plans Provided (Accord 13.3) Yes

Fire Drills Conducted & Records Maintained (Accord 13.2) Yes

Smoking Prohibited (Accord 13.5)	No
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Emergency evacuation plan



Emergency evacuation plan

Fire Protection Features

Sprinkler System

No sprinkler system present in the building. Based on the height of the highest occupiable floor, automatic sprinkler protection is not required.

Standpipe System

The factory building height was less than 10 m (33 ft) at the highest occupied floor and does not require a standpipe system, however a non-rated standpipe system was provided in the factory. Hose reels with 1.0 in. hoses were provided within the northwest and southwest exit stairs. No records or assertions of regular testing or maintenance of the standpipe system were provided.

Standpipe System Required	No
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Type of System Installed other

Hose Connection Locations None

ITM Per NFPA 25 No



Fire Hose reel



Fire Hose Reel

Fire Water Supply

The standpipe system was reportedly, supplied by gravity from four roof tanks having a reported total capacity of 12,000 L. The tanks were fed by an underground cistern tank with a reported capacity of 60,000 L., that is accessed from ground floor north side of the building. There was no fire pump connected to the system. A fire department inlet and outlet connection was not provided for the building.

Source, Location, & Capacity Overhead tank/ roof/ 12,000 L

Fire Pump Provided No

Fire Department Inlet & Outlet Connections Provided (Accord 5.5.4) No

**Fire Pump Adequate
(Accord 5.5.1)** N/A

**Fire Pump Room
Provided With Adequate
Fire Rated Separation
(NFPA 20)** N/A

**Fire Pump ITM Per NFPA
25** N/A

Fire Alarm System

A fire alarm system was provided in the factory building. It consisted of manual alarm switches, horn, bell and beacon units installed throughout the factory. Reportedly, the activation switches on each floor triggers the fire alarm for only the respective floor. No functional test was conducted on the system during the inspection. There was no fire alarm panel or system supervision present during the inspection. No records or assertions of regular testing or maintenance of the fire alarm system were provided.

Type of System Manual Fire Alarm System (Audible & Visual)

Fire Panel Location None

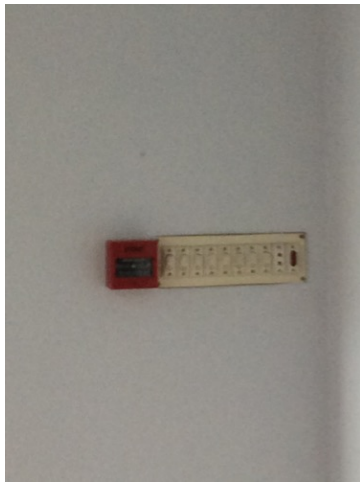
**Visible Notification Per
NFPA 72** No

**Audible Notification Per
NFPA 72** Yes

Alarm Annunciation Manual
By Floor

ITM per NFPA 72 No

**Functional Test
Conducted** No



Manual pull station



Speaker Horn and Bell



Beacon

Fire Detection System

Single station smoke alarms were located in various places throughout the factory. These smoke alarms are not tied into the fire alarm system. In the event they detect smoke, they will provide a local a local alert sound. No records or assertions of regular testing or maintenance of the fire detection system were provided.

Type of Detectors Single Station Smoke Alarms

Smoke Detection Per NFPA 72 No



Single station smoke alarm



Single station smoke alarm

Portable Fire Extinguishers

Portable fire extinguishers, consisting of a mix of CO2 and dry chemical extinguishers, were provided throughout the building. Inspection tags shows recent and up to date inspection. No records or assertions of regular testing or maintenance of the portable fire extinguishers were provided.

Types Provided CO2 and dry chemical fire extinguisher

Adequate Number/Spacing No

ITM Per NFPA 10 No



CO2 portable fire extinguisher



Dry chemical portable fire extinguisher

Manual Fire Fighting Equipment

Each floor had firefighting equipment staged outside the main floor entrances. Types of manual firefighting equipment provided included: buckets, escape hoods, bolt/lock cutters, shovels, stretchers and personal protection equipment.

Types of Equipment Provided	Buckets, escape hoods, bolt/lock cutters, shovels, stretchers and personal protection equipment.
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Location of Equipment	Adjacent to Northwest and southwest exit stairs.
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Other Features

Emergency Lighting & Exit Signs

There were multiple florescent lights that had an alternate “Instant Power Supply” (IPS) and generator backup on each floor. Based on the number and location of emergency lighting units, there did not appear to be adequate illumination of the means of egress. Each floor had a number of illuminated exit signs, non-directional, located above exits. The factory management reported that these are all serviced by normal electricity as well as by multiple “Instant Power Supply” (IPS) units. Exits signs were observed to be missing along certain egress paths. There were no records or assertions of regular testing or maintenance of the emergency lighting system.

Exits and Exit Access Properly Marked with Exit Signage	No
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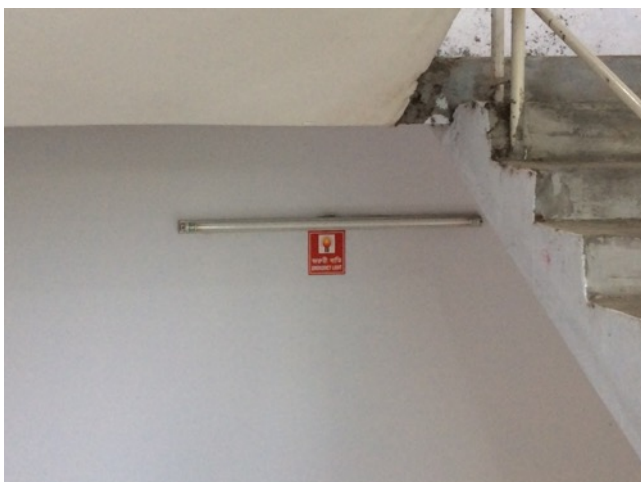
Emergency Power	Generator IPS
Adequate Emergency Lighting for Exits & Exit Access	No
Adequate Inspection / Testing (Accord 10.12)	No



Exit sign



IPS Powered emergency lighting



IPS Powered emergency lighting

Elevator

No elevator was provided in the building.

Compressor Equipment

Two (2) compressors serve the building. They were located on the ground floor in the north and east side of the building. The building did not have proper fire-rated separations.

Location(s) Ground floor north & east side of the building.

Fire Rated Separation No



Compressors

Boiler & Furnace Equipment

A single (1) boiler serves the building. They were located on the ground floor in the east side of the building. The building did not have proper fire-rated separations.

Location(s) Ground floor east side of the building.

Fire Rated Separation No
(Accord 3.4.2.1.2)

Industrial Dryers N/A
Provided with Adequate
Fire Rated Separation
(Accord 3.4.2.1.2)



Boiler room



Boiler

Storage Areas

Rooms used for the storage of combustible materials were not separated by fire-rated construction on floors ground, 2nd. Areas are used for combustible storage that are open to the factory floor, were also present within the factory building. These areas were located on floors ground, 2nd and did not meet the pile dimension requirements. Storage areas were not separated from exit stairs and discharge paths. Storage of liquefied gas cylinders were not present in the factory building. Hazardous material and flammable liquid storage was not present in the factory building. Additional fuel was present in the generator area.

Location(s) Ground, 1st, and 2nd

Fire Rated Separation No
(Accord 3.4.2.1.5)

Open Storage Within No
Limits (Accord 3.4.2.1.6)

Storage Areas Separated No
from Exit Stairs &
Discharge Paths

**Storage / Use of
Liquefied Gas Cylinders
Prohibited Within
Building (Accord
3.4.2.1.11)**

Yes

**Hazardous Materials /
Flammable Liquid
Storage Area Provided
With Adequate Fire Rated
Separation (Accord
3.4.2.1.10)**

N/A

**Generator Area Free of
Additional Fuels**

No

Additional Information

None

Findings & Recommendations

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	Diesel fuel storage was located inside the generator room.	Remove all diesel fuel storage from the generator room and relocate to the exterior such that the diesel fuel storage is at least 10 ft from required egress paths. If located along egress paths or in a utility building, separate the diesel fuel storage with 2-hr fire rated construction. There shall be no diesel fuel storage in a factory production building.	Immediately
 				
F-2	Fire Rated Construction	Exit access corridors are not provided with 1 hr fire resistance rating or approved NFPA 13 sprinkler system.	Provide exit access corridors with 1 hr fire resistance rating or approved NFPA 13 sprinkler system.	Within 3 months



F-3	Fire Rated Construction	The boiler and compressor rooms are not separated by fire-rated construction due to openings, non-rated doors, and penetrations on ground floor north side of the building.	Separate the boiler and compressor rooms by a minimum 1-hr fire-rated construction for non-high rise. Seal and protect all openings to maintain the required fire separations. Provide proper ventilation and consult a qualified engineer.	Within 3 months
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F-4	Fire Rated Construction	Areas used for combustible storage open to the factory are not properly defined and not within limits on ground, and 2nd floors.	Provide defined storage areas and limit the storage arrangement as follows: Maximum height of 2.45m (8 ft) and maximum area of 23m² (250 ft²) AND Separate areas of unenclosed combustible storage by a minimum clear distance of 3m (10 ft).	Within 3 months
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F-5	Fire Rated Construction	Rooms used for combustible storage are not separated by a minimum 1-hr fire-rated construction on ground and 2nd floors.	Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. OR Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows: Maximum height of 2.45m (8 ft) and maximum area of 23m² (250 ft²) OR If sprinkler protected: maximum height of 3.66m (12 ft) and maximum area of 93m² (1000 ft²) AND Separate areas of unenclosed combustible storage by a minimum clear distance of 3m (10ft).	Within 3 months
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F-6	Fire Rated Construction	Exit stairs are not separated from work areas and other spaces on each floor by fire-rated construction due to unprotected openings and penetrations in all exit stairs on all floors.	Separate the exit stairs from from work areas and other building spaces on all floor levels by minimum 1-hr fire-rated construction. Provide minimum 1-hr fire rated doors and seal all unprotected openings and penetrations to maintain the fire separation.	Within 3 months
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Ensure that all fire doors are self-closing and positive latching, and are provided with fire exit (panic) hardware where serving production floors or assembly occupancies. If fire doors are required to be held open for functional reasons, provide automatic-closing devices tied to the fire alarm system.





F-7	Egress	Building did not have stair designation signs, and occupant load signs at required locations on all floors.	Provide stair designation signs, and occupant load signs at required locations.	Immediately
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F-8	Egress	Egress doors and gates with locking features are provided at building exits, exit stairs, along egress routes, and exit discharge on all floors. All gates were open and unlocked during inspection.	Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with ACCORD standard 6.8.2.	Immediately
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F-9	Egress	Storage was located in the egress path on ground and 2nd floors.	Keep egress paths and stairs clear of storage.	Immediately
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F-10	Egress	Storage was located in the exit stair in the northwest exit stair on the 2nd floor and southwest exit stair on ground floor.	Remove all storage from exit stairs.	Immediately
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F-11	Egress	Fire drills are not performed as required by ACCORD standard.	Fire drills shall be conducted on a quarterly basis in accordance with ACCORD standard 13.2.	Immediately
F-12	Egress	Collapsible gates and sliding doors are provided at building exits, exit stairs, along egress routes, and exit discharge on all floors.	Replace all gates and sliding doors along the means of egress with side-hinged, swinging egress doors in accordance with ACCORD standard 6.8.1.	Within 1 month



F-13	Egress	Handrails are not provided on both sides of the exit stair on all floors	Provide handrails on both sides of the exit stair. New handrails shall have a minimum height of 865 mm (34 in.) and a maximum height of 965 mm (38 in.) as measured from the leading edge of the tread. Intermediate handrails shall be provided when the stair width exceeds 2.2 m (87 in.) .	Within 3 months
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F-14	Egress	The width of egress aisles is less than 36-in on 2nd floor.	Provide minimum aisle widths of 36-in.	Within 3 months
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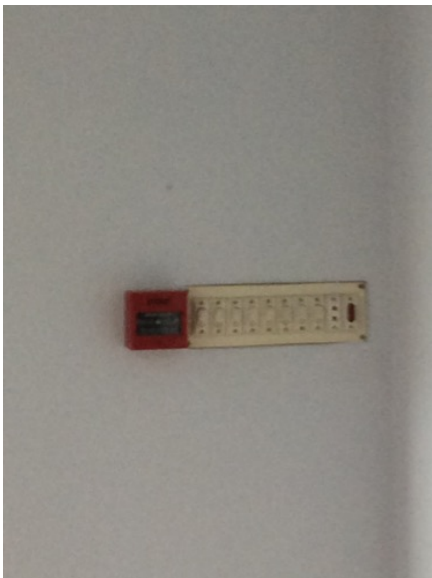
F-15	Egress	Egress door serving does not swing in the direction of egress travel in the store room on ground floor and accounts room on 1st floor.	Modify the egress door to swing in the direction of egress travel.	Within 3 months
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F-16	Egress	Occupiable roof is not provided with an adequate parapet or guard rail.	All occupiable roofs shall be provided with parapets or guards with a minimum height of 1067 mm (42 in.)	Within 3 months
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F-17	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 automatic fire alarm system in accordance with NFPA 72 and ACCORD standards.	Design within 4 months, install within 9 months
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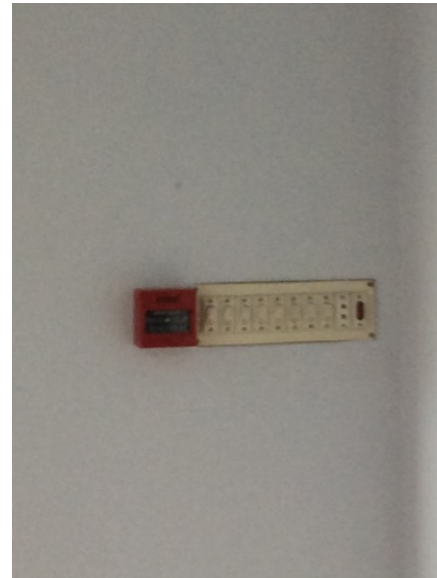


F-18	Fire Protection	The required no smoking signs are not present in the factory.	Smoking is prohibited in any garment factory building or separate storage building. Signs shall be posted in Bengali and English at all building entrances. If the factory creates a designated smoking area outside the building, information of these areas will be posted on the signs.	Within 1 months
F-19	Fire Protection	Inspection, testing and maintenance for the fire alarm system is 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 and ACCORD standards.	Within 3 months
F-20	Fire Protection	Inspection, testing and maintenance of portable fire extinguishers is not in accordance with NFPA 10.	Inspect, test and maintain the portable fire extinguishers and keep written records on-site, in accordance with NFPA 10 and ACCORD standards.	Within 3 months

F-21	Fire Protection	Fire department connection is not provided.	Provide fire department connection in accordance with ACCORD standard 5.5.4.	Within 3 months
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, tied into the fire alarm system, in accordance with NFPA 72 and ACCORD standards.	Within 9 months



F-23	Egress Lighting	Manual on-off switch is provided for emergency lighting units on all floors.	Remove manual on/off switches from emergency lighting units to prevent them from being switched off.	Within 1 month
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F-24	Egress Lighting	Inspection, testing and maintenance for the emergency lighting system was not in accordance with ACCORD standards.	Inspect, test and maintain the emergency lighting system in the accordance with ACCORD standards. Keep written records on-site.	Within 3 months
F-25	Egress Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress route on all floors.	Test the emergency lighting system on each floor and provide additional emergency fixtures to supply adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and along exit discharge paths and a minimum 2.5 lux along exit access aisles.	Within 3 months