

FIRE SAFETY INSPECTION REPORT

SHAFI KNIT LTD

ACCORD ID: 23395

Natun Para, Baipail (Beside DEPZ-2), Ashulia, Savar, Dhaka. (23.945423,90.2777701)

Other Factories: None



Inspected By: Safawan Abyaz & Pantha Pallob Das

Date: 12 May, 2019

Fire Safety Inspection Report

Factory Name: Shafi Knit Ltd

Introduction:

Shafi Knit Ltd complex was surveyed for fire safety on 12/05/2019 by The Accord Inspection Team. 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, The Accord 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

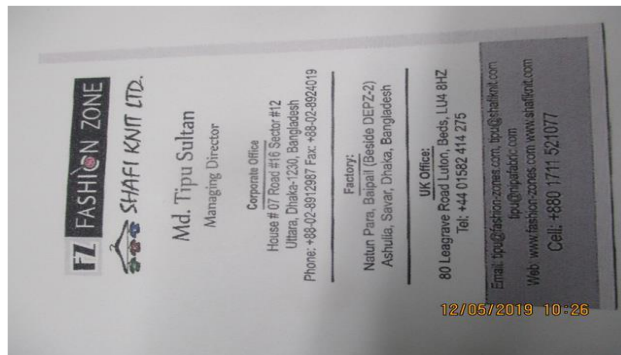
Factory Building name(s): There are total 3 buildings in the premises, The buildings are as: i. Main production building (4 storied RCC building), ii. Shed-1 (Single storied shed) , ii. Shed-2 (Single storied utility shed).

Factory Address: Natun Para, Baipail (Beside DEPZ-2), Ashulia, Savar, Dhaka.

Points of contact:

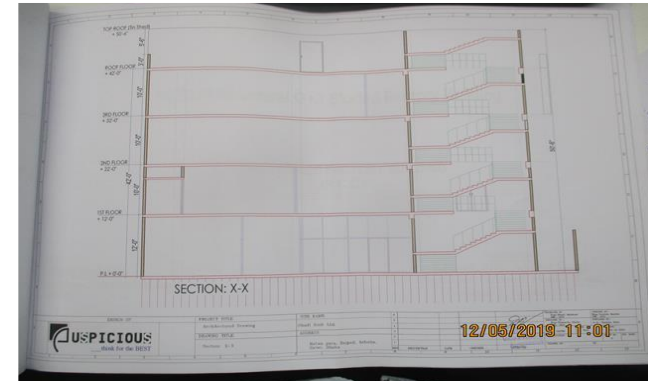
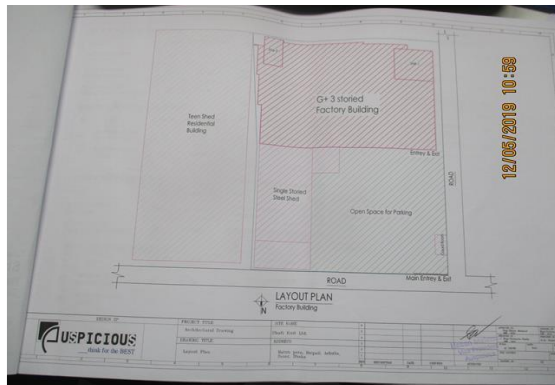
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01711-521077, tipu@shafiknit.com

Md. Shhab Uddin
Manager-HR, Admin & Compliance
01737-635152, shafiknithr@gmail.com



General Building Information- Main Building (4 storied RCC building with shed on roof).

Number of Stories Below / Above Grade	0/5
Highest Occupied Floor Level / Height	42 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 (32 inch)
Occupancy Classifications	Industrial, Storage, Office.
Floor Plans Available	Yes



Date Of Construction	1st phase (Ground to 2nd floor: Jan-2009 to June 2010, operation Dec 2010). 2nd phase (3rd floor & roof: Jul 2015-March 2016, operation June-2016). Shed-1&2 same as 1st phase.
Major Renovations / Additions	No
Comments	N/A
Other Tenants In Building	No
Floors Occupied By Factory	All

Occupant load by floor

Floor	Use	Occupant Load	Comments
Ground floor	Cutting, Accessories store, Fabric warehouse, Admin office.	50	
1st floor	Finishing, Inspection room, Spot removing room & boiler room.	120	
2nd floor	Sewing & maintenance	200	
3rd floor	Sewing & production office	200	
Roof	Prayer room	70 (capacity)	
Shed-1	Sample, medical, dining, day-care center and storage.	15	
Shed-2	Generator & substation.		



Construction Features:

Non-Combustible Construction	Yes
Fire-Resistive Construction	Main building fire resistive except roof.

Building Exposures:

North	Road
South	Residential Area
East	Residential Area
West	Residential Area

Vertical Openings:

Stairs Enclosed in Fire-Rated Construction?	No	
Unsealed Penetrations in Stairs	No	
Unprotected Openings From Stairs	Yes	
Shafts Enclosed in Fire-Rated Construction	No	
Floors with Openings/Penetrations	Yes	Elec. Cable



Other Vertical Openings	No	
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Egress Features:

The main building has total 2 exits on each floor except ground floor where 3 exits are available. Exit capacity meets the requirement. Travel distance, common path of travel found as per standard. Non-compliant gates as collapsible door with non-compliant locking features available in each exit door.

Floor	Occupant load	Nos of. Exit	Exit Capacity
Ground	50	3	1000
1st floor	120	2	330
2nd floor	200	2	330
3rd floor	200	2	330
4th floor	70 (capacity)	2	330
Roof	15	2	330
Shed-1	0	2	500

General:



Number of Exits Per Floor is Compliant (Accord 6.6)	Yes	
Capacity of Exits Per Floor Is Compliant (Accord 6.5.3)	No	
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	Roof- west side
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)	Yes	
Exit Stairs Free of Storage and Obstructions (Accord 6.3.8, 6.3.9)	No	
Electrical Panels Located Outside of Exit Stairs	No	



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

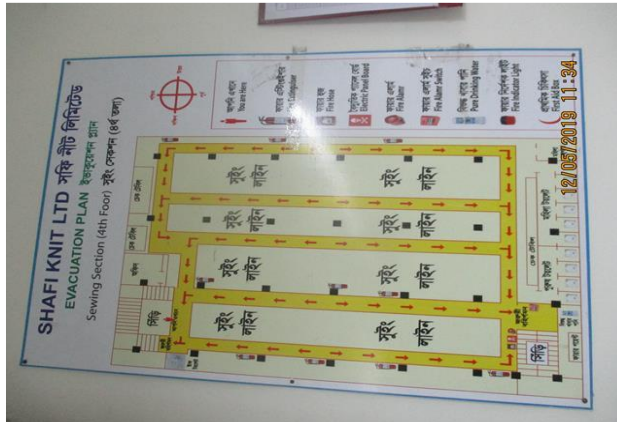
Means of Egress Free of Storage & Obstructions (Accord 6.3.8, 6.3.9)	No	
Means of Egress of Adequate Width (Accord 6.5)	Yes	
Travel Distances, CPT, DE's Within Limits (Accord 6.13)	Yes	
Exit Access Corridors Provided with Proper Fire Protection / Separation (Accord 6.3.1.1)	N/A	
Daycare Within Limits (Accord 3.4.2.1.1)	Yes	
Egress Court Provided With Adequate Fire Rated Separation (Accord 6.17.2)	No	
Utility / Storage Rooms Adequately Separated from Exit Enclosures (Accord 6.14.3)	Yes	

Emergency Planning :

Emergency Evacuation Plans Provided (Accord 13.3)	Yes	
Fire Drills Conducted & Records Maintained (Accord 13.2)	Yes	



Smoking Prohibited (Accord 13.5)	Yes	
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Fire Protection Features:

Fire Alarm & Detection System

Current System Overview: Single station smoke alarms were located in various places throughout the factory. Very few smoke alarms were provided in the factory, and they were not installed correctly. These smoke alarms were not tied into the fire alarm system. In the event they detected smoke, they would provide a local alert sound. No records or assertions of regular testing or maintenance of the fire detection system were provided.

Type of System	Manual	
Fire Panel Location	Not Available	



Visible Notification Per NFPA 72	Not Available	
Audible Notification Per NFPA 72	Yes	
Alarm Annunciation	No	
ITM per NFPA 72	No	
Functional Test Conducted	No	



Standpipe System

Current System Overview: 25 mm hose system installed in the buildings.

Standpipe System Required	Yes	
Type of System Installed	25 mm hose reel	



Hose Connection Locations	Inside of floors	
ITM Per NFPA 25	No	
Comments		



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Sprinkler System

Current System Overview: Not mandatory as low rise building.

Sprinkler Protection Required	No	
Type of System Installed	25 mm hose reel	
Location/Coverage	In the floor.	



ITM Per NFPA 25	No	
Comments	Sprinkler system is not mandatory.	

Fire Water Supply

Current System Overview: The standpipe system was reportedly supplied by gravity from a roof tank having a reported total capacity of 8, 500L. 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	
Fire Pump Provided	No	
Fire Department Inlet & Outlet Connections Provided (Accord 5.5.4)	No	
Fire Pump Adequate (Accord 5.5.1)	No	
Fire Pump Room Provided With Adequate Fire Rated Separation (NFPA 20)	No	
Fire Pump ITM Per NFPA 25	No	



Portable Fire Extinguishers

Current System Overview: Portable fire extinguishers, consisting of a mix of CO2 and ABC extinguishers were provided throughout the building. Inspection tags show recent and up-to-date inspections. Records or assertions of regular testing or maintenance of the portable fire extinguishers were provided.

Types Provided	ABC, CO2	
Adequate Number/Spacing	No	
ITM Per NFPA 10	No	



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Manual Fire Fighting Equipment

Current System Overview: Manual firefighting equipment's staged near the floor exits & main building entrances. Types of manual firefighting equipment provided included: buckets, escape hoods, bolt/lock cutters, shovels, stretchers and personal protection equipment.



Types Provided	Extinguishers, buckets, escape hoods, bolt/lock cutters, shovels, stretchers and personal protection equipment.	
Location of Equipment	Inside the floor and near the exit stair.	



Other Features

Emergency Lighting & Exit Signs

Overview: Emergency lights & exit signs have not been sufficiently provided in the production floor and above exits. There were few self battery emergency light located inside the production floor but it was not sufficient . They are keeping records or assertions of regular testing or maintenance of the emergency lighting system & exit signage units as per standard.

Exits and Exit Access Properly Marked with Exit Signage	Yes	



Emergency Power	No	
Adequate Emergency Lighting for Exits & Exit Access	No	
Adequate Inspection / Testing (Accord 10.12)	No	



Elevator

Overview: No elevator in the building.

Elevator Opens Into Exit Enclosure	No	
Elevator Shaft/Doors Fire-Rated	No	
Automatic Recall	N/A	

Generator



Overview: There are total two generators set up in shed-2.

Location(s)	Shed-2	
Fire Rated Separation	No	With transformer
Generator Area Free of Additional Fuels	Yes	



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Boiler & Furnace Equipment

Overview: There are total two electric boilers on 1st floor of the main building.

Location(s)	1st floor	
Fire Rated Separation (Accord 3.4.2.1.5)	No	





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Transformer/Substation

Overview: Transformer is located inside of shed-2 beside generators.

Location(s)	Shed-2	
Fire Rated Separation (Accord 3.4.2.1.5)	No	Not separated with generators.





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Compressor

Overview: There were no compressor in the factory.

Storage Areas

Overview: Wastage store & fabric store located in shed-1, bonded warehouse and accessories store located on the ground floor of the main building.

Fire Rated Separation (Accord 3.4.2.1.5)	No	
Open to Factory Floors?	Yes	
Open to Exit Discharge?	Yes	





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:

Sl No.	Category	Findings	Required Action	Remediation Time Frame
1	Fire Rated Construction	The boiler, generator and substation rooms are not fire separated with fire rated construction barrier or assemblies.	<p>Separate the boiler and compressor rooms by a minimum 1-hr fire-rated construction with 0.75-hr fire rated opening protective assemblies like fire rated door.</p> <p>Similarly separate generator and substation room by a minimum 2-hr fire rated construction with 1.5-hr fire rated opening protective assemblies like fire rated door. Provide proper ventilation and consult a qualified engineer for overall solution.</p> <p>When located to the exterior of a building by at least 3m (10 ft.) distance from surroundings then fire rated construction barrier is not mandatory.</p>	Within 3 months
				



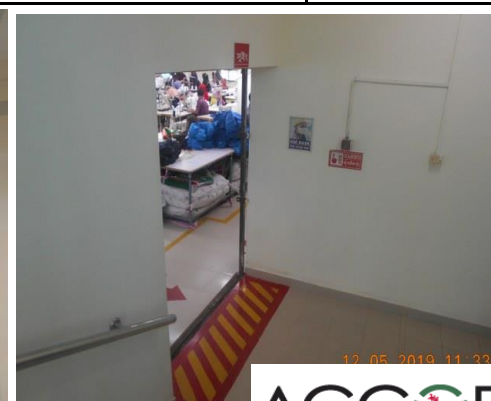
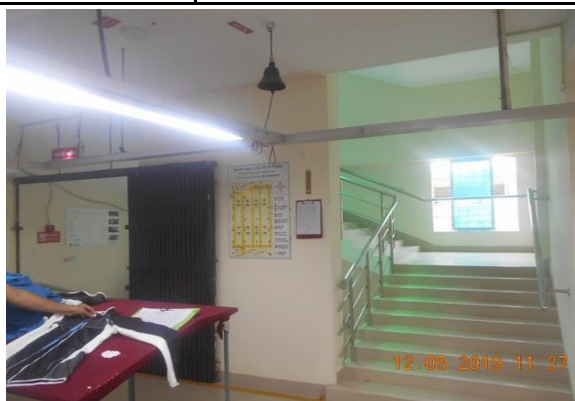
2	Fire Rated Construction	<p>Rooms used for combustible storage are not separated by fire rated construction.</p> <p>Location: Fabric Store, Wastage Store (Shed 1); Ground floor Bonded Warehouses</p>	<p>Separate the dedicated storage rooms by minimum 1-hr fire-rated construction. Provide 0.75 hr. fire rated door and seal all penetrations and openings by 1 hr. fire rated fire rated barrier construction.</p>	Within 3 months
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3	Fire Rated Construction	<p>Areas used for combustible storage open to the factory are not separated by fire rated construction.</p> <p>Location: 1st floor</p>	<p>Separate the dedicated storage rooms by minimum 1-hr fire-rated construction. Provide 0.75 hr. fire rated door and seal all penetrations and openings by 1 hr. fire rated fire rated barrier construction.</p> <p>Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows: - Maximum height of 2.45m (8ft.) and maximum area of 23m² (250 ft²) - If sprinkler protected: maximum height of 3.66m (12ft.) and maximum area of 93m² (305ft²). Separate areas of unenclosed combustible storage by a minimum clear distance of 3m (10ft.).</p>	Within 3 months
				



4	Fire Rated Construction	<p>The exit stairs are not separated from work areas and other spaces on each floor by fire rated construction. [Front Stair, Top floor (Rear Stair): Not enclosed, Unprotected openings]</p>	<p>The exit stair enclosure shall be provided with a minimum 1-hr fire resistance rating for buildings with 3 or fewer stories and a minimum of 2- hr. fire resistance rating for buildings 4 or more stories. Provide 0.75 hr. fire rated door and seal all penetrations and openings by 1 hr. fire rated fire rated barrier construction for building with 3 or fewer stories. Provide 1.5 hr. fire rated door and seal all penetrations and openings by 2 hr. fire rated fire rated barrier construction for building with 4 or more stories.</p> <p>Provide a fire-resistive rated assembly between the exterior exit stairs and the building up to 10 ft. beyond the end of the stair to achieve the required separation. The rated assembly shall be approved and/or designed by a qualified fire protection engineer.</p> <p>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.</p>	Within 3 months
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5	Fire Rated Construction	<p>Unsealed penetrations and openings are located in the fire-rated floor/ceiling assemblies.</p> <p>Location: Electrical riser on every floor.</p>	<p>Seal all penetrations and openings in floor/ceiling assemblies to maintain the fire separation.</p>	Within 1 months
<div style="display: flex; justify-content: space-around;">   </div>				
6	Egress	<p>Collapsible gates/sliding gates are provided at building exits.</p> <p>Location: Exit stairs, Building exits</p>	<p>Replace all collapsible/sliding/shutter type doors & gates by the side-hinged swinging type doors.</p> <p>If locks are required for security reasons, utilize special door locking features complying with NFPA 101.</p>	Immediate






7	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 doors and gates were open and unlocked during inspection.	<ol style="list-style-type: none"> 1. Remove all non compliant locking features from egress doors. 2. If locks are required for security reasons, utilize special door locking features complying with NFPA 101. 3. Doors may be locked where the latch and lock are disengaged with one motion where the occupant load does not exceed 49 persons. 4. Doors may be provided with locking hardware from the ingress side provided that a panic bar is installed on any door with an occupant load exceeding 49 persons. 	Immediate
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8	Egress	The width of egress aisles is less than 36 inch. Location: 1st & 2nd floor	Provide minimum unobstructed aisle width of 36-inch.	Within 3 months
				



9	Egress	Storage/service equipment/electrical panel was located in the exit stair and egress path on every floors.	Remove all storage and other appliances from exit stairs and egress paths.	Immediate
				
10	Egress	Parapets or guards are provided in occupied roof which is less than 1067mm (42 inch.).	Provide parapets or guards with a minimum height of 1067mm (42 inch.)..	Within 3 months




				
11	Egress	Building did not have floor designation, stair designation and occupant load signage as per ACCORD Standard.	Provide floor designation, stair designation and occupant load signage at required locations as per ACCORD Standard.	Within 1 month



12	Egress Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes and at exit stairs 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
13	Egress Lighting	Exit sign was missing at an exit door at ground floor.	Lighted exit signs shall be placed at entrance to an exit. Additional exit signs shall be placed throughout the facility anywhere the continuation of the egress is not obvious. Lighted exit signs shall be provided with either battery backup or uninterruptable power supply systems and shall be continuously illuminated.	Within 1 month



14	Egress Lighting	Inspection, testing, and maintenance for the emergency lighting system was not in accordance with The ACCORD standard.	Inspect, test and maintain the emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 1 month
15	Fire Detection and Alarm System	The fire detection and alarm system is antiquated, not a listed system and does not provide alarm and notification features consistent with acceptable standards.	<p>Replace the fire detection and alarm system with a new, listed addressable fire detection & alarm system in accordance with NFPA 72.</p> <p>Design shall be submitted to ACCORD Chief Safety Inspector for review prior to installation of the system.</p>	Design within 4 months and installation within 9 months.
				



16	Fire Detection and Alarm System (ITM).	Inspection, testing and maintenance (ITM) for the fire detection and alarm system is not in accordance with NFPA 72.	Inspect, test and maintain the fire detection and alarm system and keep written records on-site, in accordance with NFPA 72.	Within 03 months (After completing installation)
17	Fire Protection System	The highest occupied floor of existing building is more than 10 m (33 ft.) above/below grade but standpipe system is not installed in the building.	<p>Design & install a new class III standpipe system & fire department (Siamese) connection in accordance with NFPA 14.</p> <p>The standpipe system shall be connected to a dedicated fire pump meeting minimum hydraulic demands of NFPA 14 & Accord standard at the required points. Installation of the fire pump shall be as per NFPA 20. Submit the design to Accord for review and approval before installation.</p> <p>Upon approval & installation the owner shall contact the Accord prior to conducting the final acceptance testing of the standpipe system installation.</p>	Design within 4 months and installation within 9 months



18	Fire Protection System (ITM)	Inspection, testing and maintenance (ITM) of the standpipe system is not in accordance with NFPA 25.	Inspect, test and maintain the standpipe system and keep written records on-side, in accordance with NFPA 25.	Within 03 months (After completing installation)
19	Fire Protection System (ITM)	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 onsite, in accordance with NFPA 10.	Within 1 month

