

INITIAL FIRE SAFETY INSPECTION REPORT

Midland Knitwear Ltd. (Extension)

RSC ID: 24760

Ramarbag, Fatullah, Narayanganj.

Geographical Coordinates of factory building: 23.6438, 90.4894

Other Factories: Midland Knitwear Ltd., ID: 9511, Liberty Knitwear Ltd. (Extension), ID: 24761 , Liberty Knitwear Ltd., ID: 9501



Inspected By: Yusuf Ahmed & Muntasir Ahmed Nasif

Date: 20-December-2023

Fire Safety Inspection Report

Midland Knitwear Ltd. (Extension)

Introduction:

Midland Knitwear Ltd. (Extension) Complex was surveyed for fire safety on **20 December 2023** by the RSC 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 RSC. 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 RSC 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): The premises have six (06) structures under this ID.

1. Extension Building-2: 8-storied RCC Building.
2. Admin Building: 6-Storied RCC Building.
3. Dyeing & Finishing Shed-1: Single storied shed with mezzanine.
4. Dyeing & Finishing Shed-2: Single storied shed.
5. Sample Dyeing and Maintainance Shed-3: Single storied shed with Mezzanine.
6. Dyeing and Finishing (Office Building): 3-storied steel structure- Roof is shed.

Findings & Recommendations :

Table 1 summarize the fire safety non-compliant issues identified during the inspection. Recommendations have been provided to address each issue with specific remediation timeline. 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 RSC for review.

Table-1:

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-1	Fire Rated Construction	The exit stairs are not separated from work areas, or other spaces on each floor by fire-rated construction due to non-functioning fire doors. Also exit stair-1 is not separated from the office rooms on ground floor. Location: Admin Building.	Provide minimum 2-hr fire rated separation in exit enclosures with minimum 1.5-hr fire rated doors and seal all unprotected openings and penetration to separate the exit stairs from work areas and other building spaces on all floor level. 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.	Within 3 months
				

F-2	Means of Egress	A single means of egress is provided from the Dyeing Office Building where the building is 3-storied. Location: Dyeing Office Building	Provide additional means of egress from the building. The number of means of egress from any floor, story or portion thereof shall not be less than 2 except where a single exit is permitted by 6.6.2, a single means of egress is permitted by 6.6.5 or where a greater number is required by 6.6.3 of RSC Technical Guidelines Standard V1.0. Also ensure arrangement of exits as per 6.6.6 of RSC Technical Guidelines Standard V1.0.	Within 3 months
 				
F-3	Means of Egress	Building did not have stair designation, floor designation and occupant load signs at the required locations on all floors. Location: Admin Building and Extension Building-2.	Provide stair designation, floor designation, & occupant load sign at the required locations.	Within 1 month

F-4	Fire Rated Construction	The exit stairs are not separated from work areas, or other spaces on each floor by fire-rated construction due to non-functional fire doors. Fire doors were found open by external objects. Location: Extension Building-2	Provide minimum 2-hr fire rated separation in exit enclosures with minimum 1.5-hr fire rated doors and seal all unprotected openings and penetration to separate the exit stairs from work areas and other building spaces on all floor level. 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.	Within 3 months
 				
F-5	Fire Rated Construction	Storage room discharges directly into exit stair enclosure without vestibules. Location: Chemical store on the 2nd floor of the Admin Building. Chemical Bonded Warehouse on the 7th floor of the Extension Building-2.	Openings from the exit enclosure to the storage room, shall be provided with a vestibule with fire-rated construction and openings. Provide a 2 hr. fire-rated door on the exit stair side and a 2 hr. fire-rated door on the store side. Ensure that the fire rating of the vestibule construction matches that of the exit stair enclosure. The minimum width for vestibules shall not be less than 1.1m and length 1.8m.	Within 3 months



F-6	Fire Rated Construction	Unsealed penetrations and openings are located in the fire rated floor/ceiling assemblies. Location(s): Electrical riser penetration on Extension Building-2	Provide a minimum 2-hr fire-rated shaft to separate the utility risers from each floor level or seal all penetrations and openings in floors/ceiling assemblies by 3-hr fire-rated listed/certified materials. The installation of such fire-rated materials shall be following certified design.	Within 3 months
				

F-7	Fire Rated Construction	Areas used for combustible storage are not separated by fire-rated construction. Location: 5th and 6th floor of the Extension Building-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.	Within 3 months
-----	-------------------------	--	--	-----------------



F-8	Fire Rated Construction	The exit stairs do not directly discharge to the exterior of the building. Location: The only exit stair of the Dyeing Office Building discharges inside Shed-2. In the Extension Building-2, the stair-3 exit corridor discharges inside WTP section on the ground floor.	Modify the exit arrangement to discharge directly outside of the building. The exit discharge shall be at grade or provide direct access to grade. Exit discharge shall not reenter a building. Or, Provide 2-hr fire rated exit passageway terminating to exit discharge. Seal/protect all unprotected openings to maintain the fire separation. Exit passageways shall be considered an extension of the stairs and shall not be used for any other purpose. A maximum of 50 percent of the number and capacity of the exit enclosures can discharge through areas on the level of exit discharge where all of the following are met: (1) Automatic sprinkler protection is provided throughout the level of exit discharge or portion of the level of discharge where separated from non sprinklered portions of the floor by fire barriers with the same fire resistance rating as the exit enclosure. (2) The interior discharge is not through a storage or hazardous occupancy. (3) The entire area of the level of exit discharge is separated from areas below by construction having a fire resistance rating not less than that required for the exit enclosure. (4) The way to the exterior shall be free and unobstructed and shall be readily visible and identifiable from the point of discharge of the interior exit.	Within 3 Months
-----	-------------------------	---	--	-----------------



F-9	Means of egress	Parapets or guards are provided in occupied roof which is less than 1067mm (42 inch.). Locaion: Extension Building-2 and Admin Building.	Provide parapets or guards with a minimum height of 1067mm (42 inch.).	Within 1 month
-----	-----------------	--	--	----------------



F-10	Fire Rated Construction	Elevator shafts are directly open into the exit enclosure which is a violation of RSC Technical Guidelines (Standard)-6.14.3. Location: Stair-1 and Stair-2 of Extension Building-2.	An exit stairway shall not be built around a lift shaft unless both are located in a smoke-proof enclosure and made of a material with a fire-resistance rating required for the type of construction of a smoke-proof enclosure. (As per 6.14.3 of RSC Technical Guidelines (Standard) V1.0) Ensure the lift shaft is enclosed by a minimum 2-hour fire-rated wall with a minimum 1.5-hr fire-rated protective openings. Recommended to follow RSC "SUPPLEMENTARY PAPER ON REMEDIATION GUIDANCE ELEVATOR OR LIFT SHAFT OPENING IN EXIT ENCLOSURES" for remediation.	Within 3 months
 				

F-11	Fire Rated Construction	Rooms used for combustible storage are not separated by fire-rated construction from production areas. Location: In the Extension Building-2, the 3rd floor knitting section is not separated from storage room of the old building due to unprotected window openings. On ground floor storage room near stair-3 is not separated from the electrical DB room.	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 with 1 hr. fire-rated barrier construction.	Within 3 months
  				
F-12	Fire Rated Construction	Unsealed penetrations and openings are located in the exit stair enclosures. Location: Stair-2 of the Admin Building.	Seal all penetrations and openings in exit stair enclosure walls to maintain the 2-hr. fire separations. If penetration is sealed by listed/ 3rd party certified firestop materials, the installation shall be as per the listed design.	Within 3 months

 				
F-13	Fire Rated Construction	The main structural element of the Dyeing and Finishing Office Building is steel which is non-rated & the steel members were found in exposed conditions without any fire protection. Location: Dyeing and Finishing Office Building.	For new construction, the building shall be Group I or Group II construction as required in BNBC 2020 Part 3 Table 3.2.4. So, provide required rating for the structural elements of the building following BNBC 2020-Table 3.2.4, 3.1.7 and 3.3.1 Factory shall ensure that, all the design, datasheet, certificate, and the design-philosophy has been reviewed from the RSC prior to install the structural fire protection system.	Within 6 months
 				

F-14	Fire Rated Construction	Room used for chemical storage (J2 Occupancy) is not separated by fire rated construction. Location: Ground floor and 2nd floor of the Admin Building. 7th floor of the Extension Building-2.	Separate the chemical storage with 4-hr fire rated construction. Ensure mixed occupancy separation as per Table 3.2.1, Part III of BNBC 2006 (for Admin Building) and BNBC 2020 (for Extension Building-2). The buildings or parts thereof classified as Occupancy J shall be limited to the type of construction set forth in Table 3.2.4 and shall comply with the provisions of Sec 1.8 and 2.4.2 of BNBC 2006 and BNBC 2020.	Within 3 months
				
F-15	Means of Egress	Intermediate handrail was not provided in stair-2 of the Extension Building-2 where stair width exceeded 87 inches. Location: Stair-2 of the Extension Building-2.	Intermediate handrails shall be provided when the stair width exceeds 2.2 m (87 in. 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.	Within 1 month



F-16	Means of Egress	Only a single exit is provided from the chemical store where travel distance exceeded 25 feet. Location: Ground floor of the Admin Building.	Provide additional exit from the Chemical Store. The number of means of egress from any floor, story or portion thereof shall not be less than 2 except where a single exit is permitted by 6.6.2, a single means of egress is permitted by 6.6.5 or where a greater number is required by 6.6.3 of RSC Technical Guidelines Standard V1.0. Also ensure arrangement of exits as per 6.6.6 of RSC Technical Guidelines Standard V1.0.	Within 3 months
------	-----------------	---	---	-----------------



F-17	Fire Alarm & Detection system	Automatic fire alarm and detection system is being installed which requires detailed review to confirm compliance with NFPA 72 and The RSC Technical Guidelines (Standard). Location: All structures under this ID.	Submit the fire alarm system design to RSC for review. Once the design is reviewed, install and modify the fire detection and alarm system throughout the buildings in accordance with review comment, RSC Technical Guidelines (Standard) and NFPA 72. After installation the owner shall conduct internal testing and commissioning and then contact the RSC for witness of final acceptance testing.	Design Review within 2 months and installation/modification within 4 months
				
F-18	Fire Alarm & Detection system (ITM of FADS)	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 Table-14.3.1 of NFPA 72.	Within 1 month (after installation)

F-19	Fire Protection System (Standpipe)	A Standpipe system was found to be installed in the factory, which is required to be reviewed and verified. Location: Admin Building	Submit the standpipe system drawing to RSC for review. Once reviewed, install or modify the standpipe system throughout the building in accordance with RSC standard and NFPA 14,20,22 and 24. Upon approval & modification (if required) the factory shall inform RSC to conduct final testing and commissioning verification of the system for final acceptance.	Design Review within 2 months and installation/modification within 4 months
------	------------------------------------	---	---	--



F-20	Fire Protection System(ITM of fire pump)	Inspection, testing, and maintenance for the fire pump is not in accordance with NFPA 25.	Inspect, test and maintain the fire pump in accordance with NFPA 25 and keep written records on-site.	Within 1 Month (after installation/modification)
F-21	Fire Protection System(ITM of Standpipe)	Inspection, testing, and maintenance for the Standpipe system is not in accordance with NFPA 25.	Inspect, test and maintain the standpipe system in accordance with NFPA 25 and keep written records on-site.	Within 1 Month (after installation/modification)

F-22	ITM of Fire Extinguishers	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
F-23	Egress Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes . Location: All buildings under this ID.	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 1 month
F-24	Egress Lighting ITM	Inspection, testing, and maintenance for the emergency lighting system were not in accordance with The RSC Technical Guidelines (Standard).	Inspect, test and maintain the emergency lighting system in the accordance with The RSC Technical Guidelines (Standard) and keep written records on-site.	Within 1 month
F-25	Fire Protection System (Sprinkler)	A Sprinkler System was found installed in the factory, which is required to be reviewed and verified. Location: Extension Building-2	Submit the sprinkler system drawing to RSC for review. Once reviewed, install or modify the sprinkler system throughout the building in accordance with RSC standard and NFPA 13,20,22 and 24. Upon approval & modification (if required) the factory shall inform RSC to conduct final testing and commissioning verification of the system for final acceptance.	Design Review within 2 months and installation/modification within 4 months

				
F-26	Fire Protection System(ITM of Sprinkler)	Inspection, testing, and maintenance for the Sprinkler system is not in accordance with NFPA 25.	Inspect, test and maintain the Sprinkler system in accordance with NFPA 25 and keep written records on-site.	Within 1 Month (after installation/ modification)
F-27	Fire Rated Construction	Dining (13, more than 300) occupancy was observed with G2 occupancy on 7th floor which is not permitted as per BNBC 2020 table 3.2.1 Location: 7th Floor of the Extension Building-2	Relocate the dining from the 7th floor. Or, Reduce the dining capacity to less than 300 and provide 3-hr fire separation between the dining and the production area. In all cases ensure mixed occupancy separation as per Table 3.2.1, Part III of BNBC 2020	Within 3 months

