# INITIAL FIRE SAFETY INSPECTION REPORT

## Liberty Knitwear Ltd. Unit-2 (Extension 2)

### RSC ID: 24571

**G-88/1, Chandra, Palli Biddyut, Kaliakoir, Gazipur.**

24.0349922, 90.2451595

**Other Factories in this premises:**

**Liberty Knitwear Ltd. Unit-2 (ID-11570)**

**Liberty Knitwear Ltd. Unit-2 (Extension) (ID- 23053)**


RSC | RMG SUSTAINABILITY COUNCIL

**Inspected By: Nirmal Chandra Sinha & Md. Khalaquzzaman**

**Date: 10 July 2023**

**Introduction:**
**RSC ID: 24571**

**Liberty Knitwear Ltd. Unit-2 (Extension 2)** complex was surveyed for fire safety on **10-July-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.

Table 1-3 summarizes 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 approval.

**Liberty Knitwear Ltd. Unit-2 (Extension 2)**

| Table Number | Total Findings | Building Number/ Name | Finding Range | Remarks |
|---|---|---|---|---|
| 1 | 14 | Yarn Building | F-1 to F-14 | |
| 2 | 14 | West Tower Building | F-15 to F-28 | |
| 3 | 2 | jhut Boiler Shed Building | F-29 to F-30 | |

**Table-1: Findings & Recommendations of Yarn Building**

| S/N | Category | Findings | Required Action | Remediation Time Frame |
|---|---|---|---|---|
| F-1 | Fire Rated Construction | The exit stairs are not separated from work areas and other spaces on each floor by fire-rated construction. During inspection it was observed that the factory has installed fire doors at exit. | Submit installed fire rated door documents to the RSC for review and separate the exit stairs from work areas and other building spaces on all floor levels by minimum 2-hr fire rated construction. Provide minimum 1.5-hr fire rated doors for buildings that are 4 or more stories. Seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation as per RSC Technical Guidelines (Standard) 6.3.1.3. The clearance under the bottom of a fire door shall be a maximum of 3⁄4 in. (19 mm). 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 or assembly occupancies.<br><br>If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system. Once fire doors are installed, every door in a stair enclosure serving more than 5 stories shall be provided with re-entry unless it meets RSC Technical Guidelines (Standard) 6.8.3.1. | Within 3 months |



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| F- 2 | Fire Rated Construction | Elevator shafts provided in exit stair enclosure. Location: North-West Exit Stair (Stair-1). | Modify the elevator and stair enclosure arrangement in a way to satisfy RSC Technical Guidelines (Standard) 6.14.3. Elevator shall not open into an exit enclosure. Elevator landing door shall be of 1.5 hr. fire rated. | Within 3 months |

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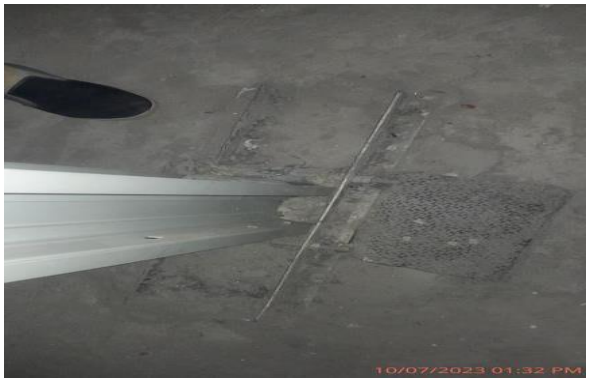
| F- 3 | Fire Rated Construction | Penetrations through floor/ceiling assemblies are found unsealed.<br>Location(s): Electrical BBT riser. | Seal all penetrations and openings in floor/ceiling assemblies to maintain the fire separation minimum 3-hr by fire rated construction. The used sealer shall be 3rd party certified and installation shall be as per manufacturer's guideline. | Within 3 months |
|   | | | | |

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| F- 4 | Fire Rated Construction | Storage rooms discharges directly into the South-East and North-West exit stair enclosures throughout the building except 1st floor. | Openings from exit enclosure to storage room, generator and transformer spaces shall be provided with a vestibule with fire rated construction and openings as per Technical Guidelines (Standard) section 6.14.3. Provide a 1.5 hr. fire rated door on the exit stair side and a 1-hr. fire rated door on store, generator, sub-station room side. Ensure that the fire rating of the vestibule construction matches that of the exit stair enclosure. | Within 3 months |
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| F- 5 | Egress | Stair designation signs at floor entrances and occupant load signs at required exit stair entrances are not accordance with RSC Technical Guidelines (Standard). | Update stair designation signs, occupant load signs and emergency evacuation plans at required locations. | Within 1 month |
| F- 6 | Egress Lighting | Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. | 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 |
| F- 7 | Egress Lighting | Manual on-off switch is provided for emergency lighting / exit sign units on several floors. | Remove manual on/off switches from emergency lighting / exit signage units to prevent them from being switched off. | Within 1 month |
| F- 8 | Egress Lighting | Inspection, testing, and maintenance for the emergency lighting system was not in accordance with The RSC Technical Guidelines (Standard). | Inspect, test and maintain the emergency lighting system in accordance with The RSC Technical Guidelines (Standard). Keep written records on-site. | Within 3 months |

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| F- 9 | Inspection Testing and Maintenance of Portable Fire Extinguisher. | 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 3 months |
| F- 10 | Fire Protection System (Standpipe & Sprinkler System) | The high-rise building has an occupied floor greater than 23 meter (75 feet) and is not provided with automatic sprinkler protection. The large occupant loads, heavy fuel loading, and anticipated extended egress times warrant sprinkler protection. | Considering present condition minimum class-I standpipe system shall be provided along with sprinkler system for the building following NFPA-13,14,20,22 and 24. If height of the building is reduced to less than 23 m then sprinkler system is not mandatory and only class-III standpipe system can meet the standard requirement.<br><br>Design & Installation of Standpipe & sprinkler system should be in accordance with RSC Technical Guidelines (Standard) and NFPA 13,14, 20, 22 and 24. Submit all design and documents to RSC for review prior to installation/modification. | Design within 2 months and modification within 6 months (if required). |


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| F- 11 | Inspection, testing, and maintenance of the Standpipe & Sprinkler System (ITM). | Inspection, testing, and maintenance of the Standpipe & Sprinkler System is not in accordance with NFPA 25. | Inspect, test and maintain the automatic Standpipe & Sprinkler System, and keep written records on-site, in accordance with NFPA 25. | Within 3 months. |
| F- 12 | Inspection, testing, and maintenance of the Fire Pump (ITM). | Inspection, testing and maintenance of the fire pump system is not in accordance with NFPA 20. | Inspect, test and maintain the fire pump system and keep written records on-site, in accordance with NFPA 20. | Within 3 months. |
| F- 13 | Fire Alarm & Detection system | A addressable fire alarm & detection system has been found which is required to be reviewed and verified. | Submit as-built drawings, testing records, equipment certification (fire alarm system shall be addressable with listed) and other relevant documentation to the RSC for review. Modification (if required) shall have to done as per the reviewed design and NFPA-72. Upon approval & modification (if required) the factory shall inform RSC to conduct final testing and commissioning verification of the system for final acceptance. | Design within 2 months and modification within 4 months (if required). |




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| F-14 | Inspection Testing and Maintenance of Fire Alarm and Detection System (ITM) | 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. | Within 3 months |

**Table-2: Findings & Recommendations of West Tower Building**

| Sl No. | Category | Findings | Required Action | Remediation Time Frame |
|---|---|---|---|---|
| F- 15 | Fire Rated Construction | The exit stairs are not separated from work areas and other spaces on each floor by fire-rated construction. During inspection it was observed that the factory has installed fire doors at exit. | Submit installed fire rated door documents to the RSC for review and separate the exit stairs from work areas and other building spaces on all floor levels by minimum 2-hr fire rated construction. Provide minimum 1.5-hr fire rated doors for buildings that are 4 or more stories. Seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. Seal all penetrations and openings in exit stair enclosure walls to maintain the fire separation as per RSC Technical Guidelines (Standard) 6.3.1.3. The clearance under the bottom of a fire door shall be a maximum of 3⁄4 in. (19 mm). 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 or assembly occupancies.<br><br>If fire doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system. Once fire doors are installed, every door in a stair enclosure serving more than 5 stories shall be provided with re-entry unless it meets RSC Technical Guidelines (Standard) 6.8.3.1. | Within 3 months |

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| F- 16 | Fire Rated Construction | Elevator shafts provided in exit stair enclosure. Location: North-West Exit Stair (Stair-2) and South-East Exit Stair (Stair-1). | Modify the elevator and stair enclosure arrangement in a way to satisfy RSC Technical Guidelines (Standard) 6.14.3. Elevator shall not open into an exit enclosure. Elevator landing door shall be of 1.5 hr. fire rated. | Within 3 months |

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| F- 17 | Fire Rated Construction | Storage rooms discharges directly into the South-East and North-West exit stair enclosures throughout the building. | Openings from exit enclosure to storage room, generator and transformer spaces shall be provided with a vestibule with fire rated construction and openings as per Technical Guidelines (Standard) section 6.14.3. Provide a 1.5 hr. fire rated door on the exit stair side and a 1-hr. fire rated door on store, generator, sub-station room side. Ensure that the fire rating of the vestibule construction matches that of the exit stair enclosure. | Within 3 months |

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| F- 18 | Fire Rated Construction | The exit discharge path serving South-East exit egress is less than 10 ft wide and is not separated from the building interior. | 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. Alternatively, provide a second remote discharge path to the public way (only include this if feasible). | Within 6 months |

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| F- 19 | Egress | Stair designation signs at floor entrances and occupant load signs at required exit stair entrances are not accordance with RSC Technical Guidelines (Standard). | Update stair designation signs, occupant load signs and emergency evacuation plans at required locations. | Within 1 month |
| F- 20 | Egress | Evacuation map at floor entrances and occupant load signs at required exit entrances are not accordance with RSC Technical Guidelines (Standard). | Update occupant load signs and emergency evacuation plans at required locations. | Within 1 month |

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| F-21 | Egress Lighting | Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. | 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 |
| F-22 | Egress Lighting | Inspection, testing, and maintenance for the emergency lighting system was not in accordance with The RSC Technical Guidelines (Standard). | Inspect, test and maintain the emergency lighting system in accordance with The RSC Technical Guidelines (Standard). Keep written records on-site. | Within 3 months |
| F- 23 | Inspection Testing and Maintenance of Portable Fire Extinguisher. | 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 3 months |
| F- 24 | Fire Alarm & Detection system | A addressable fire alarm & detection system has been found which is required to be reviewed and verified. | Submit as-built drawings, testing records, equipment certification (fire alarm system shall be addressable with listed) and other relevant documentation to the RSC for review. Modification (if required) shall have to done as per the reviewed design and NFPA-72. Upon approval & modification (if required) the factory shall inform RSC to conduct final testing and commissioning verification of the system for final acceptance. | Design within 2 months and modification within 4 months (if required). |




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| F-25 | Inspection Testing and Maintenance of Fire Alarm and Detection System (ITM) | 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. | Within 3 months |

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| F- 26 | Fire Protection System (Standpipe & Sprinkler System) | The high-rise building has an occupied floor greater than 23 meter (75 feet) and is not provided with automatic sprinkler protection. The large occupant loads, heavy fuel loading, and anticipated extended egress times warrant sprinkler protection. | Considering present condition minimum class-I standpipe system shall be provided along with sprinkler system for the building following NFPA-13,14,20,22 and 24. If height of the building is reduced to less than 23 m then sprinkler system is not mandatory and only class-III standpipe system can meet the standard requirement.<br><br>Design & Installation of Standpipe & sprinkler system should be in accordance with RSC Technical Guidelines (Standard) and NFPA 13,14, 20, 22 and 24. Submit all design and documents to RSC for review prior to installation/modification. | Design within 2 months and modification within 6 months (if required). |
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| F- 27 | Inspection, testing, and maintenance of the Standpipe & Sprinkler System (ITM). | Inspection, testing, and maintenance of the Standpipe & Sprinkler System is not in accordance with NFPA 25. | Inspect, test and maintain the automatic Standpipe & Sprinkler System, and keep written records on-site, in accordance with NFPA 25. | Within 3 months. |
| F- 28 | Inspection, testing, and maintenance of the Fire Pump (ITM). | Inspection, testing and maintenance of the fire pump system is not in accordance with NFPA 20. | Inspect, test and maintain the fire pump system and keep written records on-site, in accordance with NFPA 20. | Within 3 months. |
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**Table-3: Findings & Recommendations of Jhut Boiler Shed Building**

| Sl No. | Category | Findings | Required Action | Remediation Time Frame |
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| F- 29 | Fire Alarm & Detection system | A addressable fire alarm & detection system has been found which is required to be reviewed and verified. | Submit as-built drawings, testing records, equipment certification (fire alarm system shall be addressable with listed) and other relevant documentation to the RSC for review. Modification (if required) shall have to done as per the reviewed design and NFPA-72. Upon approval & modification (if required) the factory shall inform RSC to conduct final testing and commissioning verification of the system for final acceptance. | Design within 2 months and modification within 4 months (if required). |

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| F- 30 | Inspection Testing and Maintenance of Fire Alarm and Detection System (ITM) | 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. (After Installation) | Within 3 months |