

INITIAL FIRE SAFETY INSPECTION REPORT

Natural Denim Ltd (Extension)

RSC ID: 25996

532, Tongabari, Savar

23.900901, 90.326316

Other Factories: Natural Denim Ltd (ID# 9602) & Natural Washing Plant Ltd. (Non-ID)



Inspected By: Md. Rakibul Islam

Date: 19-Jan-2025

Fire Safety Inspection Report

Natural Denim Ltd (Extension)

Introduction:

Natural Denim Ltd (Extension) complex was surveyed for fire safety on **19-Jan-2025** 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): There are total 9 numbers of structures in the factory compound where approval authority of all structures are LGED. Six number of structures [Washing Building, Thermo Boiler Shed; Compressor Shed; Fire Pump Room; Security Building, RMS Room] have been covered in this inspection under RSC ID # 25996. Three number of structures [7 Storey Building with Steel Frame on Upper Floor, 5 Storey Annex, 2-Storey utility Building] have been previously covered by ACCORD under “Natural Denim Ltd. [ID-9602]. The buildings under RSC ID-25996 are as below:

SI No	Building Name & Description	Construction History	Period
1	Building-4: Washing Building 4 storied Steel Building Total Approx Area: 53,412 Sft Land: Rented; Building: Owned The building has multi tenancy . The building is being occupied by both “Natural Denims Ltd” & “Natural Washing Plant Ltd”	Construction Start: Phase-1 : December, 2014 Phase-2 : October, 2023 Construction End: Phase-1 : December, 2015 Phase-2 : March, 2024 Date of first Operation: June, 2024 Building Approval: 05 July 2023 from LGED and 10 September 2023 from DIFE	New
2	Shed-5: Thermo Boiler shed (Thermo boiler) Single Storied Steel Shed Total Approx Area: 500 Sft	Construction Start: December, 2014 Construction End: January, 2015 Date of first Operation: January, 2015 Building Approval: 05 July 2023 from LGED and 10 September 2023 from DIFE	Interim
3	Shed-6: Compressor Shed (Compressor) Single Storied Steel Shed Total Approx Area: 500 Sft	Construction Start: December, 2014 Construction End: January, 2015 Date of first Operation: January, 2023 Building Approval: 05 July 2023 from LGED and 10 September 2023 from DIFE	Interim
4	Building-7: Fire Pump Room Single-storied RCC building with one basement Total Approx Area: 550 Sft (1428 sft including underground water reservoir)	Construction Start: January, 2022 Construction End: December, 2022 Date of first Operation: October, 2024 Building Approval: 05 July 2023 from LGED and 10 September 2023 from DIFE	New

SI No	Building Name & Description	Construction History	Period
5	Building-8: Security Building Two Storied RCC Building Total Approx Area: 753 Sft	Construction Start: June, 2007 Construction End: December, 2007 Date of first Operation: December, 2007 Building Approval: 05 July 2023 from LGED and 10 September 2023 from DIFE	Existing
6	Building-9: RMS Room Single Storied RCC Building Total Approx Area: 55 Sft	Construction Start: June, 2007 Construction End: December, 2007 Date of first Operation: December, 2007 Building Approval: 05 July 2023 from LGED and 10 September 2023 from DIFE	Existing

Findings & Recommendations :

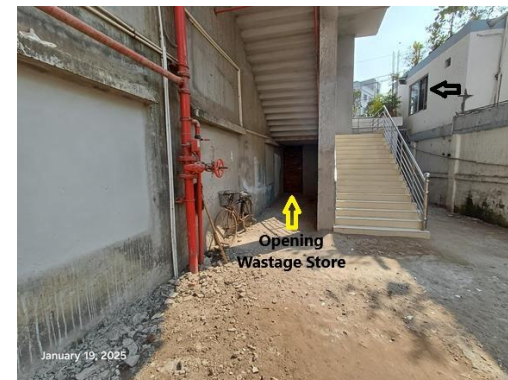
Table 1 summarize the fire safety non-compliant issues identified during the inspection. Recommendations have been provided to address each issue with specific remediation timeline. An implementation schedule shall be developed by the factory to remediate each of the findings. The specific timing of improvements, including any requested extensions due to design / installation constraints, shall be submitted to the RSC for review.

Table-1: For Building-4: Washing Building, Shed-5: Thermo Boiler shed, Shed-6: Compressor Shed, Building-7: Fire Pump Room, Building-8: Security Building and Building-9: RMS Room

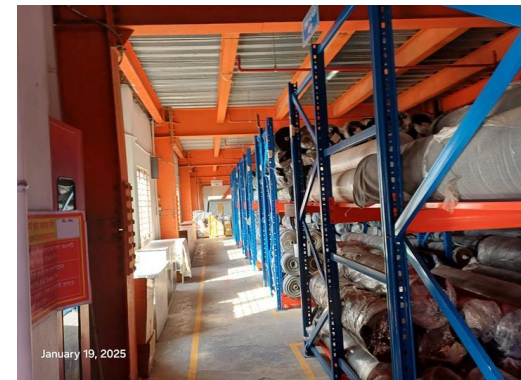
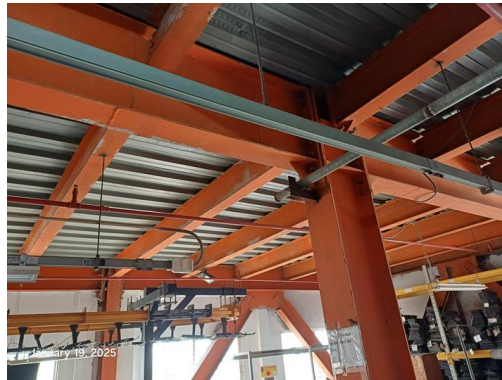
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-1	Means of Egress	The exit stairs are not separated from work areas and other spaces on each floor by fire rated construction at Four (4) Storied Steel Washing Building # 04 and 2 Storied Security Building # 08. Following observations has been found a. Stair partition wall is not constructed upto ceiling. b. Manuals and certificates of installed fire rated doors are not available during inspection. c. Slab constructed above fire rated doors do not provide required fire rating. d. There is gap through out all side of fire doors. Specially gaps in bottom of fire doors exceed 19mm. e. Listing mark is not found in few vision panel.	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 1-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. 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

Sl No.	Category	Findings	Required Action	Remediation Time Frame
		 January 19, 2025		
		 January 19, 2025		
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		 January 19, 2025		
		 January 19, 2025		
		 January 19, 2025		

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-2	Means of Egress	The external RCC stair located at South-west of washing building-4 is not having a fire separation from the building beyond 10 feet of its span as required as per clause 6.3.1.3.	Exterior exit stairs shall be separated by minimum 1-hr fire-rated construction and The rating of the exterior wall shall extend 3.05 m (10 ft.) beyond the ends of the stair structure.	Within 3 months



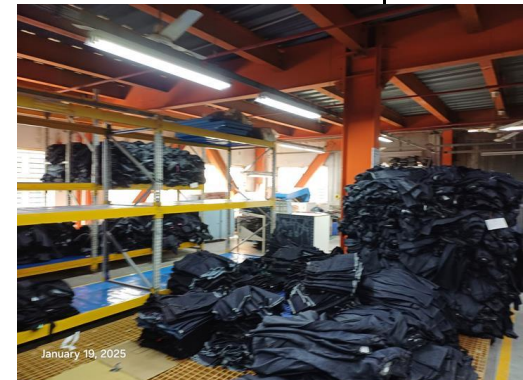
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-3	Fire Rated Construction	The main structural elements of the four storied washing building-4 are constructed by steel which is non-rated and are found in exposed condition without any fire protection.	Assess structural fire protection requirements of steel buildings (unprotected non-combustible construction type) according to BNBC 2020. The construction type shall confirm to be in accordance with BNBC 2020 Part-3, Table 3.1.7. Ensure fire resistive rated construction following Table 3.3.1 (a) Part 3 Section-3, Table 3.2.2 and Table 3.2.3 Part 3 Section 2 and Table 4.1.1 from BNBC 2020 Part 4 Section 1. Provide design philosophy to determine the construction type as per BNBC 2020. If any construction rating requires, Consult a qualified fire protection engineer to achieve the require fire rating. Factory shall ensure that, all the design, datasheet, certificate, and the design-philosophy has been reviewed from the RSC prior to install the passive fire protection system.	Design within 2 months, installation/ modification within 4 months



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-4	Fire Rated Construction	Room used for chemical storage is not properly separated by fire rated construction from labrotary and washing section on ground floor due to less thick (5 inch thick brick wall) partition and from storage area on 1st floor due to less thick decking slab. Location: Washing Building-4	Ensure the chemical store fire separated by minimum 4-hr fire rated construction barrier with only occupancies with G and H following table 3.2.1 of BNBC-2020. No opening is permitted in the 4-hr rated wall towards any other occupancy. Follow section 2.14 of BNBC-2020 as a guideline chemical store while rearranging.	Within 3 months
				
F-5	Fire Rated Construction	The thermo boiler shed-5; compressor shed-6 and fuel storage for thermo boiler are located within 5'-0" from the building # 04 (Washing building) and these are not separated by fire rated construction.	Either, separate the boiler, compressor room and fuel storage by a minimum 1-hr fire rated construction. Seal and/or protected all openings to maintain fire separations. Or, Seal and/or protect all openings on ground and 1st floor of 4 storied steel washing building-4 to maintain fire separations.	Within 3 months

SI No.	Category	Findings	Required Action	Remediation Time Frame
				
				

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-6	Fire Rated Construction	Areas used for combustible storage (exceed 10 percent of floor area) open to the production area (washing dry process) is not separated by fire rated construction on 2nd floor of Washing building # 04.	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. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows: - Maximum height of 2.45m (8ft.) , maximum area of 23m2 (250 ft2) and 3m (10ft.) clear distance from adjacent another unenclosed combustible storage. - If the building/floor is sprinkler protected: maximum height of 3.66m (12ft.) and maximum area of 93m2 (1000 ft2) and 7.62m (25ft.) clear distance from adjacent another unenclosed combustible storage. -In process storage shall be limited to 10 percent of the building area of the story in which they occur.	Within 3 months

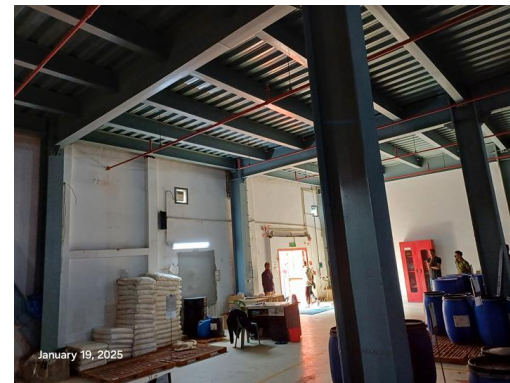
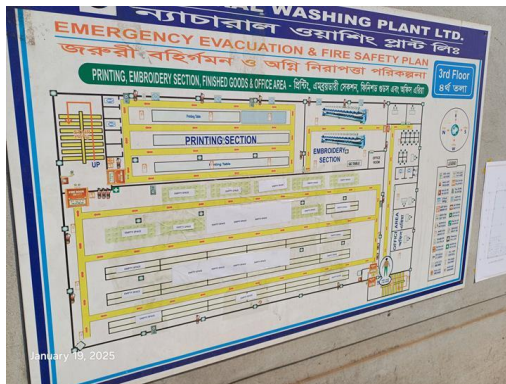


SI No.	Category	Findings	Required Action	Remediation Time Frame
F-7	Fire Rated Construction	Unsealed penetrations and openings are located in the fire-rated floor/ceiling assemblies in toilet zones from 1st floor to 3rd floor in washing building # 04.	Provide a minimum 2-hr fire-rated shaft to separate 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 and manufacturer's guidelines.	Within 3 months
 				

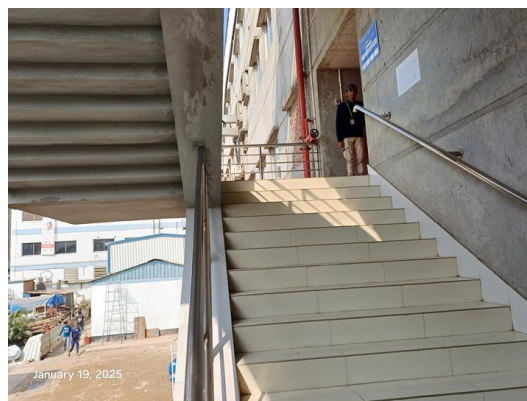
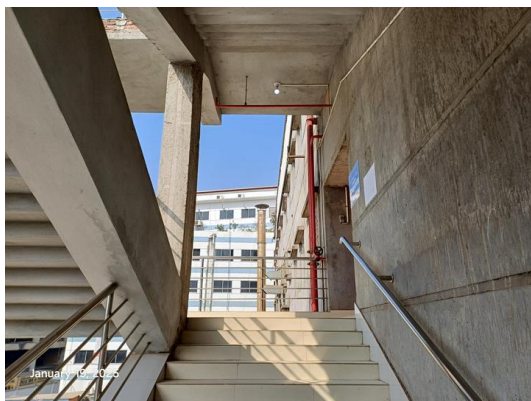
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-8	Fire-Rated Construction	In south side, non-rated openings are found in exterior wall of washing building-04 is adjacent to wastage shed. In north, east and west sides, non-rated opening are found in exterior wall of washing building-04 which within 4.5 m distance from other structures and boundary wall.	Seal the opening with fire rated construction in accordance to Tables 3.3.1 (a), 3.3.1 (b) and 3.2.3. (BNBC 2020, Section 2.4) or provide all openings in wall assemblies by fire-rated listed/certified louvers. The installation of such fire-rated materials shall be following certified design and manufacturer's guidelines.	Within 6 months



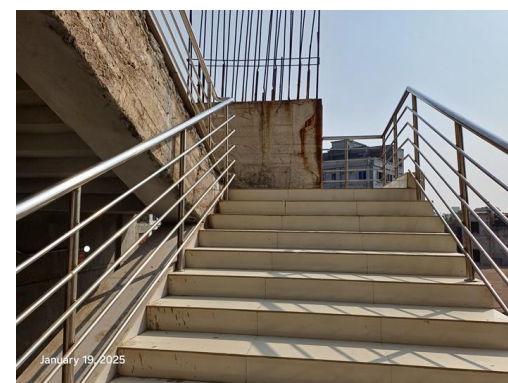
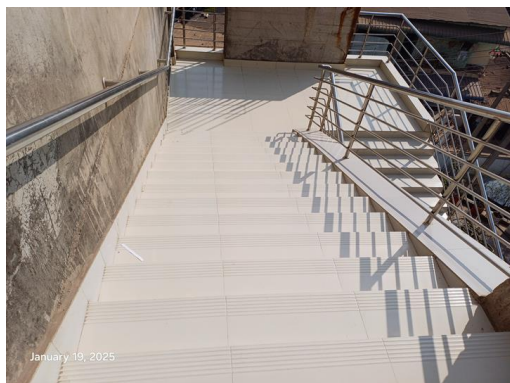
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-9	Means of Egress	Evacuation maps are not posted at ground floor and is not matched at 3rd floor unoccupied space in Washing building-04.	Update the fire evacuation map and shall be posted at the entrance to each exit stair.	Within 1 month



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-10	Means of Egress	Both side handrails are provided at all floor in both the stairs. But, in the columns portion handrail is discontinued in south-west exterior RCC stair-2. Both side handrails are not provided in the security building.	Provide handrails on both sides of the exit stair. Intermediate handrails shall be provided when the stair width exceeds 2.2 m (87 in).	Within 1 month

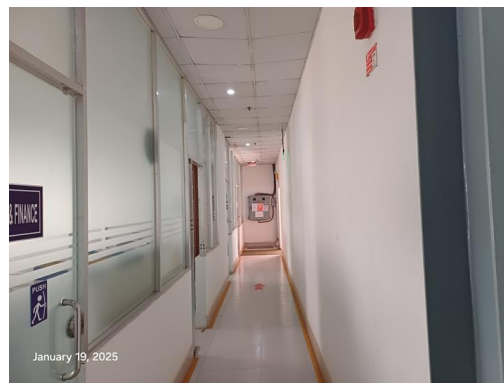
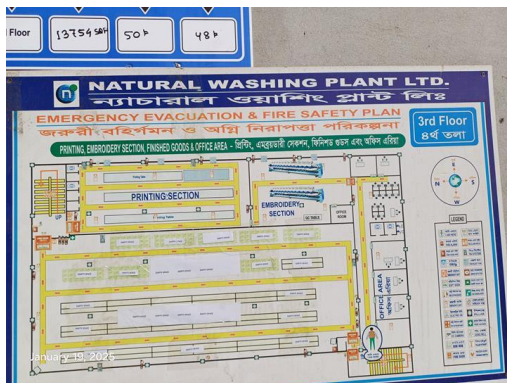


SI No.	Category	Findings	Required Action	Remediation Time Frame
F-11	Means of Egress	Height of handrail or guard in south-west exterior staircase is found 36 inch which is less than required.	Stairways serving more than three storey building having capacity more than 10 occupants shall have visual enclosures to avoid any impediments to stair use by persons having fear of height, any arrangement intended to meet this requirement shall be at least 1070 mm in height.	Within 3 months



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-12	Fire-Rated Construction	The fire pump room is not provided with adequate fire separation.	Provide fire pump room with 2 hr rated fire separation when not sprinklered and 1 hr rated fire separation when provided with automatic sprinklers, in accordance with NFPA 20. In the case exterior it shall be 50 ft away from another occupancy.	Within 3 months
				

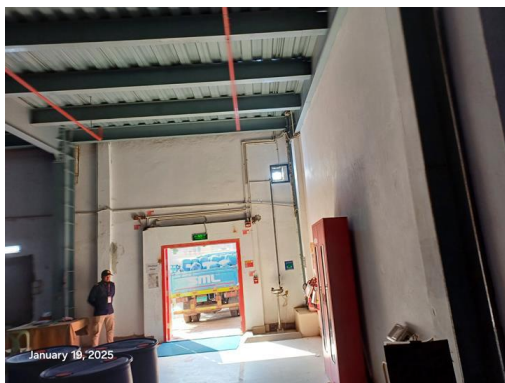
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-13	Means of Egress	Office area located on 3rd floor and Chemical store located on ground floor are provided with single exit and travel distance found 85 ft (approx.). Location: Washing Building-04	Provide two number of exits in such a way that travel distance meet the requirement in accordance to section 6.13 of the RSC Technical Guideline (Standard) V1. Or, re-arrange the area or exit in such a way that occupant load and travel distance is within limit for single exit as per the RSC Technical Guideline (Standard) V1, section 6.6.2 and table 6.6.2.	Within 3 months

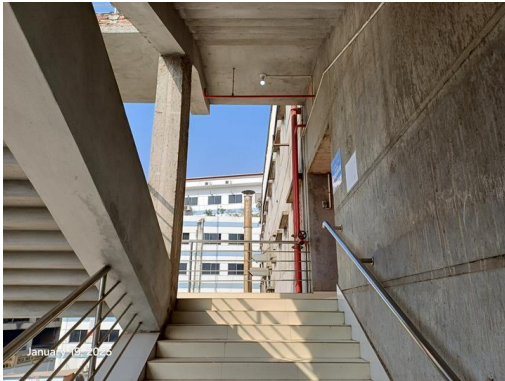


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F-14	Means of Egress	Abrupt changes in the elevation of walking surfaces were observed, not meeting the RSC Technical Guidelines (Standard) ¹ V1.0 Section 6.3.4.	Abrupt changes in elevation of walking surfaces shall not exceed ¼ in. unless provided with a beveled slope of 1 in 2 that do not exceed ½ in. Changes greater than ½ in. shall meet the requirements for RSC Technical Guidelines (Standard) ¹ V1.0 Section 6.3.5.	Within 3 months



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-15	Means of Egress	Occupant load signs are not posted on 1st floor and ground floor of washing building-4 and all floors in security building-8.	Post the occupant load for every assembly and production floor in a facility in a conspicuous space near the main exit or exit access doorway for the space.	Within 1 month



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-16	Means of Egress	Building does not have stair signs at required locations on all floors.	Provide stair designation sign at at each floor entrance from the stair to the floor in English and Bengali. Signs shall indicate the name of the stair and the floor level. Signs shall be posted adjacent to the door.	Within 1 month
 				

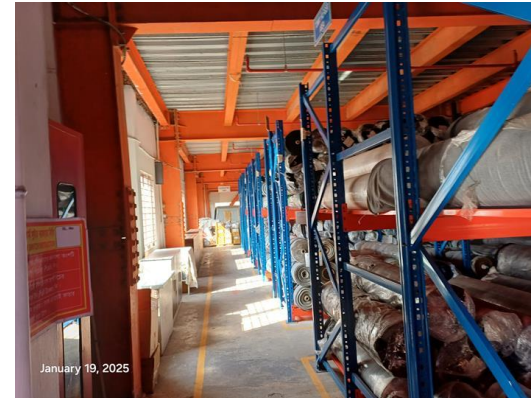
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-17	Emergency Lighting	Exit signage is found less illuminated on ground floor of washing building-4. Exit sign is not provided in compressor shed-6. Insufficient number of direction exit signs are provided throughout all floors in washing building# 04.	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. All required exit signs shall be illuminated continuously at all times. 10.12.1.2 Exit signs may be illuminated either by lamps external to the sign or by lamps contained within the sign. The source of illumination shall provide not less than 50 lux at the illuminated surface with a contrast of not less than 0.5. Approved self-luminous signs which provide evenly illuminated letters having a minimum luminance of 0.2cd/m² may also be used. Lighting for exit signs shall either be provided with emergency power or battery backup.	Within 1 month



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-18	Emergency 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 in all buildings and sheds.	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 1 month
 				

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-19	Inspection, testing, and maintenance (Emergency lighting system)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with the RSC Technical Guidelines (Standard)	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The RSC standard. Keep written records on-site.	Within 1 month
F-20	Inspection, testing, and maintenance (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 and RSC standards.	Within 1 month

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-21	Fire Protection System	Insufficient number of portable fire extinguishers are found on 1st and 3rd floor of washing building-04. Thermo boiler shed-5 and compressor shed-6 is also not provided with portable fire extinguishers.	Portable fire extinguishers shall be installed throughout all new, interim, and existing facilities in accordance with BNBC 2020 and NFPA 10. Extinguishers shall be placed so that maximum travel distance to the nearest unit shall not exceed 30 m (100 ft).	Within 2 months

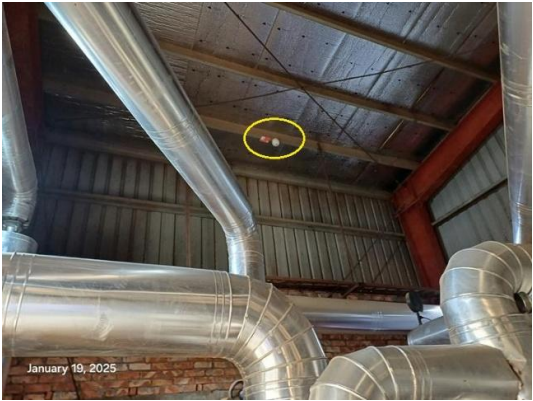
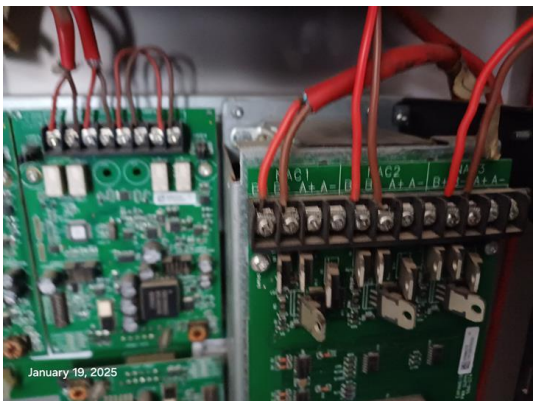
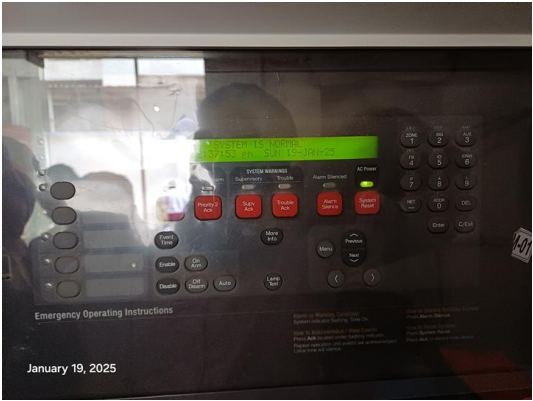


SI No.	Category	Findings	Required Action	Remediation Time Frame
F-22	Fire Protection System	Few portable fire extinguishers are inaccessible.	All installed portable fire extinguishers shall be accessible.	Within 1 month



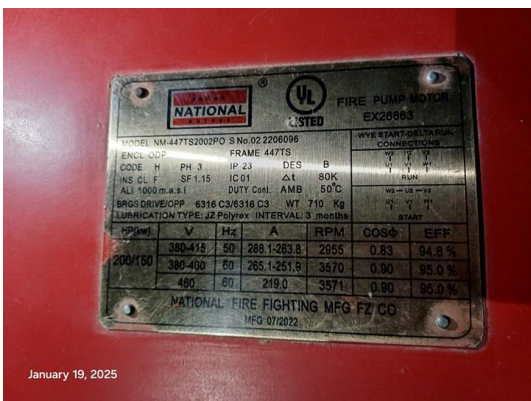
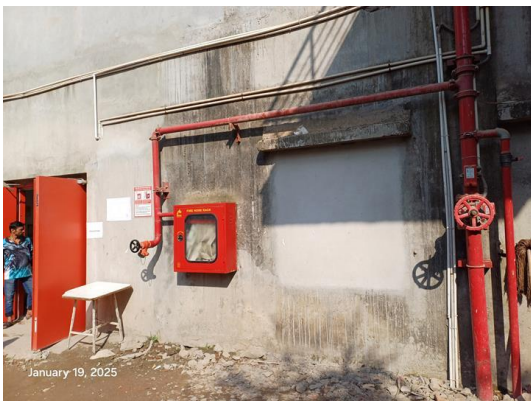
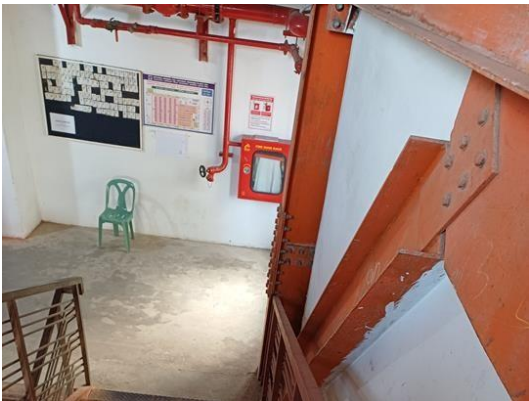
SI No.	Category	Findings	Required Action	Remediation Time Frame
F-23	Fire Alarm & Detection System (FADS)	All the buildings and sheds have been provided with addressable fire alarm and detection system. Installation work is on-going. In washing building-4, detectors are not installed in floor and have direct dependancy on installed sprinkler system. Factory used a common FACP with another factory (RSC ID # 9602). The factory needs to submit the design to RSC for initial review covering both the ID (9602 & 25996) sharing the common system. After installing centralized fire alarm and detection system, functional test need to be performed and records of regular testing or maintenance should be kept.	Design & Installation of Fire Alarm system shall be in accordance with RSC standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. Once the design is reviewed, install/modify the fire detection and alarm system throughout the building in accordance with review comment, RSC/ RSC Technical Guidelines (Standard) and NFPA 72. Complete the fire alarm installation as per NFPA 72. After installation the owner shall conduct internal testing and commissioning and then contact the RSC for witness of final acceptance testing. Submit as-built drawings, testing records, equipment certification and other relevant documentation to the RSC for review and approval. 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, installation/modification on within 4 months

SI No.	Category	Findings	Required Action	Remediation Time Frame
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SI No.	Category	Findings	Required Action	Remediation Time Frame
F-24	Inspection, testing, and maintenance (Fire Alarm System)	Inspection, testing and maintenance of the addressable fire alarm and detection system is not in accordance with NFPA 72, and the RSC Technical Guidelines (Standard).	Inspect, test and maintain the addressable fire alarm and detection system and keep written records on- site, in accordance with NFPA 72 and the RSC Technical Guidelines (Standard)	1 month after installation
F-25	Fire Protection System (Standpipe)	The building has highest occupiable floor level more than 11 meter (33 ft.) which requires standpipe system.	Design & Installation of standpipe system, fire pump and water supply system shall be in accordance with RSC standard, NFPA 14, NFPA 22, NFPA 25 and NFPA 20. Submit design, documents and calculations to RSC for review prior installation/modification. Once the design is reviewed, Install a standpipe system in accordance with RSC standard 5.4 and NFPA 14. A class III system shall be installed in buildings with the highest occupiable floor 10 m (33 ft.) above grade or more. A class I system shall be permitted in buildings protected throughout by an approved automatic sprinkler system. Also, install fire pump in accordance to RSC standard and NFPA 20. Submit the as-built standpipe system, fire pump and water supply 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. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the standpipe system, fire pump and water supply system.	Design Review within 2 month and installation within 4 months

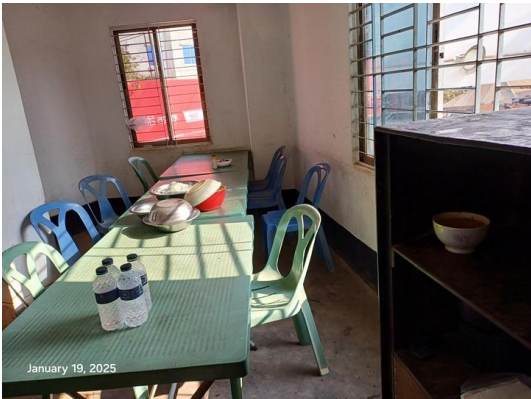
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SI No.	Category	Findings	Required Action	Remediation Time Frame
F-26	Fire Protection System (Sprinkler)	The highest occupiable floor level is less than 75 ft. which does not required sprinkler system. But, washing building-4 is provided with sprinkler system throughout all the floors and sprinkler system is dependant on detection system, structural fire protection, exit adequacy and separation of egress corridors and in process storage area.	Submit the sprinkler system drawing to RSC for review. Once the design is reviewed, install and modify (if required) the sprinkler system throughout the building in accordance with review comment, RSC Standard and NFPA 13,20,22 and 24. 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 month and installation within 4 months



SI No.	Category	Findings	Required Action	Remediation Time Frame
F-27	ITM of Standpipe System	Inspection, testing and maintenance for the standpipe system was not in accordance with standard.	Inspect, test and maintain the standpipe system in accordance with NFPA 25 and keep written records on-site.	Within 1 Month after installation
F-28	ITM of Pump System	Inspection, testing, and maintenance for the Fire pump & water system is not in accordance with NFPA 25 or as per RSC standard.	Inspect, test and maintain the fire pump & water system and keep written records on-site, in accordance with NFPA 25 or as per RSC standard.	Within 1 Month after installation
F-29	ITM of Sprinkler System	Inspection, testing, and maintenance for the sprinkler system is not in accordance with NFPA 25, 13 or as per RSC standard.	Inspect, test and maintain the sprinkler system and keep written records on-site, in accordance with NFPA 25, 13 or as per RSC standard.	Within 1 Month after installation

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-30	Means of Egress	Staff dining (E4) is provided with single exit on 1st floor of security building #08.	Either provide additional exit for staff dining on 1st floor. Or, modify occupancy in such a way that it permits single exit.	Within 3 months
F-31	Means of Egress	Stair width is found less than 0.9m in security building # 08.	Stairs shall have a minimum width of 0.9 m (35 in.).	Within 3 months
				

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-32	Human Element Program	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 week
F-33	Human Element Program	Fire drills are not conducted according to section 13.2 of RSC Technical Guidelines (Standard) V1.0.	Fire drills shall be conducted according to section 13.2 of RSC Technical Guidelines (Standard) V1.0. Fire drills shall be conducted on a monthly basis as outlined in BNBC 2020 Part 4 Appendix A.	Within 3 months