INITIAL FIRE SAFETY INSPECTION REPORT

Square Fashions Limited (New Extension)

RSC ID: 25581

Rokeyapur, Jamirdia, Habirbari, Valuka.

Geographical Coordinates of factory building: 24°17'43.3"N 90°23'12.9"E

Other Factories: Square Fashions Limited (ID: 9524)

Square Fashions Limited (Extension) (ID: 24583) in the premises

RSC RMG SUSTAINABILITY COUNCIL

Inspected By: Mahfuza Khanom & Shahina Imam

Date: 21 March 2024

Fire Safety Inspection Report

Square Fashions Limited (New Extension)

Introduction:

Square Fashions Limited (New Extension). was surveyed for fire safety on **21/03/2024** 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):

1. Building -3: RCC (G+3)
   Construction Start Date: September, 2016
   Construction End Date: March, 2018
   Production Start: April, 2018
   Design Approved by LGED on 06 December, 2017 and layout plan approved by DIFE on 10 July, 2018.
2. Building- 8: G+4 (5 storied steel building with RC stairs)
   Construction Start Date: December, 2013
   Construction End Date: February, 2016
   Production Start: March, 2016
   Design Approved by LGED on 06 December, 2017 and layout plan approved by DIFE on 10 July, 2018.
3. Building- 9: G+3 (4 Storied RCC Building)
   Construction Start Date: November, 2016
   Construction End Date: March, 2018
   Production Start: April, 2018
   Design Approved by LGED on 06 December, 2017 and layout plan approved by DIFE on 10 July, 2018.
4. Building- 11: ETP1 & 3 (G+1),, ETP 2 (Single story)
   Construction Start Date: ETP-1: January, 2001, ETP-2: March, 2006, ETP-3: January, 2017
   Construction End Date: ETP-1: December, 2001, ETP-2: March, 2007, ETP-3: December, 2017
   Production Start: ETP-1: Jan, 2002, ETP-2: April, 2007, ETP-3: Jan, 2018
   Design Approved by LGED on 06 December, 2017 and layout plan approved by DIFE on 10 July, 2018.
5. Building- 12: (G+1) storied RCC building
   Construction Start Date: May, 2006
   Construction End Date: June, 2007
   Production Start: June, 2007
   Design Approved by LGED on 06 December, 2017 and layout plan approved by DIFE on 10 July, 2018.

6. Building-14: (G+4) RCC Building
   Construction Start Date: March, 2018
   Construction End Date: December, 2019
   Production Start: January, 2020
   Design Approved by LGED on 06 December, 2017 and layout plan approved by DIFE on 10 July, 2018.
7. Building-18: Single Story RCC Building
   Construction Start Date: March, 2023
   Construction End Date: December, 2023
   Production Start: December, 2023
   Design Approved by LGED on 04 April, 2022.
8. Building-19: G+1 (Partially two storied) with underground water tank
   Construction Start Date: November, 2021
   Construction End Date: May, 2022
   Production Start: June, 2022
   Design Approved by LGED on 04 April, 2022.

Factory Address: Rokeyapur, Jamirdia, Habirbari, Valuka.

Points of contact:

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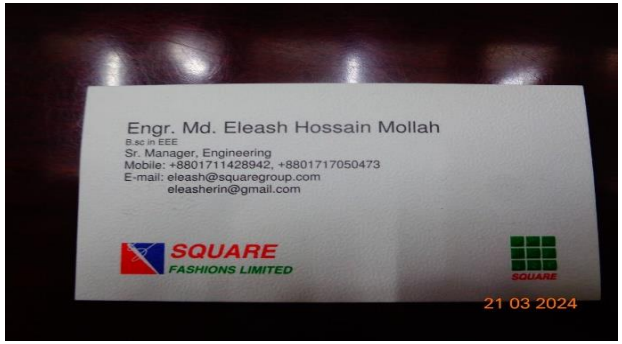
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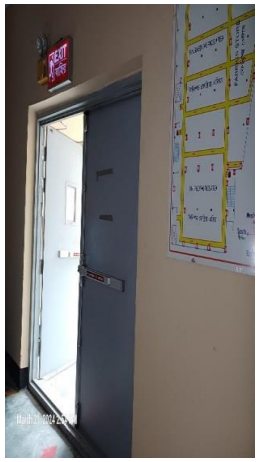
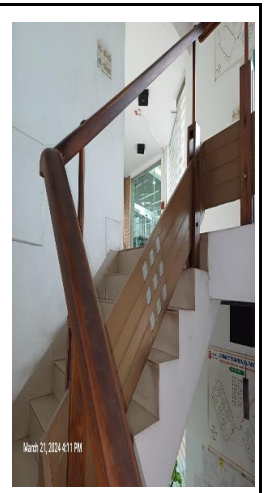
Findings & Recommendations :

Square Fashions Limited (New Extension)

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 RSC for review.

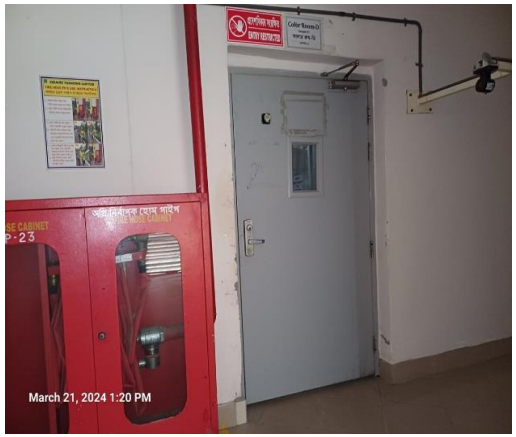
Table-1:

Sl No.	Category	Findings	Required Action	Remediation Time Frame
F-1	Fire Rated Construction	The exit stairs are not separated from [work areas, other spaces] on each floor by fire-rated construction. Location: B-3, B-8, B-14, B-9, B-11, B-12, B-19.	Provide minimum 2-hr fire rated construction for buildings 4 storied or more and 1-hr for upto 3 storied. Seal all unprotected openings to separate the exit stairs from work areas and other spaces on all floor levels by 90 minutes for 2 hr construction and 60 minutes for 1-hr construction. Ensure that the fire rated doors are self-closing and positive latching and that they are provided with fire exit (panic) hardware where serving production floors and provide vestibules to avoid direct discharge from storage to exit stair enclosure. If fire rated 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) 6.8.3.1If fire doors are required to be held open for functional reasons, provide automatic-closing devices tied to the fire alarm system. Exit enclosures shall be protected with a construction of at least 4 hr fire separation as per 2.13.6 of BNBC 2006 Part 3 Ch 4 for J occupancy.	Within 3 Months

     				
F-2	Fire Rated Construction	The Substation room is not separated by fire rated construction (openings, non-rated doors, penetrations). Location: Ground Floor of B-8.	Separate the Substation room by a minimum 2-hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations.	Within 3 Months

  				
F-3	Fire Rated Construction	Rooms used for storage of combustible materials are not separated from the surrounding occupancy/areas & floors. Location: All floors of B-8.	Rooms used for storage of combustible materials shall be separated from the surrounding occupancy with a minimum 1 hour construction. Store rooms directly discharge in exit stair enclosure shall be separated in accordance with the RSC Technical Guidelines (Standard) Section 6.14.3	Within 3 Months

	 			
F-4	Fire Rated Construction	Storage rooms discharges directly into the exit stair discharge. Location: B-9, B-8 & B-3	Openings from exit enclosure to storage room, generator and hazard spaces shall be provided with a vestibule with fire rated construction and openings. Provide a 1.5 hr. fire rated door on the exit stair side and a 1-hr. fire rated door on the Store, generator, substation room side. Ensure that the fire rating of the vestibule construction matches that of the exit stair enclosure.	Within 3 Months

	  			
F-5	Fire Rated Construction	Chemical storage area is not separated by fire-rated construction. Location: B-8 & B-3	Hazardous materials / flammable liquid storage shall be in compliance and separated in accordance with BNBC 2006 Part 3 Section 2.13. Seal and/or protected all openings to maintain the required fire separations.	Within 3 Months

  				
F-6	Fire Rated Construction	Areas used for in-process storage of combustible materials are open to the surrounding occupancy. Location: Ground Floor of B-8	Provide defined storage areas and limit the storage arrangement as follows:- 1. General Condition: Maximum height of 2.4m and maximum area of 23m2. Separate areas of unenclosed combustible storage by a minimum clear distance of 3m. 2. 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. or 3. Enclose the storage area from the surrounding occupancy with a minimum 1 hour construction.	Within 3 Months

				
F-7	Fire Rated Construction	Elevator shafts are directly open into the inside of Exit Stair. Location: B-8, B-9 & B-3	An exit stairway shall not be built around a lift shaft unless both of them are located in a smoke proof enclosure and made of a material with fire resistance rating required for the type of construction of smoke proof enclosure. So, ensure the lift shaft is 2-hr fire rated including opening protection with similar rating.	Within 3 Months

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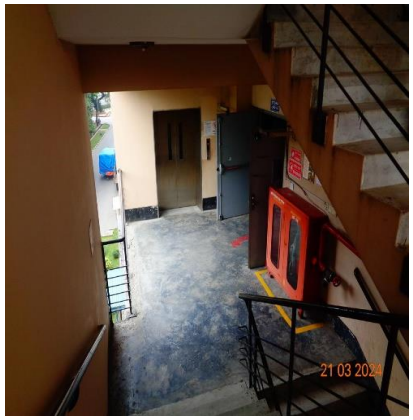
<tr><td colspan="5">     </td></tr>
<tr><td>F-8</td><td>Fire Rated Construction</td><td>Elevator shafts are directly open to the floor.
Location: B-8 & B-14</td><td>Modify the elevator shaft as per RSC Technical Guideline (Standard) V1-6.14.3. Elevator shaft shall be 2-hr fire rated opening protection from factory floor.</td><td>Within 3 Months</td></tr>
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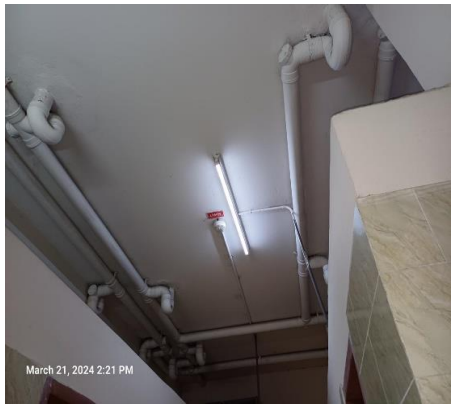
F-9	Fire Rated Construction	Unsealed penetrations and openings are located in the fire rated floor/ceiling assemblies. Followings are the description of openings or penetrations indicating specific locations: 1. Passing of BBT through rated walls from MDB room to the production area in each floor. 2. Due to Plastic pipeline of Toilet areas. 3. Electrical cable riser through rated walls on several floors of the buildings. 4. Steamline/GI pipes, utility pipes etc. penetrate the floor slabs of the buildings. 5. Expansion joint Location: B-3, B-8 & B-14	Seal all penetrations and openings in floor/ceiling (full thickness of the floor/ceiling) assemblies by fire rated materials to maintain the fire resistance rating. If fire stopping materials with proprietary design are used for seal, then it shall be classified for the purpose it is used for. Also the installation shall be as per the proprietary design it has been tested with. Provide a minimum 2-hr fire rated shaft to separate the utility risers from each floor if required.	Within 3 Months

   				
F-10	Fire Rated Construction	The Building-8 is interim constructed where structural members are constructed by steel and have been found in exposed condition without any fire protection.	The Building-8 shall be type-1 or type-2 construction in accordance with the RSC Technical Guidelines (Standard) 3.5.2.1 and BNBC Part-2, Table-3.2.4. Construction type shall be Type-1 for J occupancy. Provide required fire rating on the structural elements by following Section 4.4 and Table 4.4.1 of the RSC Technical Guidelines (Standard) or Table 3.3.1 and Table 4.1.1 from BNBC Part 4. Consult a qualified fire protection engineer to design the rated construction barriers in between two floors and in structural members.	Within 6 Months

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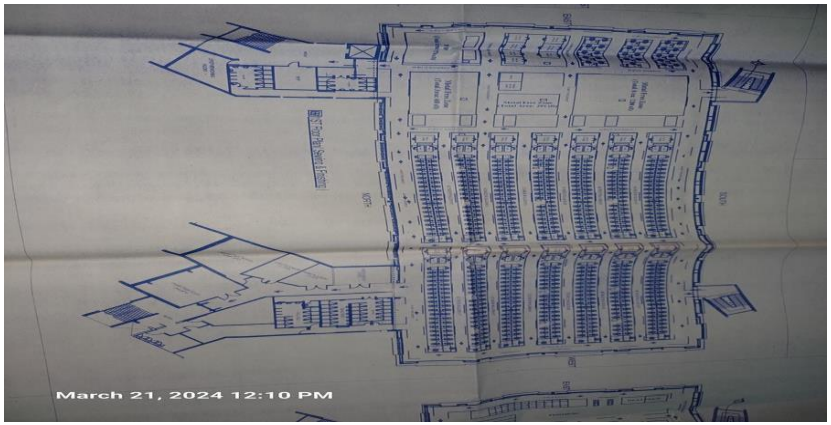
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<tr><td>F-11</td><td>Fire Rated Construction</td><td>Prayer room is not separated from store area.
Location: 2nd floor of B-8</td><td>Separate dining/Prayer room by a minimum 3-hr fire rated construction having direct access to exit stairs. Seal and/or protect all openings to maintain the required fire separations.</td><td>Within 3 Months</td></tr>
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F-12	Fire-Rated Construction	Electrical Panel box was located in the exit stair-4. Location: Ground Floor of B-8, B-12	Remove all electrical panel box from exit stairs.	Within 1 Month

	  			
F-13	Fire-Rated Construction	Exit access corridors serving an occupant load exceeding 30 is not separated by fire resistance rating. Location: B-8	Exit access corridors serving an occupant load exceeding 30 shall be separated by walls having a fire resistance rating of 1 hr unless provided with automatic sprinkler protection throughout the story or building	Within 3 Months

	 			
F-14	Fire-Rated Construction	Building-8 is connected to Shed-1 with a lift shaft core without adequate fire separations.	Separate the connected shaft by minimum 2-hr fire-rated construction. Provide 1.5 hr. fire rated door and seal all penetrations and openings between the exterior connecting bridge and the building up to 10 ft.	Within 3 Months


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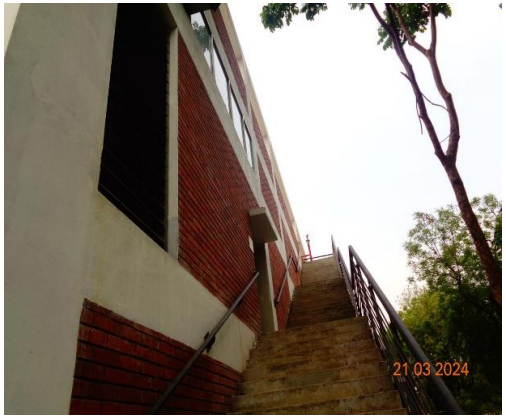
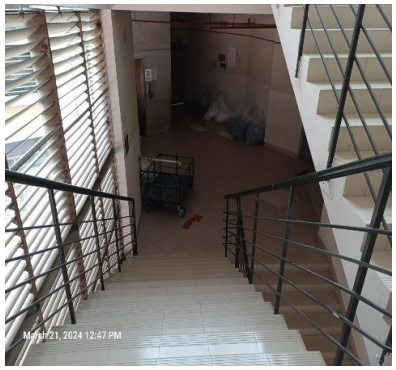
F-15	Fire Rated Construction	Liquefied or compressed gas cylinders/CNG appliances (high pressure CNG pipeline and pressure reducing unit) used in a fuel of boiler were located in Building-19.	The RSC Technical Guideline (Standard) V1, section 3.4.2.1.11 prohibits the storage or use of liquefied or compressed flammable gas (LPG/CNG) cylinders within the factory building. However, if it is not feasible then conditionally those are permitted to be stored in a separate dedicated building on the factory premises within its boundaries if the building meets the following conditions. 1. The storage building must be at least 3 meters away from any other building and boundaries. 2. The exterior walls of the building must have a fire resistance rating of 3 hours using non-combustible construction. 3. Doors and other openings in the exterior walls must be protected with suitable closing devices having a fire protection rating of 3 hours. 4. The building is to be used for no other purpose than the storage of LPG/CNG cylinders. 5. The building must be mechanically ventilated to control the accumulation of flammable vapours. 6. The installations must be approved and accepted by the requirements of the AHJ, Gas supply company regulations, manufacturers/supplier's instructions/guidance, CIOB and all other applicable agencies, codes and standards.	Within 1 Month

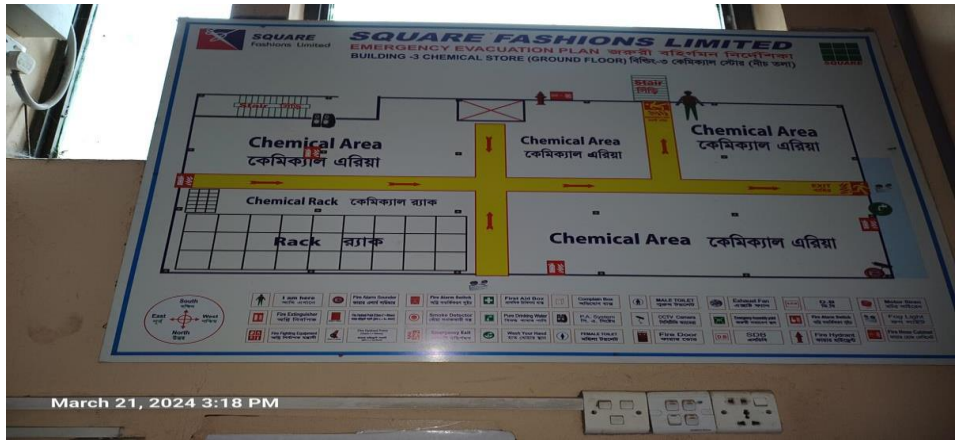
				
F-16	Fire Rated Construction	The exterior exit stair is not separated from the building. Location: B-14 & B-19	Exterior exit stairs shall be separated by minimum 2-hr fire-rated construction and The rating of the exterior wall shall extend 3.05 m (10 ft.) beyond the ends of the stair structure. Provide minimum 2-hr fire rated doors to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing, 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-17	Fire Rated Construction	Unsealed penetrations and openings are located in exit stair enclosures. Location: B-8	Seal all penetrations and openings in the wall of exit enclosure walls (full thickness of the wall) by fire rated materials to maintain the fire resistance rating.	Within 3 Months

		 		
F-18	Means of 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. Location: B-3, B-8 & B-14	Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101 and RSC Technical Guidelines (Standard) Part 6 Section 6.8.2	Immediate

   				
F-19	Means of Egress	Building are interim construction where width of exit stairs is less than 1.5 m (60 in). Location: B-3, B-14	Provide exit stair minimum clear and unobstructed width of 1.5 m (60 in.) in accordance with as per RSC Technical guideline (standard V1) 6.5.6.2.1. Or, If Other exits meet exit capacity, travel distance, common path of travel, dead end, exit remoteness & other exit stair requirements as per RSC Technical guideline (standard V1), these exits may eliminate from emergency exit.	Within 3 Months

F-20	Mean of Egress	Storage are observed inside exit stair enclosure and egress path. Location: B-8	Remove all storage from egress path and exit stair enclosures.	Immediate
   				

F-21	Mean of Egress	Common path of egress travel exceeds limit on the Chemical store room. Location: Ground Floor of B-3.	Reconfigure the egress arrangement to reduce the maximum common path of travel to not more than 8 m (25 ft.).	Within 1 month
				

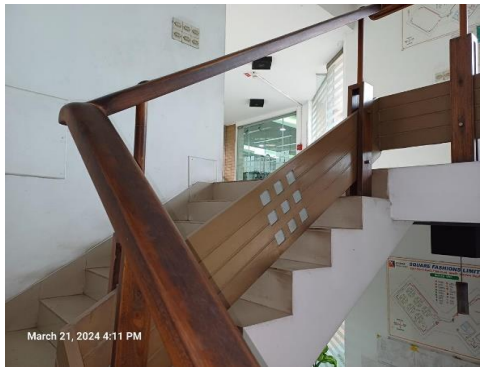
F-22	Means of Egress	Aisles marks have not been provided properly throughout the egress path. Location: Ground Floor of B-14 soft winding section.	Provide minimum aisle widths of 36 inch with proper marking & update on evacuation map.	Within 1 month
				
F-23	Means of Egress	Door width found 32 inch Ground floor B-3.	Provide minimum door widths of 1m (39 in).	Within 1 month

				
F-24	Means of Egress	Ramps do not have a running slope greater than 1 in 8 (12.5 percent). Location: B-3 Ground floor	Construct or modify the ramp having running slope less than 1 in 8 (12.5 percent) and provide handrails on both sides of the ramp. Also, assure that the walking surface is slip resistance.	Within 1 month

				
F-25	Means of Egress	Evacuation maps are not posted properly at the entrance to each exit at all Floors. Location: B-8	Fire evacuation maps shall be posted at the entrance to each main exit.	Within 1 month

F-26	Means of Egress	Sliding door have provided along means of egress exits. Location: Ground Floor B-3	Replace all collapsible/sliding/shutter type doors & gates by the side-hinged swinging type doors. If locks are required for security reasons, utilize special door locking features complying with NFPA 101.	Within 1 month
				

F-27	Means of Egress	Landings are provided on both sides of doors used along the path of egress. Doors do not swing out over stairs. Location: B-8 Roof	Provide landings on both side of exit door and prevent door leaf does not swing on landing area to facilitate uninterrupted egress of occupants.	Within 1 Month
				

F-28	Means of Egress	Handrails are not provided on both sides of the exit stair. Location: B-12	Provide handrails on both sides of the exit stair and ramp. 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 1 Month
				

F-29	Egress Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes on all Buildings.	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
F-30	ITM of Emergency light and Exit Sign	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The RSC Technical standard.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The RSC Technical standard. Keep written records on-site.	Within 1 Month
F-31	Egress Lighting	Illuminated directional signs are not provided where direction of the path of travel to an exit has changed.	Illuminated directional signs shall be provided where there is a change in the direction for the path of travel and the direction to an exit is not obvious.	Within 1 Month

F-32	Fire Alarm and Detection System (FADS)	Fire alarm & detection system installation requires detailed review to confirm compliance with NFPA 72 and RSC Technical Guidelines (Standards). (All Buildings)	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. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with Table-14.3.1 of NFPA 72.	Design Review within 2 Months and installation within 4 Months.
				

F-33	ITM of Fire Alarm & Detection system	Inspection, testing and maintenance for the fire detection and alarm system was not in accordance with standard.	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-34	Fire Protection System(Standpipe)	Standpipe system installation requires detailed review to confirm compliance with NFPA 14 and RSC standards.	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 standard.	Design Review within 2 months and installation within 4 months

F-35	Fire Protection System (Automatic Sprinkler System)	The interim building (B-8) has an occupied floor greater than 10 meter (33 feet), therefore, standpipe system is required. The factory has installed sprinkler system through the building. So, the automatic sprinkler and standpipe system installation requires detailed review to confirm compliance with NFPA 13, 14, 20, 22, 24 and the RSC Technical Guidelines (Standard).	Submit as built drawings, testing records, listing information and other relevant documentation to the RSC for review and approval, modification shall have to done as per the reviewed design (if required). Class-I standpipe system is acceptable with automatic sprinkler system.	Design Review within 2 months and installation within 4 months
				

F-36	Fire Protection System(ITM of standpipe)	Inspection, testing, and maintenance for the Standpipe system is not in accordance with NFPA 25 and RSC Technical Guideline (Standard).	Inspect, test and maintain the standpipe system in accordance with NFPA 25 and RSC Technical Guideline (Standard) and keep written records on-site.	Within 1 Month after installation
F-37	Fire Protection System(ITM of fire pump)	Inspection, testing, and maintenance for the fire pump is not in accordance with NFPA 25 and RSC Technical Guideline (Standard).	Inspect, test and maintain the fire pump in accordance with NFPA 25 and RSC Technical Guideline (Standard) and keep written records on-site.	Within 1 Month after installation
F-38	Fire Protection System(ITM of Sprinkler)	Inspection, testing, and maintenance for the automatic fire sprinkler system is not in accordance with NFPA 13 and 25 or as per RSC standard.	Inspect, test and maintain the fire pump and standpipe system, and keep written records on-site, in accordance with NFPA 13 and 25 or as per RSC standard.	Within 1 Month after installation