

INITIAL FIRE SAFETY INSPECTION REPORT

Auko-Tex Limited (Extended building)

RSC ID: 24940

South Panishail, Zirani Bazar, Kashimpur, Gazipur Sadar, Gazipur

Geographical Coordinates: 23.990574, 90.260170

**Other Factories: Auko-Tex Limited [9203]; Yasin Knittex Ind. Ltd. [9204];
Yasin Knittex Ind. Ltd. (Extended building) [24941].**



Inspected By: Mohammad Anayet Hossain

Date: 14-Jan-2024

Fire Safety Inspection Report

Auko-Tex Limited (Extended building)

Introduction:

Auko-Tex Limited (Extended building) complex was surveyed for fire safety on **14-Jan-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):

Number of Building	Name of Building	Building Description
B#1	Building No.: 1; (Knitting and Store Building, B+G+5, RCC Building)	Type of construction: RCC Year of construction: Feb-2019 to Dec-2019 Construction period: Interim Building Building approval from: RAJUK Building approval date: 22-Feb-2018
B#2	Building No.: 2; (Officers Resting Room, B+G+3, RCC Building)	Type of construction: RCC Year of construction: May-2016 to Dec-2019 Construction period: Interim Building Building approval from: RAJUK Building approval date: 22-Feb-2018
B#3	Building No.: 3; (Security Post & Sub-station Building, Partially G+1, RCC Building)	Type of construction: RCC Year of construction: Feb-2019 to Dec-2019 Construction period: Interim Building Building approval from: RAJUK Building approval date: 22-Feb-2018

Factory Address: South Panishail, Zirani Bazar, Kashimpur, Gazipur Sadar, Gazipur

Points of contact:

Name: Md. Abul Basher

Designation: DGM-Operation

Contact No: 01955550034

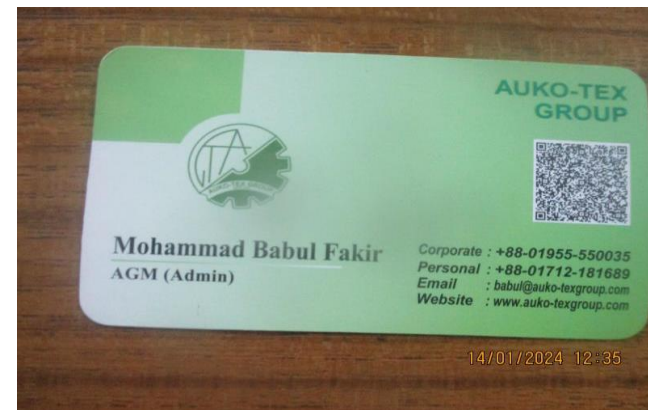
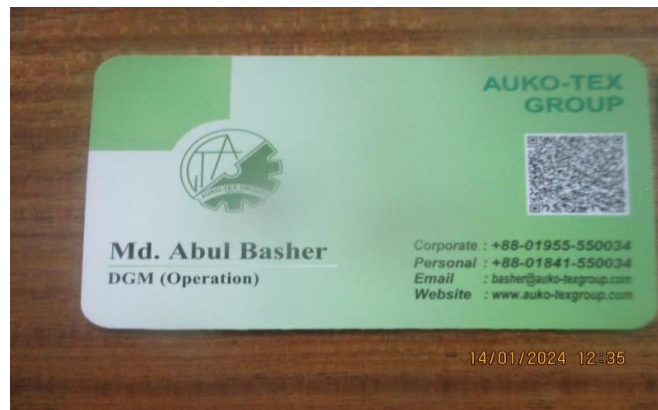
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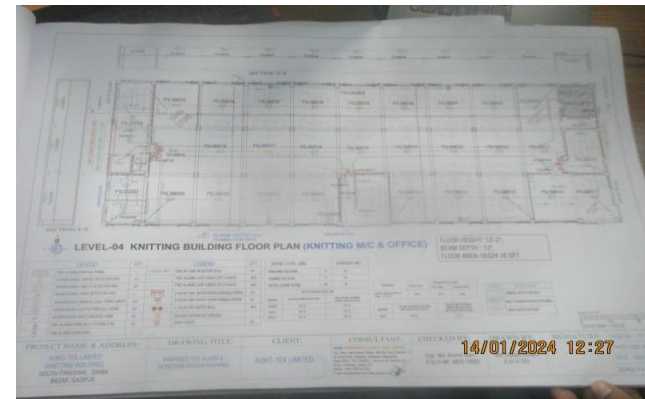


General Building Information - Building No.: 1; (Knitting and Store Building, B+G+5, Roof-top partially occupied, RCC Building)

Number of Stories Below / Above Grade	1/6
Highest Occupied Floor Level / Height	7/ 82 feet
High Rise (RSC Technical Guidelines (Standard) V1-3.2.1)	Yes
Occupiable Roof (RSC Technical Guidelines (Standard) V1-3.2.2)	Yes
Occupiable Roof Provided with Adequate Parapets / Guards (RSC Technical Guidelines (Standard) V1-6.12.2.4)	Yes
Occupancy Classifications	Business [F], Industrial [G2], Storage [H2], Assembly [E3]
Floor Plans Available	Yes



Master Plan



Floor Plan

Date Of Construction	Feb-2019 to Dec-2019
Major Renovations / Additions	No
Other Tenants In Building	No
Floors Occupied By Factory	Yes

Occupant load by floor

Floor	Use	Occupant Load	Comments
Basement	Yarn Store	5	
GF	Yarn Store	12	
1	Knitting Production, Office	65	
2	Knitting Production, Office	51	
3	Knitting Production, Office	53	
4	Fabric Store	21	
5	Fabric Store	21	
Roof Top	Store, Helipad, Lift machine room	2	

Construction Features:

Non-Combustible Construction	Yes
Fire-Resistive Construction	Yes

Building Exposures:

North	8 feet away boundary wall
South	15 feet Internal Road
East	13 feet away '04-storied-Officers Resting Room'
West	60 feet away '02-storied-Security Post & Sub-station Building'

Vertical Openings:

Stairs Enclosed in Fire-Rated Construction?	Yes	
Unsealed Penetrations in Stairs	Yes	
Unprotected Openings From Stairs	Yes	
Shafts Enclosed in Fire-Rated Construction	No	
Floors with Openings/Penetrations	Yes	
Other Vertical Openings	No	

Egress Features:

The buildings are provided with 3 (three) exits which are sufficient. All the exits were remotely located and also travel distance requirements were met. Doors along the means of egress in the building are not of the swing type. No locking features were identified in the exits. Throughout the inspection, all doors were found open and unlocked. Storage was not situated in the egress path; however, in several places, in-process goods stacks were observed on the floor, and the storage room directly discharges to the exit stair enclosure without a vestibule. Emergency Evacuation Maps and occupant load signs were found inside staircases but were not up to date. Stair designation signs were not identified.

Floor	Occupant load	Nos of. Exit	Exit Capacity
Basement	5	3	1000
GF	12	3	1000
1	65	3	1000
2	51	3	1000
3	53	3	1000
4	21	3	1000
5	21	3	1000
Roof Top	2	3	1000

General:

Number of Exits Per Floor is Compliant (RSC Technical Guidelines (Standard) V1- 6.6)	Yes	
Capacity of Exits Per Floor Is Compliant (RSC Technical Guidelines (Standard) V1-6.5.3)	Yes	
Exits Remotely Located (RSC Technical Guidelines (Standard) V1- 6.6.6)	Yes	

Exit Doors:

Egress Doors are Side Hinged (RSC Technical Guidelines (Standard) V1-6.8.1)	Yes	
Egress Doors Swing Correctly (RSC Technical Guidelines (Standard) V1-6.8.1)	Yes	
Egress Doors Without Locking Hardware in Direction of Travel (RSC Technical Guidelines (Standard) V1-6.8.2)	Yes	

Exit Stairs:

All Exit Stairs Discharge Directly to the Exterior (RSC Technical Guidelines (Standard) V1-6.17)	Yes	
Handrails Provided on Both Sides (RSC Technical Guidelines (Standard) V1-6.9.2.4)	Yes	
Exit Stairs Free of Storage and Obstructions (RSC Technical Guidelines (Standard) V1-6.3.8, 6.3.9)	Yes	
Electrical Panels Located Outside of Exit Stairs	Yes	
Exit Stairs Serving More than 5 Stories Provided with Re-Entry (RSC Technical Guidelines (Standard) V1-6.8.3)	No	

Exit Access & Arrangement:

Means of Egress Free of Storage & Obstructions (RSC Technical Guidelines (Standard) V1-6.3.8, 6.3.9)	Yes	
Means of Egress of Adequate Width (RSC Technical Guidelines (Standard) V1-6.5)	Yes	
Travel Distances, CPT, DE's Within Limits (RSC Technical Guidelines (Standard) V1-6.13)	Yes	
Exit Access Corridors Provided with Proper Fire Protection / Separation (RSC Technical Guidelines (Standard) V1-6.3.1.1)	N/A	
Daycare Within Limits (RSC Technical Guidelines (Standard) V1-3.4.2.1.1)	N/A	
Egress Court Provided With Adequate Fire Rated Separation (RSC Technical Guidelines (Standard) V1-6.17.2)	N/A	

Utility / Storage Rooms Adequately Separated from Exit Enclosures (RSC Technical Guidelines (Standard) V1-6.14.3)	No	
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Emergency Planning :

Emergency Evacuation Plans Provided (RSC Technical Guidelines (Standard) V1-13.3)	Yes	
Fire Drills Conducted & Records Maintained (RSC Technical Guidelines (Standard) V1-13.2)	Yes	
Smoking Prohibited (RSC Technical Guidelines (Standard) V1-13.5)	Yes	

Fire Protection Features:

Fire Alarm System

Current System Overview: There is an automatic fire alarm and detection system (Brand-BOSCH) has been found already installed in the factory during the inspection.

Type of System	Addressable	
Fire Panel Location	Ground Floor of '02-storied-Security Post & Sub-station Building'	
Visible Notification As Per NFPA 72	Not verified	
Audible Notification Per NFPA 72	Not verified	

Smoke Detection Per NFPA 72	Not verified	
Alarm Annunciation	Not verified	
ITM per NFPA 72	No	
Functional Test Conducted	No	



Standpipe System

Current System Overview:

The height of the highest occupiable floor from the road level is 82 feet and Standpipe System is required for the entire building and which has been found installed. Class-III is installed inside the staircases.

Standpipe System Required	Yes	
Type of System Installed	Class III	

Hose Connection Locations	Stair enclosures	
ITM Per NFPA 25	No	
Comments	No	



Sprinkler System

Current System Overview: The height of the highest occupiable floor from the road level is 82 feet and Automatic Sprinkler system is required for the building and which has been found installed..

Sprinkler Protection Required	Yes	
Type of System Installed	Wet system	
Location/Coverage	Entire building	

ITM Per NFPA 25	No	
Comments	No	

Fire Water Supply

Current System Overview: Single fire pump set supplying entire premises consisting electrical motor driven pump, diesel engine driven pump and jockey pump. The pump capacity is 1250 GPM @ 12 Bar. Centrifugal fire pump installed in a positive suction arrangement. The water reservoir capacity is reportedly 1,62,337 US Gallon.

Source, Location, & Capacity	Source: Underground water reservoir Basement of '4-Storied-Officers Location: Resting Room' Capacity: 1,62,337 US Gallon	
Fire Pump Provided	Yes	
Fire Department Inlet & Outlet Connections Provided (RSC Technical Guidelines (Standard) V1-5.5.4)	Yes	
Fire Pump Adequate (RSC Technical Guidelines (Standard) V1-5.5.1)	Not verified	
Fire Pump Room Provided With Adequate Fire Rated Separation (NFPA 20)	Yes	
Fire Pump ITM Per NFPA 25	No	



Portable Fire Extinguishers

Current System Overview:

Portable fire extinguishers, consisting of a mix of CO2 and dry chemical were provided on occupied in operation area of the building. Inspection tags show recent and up-to-date inspections. Records of regular testing or maintenance of the portable fire extinguishers were not provided as per NFPA10.

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

Manual Fire Fighting Equipment

Current System Overview:

Factory had fire fighting equipment staged inside the stair. Types of manual fire fighting equipment should provide Lock Cutter, Fire Roof, Fire Bitter, Fire Hook, Fire Axe, Stretcher, Fire Blanket, Fire Gloves, Escape hoods, Gas mask and personal protection equipment.

Types Provided	Lock Cutter, Fire Bitter, Fire Hook, Fire Axe, Stretcher, Fire Blanket, Fire Gloves, Escape hoods, Gas mask and personal protection equipment.	
Location of Equipment	Inside the stair enclosure	

Other Features

Emergency Lighting & Exit Signs

Overview:

Emergency lighting appliances were not located inside all production floor and exit stairs. Illuminated exit signs were missing at few exits. Directional Exits signage were missing along certain egress paths on production floors. No proper records or assertions of regular testing or maintenance of the emergency lighting system was provided.

Exits and Exit Access Properly Marked with Exit Signage	No	
Emergency Power	Yes	
Adequate Emergency Lighting for Exits & Exit Access	No	
Adequate Inspection / Testing (RSC Technical Guidelines (Standard) V1-10.12)	No	

Elevator

Overview:

There is one(01) elevator located in exit stair-01 (NW-Stair) which is not installed as per The RSC Technical Guidelines (Standard).

Elevator Opens Into Exit Enclosure	Yes	
Elevator Shaft/Doors Fire-Rated	No	
Automatic Recall	Not verified	



Generator

Overview:

There are three (03) generators serving the factory buildings and those are already have been covered at RSC-ID: 9204 (Yasin Knittex Ind. Ltd.).

Boiler & Furnace Equipment

Overview:

There are three (03) generators serving the factory buildings and those are already have been covered at RSC-ID: 9204 (Yasin Knittex Ind. Ltd.).

Transformer/Substation

Overview:

There is one (01) transformer serving the factory buildings and which is located at '02-storied-Security Post & Sub-station Building'

Location(s)	Ground floor of 02-storied-Security Post & Sub-station Building'
Fire Rated Separation (RSC Technical Guidelines (Standard) V1-3.4.2.1.5)	Yes

Compressor

Overview:

There is one (01) compressor serving the factory buildings and which is located at '02-storied-Security Post & Sub-station Building'

Location(s)	Ground floor of 02-storied-Security Post & Sub-station Building'
Fire Rated Separation (RSC Technical Guidelines (Standard) V1-3.4.2.1.5)	Yes

Storage Areas

Overview:

Dedicated storage rooms and in-process storage areas were found at several locations on the floor, and they were not properly separated by fire-rated construction from the surrounding occupancy.

Fire Rated Separation (RSC Technical Guidelines (Standard) V1-3.4.2.1.5)	No	
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Open to Factory Floors?	Yes	
Open to Exit Discharge?	Yes	



Additional Information:

Apart from the **Building No.: 1; (Knitting and Store Building, B+G+5, RCC Building)**, the factory also contains a separate two **(02)** ancillary buildings which has found during the inspection.

i) Building No.: 2; (Officers Resting Room, B+G+3, RCC Building).

- Basement floor: Fire Pump (35 m2) and Water Reservoir.
- Ground floor: Acid Wash and Maintenance Workshop.
- 1st floor: Officers Rest Room.
- 2nd floor: Officers Rest Room.
- 3rd floor: Officers Rest Room.
- Roof Top: Open to sky, Accessories Store.

Building has the fire alarm and detection system & standpipe system.

ii) Building No.: 3; (Security Post & Sub-station Building, Partially G+1, RCC Building).

- Ground floor: Security room, Fire alarm control panel, Transformer, Compressor.
- 1st floor: Office.
- Roof Top: Open, Solar Pannel.

Building has the fire alarm and detection system.



Building No.: 2; (Officers Resting Room, B+G+3, RCC Building).



Building No.: 3; (Security Post & Sub-station Building, Partially G+1, RCC Building).

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:

Sl No.	Category	Findings	Required Action	Remediation Time Frame
F-01	Fire Rated Construction	The exit stairs are not separated from work areas, other spaces on each floor by fire-rated construction. Location: Building No.: 1; (Knitting and Store Building).	Provide minimum 2-hr fire rated construction for buildings 4 storied or more and 1-hr for up to 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. If fire rated doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.	Within 3 months
 				

F-02	Fire Rated Construction	Unsealed penetrations and openings are located on the fire-rated floor/ceiling assemblies. Location: Toilet plumbing PVC pipe of Building No.: 1; (Knitting and Store Building).	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. Provide a minimum 3-hr fire rated shaft to separate the utility risers from each floor if required.	Within 3 months
 				

F-03	Fire Rated Construction	Storage room discharges directly into exit stair enclosure. Location: Building No.: 1; (Knitting and Store Building).	Openings from exit enclosure to storage room, 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 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-04	Fire Rated Construction	Elevator shafts are directly open into the inside of exit enclosure. Location: Building No.: 1; (Knitting and Store Building)- Stair-1 (NW-Stair).	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. Modify the elevator shaft as per The RSC Technical Guideline (Standard) V1-6.14.3.Rearrange the facility to provide separate enclosure for lifts. If not possible anyway provide a minimum 2-hr fire- rated elevator shaft with listed fire rated lift landing door to separate from each floor level.	Within 3 months
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F-05	Fire Rated Construction	Areas used for in-process storage of combustible materials are open to the surrounding occupancy. Location: Building No.: 1; (Knitting and Store Building).	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-06	Means of Egress	Aisles marking has not been provided on the floor properly. Location: Building No.: 1; (Knitting and Store Building).	Provide minimum aisle widths of 36-in.	Within 3 months
F-07	Means of Egress	Building did not have stair designation signs, floor designation sign and occupant load signs at the required locations.	Provide stair designation signs, floor designation signs and occupant load signs at the required locations.	Within 1 month
F-08	Means of Egress	Fire evacuation maps is not posted inside the stair enclosure.	Provide updated fire evacuation maps at the entrance to each exit stair as per actual site condition.	Within 1 month
F-09	Means of egress	Exit stairs serve more than 5 stories and do not have required re-entry provisions. Location: Building No.: 1; (Knitting and Store Building).	Every door in a stair enclosure serving more than 5 stories shall be provided with re-entry unless it meets RSC standard 6.8.3.1.	Within 1 month

F-10	Egress Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes and at exit stairs on all floors. Location: Building No.: 1; Building No.: 2; Building No.: 3.	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-11	Egress Lighting	Exit sign and Directional Sign are not provided at and towards exit at several floors.	Lighted exit signs shall be placed at entrance to an exit. Additional exit signs shall be placed throughout the facility anywhere the continuation of the egress is not obvious. Lighted exit signs shall be provided with either battery backup or uninterruptable power supply systems and shall be continuously illuminated.	Within 1 month
F-12	Fire Alarm & Detection system	Automatic fire alarm and detection system installation has been found complete which requires detailed review to confirm compliance with NFPA 72 and The RSC Technical Guidelines (Standard). Location: All Building.	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, Accord/ 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/modification within 4 months



F-13	Fire Alarm & Detection system (ITM of FADS)	Inspection, testing and maintenance for the fire alarm system is not in accordance with NFPA 72 and The RSC Technical Guidelines (Standard).	Inspect, test and maintain the fire alarm system and keep written records on-site, in accordance with NFPA 72 and The RSC Technical Guidelines (Standard) and keep written records on-site	Within 1 month (after installation)
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F-14	Fire Protection System (Sprinkler)	The height of the highest occupied floor is more than 75 ft and the factory has installed a sprinkler system which is required to be reviewed and verified. Location: Building No.: 1; (Knitting and Store Building).	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 be done as per the reviewed design and NFPA- 13. 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 month, installation/modification on within 4 months
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F-15	Fire Protection System (Standpipe)	The height of the highest occupied floor is more than 33 ft and the factory has installed a standpipe system which is required to be reviewed and verified. Location: Building No.: 1; (Knitting and Store Building). Building No.: 2; (Officers Resting Room).	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 be done as per the reviewed design and NFPA- 14. 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 month, installation/modification on within 4 months
F-16	Fire Protection System(ITM of fire pump)	Inspection, testing, and maintenance for the fire pump is not in accordance with NFPA 20, 25 and RSC Technical Guideline (Standard).	Inspect, test and maintain the fire pump in accordance with NFPA 20, 25 and RSC Technical Guideline (Standard) and keep written records on-site.	Within 1 Month (after installation)
F-17	Fire Protection System(ITM of Sprinkler)	Inspection, testing and maintenance of the sprinkler system is not in accordance with NFPA 25.	Inspect, test and maintain the automatic sprinkler system, and keep written records on-site, in accordance with NFPA 25 and RSC Technical Guideline (Standard).	Within 1 Month (after installation)

F-18	Fire Protection System(ITM of Standpipe)	Inspection, testing and maintenance of the standpipe system is not in accordance with NFPA 25.	Inspect, test and maintain the automatic sprinkler system, and keep written records on-site, in accordance with NFPA 25 and RSC Technical Guideline (Standard).	Within 1 Month (after installation)
F-19	ITM of Egress Lighting	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 3 months
F-20	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 and The RSC Technical Guidelines (Standard).	Within 3 months