

# INITIAL FIRE SAFETY INSPECTION REPORT

**Zaheen Knitwears Limited (Shed - 3, 4, 5, 10, 11, 12, 13) & (Building - Security, ETP and Fire Pump)**

**RSC ID: 24449**

**Keodala, Madanpur, Bandar, Narayangonj.**

**Other Factories: Zaheen Knitwears Limited (ID: 11497)**



**Inspected By: Md. Ferdaus Jaman and Yusuf Ahmed**

**Date: 19 September, 2022**

# Fire Safety Inspection Report

**Factory Name: Zaheen Knitwears Limited (Shed - 3, 4, 5, 10, 11, 12, 13) & (Building - Security, ETP and Fire Pump)**

## Introduction:

**Zaheen Knitwears Limited (Shed - 3, 4, 5, 10, 11, 12, 13) & (Building - Security, ETP and Fire Pump)** complex was surveyed for fire safety on 19/09/2022 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):

Factory Building name(s): There are total 12 structures in the factory compound under this RSC ID. The buildings are as below:

1. Shed-3: (Garments Shed)-2 Storied Pre-fabricated Steel Shed
2. Shed-4: (Knitting, Fabric Store Shed) -2 Storied Pre-fabricated Steel Shed
3. Shed-5: (Garments & Dyeing Shed) - 2 Storied Pre-fabricated Steel Shed
4. Shed-10: (Chemical Godown)- Single Storied Pre-fabricated Steel Shed
5. Shed-11: (Garments shed) - 3 Storied Pre-fabricated Steel Shed
6. Shed-12: (Wastage Shed) - Single Storied Pre-fabricated Steel Shed
7. Shed-13: (Worker Dining Shed) - Single Storied Pre-fabricated Steel Shed
8. Shed-14: (Knitting Gray Fabric Godown) - Single Storied Pre-fabricated Steel Shed
9. Building-3: Fire Control Room - Single Storied RCC Building
10. Building-4: Security Office - Single Storied RCC Building
11. Building-5: ETP - 3 Storied RCC Building
12. Building-6: Fire Pump Room- Single Storied Underground RCC Building

**Factory Address: Keodala, Madanpur, Bandar, Narayangonj.**

## Findings & Recommendations :

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

Table-1:

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-1	Fire Rated Construction	<p style="text-align: center;"><b>Shed-3</b></p> <p>The exit stairs are not separated from [work areas, other spaces] on each floor by fire-rated construction.</p>	<p>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.</p> <p>If fire rated doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.</p>	Within 3 months




F-2	Fire Rated Construction	Unsealed penetrations and openings are located in the exit stair enclosures. Location: Stair-1 and stair-2	Seal all penetrations and openings in exit stair enclosure walls a minimum 2-hr fire rated separations.	Within 3 months
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F-3	Fire Rated Construction	The main structural element of the Production Building is constructed by steel which is non-rated and were found in exposed condition without any fire protection.	The building shall be type-I or II construction. So, provide required rating in the structural elements of the building. Consult with a qualified fire protection engineer. Follow BNBC 2006-Table 3.3.1, 3.2.4 & 3.1.9.	Within 6 months
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F-4	Means of egress	Storage was located in the egress path. Location: Ground Floor.	Keep egress path and stair clear of storage.	Immediately
				
F-5	Means of egress	Building did not have stair designation signs or occupant load signs at the required locations.	Provide stair designation signs and occupant load signs at the required locations.	Within 1 month

F-6	Means of Egress	Landings are not provided on both sides of doors used in the means of egress. Doors swing out over stairs.	According to RSC Technical Guidelines (Standard) 6.8.5 a landing shall be provided on both sides of doors used in the means of egress. Door shall not swing out over stairs.	Within 3 months
				
F-7	Egress Lighting	The directional signs are not provided where there is a change in direction and where the continuation of the egress path is not obvious. Location: All floors	Install 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-8	Egress Lighting	<p>Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. Location: All floors.</p>	<p>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.</p>	Within 1 month
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F-9	Fire Rated Construction	<p style="text-align: center;"><b>Shed-4</b></p> <p>The exit stairs are not separated from [work areas, other spaces] on each floor by fire-rated construction.</p>	<p>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.</p> <p>If fire rated doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.</p>	Within 3 months
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F-10	Fire Rated Construction	The main structural element of the Production Building is constructed by steel which is non-rated and were found in exposed condition without any fire protection.	The building shall be type-I or II construction. So, provide required rating in the structural elements of the building. Consult with a qualified fire protection engineer. Follow BNBC 2006-Table 3.3.1, 3.2.4 & 3.1.9.	Within 6 months
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F-11	Fire Rated Construction	Unsealed penetrations and openings are located in the exit stair enclosures. Location: Stair-1	Seal all penetrations and openings in exit stair enclosure walls a minimum 2-hr fire rated separations.	Within 3 months
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F-12	Fire Rated Construction	Room used for combustible storage are not separated by fire rated construction. Location: Fabric store on ground floor.	Separate the storage room by a minimum 1- hr fire-rated construction. Seal and/or protected all openings to maintain the required fire separations	Within 3 months
				
F-13	Means of Egress	Egress doors/gates with locking features not complying with NFPA101 are provided at building exits.	Remove locking features from all egress doors/gates. If locks are required for security reasons, utilize specialized door locking features complying with NFPA101.	Immediately



F-14	Means of egress	Storage was located in exit stair. Location: Stair-2	Remove storage from the exit stairs and egress path	Immediately
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F-15	Means of Egress	<p>Electrical panel boards are located on the Exit stair. Location: Stair-2</p>	<p>Remove electrical panel boards from exit stairs.Or Relocate the electrical panel boards to a suitable location.</p>	<p>Within 1 month</p>
				
F-16	Egress Lighting	<p>Exit signs are not provided at exit. Location: Exit-2</p>	<p>Provide exit signs above all exits to the exterior and all doors to the exit stair.</p>	<p>Within 1 month</p>



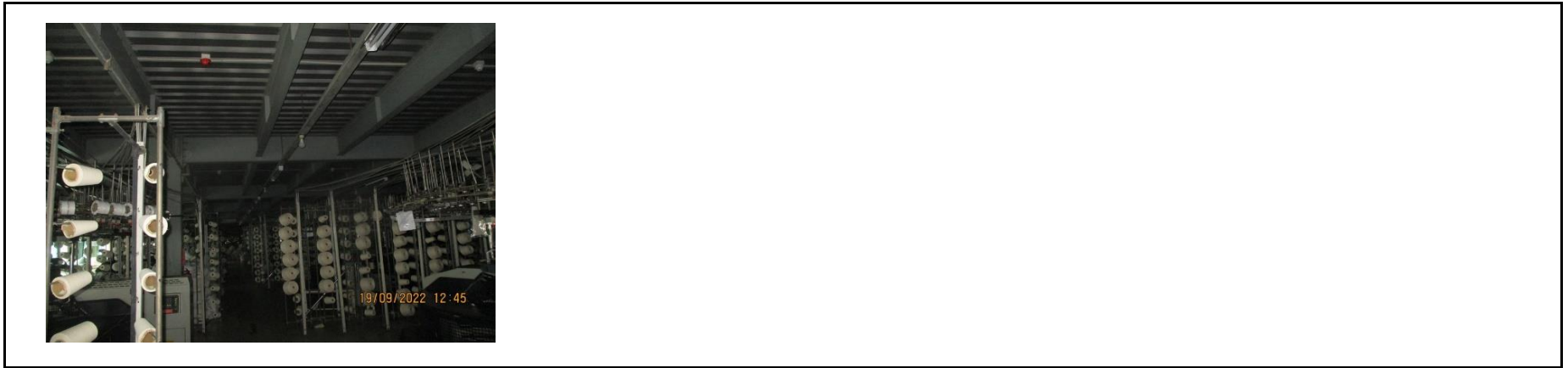
F-17	Egress Lighting	Exit signage not illuminated (burned out, broken, etc.). Location: Exit of Stair-2 and Fabric Store.	Regularly inspect all exit signage and replace/install lights as needed to illuminate signs.	Within 1 month
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F-18	Egress Lighting	<p>The directional signs are not provided where there is a change in direction and where the continuation of the egress path is not obvious. Location: All floors</p>	<p>Install 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.</p>	Within 1 month
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F-19	Egress Lighting	<p>Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. Location: All floors.</p>	<p>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.</p>	Within 1 month
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F-20	Fire Rated Construction	<p style="text-align: center;"><b>Shed-5</b></p> <p>The exit stairs are not separated from [work areas, other spaces] on each floor by fire-rated construction.</p>	<p>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.</p> <p>If fire rated doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.</p> <p>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 The RSC Technical Guidelines (Standard) 6.8.3.1</p>	Within 3 months
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F-21	Fire Rated Construction	Unsealed penetrations and openings are located in the exit stair enclosures. Location: Stair-2	Seal all penetrations and openings in exit stair enclosure walls a minimum 2-hr fire rated separations.	Within 3 months
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F-22	Fire Rated Construction	<p>Areas used for combustible storage are not separated by fire-rated construction. Location: Ground floor.</p>	<p>Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction.</p> <p>Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:</p> <ul style="list-style-type: none"> <li>- Maximum height of 2.4m and maximum area of 23m<sup>2</sup></li> <li>- If sprinkler protected: maximum height of 3.66m and maximum area of 93m<sup>2</sup></li> </ul> <p>Separate areas of unenclosed combustible storage by a minimum clear distance of 3m</p>	Within 3 months
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F-23	Means of egress	Storage was located in exit stair. Location: Stair-1	Remove storage from the exit stairs and egress path	Immediately
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F-24	Means of Egress	Egress doors/gates with locking features not complying with NFPA101 are provided at building exits.	Remove locking features from all egress doors/gates. If locks are required for security reasons, utilize specialized door locking features complying with NFPA101.	Immediately
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F-25	Means of egress	Building did not have stair designation signs or occupant load signs at the required locations.	Provide stair designation signs and occupant load signs at the required locations.	Within 1 month
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F-26	Means of egress	Fire evacuation maps were not posted at the entrance to each exit stair.	Fire evacuation maps shall be posted at the entrance to each exit stair.	Within 1 month
F-27	Means of egress	sliding doors/rolling shutter doors are provided at building exits. Location: Ground floor	Replace all collapsible gates/ sliding doors/ rolling shutter doors along the means of egress with side-hinged, swinging egress doors. If locks are required for security reasons, utilize specialized door locking features complying with NFPA101.	Within 1 month



F-28	Egress Lighting	Exit signage not illuminated (burned out, broken, etc.).	Regularly inspect all exit signage and replace/install lights as needed to illuminate signs	Within 1 month
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F-29	Egress Lighting	<p>Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. Location: All floors.</p>	<p>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.</p>	Within 1 month
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F-30	Egress Lighting	<p>The directional signs are not provided where there is a change in direction and where the continuation of the egress path is not obvious. Location: All floors</p>	<p>Install 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.</p>	Within 1 month
F-31	Fire Rated Construction	<p><b>Shed-11</b> The exit stairs are not separated from [work areas, other spaces] on each floor by fire-rated construction.</p>	<p>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.</p> <p>If fire rated doors are required to be held open for functional reasons, provide automatic closing devices tied to the fire alarm system.</p>	Within 3 months



F-32	Fire Rated Construction	The main structural element of the Production Building is constructed by steel which is non-rated and were found in exposed condition without any fire protection.	The building shall be type-I or II construction. So, provide required rating in the structural elements of the building. Consult with a qualified fire protection engineer. Follow BNBC 2006-Table 3.3.1, 3.2.4 & 3.1.9.	Within 6 months
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F-33	Fire Rated Construction	Unsealed penetrations and openings are located in the exit stair enclosures. Location: Stair-2	Seal all penetrations and openings in exit stair enclosure walls a minimum 2-hr fire rated separations.	Within 3 months
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F-34	Fire Rated Construction	<p>Areas used for combustible storage are not separated by fire-rated construction. Location: Ground floor.</p>	<p>Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction.</p> <p>Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:</p> <ul style="list-style-type: none"> <li>- Maximum height of 2.4m and maximum area of 23m<sup>2</sup></li> <li>- If sprinkler protected: maximum height of 3.66m and maximum area of 93m<sup>2</sup></li> </ul> <p>Separate areas of unenclosed combustible storage by a minimum clear distance of 3m</p>	Within 3 months
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F-35	Means of Egress	<p>Egress doors/gates with locking features not complying with NFPA101 are provided at building exits. Location: Ground floor</p>	<p>Remove locking features from all egress doors/gates. If locks are required for security reasons, utilize specialized door locking features complying with NFPA101.</p>	Immediately
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F-36	Means of Egress	Handrails are not provided at exit stairs. Location: Stair-1 & 2	Provide handrails on both sides of the exit stair. 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 3 months
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F-37	Means of egress	Storage was located in exit stair. Location: Stair-1	Remove storage from the exit stairs and egress path	Immediately
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F-38	Means of egress	Storage was located in the egress path. Location: Ground Floor.	Keep egress path and stair clear of storage.	Immediately
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F-39	Egress Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. Location: All floors.	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.	Within 1 month	




F-40	Egress Lighting	<p>The directional signs are not provided where there is a change in direction and where the continuation of the egress path is not obvious.          Location: All floors</p>	<p>Install 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.</p>	Within 1 month
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F-41	Fire Rated Construction	<p style="text-align: center;"><b>Shed-14</b></p> <p>The main structural element of the Production Building is constructed by steel which is non-rated and were found in exposed condition without any fire protection.</p>	<p>The building shall be type-I or II construction. So, provide required rating in the structural elements of the building. Consult with a qualified fire protection engineer. Follow BNBC 2006-Table 3.3.1, 3.2.4 &amp; 3.1.9.</p>	Within 6 months
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F-42	Means of egress	Fire evacuation maps were not posted at the entrance to each exit stair.	Fire evacuation maps shall be posted at the entrance to each exit stair.	Within 1 month
F-43	Means of egress	Building did not have stair designation signs or occupant load signs at the required locations.	Provide stair designation signs and occupant load signs at the required locations.	Within 1 month

F-44	Egress Lighting	Exit signage not illuminated (burned out, broken, etc.).	Regularly inspect all exit signage and replace/install lights as needed to illuminate signs	Within 1 month
				
F-45	Egress Lighting	The directional signs are not provided where there is a change in direction and where the continuation of the egress path is not obvious.	Install 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-46	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 1 month
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F-47	Fire Rated Construction	<p align="center"><b>Chemical Shed</b></p> <p>Chemical storage shed is non-rated and not properly separated by fire-rated construction from surrounding occupancies.</p>	<p>Separate the chemical storage room by 4-hr fire rated construction. Seal all penetrations and protect the openings to maintain the required fire separations. Keep 16-points SDS of all chemicals in the storage area. As per BNBC, chemical storage room will be Type-1 construction. Follow section-2.13 and Table 3.2.1 of BNBC-2006 for the guideline.</p>	Within 3 months
				
F-48	Fire Alarm & Detection system	<p>The fire detection system is antiquated, not a listed system, and does not provide alarm and notification features consistent with acceptable standards.</p> <p align="center"><b>Location:</b> For all structures.</p>	<p>Replace the fire detection system with a new, listed addressable fire detection system in accordance with NFPA 72.</p>	<p>Design within 4 months, Install within 9 months</p>



F-49	ITM of Fire Alarm & Detection system	Inspection, testing and maintenance for the fire alarm system is not in accordance with NFPA 72 and 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-50	ITM of Fire Extinguishers	<p>Inspection, testing and maintenance of portable fire extinguishers is not in accordance with NFPA 10.</p> <p><b>Location:</b> For all structures.</p>	<p>Inspect, test and maintain the portable fire extinguishers and keep written records onsite, in accordance with NFPA 10 and The RSC Technical Guidelines (Standard).</p>	Within 3 months
F-51	Egress Lighting	<p>Inspection, testing, and maintenance for the emergency lighting system was not in accordance with The RSC standard.</p> <p><b>Location:</b> For all structures.</p>	<p>Inspect, test and maintain the emergency lighting system in the accordance with The RSC standard. Keep written records on-site.</p>	Within 1 month