

INITIAL FIRE SAFETY INSPECTION REPORT

GMS Composite Knitting Ind. Ltd. (New Building)

RSC ID: 24141

Sardaganj, Kashimpur, Gazipur-1346, Bangladesh.

Geographical Coordinates of factory building: 23°58'07.0"N 90°17'49.5"E

Other Factories: GMS Composite Knitting Ind. Ltd & GMS Trims (In the premises)



Inspected By: Pantha Pallob Das , Safawan Abyaz, Md. Anisuzzaman & Nainin Nowrose

Date: 24-May-2021 and 31-May-2021

Fire Safety Inspection Report

GMS Composite Knitting Ind. Ltd. (New Building)

Introduction:

GMS Composite Knitting Ind. Ltd. (New Building). complex was surveyed for fire safety on 24-May-2021 and 31-May-2021 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): The buildings under this inspection scope (ID 24141).

1. Building No- 07-Basement Building (Construction: January, 2015 to December, 2017)
2. Building No-08- All Over Printing Building(Construction: March , 2014 to June , 2016)
3. Building No-09 - Washing Building.(Construction: February, 2015 to February, 2017)
4. Building No-10- Sample Dyeing Building.(Construction: November, 2016 to December, 2017)
5. Building No-11- ETP Lab Building.(Construction : June, 2015 to February, 2016)
6. Building No-12- New Dyeing Building(Construction: April, 2019 to June, 2021 (Proposed)).
7. Building No-13- Fair Shop Building.(Construction: February, 2016 to June, 2020)
8. Building No-14- New Utility Building(Construction: January, 2014 to July, 2015)
9. Building No -15- Fire Pump Building.(Construction: June, 2019 to June, 2021 (Proposed))
10. Shed Bldg. No-01-01 No Security Office(Construction: January , 2001 to February , 2001)
11. Shed Bldg. No-02- 04 No Boiler Room.(Construction: October , 2016 to January , 2017)
12. Shed Bldg. No-03- #1 New Fire Pump & Reservoir.(Construction: July, 2017 to September, 2017)
13. Shed No-04- #3 Boiler Room.(Construction: January, 2014 to July, 2015)
14. Shed No-05-Lath Workshop & RCU.(Construction: November, 2015 to December, 2015)
15. Shed No-06-Yarn Store.(Construction: January, 2012 to April, 2012)
16. Shed No-07-Big Go down.(Construction: July, 2010 to October, 2010)
17. Shed No-08-Left Over Shed.(Construction: January, 2015 to October, 2015)
18. Shed No-09-Left Over Store Shed.(Construction: April, 2016 to October, 2016)
19. Shed No-10-New Chemical 1 & 2.(Construction: January, 2018 to April, 2018)
20. Shed No-11-Finished Fabric Shed.(Construction: October, 2018 to February, 2019)
21. Shed No-12-Central Wastage Shed 1&2.(Construction: September, 2019 to November, 2019)
22. Shed No-13- #4 Security Office.(Construction: January 2017 to March 2017)
23. Shed No-14- New Yarn Shed.(Construction: January 2021 to May 2021)
24. Shed Bldg. No-15- #2 Security Office.(Construction: July, 2017 to August, 2017)
25. Shed Bldg. No-16- #3 Security Office.(Construction: June, 2013 to July, 2013)

Findings & Recommendations :

Table 1-6 summarizes the fire safety non-compliant issues identified during the inspection. Recommendations have been provided to address each issue with specific remediation timeline.

An implementation schedule shall be developed by the factory to remediate each of the findings. The specific timing of improvements, including any requested extensions due to design / installation constraints, shall be submitted to the RSC for approval.

Table No.	Building	Total Finding	Finding Range	Remarks
Table 1	Building-7	18	F-1 to F-18	
Table 2	Building-9&10	24	F-19 to F-42	
Table 3	Building-8	17	F-43 to F-59	
Table 4	Building-12	15	F-60 to F-74	
Table 5	Yarn Store (Shed No-06), Leftover Shed (Shed-08), ETP Lab Building (Building-11).	9	F-75 to F-83	
Table 6	Building 13 to 15 and Shed no: 1 to 5 & shed no: 7, 9 to 16	16	F-84 to F-99	

Table-1: Building No- 07-Basement Building-RCC Structure

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-1	Fire Rated Construction	Exit Enclosures are not properly fire separated from other occupancy on each floor by fire rated construction. Location: Building 7 (Basement building)	Provide minimum 2-hr fire rated separation in exit enclosures with minimum 1.5-hr fire rated doors and seal all unprotected openings and penetration to separate the exit stairs from work areas and other building spaces on all floor levels with similar rating of fire door. 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



F-2	Fire Rated Construction	Elevator shafts are directly open into the inside of stair-1 & Stair-2. Located: Building 7(basement)	For new construction, elevators shall not open into an exit enclosure as per ACCORD Standard-6.14.3. So, ensure separate enclosures for the elevator shafts with minimum 2 hr. fire rating.	Within 3 month
 				
F-3	Fire Rated Construction	The exit discharge path (Egress Court) stair-3 was less than 10 ft wide and was not separated from the building interior due to some unprotected openings and penetrations of basement and ground floor. Location: Near to Stair-3 of building 7 (basement).	Seal all penetrations and openings to the interior of the building along the discharge path, up to a height of 10 ft. with minimum 2-hr fire rated materials.	Within 3 months



F-4	Fire Rated Construction	Chemical storage area is not properly separated by fire-rated construction with general store. Location: Basement of building 07.	Separate the chemical storage room by minimum 4-hr fire rated construction. Seal all penetrations and protect the openings to maintain the required fire separations. Keep 16-points MSDS of all chemicals in the storage area. ** As per BNBC, chemical storage room shall be Type-1 construction. Follow section-2.13 and Table 3.2.1 of BNBC-2006 for the guideline.	Within 3 months
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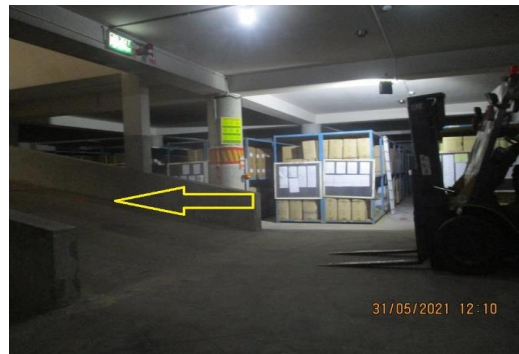
F-5	Means of Egress	Exits are not remotely located from each other of the basement floor. Location: building 7(basement)	Specify appropriate upgrade based on conditions:- 1. Modify exit arrangement to meet ACCORD standard 6.6.6. OR 2. Provide additional exit(s) to meet ACCORD standard 6.6.6.	Within 3 months
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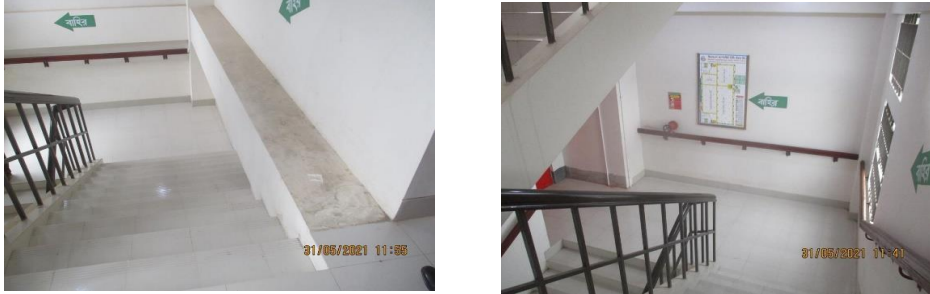


F-6	Means of Egress	Common path of egress travel was more than 8 m for chemical store and more than 23 m for normal storage in basement floor . Location: Building 7(basement)	The maximum common path of travel for the general storage shall be 23 m and 30 meter with sprinkler, for chemical store it shall not be more than 8 meter under any condition. So, Reconfigure the egress arrangement to reduce the maximum tolerable common path of travel.	Within 3 months
				
F-7	Means of Egress	Parapets or guards are provided in occupied roof which is less than 1067mm (42 inch). Location: Building 7(basement building)	Provide parapets or guards with a minimum height of 1067mm (42 inch.).	Within 3 months



F-8	Means of Egress	Ramp slope are not provided as per standard. Location: Basement floor of building 7(basement).	New ramps shall not have a running slope greater than 1 in 12 (8percent). Existing ramps shall not have a running slope greater than 1 in 8 (12.5percent). Please have a cross check on it and ensure at least 1:8.	Within 3 months
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F-9	Means of Egress	Handrails were not provided on both sides of exit stair and new handrails height were provided greater than 965 mm (38 in.). Location : Building 7(basement)	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.	Within 3 months
				
F-10	Egress lighting	Directional signs are not provided where direction of the path of travel to an exit has changed. Location: all floor of building 7(basement)	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 months
F-11	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. Location: Building 7(basement)	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.	Within 3 months

F-12	Egress lighting(ITM)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The ACCORD standard.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 3months
F-13	Fire Alarm & Detection System (FADS)	The Required Fire Alarm system is not installed in accordance with the ACCORD standard and NFPA-72. Location: Building 07(Basement)	Design & Installation of Fire Alarm system shall be in accordance with ACCORD standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the fire detection & alarm system installation. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	Design within 2 months, Install within 5 months.
F-14	Fire Detection System (ITM of FADS)	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 or as per Accord standard	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 or as per Accord standard.	Within 1 Month after installation.

F-15	Fire Protection System(Standpipe)	The Required Standpipe System is not installed in accordance with the ACCORD standard and NFPA-14, 20, 22 and 24. Location: Building 7(basement)	Submit the standpipe system drawing to RSC for review. Once reviewed, install or modify the standpipe system throughout the building in accordance with Accord 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 fire detection & alarm system installation.	Design within 2 months, Install within 5 months.
F-16	Fire Protection System(ITM of Standpipe)	Inspection, testing, and maintenance for the Standpipe system is not in accordance with NFPA 25 or as per Accord standard	Inspect, test and maintain the Standpipe system, and keep written records on-site, in accordance with NFPA 25 or as per Accord standard	Within 1 Month after installation.
F-17	Fire Protection System(ITM of Fire Pump)	Inspection, testing, and maintenance for the fire pump is not in accordance with NFPA 25 or as per Accord standard	Inspect, test and maintain the fire pump, and keep written records on-site, in accordance with NFPA 25 or as per Accord standard	Within 1 Month after installation.
F-18	Fire Protection System(ITM of Extinguisher)	Inspection, testing, and maintenance of the extinguisher system is not in accordance with NFPA 10 or as per Accord standard.	Inspect, test and maintain the extinguisher system, and keep written records on-site, in accordance with NFPA 10 or as per Accord standard.	Within 1 month

Table-2: Building 9-Washing Building & Building 10-Sample Dyeing Building.

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-19	Fire Rated Construction	Exit Enclosures are not properly fire separated from other occupancy on each floor by fire rated construction. Location :Building 9 & Building 10.	Provide minimum 2-hr fire rated separation in exit enclosures with minimum 1.5-hr fire rated doors and seal all unprotected openings and penetration to separate the exit stairs from work areas and other building spaces on all floor levels with similar rating of fire door. 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



F-20	Fire Rated Construction	Elevator shafts are directly open into the production floor without proper fire separation. Location: Building 9 (Washing).	Ensure minimum 2-hr listed/3rd part certified fire rated lift landing doors for elevator shafts otherwise close the area of the shaft with a 2-hr fire-rated construction barrier.	Within 3 months
 				
F-21	Fire Rated Construction	Prayer room is not properly fire separated from other occupancy by fire rated construction. Location: 1st floor of building 9 (Washing)	Separate the dining area from production & other occupancies by minimum 3-hr fire rated construction. Provide rated exit passageways leading directly to the exit stairs with the same resistance rating. OR Relocated the prayer room.	Within 3 months



F-22

Fire Rated Construction

The main structural element of the building 9 is constructed by steel which is non-rated and were found in exposed condition without any fire protection.

The building is a new steel structure which shall be type-I or II construction. So, provide require rating in the structural elements of the building. Consult with a qualified fire protection engineer. Follow BNBC 2006-Table 3.2.4, 3.1.9 and 3.3.1 as reference.

Within 6 months



F-23	Fire Rated Construction	Chemical storage area is not separated by fire-rated construction having non rated door and unsealed penetrations and openings. Location: Mezzanine floor of building 9(Washing)	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 MSDS of all chemicals in the storage area. ** As per BNBC, chemical storage room shall be Type-1 construction (Table-3.2.4 of BNBC-2006). Follow section-2.13 and Table 3.2.1 of BNBC-2006 for the guideline.	Within 3 months
				

F-24	Fire Rated Construction	Areas used for in-process storage of combustible materials are open to the surrounding occupancy which are not separated by fire rated construction. Location: 1st floor, 2nd & 3rd floor of Building 9 (washing) and 1st & 4th floor of Building 10 (sample dyeing)	Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Or, Where separate storage rooms are not feasible, 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.	Within 3 months
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F-25	Fire Rated Construction	The occupants from dining (building-10) reach to stair enclosure through production area of building 9 without fire protection. Location: 2nd and 3rd floor of building 10.	Rearrange the egress facility for the dining so that total occupants from dining can get access directly to rated stair enclosures or through a rated vestibule or passageway with similar rating of stair enclosures which is 2-hr for this case.	Within 3 months
 				
F-26	Fire Rated Construction	The angle between exterior wall of production floor and stair is less than 180° where there are unprotected openings for both walls within 10 ft of diagonal distance. Location: All floor at stair -1 of building 10 (sample dyeing) & Stair-3 of building 9 (washing).	The unprotected opening for any side of the exterior walls shall be sealed or protected by minimum 1.5 hr. fire rated materials so that the protected diagonal distance not being less than 10ft.	Within 3 months



F-27	Means of Egress	Exit pass through the toilet area near to exit stair-3 on each level of all floors. Location: Building 9 (washing building).	Modify the access to toilets. Means of egress shall be maintained continuously free and clear of all hazard/obstructions.	Within 3 months
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F-28	Means of Egress	Parapets or guards are provided in occupiable roof which is less than 1067mm (42 inch). Location: Building 9 (washing) & building 10 (sample dyeing)	Provide parapets or guards with a minimum height of 1067 mm (42 inch.).	Within 3 months
				
F-29	Means of Egress	The egress path along the means of egress has been interrupted by obstruction/storage at ground ,2nd & 3rd floor of building 9(washing).	Means of egress shall be maintained continuously free and clear of all obstructions/storage. Or Aisles shall be provided with a minimum unobstructed clear- with of 0.9m (36 in).	Immediate



F-30	Means of Egress	Headroom for the exit path connected between building 10 & building 9 were found less than 6' 8". Location: 3rd floor of building 9&10.	The minimum headroom shall be 2.03m (6 ft 8 inch)	Within 1 month
				

F-31	Means of Egress	Intermediate handrails were not provided when the stair width exceeds 2.2 m (87 in.) and new handrails were provided with height greater than 965 mm (38 in.). Location : Building 9 & Building 10.	Provide handrails on both sides of the exit stair. Intermediate handrails shall be provided when the stair width exceeds 2.2 m (87 in.). 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.	Within 3 months
 				
F-32	Means of Egress	Landing are not provide both side of doors used in the means of egress. The door installed on the discharge point is very narrow comparing to stair width which increase the possibility of bottlenecking of the discharge system. Location: Ground floor - stair -3 at building- 9 (washing).	Landing shall be provided both side of doors of the means of egress. Modify the width of the door.	Within 3 months

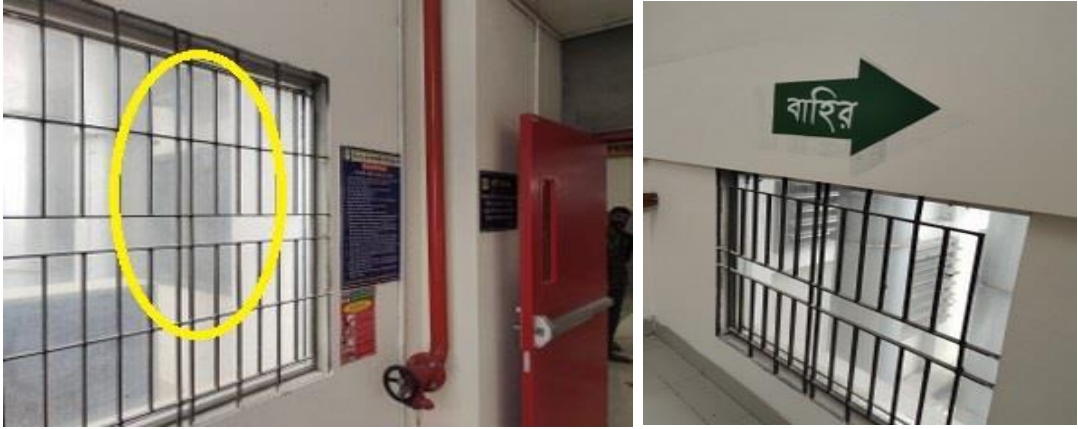
				
F-33	Egress lighting	Directional signs are not provided where direction of the path of travel to an exit has changed. Location: all floor of building 9 & building 10.	Illuminated directional signs shall be provided where there is a change in the direction for the path of travel and the direction to an exit is not obvious.	Within 1 month
F-34	Egress lighting	Exit sign not provided at each exit.	Illuminated 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. Illuminated exit signs shall be provided with either battery backup or uninterruptable power supply systems and shall be continuously illuminated.	Within 1 month
F-35	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes . Location: Building 9 & building 10.	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.	Within 3 months

F-36	Egress lighting	Emergency lights not illuminated during testing (burned out, broken, etc.). Location : Building 9(Washing)	Regularly inspect all emergency lighting system as per Accord standard and replace/install lights as needed to illuminate signs.	Within 1 month
				
F-37	Egress lighting(ITM)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The ACCORD standard.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 3 months

F-38	Fire Alarm & Detection System (FADS)	The Required Fire Alarm system is not installed in accordance with the ACCORD standard and NFPA-72. Location: Building 09(washing) & building 10 (sample dyeing).	Design & Installation of Fire Alarm system shall be in accordance with ACCORD standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the fire detection & alarm system installation. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	Design within 2 months, Install within 4 months.
F-39	Fire Detection System (ITM of FADS)	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 or as per Accord standard.	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 or as per Accord standard.	Within 1 Month after installation.

F-40	Fire Protection System(Standpipe & sprinkler)	The Required Sprinkler System is not installed yet. Class-III standpipe system installation work was going on for the buildings. Location: Building 9 & Building 10.	Considering present condition minimum class-I standpipe system shall be provided along with sprinkler system for both building following NFPA-13,14,20,22 and 24. If height of the building is reduced to less than 23 m then sprinkler system is not mandatory then only class-III standpipe system can meet the standard requirement. Design & Installation of Standpipe & sprinkler system should be in accordance with ACCORD standard and NFPA 13,14, 20, 22 and 24. Submit all design and documents to RSC for review prior to installation/modification.	Design within 2 months, Install within 5 months.
F-41	Fire Protection System(ITM of Standpipe)	Inspection, testing, and maintenance for the Sprinkler & Standpipe system is not in accordance with NFPA 25 or as per Accord standard	Inspect, test and maintain the Standpipe system, and keep written records on-site, in accordance with NFPA 25 or as per Accord standard.	Within 1 Month after installation.
F-42	Fire Protection System(ITM of Extinguisher)	Inspection, testing, and maintenance of the extinguisher system is not in accordance with NFPA 10 or as per Accord standard	Inspect, test and maintain the extinguisher system, and keep written records on-site, in accordance with NFPA 10 or as per Accord standard.	Within 3 months

Table-3: Building 8

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-43	Fire Rated Construction	Exit stair enclosures are not properly fire separated from other occupancy on each floor by fire rated construction. Location : Stair 5, building-8.	Provide minimum 2-hr fire rated separation for exit enclosure. Seal all unprotected openings and penetration to separate the exit stairs from work areas and other building spaces on all floor levels by minimum 1.5 hr. listed/3rd part certified materials.	Within 3 months
				
F-44	Fire Rated Construction	Elevator shafts are directly open into the production floor without proper fire separation. Location: South-West corner of building-8.	Ensure minimum 2-hr listed/3rd part certified fire rated lift landing doors for elevator shafts otherwise close the area of the shaft with a 2-hr fire-rated construction barrier.	Within 3 month

				
F-45	Fire Rated Construction	The fire doors provided at production floors were held open manually. The door holding devices were not interfaced with fire alarm system. These might compromise the rating of the exit stair enclosure in case of emergency. Location: All floors of building-8.	If fire rated doors are required to be held open for functional reasons, provide magnetic door hold open devices tied to the fire alarm system. Each & every component of fire doors shall be put through proper maintenance for proper functioning & sustainability.	Within 3 months

 				
F-46	Fire Rated Construction	Penetrations through fire rated floor/ceiling assemblies are not properly sealed. Location: South-West Utility Room of building-8.	Seal all penetrations and openings in floor/ceiling (full thickness of the floor/ceiling or thickness required to maintain desired rating) assemblies by listed fire stop materials to maintain the required fire resistance rating of 3-hr. or, Enclose the riser room by minimum 2-hour fire rated construction.	Within 3 month

				
F-47	Means of Egress	Egress aisles were partially obstructed by process goods. Location: 6th floor, south aisles. Building-8.	Keep egress aisles clear of any kind of obstruction & storage. Maintain clear aisle width of 36 inch.	Immediately
				

F-48	Means of Egress	Storage was located inside the exit staircase at roof level. Location: Stair 4 of building-8.	Remove all storage and other appliances from exit stairs and egress paths. Stairs shall not be utilized for storage purposes.	Immediately
				

F-49	Fire Rated Construction	Areas used for combustible storage are not separated by fire-rated construction. Location: Ground, 1st, 2nd, 4th, 5th floors of building-8.	Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Seal all penetrations to maintain required fire separation. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:-Maximum height of 2.4 m and maximum area of 23m²- 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.	Within 3 months
 				

F-50	Fire Rated Construction	The Dining area is not separated by fire rated construction with the adjacent production occupancies. Location: 4th floor of building-8.	Separate the dining area from production & other occupancies by minimum 3-hr fire rated construction. Provide rated exit passageways leading directly to the exit stairs of the same resistance rating.	Within 3 months
				
F-51	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress aisles located specially at ground floor. Location: Building-8.	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.	Within 3 months

F-52	Egress lighting(ITM)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The ACCORD standard. Location: Building-8.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 3 months
F-53	Fire Alarm & Detection System (FADS)	An addressable fire alarm & detection system installation was ongoing during inspection day. Additionally, single station smoke alarms were located at several locations. Location: Building-8.	Design & Installation of Fire Alarm system shall be in accordance with ACCORD standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the fire detection & alarm system installation. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	Design within 2 months, Install within 4 months.
F-54	Fire Detection System (ITM of FADS)	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 & Accord standard	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 or as per Accord standard.	Within 1 Month after installation.

F-55	Fire Protection System (Standpipe & Sprinkler System).	The high-rise building has an occupied floor greater than 23 meter (75 feet) and is not provided with automatic sprinkler protection. The large occupant loads, heavy fuel loading, and anticipated extended egress times warrant sprinkler protection. Location: Building-8.	Considering present condition minimum class-I standpipe system shall be provided along with sprinkler system for the building following NFPA-13,14,20,22 and 24. If height of the building is reduced to less than 23 m then sprinkler system is not mandatory then only class-III standpipe system can meet the standard requirement. Design & Installation of Standpipe & sprinkler system should be in accordance with ACCORD standard and NFPA 13,14, 20, 22 and 24. Submit all design and documents to RSC for review prior to installation/modification.	Design within 2 months, Install within 5 months.
F-56	Fire Protection System(ITM of Standpipe)	Inspection, testing, and maintenance for the Standpipe system is not in accordance with NFPA 25 or as per Accord standard. Location: Building-8	Inspect, test and maintain the standpipe system in accordance with NFPA 25 or as per Accord standard and keep written records on-site.	Within 1 Month after installation.
F-57	Fire Protection System(ITM of Sprinkler)	Inspection, testing, and maintenance for the Sprinkler system is not in accordance with NFPA 25 or as per Accord standard. Location: Building-8	Inspect, test and maintain the sprinkler system in accordance with NFPA 25 or as per Accord standard and keep written records on-site.	Within 1 Month after installation.

F-58	Fire Protection System(ITM of fire pump)	Inspection, testing, and maintenance for the fire pump is not in accordance with NFPA 25 or as per Accord standard. Location: Building-8	Inspect, test and maintain the fire pump in accordance with NFPA 25 or as per Accord standard and keep written records on-site.	Within 1 Month after installation.
F-59	Fire Protection System(ITM of Extinguisher)	Inspection, testing, and maintenance of the extinguisher system is not in accordance with NFPA 10 or as per Accord standard Location: Building-8	Inspect, test and maintain the extinguisher system, and keep written records on-site, in accordance with NFPA 10 or as per Accord standard.	Within 3 months

Table-4: Building 12

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-60	Fire Rated Construction	None of the exit stairs are enclosed properly by fire rated construction at ground floor level. Location: Building-12.	The exit stairs shall be enclosed by a minimum 2-hr fire rated construction. Provide minimum 1.5-hr fire rated doors and seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. 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 & assembly areas. Each & every component of fire doors shall be put through proper maintenance for proper functioning & sustainability.	Within 3 months
				

F-61	Fire Rated Construction	Elevator shafts are directly open into the production floor without proper fire separation. Location: South-West corner of Building-12.	Ensure minimum 2-hr listed/3rd part certified fire rated lift landing doors for elevator shafts otherwise close the area of the shaft with a 2-hr fire-rated construction barrier.	Within 3 month
				
F-62	Fire Rated Construction	The fire doors provided at several floors were held open manually. The door holding devices were not interfaced with fire alarm system. These might compromise the rating of the exit stair enclosure in case of emergency. Location: All floors of Building-12.	If fire rated doors are required to be held open for functional reasons, provide magnetic door hold open devices tied to the fire alarm system. Each & every component of fire doors shall be put through proper maintenance for proper functioning & sustainability.	Within 3 months

				
F-63	Fire Rated Construction	Penetrations through fire rated floor/ceiling assemblies are not properly sealed. Location: North-East Cable Riser of Building-12.	Seal all penetrations and openings in floor/ceiling (full thickness of the floor/ceiling or thickness required to maintain desired rating) assemblies by listed fire stop materials to maintain the required fire resistance rating of 3-hr.	Within 3 months
				

F-64	Fire Rated Construction	Areas used for combustible storage are not separated by fire-rated construction. Location: Ground, 1st floors of Building-12.	Provide dedicated storage rooms separated by minimum 1-hr fire-rated construction. Seal all penetrations to maintain required fire separation. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows:- Maximum height of 2.4m and maximum area of 23m²- 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.	Within 3 months
				
F-65	Means of Egress	Parapets or guards are provided in occupied roof which is less than 1067mm (42 inch). Building-12.	Provide parapets or guards with a minimum height of 1067mm (42 inch.).	Within 3 months



F-66	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress aisles located specially at upper floors. Location: Building-12.	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 3months
F-67	Egress lighting(ITM)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The ACCORD standard. Building-12.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 3months

F-68	Fire Alarm & Detection System (FADS)	An addressable fire alarm & detection system installation was ongoing during inspection day. Additionally, single station smoke alarms were located at several Locations. Building-12.	Design & Installation of Fire Alarm system shall be in accordance with ACCORD standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the fire detection & alarm system installation. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	Design within 2 months, Install within 5 months.
F-69	Fire Detection System (ITM of FADS)	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 & Accord standard. Location: Building-12.	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 or as per Accord standard.	Within 1 Month after installation.
F-70	Fire Protection System (Standpipe & Sprinkler)	The high-rise building has an occupied floor greater than 23 meter (75 feet) and is not provided with automatic sprinkler protection. The large occupant loads, heavy fuel loading, and anticipated extended egress times warrant sprinkler protection. Location: Building-12.	Considering present condition minimum class-I standpipe system shall be provided along with sprinkler system for the building following NFPA-13,14,20,22 and 24. If height of the building is reduced to less than 23 m then sprinkler system is not mandatory then only class-III standpipe system can meet the standard requirement. Design & Installation of Standpipe & sprinkler system should be in accordance with ACCORD standard and NFPA 13,14, 20, 22 and 24. Submit all design and documents to RSC for review prior to installation/modification.	Design within 2 months, Install within 5 months.

F-71	Fire Protection System(ITM of Standpipe)	Inspection, testing, and maintenance for the Standpipe system is not in accordance with NFPA 25 or as per Accord standard. Location: Building-12.	Inspect, test and maintain the standpipe system in accordance with NFPA 25 or as per Accord standard and keep written records on-site.	Within 1 Month after installation.
F-72	Fire Protection System(ITM of Sprinkler)	Inspection, testing, and maintenance for the Sprinkler system is not in accordance with NFPA 25 or as per Accord standard. Location:Building-12.	Inspect, test and maintain the sprinkler system in accordance with NFPA 25 or as per Accord standard and keep written records on-site.	Within 1 Month after installation.
F-73	Fire Protection System(ITM of fire pump)	Inspection, testing, and maintenance for the fire pump is not in accordance with NFPA 25 or as per Accord standard. Location:Building-12.	Inspect, test and maintain the fire pump in accordance with NFPA 25 or as per Accord standard and keep written records on-site.	Within 1 Month after installation.
F-74	Fire Protection System(ITM of Extinguisher)	Inspection, testing, and maintenance of the extinguisher system is not in accordance with NFPA 10 or as per Accord standard. Location:Building-12.	Inspect, test and maintain the extinguisher system, and keep written records on-site, in accordance with NFPA 10 or as per Accord standard.	Within 3 months

Table-5: Yarn Store (Shed-6), Leftover Shed (Shed-8) & ETP Building.

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-75	Means of Egress	Exits are not remotely located from each other that a single fire event could compromise both exits. Location: Yarn Store Shed (Shed-6).	Specify appropriate upgrade based on conditions:- 1. Modify exit arrangement to meet ACCORD standard 6.6.6. OR 2. Provide additional exit(s) to meet ACCORD standard 6.6.6. Or 3. Provide sprinkler protection in accordance with NFPA 13 to meet ACCORD standard 6.6.6	Within 3 months

F-76	Fire Rated Construction	Sliding gates are provided at exits. Location: Yarn Store, Leftover Shed	Replace sliding gates along the means of egress with side hinged swinging type doors. Provide push bar or panic exit hardware fitted with the doors.	Within 1 month
				
F-77	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress aisles. Location: Yarn Store, Leftover Shed	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.	Within 3 months

F-78	Egress lighting(ITM)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The ACCORD standard.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 3 months
F-79	Fire Alarm & Detection System (FADS)	The fire alarm system is antiquated, not a listed system, and does not provide alarm and notification features consistent with acceptable standards. Building: Shed-6,8 & ETP building.	Design & Installation of Fire Alarm system shall be in accordance with ACCORD standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the fire detection & alarm system installation. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	Design within 2 months, Install within 5 months.
F-80	Fire Detection System (ITM of FADS)	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 & Accord standard.	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 or as per Accord standard.	Within 1 Month after installation.

F-81	Egress	The 3-storied ETP building is provided with one exit stair only which violates the RSC and BNBC requirements.	Provide at least one additional exit stair for evacuation purpose in case of emergency. All requirements shall be met for stairs in new building construction as per BNBC.	Within 3 months
				
F-82	Fire Rated Construction	The dedicated leftover store is not separated the adjacent production process area. Location: Leftover Shed	Separate the dedicated the storage area by minimum 1-hr fire rated construction. All openings penetrations to be sealed and/or protected by fire rated measure.	Within 3 months

				
F-83	Fire Protection System(ITM of Extinguisher)	Inspection, testing, and maintenance of the extinguisher system is not in accordance with NFPA 10 or as per Accord standard.	Inspect, test and maintain the extinguisher system, and keep written records on-site, in accordance with NFPA 10 or as per Accord standard.	Within 3 months

Table-6: Building no: 13 to 15 and Shed no: 1 to 5 & shed no: 7, 9 to 16

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-84	Fire Rated Construction	Transformer room is not properly fire separated from temporary store (proposed generator room) by fire rated construction due to unprotected opening. Location: Ground floor of building 13 (Fair shop).	Transformer room shall be separated from the temporary store (proposed generator room) by a minimum 2-hr fire-rated construction (wall, floor, slab, etc.). Seal all penetrations and openings (door, window, etc.) by minimum 1.5-hr fire-rated materials to maintain the fire separation as required. All exhaust systems shall discharge to the exterior of the building in a safe location. Or, Relocate the Transformer to the exterior of the building and maintain a minimum 3m (10 ft.) spatial separation distance from the building.	Within 3 months
				

F-85	Fire Rated Construction	Boiler room is not properly separated from turning machine by fire rated construction. Location: Shed No-02 (04 No Boiler Room) & Building-14.	Boiler room shall be separated from other occupancies by a minimum 1-hr. Seal all penetrations and openings (door, window etc.) by minimum 0.75-hr (45 min) fire rated materials to maintain the fire separation as required. All exhaust systems shall discharge to the exterior of the building in a safe location. Or Relocate it to exterior of the building and maintain a minimum 3m (10 ft.) spatial separation distance from the building.	Within 3 months
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F-86	Fire Rated Construction	The exit stairs are not separated from work areas and other spaces on each floor by fire rated construction. Location: Building No-14.(New Utility Building).	The exit stair enclosure shall be provided with a minimum 0.75-hr fire rated door and seal all penetrations with similar rated listed/3rd party certified fire rated materials. 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
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F-87	Fire Rated Construction	The main structural elements of the buildings are constructed by steel which is non-rated and were found in exposed condition without any fire protection. (New Structure). Location: Shed 6,8,9,10,11 & 14.	The buildings are new steel structure which shall be type-I or II construction. So, provide require rating in the structural elements of the buildings. Consult with a qualified fire protection engineer. Follow BNBC 2006-Table 3.2.4, 3.1.9 and 3.3.1 as reference. Note: J occupancy (Chemical Store) shall be type-I construction.	Within 6 months
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F-88	Fire Rated Construction	A compressed natural gas cylinder was located within the factory. Location :Shed No-05 (Lath Workshop & RCU)	The storage or use of liquefied or compressed flammable gas cylinders shall be prohibited within the factory building as per ACCORD -3.4.2.1.11 standard. OR LPG/CNG cylinders 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 noncombustible 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 vapors. 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.
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F-89	Fire Rated Construction	Chemical storage area is not properly separated from temporary batch shed by fire-rated construction. Location: Near to Shed No-10 (New Chemical 1 & 2)	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 MSDS 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.	Within 3 month
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F-90	Means of Egress	Common path of egress travel was more than 8 m for chemical store. Location: Shed No-10 (New Chemical 1 & 2)	Reconfigure the egress arrangement so that the maximum common path of travel for group J (high hazard) occupancies shall not exceed 8m (25ft).	Within 3 months
 				

F-91	Means of Egress	Parapets or guards are provided in occupied roof which is less than 1067mm (42 inch). Location: Building No- 13(Fair Shop Building)	Provide parapets or guards with a minimum height of 1067 mm (42 inch.).	Within 3 months
				
F-92	Means of Egress	A single means of exit has been provided for all the floors of 3 storied building which does not comply with the standard. Location: Building No- 13(Fair Shop Building)	Provide additional exit following Table 6.6.2 of ACCORD Standard.	Within 3 months



F-93	Means of Egress	Rolling down shutter type doors have provided along means of egress where production related work was going on on the inspection day. Location: Shed No-02 (04 No. Boiler Room)	Replace all roll down shutter type doors & gates by the side-hinged swinging type doors.	Within 1 month
				

F-94	Egress lighting	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-95	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes located at each all buildings. Location: Building No-13, 14, 15, Shed 01,02,03,04,05,7,9,10,11,12,13,14,15, & Shed 16.	Test the emergency lighting system on each floor and provide additional emergency fixtures to provide adequate illumination along the means of egress. Provide a minimum illumination of 10 lux at the floor level within exit stairs and exit discharge paths and minimum 2.5 lux along exit access aisles.	Within 3 months
F-96	Egress lighting(ITM)	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The ACCORD standard. Location: Building No-13, 14, 15, Shed 01,02,03,04,05,7,9,10,11,12,13,14,15, & Shed 16.	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with The ACCORD standard. Keep written records on-site.	Within 3 months

F-97	Fire Alarm & Detection System (FADS)	The Required Fire Alarm system is not installed in accordance with the ACCORD standard and NFPA-72. Location: Building No-13, 14, 15, Shed 01,02,03,04,05,7,9,10,11,12,13,14,15, & Shed 16.	Design & Installation of Fire Alarm system shall be in accordance with ACCORD standard and NFPA 72. Submit design, documents and calculations to RSC for review prior installation/modification. After installation the owner shall contact the RSC for witness of conducting the final acceptance testing of the fire detection & alarm system installation. Also inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72.	Design within 2 months, Install within 5 months.
F-98	Fire Detection System (ITM of FADS)	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 or as per Accord standard.	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 or as per Accord standard.	Within 1month after installation.
F-99	Fire Protection System(ITM of Extinguisher)	Inspection, testing, and maintenance of the extinguisher system is not in accordance with NFPA 10 or as per Accord standard. Location: Building No- 13, 14, 15, Shed 01,02,03,04,05,7,9,10,11,12,13,14,15, & Shed 16.	Inspect, test and maintain the extinguisher system, and keep written records on-site, in accordance with NFPA 10 or as per Accord standard.	Within 3 months