INITIAL FIRE SAFETY INSPECTION REPORT

Kadena Sportwear Limited (Extension)

RSC ID: 24614

Standard Factory Building no. 5 & Plot no. 113-121, Comilla EPZ, Comilla.

GPS: 23.4430, 91.1832

Other Factories: Kadena Sportwear Limited [ID-12141]

RSC RMG SUSTAINABILITY COUNCIL

Inspected By: Md. Kamrul Hasan

Date: 06-Dec-2023

Fire Safety Inspection Report

Kadena Sportwear Limited (Extension)

Introduction:

Kadena Sportwear Limited (Extension) complex was surveyed for fire safety on **06-Dec-2023** by The RSC Inspection Team. The purpose of the survey was to identify significant fire safety issues and to provide recommendations for remediation based on applicable standards specified by the RSC. The scope of this initial fire safety inspection was limited to the review and identification of major fire safety issues. The inspection did not include identification of minor deficiencies, which will be further addressed as part of follow-up inspections.

Limitations

The information in this fire safety inspection report was obtained during a visit to the facility and during interviews with local factory management. It has not been possible to provide independent verification for all the information and data collected, and, therefore, The RSC cannot accept general responsibility for omissions or errors arising from inaccuracies in this report from the information obtained.

The findings and recommendations in this report are not intended to imply, guarantee, ensure or warrant compliance with any government regulations. Additionally, the results do not imply in any way that compliance with the findings or recommendations as stated in this report will eliminate all hazards, risks or exposures or that hazards, risks or exposures not referred to in this report do not exist. Compliance with the findings and recommendations stated in this report does not relieve the factory owner from obligation to comply with specific project requirements, industry standards, or the provisions of any local government regulations.

General Factory Information

Factory Building name(s): There are total 14 nos of structures in the factory compound under this RSC ID 24614. The buildings are as below:

S/N	Building Name		Year of construction	Date of Occupy		Area (square meter)
1	**Building-2 Production Shed**	Steel (G+M)	Dec 2014 to Dec 2015	Dec-2015	Interim Construction	2500
2	Warehouse & Cutting Shed	Steel (G+M)	Jan 2019 to Jun 2020	Jun-2020	Interim Construction	4600
3	Printing Shed	Steel (G)	July 2017 to Aug 2017	Aug-2017	Interim Construction	700
4	116-Finished Goods Shed	Steel (G)	Feb 2023 to Jun 2023	Jul-2023	New Construction	1487
5	Chemical Store Shed	Steel (G)	Feb 2018 to Apr 2018	May-2018	Interim Construction	300
6	Maintenance Store Shed	Steel (G)	Dec 2014 to Dec 2014	Dec-2015	Interim Construction	50
7	Sub staion Shed-2	Steel (G)	Jul 2023 to Aug 2023	Aug-2023	New Construction	44
8	**MS SFB2 6 Storied Building**	RCC (G+5)	Sep 2015 to Jan 2017	May-2017	Interim Construction	19800
9	Utility Shed	Steel (G)	Jan 2017 to Mar 2017	Apr-2017	Interim Construction	500
10	Dining Shed	Steel (G)	May 2017 to Jul 2017	Aug-2017	Interim Construction	1000
11	Generator Shed	Steel (G)	May 2017 to Jul 2017	Aug-2017	Interim Construction	30
12	Pump Room-1	RCC (B)	May 2017 to Jul 2017	Aug-2017	Interim Construction	30
13	Pump Room-2	RCC (B)	May 2017 to Jul 2017	Aug-2017	Interim Construction	30
14	Idle Machine Shed	Steel (G)	Jan 2019 to Feb 2019	Feb-2019	Interim Construction	30

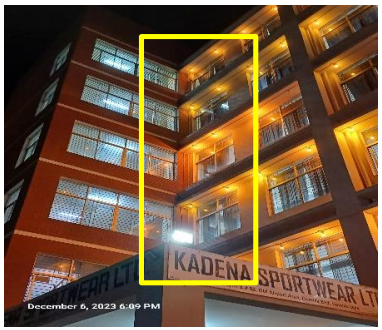
Factory Address: Standard Factory Building no. 5 & Plot no. 113-121, Comilla EPZ, Comilla.

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.

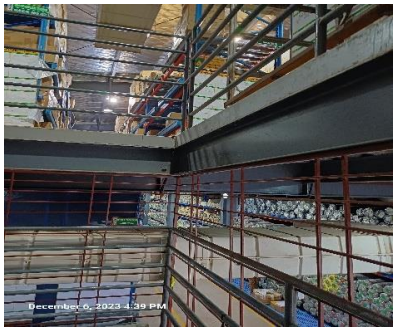
Table-1:

Sl No.	Category	Findings	Required Action	Remediation Time Frame
1	Fire Rated Construction	The exit stairs are not separated from work areas and other spaces on each floor by fire rated construction. **(MS SFB2 6 Storied Building)**	Provide minimum 1-hr rated doors for buildings with 3 or fewer stories and 1.5-hr fire rated doors for buildings that are 4 or more stories. Seal all unprotected openings to separate the exit stairs from work areas and other building spaces on all floor levels. 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. Provide a fire-resistive rated assembly between the exterior exit stairs and the building up to 10 ft. beyond the end of the stair to achieve the required separation. 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.	Within 3 months

   				
2	Fire Rated Construction	Storage room discharges directly into exit stair enclosure. **(MS SFB2 6 Storied Building)**	Openings from exit enclosure to storage room spaces shall be provided with a vestibule with fire rated construction and openings. Provide a 1.5 hr. fire rated door on the exit stair side and a 1-hr. fire rated door on the Store room side. Ensure that the fire rating of the vestibule construction matches that of the exit stair enclosure.	Within 3 months

				
3	Fire Rated Construction	The boiler and compressor rooms are not separated by fire rated construction due to openings, non-rated doors, and penetrations with the store room. **(Utility Shed)**	Any room or space housing boilers or other heat producing equipment shall be separated from other occupancies by a minimum 1 hour construction or by a minimum spatial separation of 3 m (10 ft) where located exterior to the building.	Within 3 months

		 		
4	Fire Rated Construction	Unsealed penetrations and openings are located in the fire-rated floor/ceiling assemblies due to both south-west side and east-south side piping & cable riser in MS SFB2 6 Storied Building; and unsealed penetrations and openings are located in the fire-rated floor/ceiling assemblies in Warehouse & Cutting Shed. **(MS SFB2 6 Storied Building, Warehouse & Cutting Shed)**	Provide a minimum 2-hr fire rated shaft to separate the utility risers from each floor level or seal all penetrations and openings in floors/ceiling assemblies by 3-hr fire rated listed/certified materials. The installation of such fire rated materials shall be following certified design.	Within 3 months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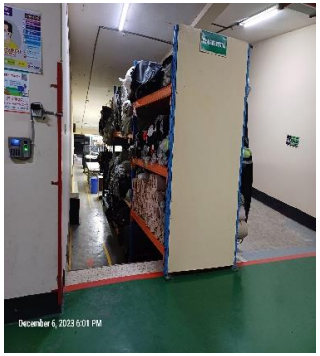
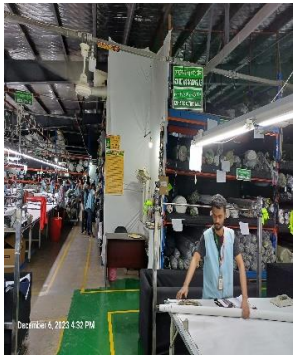
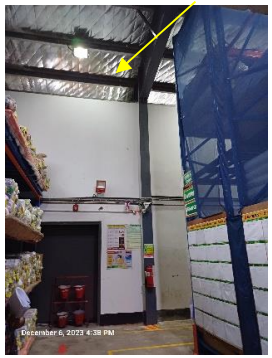
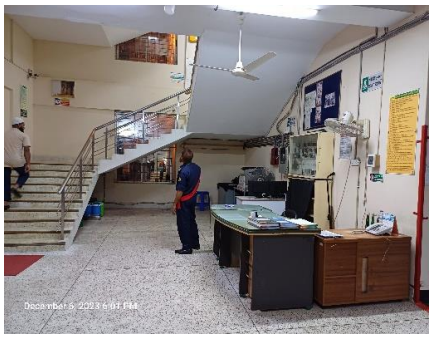
5	Fire Rated Construction	Rooms used for combustible storage are not separated by fire rated construction on the ground & 3rd floors of MS SFB2 6 Storied Building; store with cutting section in Warehouse & Cutting Shed; SCT Store & dryroom store in Building-2 Production Shed; finished goods storage with production area in 116-Finished Goods Shed; and store room in Utility Shed. **(Ground & 3rd floor of MS SFB2 6 Storied Building, Warehouse & Cutting Shed, Building-2 Production Shed, 116-Finished Goods Shed, Utility Shed)**	Separate the dedicated storage rooms by minimum 1-hr fire-rated construction. Provide 0.75 hr. fire rated door and seal all penetrations and openings by 0.75 hr. (45 Minutes) fire rated fire rated barrier construction. Where separate storage rooms are not feasible, provide defined storage areas and limit the storage arrangement as follows: - Maximum height of 2.45m (8ft.) , maximum area of 23m2 (250 ft2) and 3m (10ft.) clear distance from adjacent another unenclosed combustible storage. - If the building/floor is sprinkler protected: maximum height of 3.66m (12ft.) and maximum area of 93m2 (1000 ft2). -In process storage shall be limited to 10 percent of the building area of the story in which they occur.	Within 2 months
    				

6	Fire Rated Construction	Elevator shafts are directly open into exit stair enclosure-1. **(MS SFB2 6 Storied Building)**	Modify the elevator shaft as per RSC Technical Guideline (Standard) V1-6.14.3. An exit stairway shall not be built around a lift shaft unless both of them are located in a smoke proof enclosure and made of a material with fire resistance rating required for the type of construction of smoke proof enclosure. So, rearrange the facility to provide separate enclosure for lifts. If not possible anyway then 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
				

7	Fire Rated Construction	Electrical panels (solar control panel, panel) & electrical distribution board were located in the exit stair-4 enclosure, exit stair-1 & 2 in MS SFB2 6 Storied Building. **(MS SFB2 6 Storied Building)**	Remove and re-locate all electrical panels & distribution board from exit stair enclosures.	Within 3 months
				

8	Fire Rated Construction	Exit Stair-4 & 5 discharge the occupant inside the building on the ground floor. **(MS SFB2 6 Storied Building)**	1. Modify stair to discharge directly outside. Or 2. Provide 2-hr fire-rated exit passageway leading directly outside (vestibules to separate any storage areas). Note: A maximum of 50 percent of the number and capacity of the exit enclosures can discharge through areas on the level of exit discharge where all the conditions described in RSC building standard 6.17.3 are met.	Within 3 months
				

9	Fire Rated Construction	Storage was observed underneath the cutting tables. **(Warehouse & Cutting Shed)**	Storage underneath the cutting tables shall be kept clear of combustibles at all time, except as provided for miscellaneous storage in accordance with RSC Technical Guidelines Standard 3.4.2.1.6 or where automatic sprinkler protection is installed. Where an automatic sprinkler system is installed sprinklers are required to be installed beneath cutting tables greater than 4 ft in width that are used for storage of combustibles.	Within 2 months
				

10	Fire Rated Construction	The substation room is not separated by fire rated construction due to openings, non-rated doors, and penetrations from the north exit access corridor of building-2 production shed. **(Sub staion Shed-2)**	Separate the substation room by a minimum 2-hr fire-rated construction. Seal and/or protect all openings to maintain the required fire separations. When located to the exterior of a building 3m (10 ft.) spatial distance shall be maintained around the substation.	Within 3 months
				
11	Fire Rated Construction	Rooms used for chemical storage are not properly separated by fire rated construction in the printing shed. **(Printing Shed, Chemical shed)**	Ensure the chemical store fire separated by minimum 4-hr fire rated construction barrier with only occupancies with G and H following table 3.2.1 of BNBC-2006. No opening is permitted in the 4-hr rated wall towards any other occupancy. Follow section 2.13 of BNBC-2006 as a guideline chemical store while rearranging.	Within 3 Months

	  			
12	Fire Rated Construction	Exit access corridor serving north exit of the Building-2 Production Shed is not fire separated with sub-station & maintenance store; and exit access corridor of 116-Finished Goods Shed. **(Building-2 Production Shed, 116-Finished Goods Shed)**	Exit access corridors serving an occupant load exceeding 30 shall be separated by walls having a fire resistance rating of 1 hr unless provided with automatic sprinkler protection throughout the story or building.	Within 3 months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13	Fire Rated Construction	The main structural elements of the building are constructed by steel which is non-rated and were found in exposed condition without any fire protection. **(Interim Structure).** **(MS SFB2 6 Storied Building [Only roof floor], Printing shed, Building-2 Production Shed, Chemical Store Shed, Maintenance Store Shed, Idle Machine Shed, Utility Shed, Dining Shed, Generator Shed)**	For interim construction, the building shall be constructed as required in BNBC 2006 Part 3 Table 3.2.4. So, provide require rating for the structural elements of the building following BNBC 2006-Table 3.2.4, 3.1.9 and 3.3.1. Factory shall ensure that, all the design, datasheet, certificate, and the design-philosophy has been reviewed from the RSC prior to install the passive fire protection system.	Within 6 months

				
14	Means of egress	The width of egress aisles is less than 36-in. in few areas on several floors and in few area aisles were not provided. **(MS SFB2 6 Storied Building, Printing Shed, Warehouse & Cutting Shed, Building-2 Production Shed, 116-Finished Goods Shed)**	Provide minimum aisle widths of 36-in.	Within 1 month


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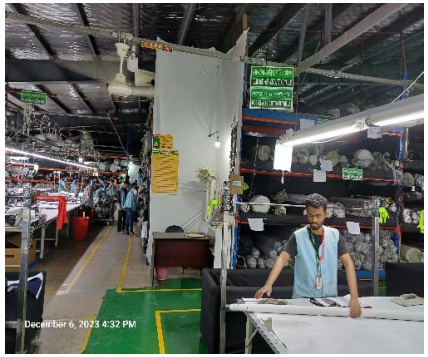
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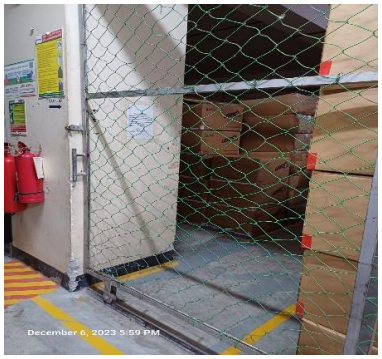
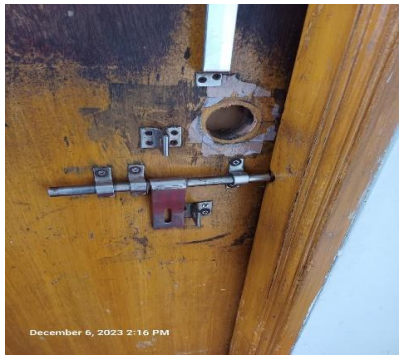
15	Means of egress	Egress doors and gates with locking features were provided at building exits, exit stairs, along egress routes and exit discharge. **(Location: Exits of Building 2 production Shed, Chemical Shed, Warehouse & cutting Shed, pump rooms, Maintenance store shed, all floors of 6 storied Building)**	Remove locking features from all egress doors and gates. If locks are required for security reasons, utilize special door locking features complying with NFPA 101 and RSC standard 6.8.2.	Immediately
  				
16	Means of egress	Storage was located in the egress path & inside stair enclosure. **(Location: Printing Shed, Ground floor of MS SFB2 6 Storied Building)**	Keep egress paths and stairs clear of storage.	Immediately

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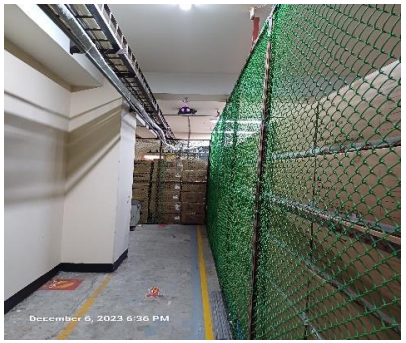
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<tr><td>17</td><td>Means of egress</td><td>Occupiable roofs provided with parapets or guards which is less than 42 in.
(MS SFB2 6 Storied Building)</td><td>All occupiable roofs shall be provided with parapets or guards with a minimum height of 1067mm (42 in.).</td><td>Within 2 months</td></tr>
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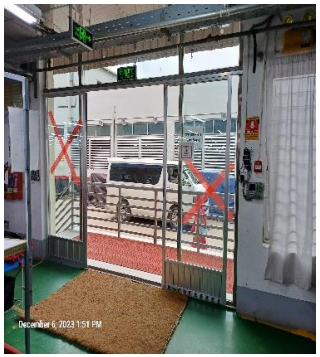
18	Means of egress	Egress path ramps have a running slope greater than 1 in 12 (8 percent). **(Printing Shed, Chemical Store Shed, Warehouse & Cutting Shed)**	Ramps shall not have a running slope greater than 1 in 12 (8 percent).	Within 1 month
				

19	Means of egress	Fire evacuation maps was not posted at all the required locations. **(Building-2 Production Shed)**	Fire evacuation maps shall be posted at the entrance to each exit stair.	Within 1 month
20	Means of egress	The exit discharge path of dining shed is not seperated from the utility building interior due to non rated door, openings & penetrations. **(Dining Shed)**	Seal all penetrations and openings to the interior of the building along the discharge path, up to a height of 10 ft., to provide a minimum 1-hr fire seperation. Alternatively, provide a second remote discharge path to the public way (only include this if feasible).	Within 3 months
				

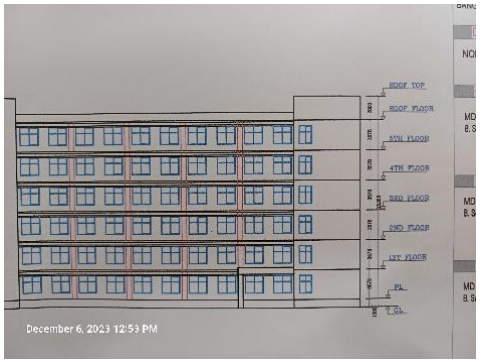
21	Means of Egress	Sliding & collapsible doors are provided at building exits. **(MS SFB2 6 Storied Building, Utility Shed, Printing Shed, Building-2 Production Shed, Sub staion Shed-2, Chemical Store Shed)**	Replace all collapsible and sliding doors along the means of egress with side-hinged, swinging egress doors.	Within 1 month
    				

22	Means of egress	Handrails are not provided on the exit discharge position of stair-1 of MS SFB2 6 Storied Building, exit discharge of Printing Shed, Warehouse & Cutting Shed & Chemical Store Shed.	Provide handrails on both side of the stairs which 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. Guards are required to be according to RSC Technical Guidelines 6.12.2 (a sphere of 200 mm (8 in.) in diameter cannot pass through any opening up to a height of 865 mm (34 in.).	Within 1 month
				

23	Emergency Lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes and at exit stairs on all floors. **(All Building)**	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
24	ITM Emergency Lighting	Inspection, testing, and maintenance for the emergency lighting system was not in accordance with The RSC Technical Guidelines (Standard). **(All Building)**	Inspect, test and maintain the emergency lighting system in accordance with The RSC Technical Guidelines (Standard). Keep written records on-site.	Within 1 month
25	Means of egress	Building did not have occupant load signs at all the required locations. **(MS SFB2 6 Storied Building, printing shed, 116-Finished Goods Shed, Building-2 Production Shed)**	Provide occupant load signs at required locations.	Within 2 weeks

26	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). **(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, 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
				

27	Fire Protection System (Standpipe)	The building has highest occupiable floor level more than 11 meter (33 ft.) which requires standpipe system. **(MS SFB2 6 Storied Building)**	Submit the standpipe system drawing to RSC for review. Once the design is reviewed, install and modify the standpipe system throughout the building in accordance with review comment, RSC Standard and NFPA 14, 20, 22 and 24. After installation the owner shall conduct internal testing and commissioning and then contact the RSC for witness of final acceptance testing.	Design Review within 2 month and installation within 4 months
				

28	Fire Protection System (Sprinkler)	The highest occupiable floor level is more than 75 ft. which requires sprinkler system. Highest occupied floor level is the roof floor (75.3 ft.). Steel structure construction found on the roof floor in where the factory use that area as Empty Cartoon & Idle machine store. **(MS SFB2 6 Storied Building)**	Submit the sprinkler system drawing to RSC for review. Once the design is reviewed, install and modify (if required) the sprinkler system throughout the building in accordance with review comment, RSC Standard and NFPA 13,20,22 and 24. After installation the owner shall conduct internal testing and commissioning and then contact the RSC for witness of final acceptance testing.	Design Review within 2 month and installation within 4 months
				
29	ITM of Fire Alarm System	Inspection, testing, and maintenance for the fire alarm system is not in accordance with NFPA 72 or as per RSC standard. **(All Building)**	Inspect, test and maintain the fire alarm system, and keep written records on-site, in accordance with NFPA 72 (Table-14.3.1) or as per RSC standard.	Within 1 Month after installation.

30	ITM of Standpipe System	Inspection, testing and maintenance for the standpipe system was not in accordance with standard. **(MS SFB2 6 Storied Building)**	Inspect, test and maintain the standpipe system in accordance with of NFPA 25 and keep written records on-site.	Within 1 Month after installation.
31	ITM of Pump System	Inspection, testing, and maintenance for the Fire pump & water system is not in accordance with NFPA 25 or as per RSC standard. **(MS SFB2 6 Storied Building)**	Inspect, test and maintain the fire pump & water system and keep written records on-site, in accordance with NFPA 25 or as per RSC standard.	Within 1 Month after installation.
32	ITM of Sprinkler System	Inspection, testing, and maintenance for the sprinkler system is not in accordance with NFPA 25, 13 or as per RSC standard. **(MS SFB2 6 Storied Building)**	Inspect, test and maintain the sprinkler system and keep written records on-site, in accordance with NFPA 25, 13 or as per RSC standard.	Within 1 Month after installation.

33	ITM extinguisher	Inspection, testing and maintenance of portable fire extinguishers is not in accordance with NFPA 10. **(All Building)**	Inspect, test and maintain the portable fire extinguishers and keep written records on- site, in accordance with NFPA 10 and RSC Technical Guidelines.	Within 1 month