

# INITIAL FIRE SAFETY INSPECTION REPORT

## Topway Industries Limited

**RSC ID: 24711**

**Plot: 19-20, Sector: 04, Road No. 04, CEPZ, Chattogram, Bangladesh**

Geographical Coordinates of factory building: 22.28385052534869, 91.77540184440717

**Other Factories: None.**



**Inspected By: Md. Hasibur Rahman Abir**

**Date: 27-09-2023**

# Fire Safety Inspection Report

## Introduction:

**Topway Industries Limited** complex was surveyed for fire safety on **27-09-2023** 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

There is total 11 structures in the factory premises. Three (3) is main production building and 8 are ancillary buildings. The buildings are as follows:

### Main Structures:

1. Building - 01 (Production Shed 01) (Steel Structure)

Construction Start: Mar'1991; Construction End: Dec'1991; Occupied: April of 1992

Building Total Area: 13347.25 sqf (approximately)

2. Building - 02 (Production Shed 02) (Ground Floor: RCC; 1st Floor: Steel)

First Phase (Ground Floor) : Construction Start: Dec' 1994; Construction End: June'1995; Occupied: Oct'1995 and second phase (1st Floor):

Construction Start: February' 2015 & Construction End: January'2016.

Building Total Area: 8266.68 sqf (approximately)

Note: Building 01 (Production Shed 01) and Building 02 (Production Shed 02) have been combined into a single structure in terms of fire and life safety because they lack fire separation as per standards and share the same means of egress. Consequently due to the construction date of the second phase, both structures are categorized as 'interim construction.

3. Building - 03 (Warehouse Shed) (Steel Structure)

Construction Start: Feb' 2015; Construction End: Jan'2016; Occupied: April' 2016

Building Total Area: 7416 sqf (approximately)

**Ancillary Structures:**

4. Building - 04 (Wastage Shed)

Construction Start: Feb' 2015; Construction End: Jan'2016; Occupied: April'2016

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5. Building - 05 (RCC Compressor and Boiler Room)

Construction Start: Feb' 2015; Construction End: Jan'2016; Occupied: April' 2016☐

6. Building - 06 (RCC Sub-Station Room)

Construction Start: Feb' 2015; Construction End: Jan'2016; Occupied: April' 2016☐

7. Building - 07 (Generator Shed)

Construction Start: Feb. 2021; Construction End: Feb. 2021; Occupied: Mar. 2021☐

8. Building - 08 (Fire Hydrant pump Shed)

Construction Start: Feb. 2021; Construction End: Sep. 2021; Occupied: Nov. 2021

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9. Building - 09 (RCC Chemical Room)

Construction Start: Sep. 2020; Construction End: Oct. 2020; Occupied: Nov. 2020

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10. Building - 10 (Security Room)

Construction Start: February' 2015; Construction End: January'2016; Occupied: April' 2016

11. Building 11: (Childcare and doctor's room) ☐

Construction Start February 2015 and Construction End January 2016, Occupied April 2016.

**Points of contact:**

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## Findings & Recommendations :



Table 1 summarizes the major fire safety issues identified **(at Building - 01, Building - 02, and the ancillary Structures)** during the inspection.



Table-2 summarizes the major fire safety issues identified **(at building 3)** during the inspection.

Table-3 summarizes the major fire safety issues identified at **all the structures** during the inspection.



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

**Table-1:**

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-01	Fire Rated Construction	The buildings are made of steel and found exposed without any fire protection which is defined as non-rated construction and a violation of BNBC-2006. Location: Building - 01 and Building - 02	<p>Construction must be of type 1 or type 2 (See BNBC 2006 Part 3 Table 3.2.4, page 10356 and Part 3, Table 3.1.9, page 10319).</p> <p>Provide/ensure required fire rating on the structural elements by following Section 4.4 and Table 4.4.1 of the RSC Technical Guideline (standard) V1 or Table 3.3.1 and Table 4.1.1 from BNBC 2006. Consult a qualified fire protection engineer to design the rated construction barriers.</p>	Within 6 months
<div style="display: flex; justify-content: space-around;">   </div>				



F-02	Fire Rated Construction	The exit stairs lack separation from dining and other spaces due to non-rated structure, unprotected openings and penetrations. Location: Building - 02	<p>Stair shall be enclosed with a minimum 1-hr fire-rated construction. Seal all unprotected openings and provide minimum 1-hr fire rated doors to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing, positive latching and that they are provided with fire exit (panic) hardware where serving production floors.</p> <p>Openings from exit enclosure to storage areas shall be provided with a vestibule with fire rated construction and openings. Ensure that the fire rating of the vestibule construction matches that of the exit stair enclosure.</p> <p>If fire 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-03	Fire Rated Construction	<p>The corridor serving the dining and production area is not separated by fire-rated construction.          Location: Building - 01 and Building - 02</p>	<p>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.</p>	Within 3 months
<div style="display: flex; justify-content: space-around;">   </div>				



F-04	Fire Rated Construction	<p>Generator room is located less than spatial distance of 3 m (10 ft) from the production building but not properly separated by fire rated construction.</p>	<p>Generator room shall be separated from other occupancies by a minimum 2-hr fire rated construction (wall, floor, slab etc.). Seal all penetrations and openings (door, window etc.) should be protected by 1.5-hr fire rated materials to maintain the fire separation if required. All exhaust systems shall discharge to the exterior of the building in a safe location.</p> <p>Or</p> <p>Relocate it to exterior of the building and maintain a minimum 3m (10 ft.) spatial separation distance from the building.</p>	Within 3 months
				



F-05	Fire Rated Construction	Boiler and compressor rooms are located less than a spatial distance of 3 m (10 ft) from the store shed (building - 03) but not properly separated by fire-related construction.	<p>Boilers or other heat producing equipment shall be separated from other occupancies by a minimum 1-hr fire rated construction (wall, floor, slab etc.). Seal all penetrations and openings (door, window etc.) should be protected by 0.75-hr (45 min) fire rated materials to maintain the fire separation if required. All exhaust systems shall discharge to the exterior of the building in a safe location.</p> <p>Or</p> <p>Relocate it to exterior of the building and maintain a minimum 3m (10 ft.) spatial separation distance from the building.</p>	Within 3 months
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F-06	Means of Egress	The doors in a means of egress have a width less than the required minimum of 1 meter (39 inches). Location: Building - 01	Doors in a means of egress shall have a minimum width of 1 m (39 in.).	Within 3 months
				

F-07	Means of Egress	Abrupt changes in the elevation of walking surfaces were observed, not meeting the RSC Technical Guidelines (Standard) <sup>1</sup> V1.0 Section 6.3.4. Location: Building - 01	Abrupt changes in elevation of walking surfaces shall not exceed ¼ in. unless provided with a beveled slope of 1 in 2 that do not exceed ½ in. Changes greater than ½ in. shall meet the requirements for RSC Technical Guidelines (Standard) <sup>1</sup> V1.0 Section 6.3.5.	Within 1 month
				



F-08	Means of Egress	The headroom on the doors is less than 2.03 m (6 ft 8 in.). Location: Building - 01	All means of egress shall have a minimum ceiling height of 2.3 m (7 ft 6 in.) with projections from the ceiling not less than 2.03 m (6 ft 8 in.).	Within 3 months
<div style="display: flex; justify-content: space-around;">   </div>				



F-09	Means of Egress	The stairs have a width less than the required minimum of 1.5 meter (60 inches). Location: Building - 02	Stairs shall have a minimum width of 1.5 m (60 in.)	Within 6 months
<div style="display: flex; justify-content: space-around;">   </div>				


F-10	Means of Egress	<p>The exits are not remotely located from each other such that a single fire event could compromise both exits on 1st floor. Location: Building - 02</p>	<p>Modify exit arrangement or provide additional exit and ensure that the exit doors or means of egress openings are located a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exits or egress openings.</p>	<p>Within 3 months</p>
				

F-11	Egress Lighting Checklist	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The RSC standard. Location: Building - 01 and Building - 02	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with the RSC standard. Keep written records on-site.	Within 2 months
F-12	Fire Extinguishers Checklist	Inspection, testing and maintenance of portable fire extinguishers is not in accordance with NFPA 10.	Inspect, test and maintain the portable fire extinguishers and keep written records on- site, in accordance with NFPA 10 and RSC standards.	Within 3 months


**Table-2:**

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-13	Fire Rated Construction	The building is made of steel and found exposed without any fire protection which is defined as non-rated construction and a violation of BNBC-2006. Location: Building - 03	<p>Construction must be of type 1 or type 2 (See BNBC 2006 Part 3 Table 3.2.4, page 10356 and Part 3, Table 3.1.9, page 10319).</p> <p>Provide/ensure required fire rating on the structural elements by following Section 4.4 and Table 4.4.1 of the RSC Technical Guideline (standard) V1 or Table 3.3.1 and Table 4.1.1 from BNBC 2006. Consult a qualified fire protection engineer to design the rated construction barriers.</p>	Within 6 months
<div style="display: flex; justify-content: space-around;">   </div>				

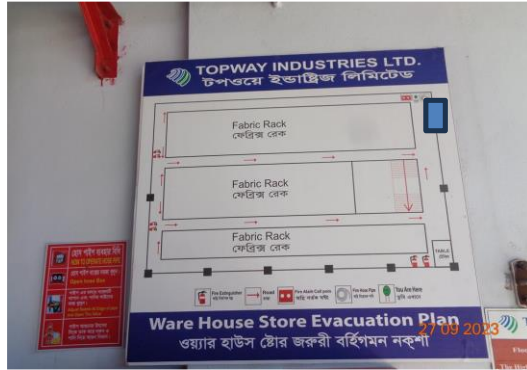
F-14	Fire Rated Construction	<p>The exterior exit stair lacks separation due to unprotected openings and non-rated structure. Location: Building - 03</p>	<p>Stair shall be enclosed with a minimum 1-hr fire-rated construction. Seal all unprotected openings and provide minimum 1-hr fire rated doors to separate the exit stairs from work areas and other building spaces on all floor levels. Ensure that the fire doors are self-closing, positive latching and that they are provided with fire exit (panic) hardware where serving production floors.</p> <p>If fire doors are required to be held open for functional reasons, provide automatic-closing devices tied to the fire alarm system.</p> <p>The rating of the exterior wall shall extend 3.05 m (10 ft) beyond the ends of the stair structure.</p>	Within 3 months
				

F-15	Fire Rated Construction and Means of Egress	The upper deck portion (1st floor) fails to meet the RSC building standard and BNBC 2006 requirements for floor-to-floor separation, stair separation, and related criteria. Location: Building - 03	The floor must adhere to the RSC building standards and BNBC 2006 regulations regarding fire separation and egress features.	Within 4 months
				


F-16	Means of Egress	The stair have a width less than the required minimum of 1.5 meter (60 inches). Location: Building - 03	Stairs shall have a minimum width of 1.5 m (60 in.)	Within 6 month
<div> </div> <div> <p>ADD PHOTO</p> </div>				

F-17	Means of Egress	Sliding type doors have provided along means of egress (door). Location: Building - 03	All doors in a means of egress shall be of the side--hinged swinging type. Roll--down and sliding gates and shutters shall not be allowed. Doors serving an occupant load of more than 50 shall swing in the direction of egress travel.	Within 1 month
<div style="display: flex; justify-content: space-around; align-items: center;">  <div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 20px; text-align: center; width: 150px; height: 100px;"> <p>ADD PHOTO</p> </div> </div>				

F-18	Means of Egress	A single means of exit has been provided, exceeding the maximum travel distance requirement. Location: Ground Floor, Building - 03	Provide additional exit to maintain maximum travel distance of 30m (100 ft). Or Maintain maximum 30 occupants having a travel distance of 30m (100 ft).	Within 3 months
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F-19	Means of Egress	Width of aisles is less than 0.9m (36-in.). Location: Building - 03	Aisles shall be provided with a minimum unobstructed clear-width of 0.9 m (36 in.).	Within 3 months
<div style="display: flex; justify-content: space-around;">   </div>				

F-20	Egress lighting	Based on the number and location of emergency lights observed, adequate illumination levels are not anticipated along egress routes. Location: Building - 03	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-21	Egress Lighting Checklist	Inspection, testing, and maintenance for the exit sign and emergency lighting system was not in accordance with The RSC standard. Location: Building - 03	Inspect, test and maintain the exit sign and emergency lighting system in the accordance with the RSC standard. Keep written records on-site.	Within 4 months
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**Table-3:**

SI No.	Category	Findings	Required Action	Remediation Time Frame
F-22	Fire Alarm & Detection System (FADS)	Fire alarm and detection system installation complete which requires detailed review to confirm compliance with NFPA 72 and RSC Technical Guidelines (Standard). (for all structures)	<p>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 building in accordance with review comment, RSC Technical Guidelines (Standard) and NFPA 72.</p> <p>After installation the owner shall conduct internal testing and commissioning and then contact the RSC for witness of final acceptance testing.</p>	Design within 2 month and modification/ installation with 4 months
<div style="display: flex; justify-content: space-around;">   </div>				

F-23	Inspection, Testing and Maintenance (ITM) of FADS.	Inspection, testing and maintenance for the fire detection and alarm system was not in accordance with standard. (for all structures)	Inspect, test and maintain the fire alarm system and keep written records on-site, in accordance with Table-14.3.1 of NFPA 72.	Within 1 Month (after installation)
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