4.11. Storage, Warehouse and Industrial Facility Fire Protection Systems

4.11.1. Storage, warehouse and industrial facilities shall be provided with Fire protection Systems in compliance with **Table 9.27.** and auxiliary rooms fire protection systems as per **Table 9.30. However, all warehouse and industrial sprinkler protection designers shall first consider and consult the relevant Material Safety Data Sheet (MSDS) before designing and proposing the sprinkler system.**

Table 9.27.: Storage, Warehouse and Industrial Fire Protection Systems

PREDOMINANT OCCUPANCY	SYSTEM REQUIREMENTS	COMBINED FIRE PUMP SET AND FIRE WATER TANK CAPACITIES
A. MULTI TENANT WAREHOUSE AND FACTORIES FOR RENTAL PURPOSE **(LIMITED TO LIGHT HAZARD MATERIALS AS PER SECTION 1.1.23, TABLE 9.1 AND LIGHT HAZARD ACTIVITY AS PER SECTION 1.1.24, TABLE 9.2.)**	**1. IF TOTAL BUILT-UP GROUND FLOOR AREA IS LESS THAN 900 m^2 AND EACH INDIVIDUAL UNIT COMPARTMENT AREA IS LESS THAN 230 m^2** i. Hose Reel System shall be provided throughout the building as per **Section 3.3.** ii. Hose Reel System shall be extended to mezzanine levels, if any. iii. Dry landing valves and risers shall not be required. **2. IF TOTAL BUILT-UP GROUND FLOOR AREA IS MORE THAN 900 m^2 OR ANY INDIVIDUAL UNIT COMPARTMENT AREA IS 230 m^2 –UP TO 900 m^2** i. Sprinklers shall be provided throughout the facility as per **Section 3.5.** ii. The sprinkler design density shall be 0.15 gpm with area of sprinkler operation of 1500 ft^2 (140 m^2). iii. Hose Reel System shall be provided throughout the building as per **Section 3.3.** iv. Dry landing valves and risers shall not be required. **3. IF INDIVIDUAL COMPARTMENT OR UNIT AREA IS MORE THAN 900 m^2** i. Sprinklers shall be provided throughout the facility as per **Section 3.5.** ii. The sprinkler design density shall be 0.15 gpm with area of sprinkler operation of 1500 ft^2 (140 m^2). iii. Hose Reel System shall be provided throughout the building as per **Section 3.3.** **4. IF SUM OF ALL GROUND FLOOR BUILT-UP AREAS IS MORE THAN 3600 m^2** i. Sprinklers shall be provided throughout the facility as per **Section 3.5.** ii. Sprinkler design density shall be 0.15 gpm with area of sprinkler operation of 1500 ft^2 (140 m^2). iii. Yard Fire Hydrants shall be provided as per **Section 3.11.,** in a loop to cover the entire facility. iv. Hose Reel System shall be provided throughout the building as per **Section 3.3.** v. Wet risers and internal landing valves shall not be required.	**1. IF TOTAL BUILT-UP GROUND FLOOR AREA IS LESS THAN 900 m^2 AND EACH INDIVIDUAL UNIT COMPARTMENT AREA IS LESS THAN 230 m^2** iv. The capacity of the fire pump set shall be 50 gpm at a pressure as required to satisfy 4.5 bar at the most remote Hose reel outlet valve. v. The water tank shall have a capacity of 30 minutes of operation, complete with low water level detection and instantaneous refilling arrangement. **2. IF TOTAL BUILT-UP GROUND FLOOR AREA IS MORE THAN 900 m^2 OR ANY INDIVIDUAL UNIT COMPARTMENT AREA IS 230 m^2 –UP TO 900 m^2** v. The capacity of the fire pump set shall be 250 gpm at pressure as required to satisfy 4.5 bar at the most remote Hose reel outlet valve. vi. The water tank shall have capacity of 45 minutes of operation, complete with low water level detection and instantaneous refilling arrangement. 3. **IF INDIVIDUAL COMPARTMENT OR UNIT AREA IS MORE THAN 900 m^2** iv. The capacity of the fire pump set shall be 250 gpm at a pressure as required to satisfy 4.5 bar at the most remote hose reel valve. v. The water tank shall have a capacity of 60 minutes of operation, complete with low water level detection, dedicated direct breeching inlet and instantaneous refilling arrangement. **4. IF SUM OF ALL GROUND FLOOR BUILT-UP AREAS IS MORE THAN 3600 m^2** vi. The capacity of the fire pump set shall be 750 gpm at a pressure as required to satisfy 6.9 bar at the most remote Hydrant valve. vii. The water tank shall have capacity of 60 minutes of operation, complete with low water level detection, dedicated direct breeching inlet and instantaneous refilling arrangement.