OUTDOOR STORAGE

INTRODUCTION

Outdoor storage of material poses unique fire protection challenges. Since the storage does not have a roof overhead, sprinkler protection cannot easily be provided. Material stored outdoors is exposed to damage from wind, hail, water, and theft and can be a target of malicious mischief. If proper precautions are not taken, a fire could destroy all the material in the storage area and extend to nearby buildings. Materials stored outdoors include pallets, rolled paper, wood chips, logs, baggasse, flammable and combustible liquids, tires, baled cotton, LPG containers, automobiles and coal.

POSITION

Provide at least 8 ft (2.4 m) high fences around the outdoor storage area. Provide either watchman service or security cameras monitored at a constantly attended location to cover the enclosed storage area. Install manual pull station alarms, near the entrances to the enclosed area, which connect to the plant fire alarm system. Install adequate lighting in the entire storage area. Keep vegetation cut low or remove it. Maintain the area free from unnecessary combustibles. Separate storage piles by a minimum 20 ft (6 m). Maintain at least 50 ft (15 m) separation between public streets and alleys, electrical substations and overhead power lines. Maintain the aisles and paths within the storage area free of obstruction and wide enough to allow access for fire fighting equipment. Separate the storage area from buildings using the separation distances derived from NFPA 80A and PRC.2.0.5. Use 100% openings and light severity for Class I commodities, moderate severity for Class II commodities and severe severity for Class III and greater commodities when using NFPA 80A.

Provide yard hydrants around the storage area so no point in the storage area is more than 100 ft (30 m) from a hydrant. Supply the hydrants from a reliable water supply capable of providing the flow requirements indicated in Table 1. Provide a properly equipped hose house adjacent to each hydrant in accordance with the requirements of NFPA 24 and PRC.14.5.0.1. Install monitor nozzles around the perimeter of the storage area where highly combustible material is stored. Remove snow from around the hydrants hose houses and monitor nozzles promptly.

Prohibit cutting and welding operations in the storage area. Repair, refuel, service and store motorized vehicles outside the storage area. Enforce no smoking regulations in the area. Use only fire retardant tarpaulins to cover stock.

Various products have additional or different protection requirements. Table 2 lists specific products and the applicable references. NFPA 1 provides general protection requirements for outdoor storage.

TABLE 1
Flow Requirements For Outdoor Storage

Size of Storage Area (ft^2)	Class I (gpm)	Class II (gpm)	Class III and IV and Baled Cotton (gpm)	Group A plastics and All Others (gpm)
10,000	1500	1750	2000	2250
20,000	2000	2500	3000	4000
50,000	3500	4000	4500	6000
100,000	5000	5500	6500	8000
200,000	6750	8000	9250	10,000

SI Units: ft^2 = 0.093 m;^{2} gpm = 3.78 L/min.

TABLE 2
References For Various Products

Product	Reference
Baled Cotton	NFPA 1
Flammable and Combustible Liquids	NFPA 30 and PRC.8.1.0
Idle Pallet	NFPA 1
Liquid Petroleum Gases	NFPA 58 and PRC.8.2.0.1
Log, Wood Chip, and Baled Wood Waste	PRC.17.5.0
Rolled Paper	PRC.10.1.1
Rubber Tires	NFPA 1