CHAPTER 28

LUMBER YARDS AND AGRO-INDUSTRIAL, SOLID BIOMASS AND WOODWORKING FACILITIES

User note:

About this chapter: *Chapter 28 provides requirements that are intended to prevent fires and explosions, facilitate fire control and reduce exposures to and from facilities storing, selling or processing wood and forest products, including sawdust, wood chips, shavings, bark mulch, shorts, finished planks, sheets, posts, poles, timber and raw logs and the hazard they represent once ignited. Also included are solid biomass feedstock and raw products associated with agro-industrial facilities and the outdoor storage of pallets at pallet manufacturing and recycling facilities. This chapter requires active and passive fire protection features to reduce on- and off-site exposures, limit fire size and development and facilitate fire fighting by employees and the fire service.*

SECTION 2801
GENERAL

2801.1 Scope. The storage, manufacturing and processing of solid biomass feedstock, timber, lumber, plywood, veneers and agro-industrial byproducts shall be in accordance with this chapter.

2801.2 Permit. Permits shall be required as set forth in Section 105.6.

SECTION 2802
DEFINITIONS

2802.1 Definitions. The following terms are defined in Chapter 2:

AGRO-INDUSTRIAL.

BIOMASS.

COLD DECK.

FINES.

HOGGED MATERIALS.

PLYWOOD AND VENEER MILLS.

RAW PRODUCT.

SOLID BIOFUEL.

SOLID BIOMASS FEEDSTOCK.

STATIC PILES.

TIMBER AND LUMBER PRODUCTION FACILITIES.

SECTION 2803
GENERAL REQUIREMENTS

2803.1 Open yards. Open yards required by the *International Building Code* shall be maintained around structures.

2803.2 Dust control. Equipment or machinery located inside buildings that generates or emits *combustible dust* shall be provided with an *approved* dust collection and exhaust system installed in accordance with Chapter 22 and the *International Mechanical Code*. Equipment or systems that are used to collect, process or convey *combustible dusts* shall be provided with an *approved* explosion control system.

2803.2.1 Explosion venting. Where a dust explosion hazard exists in equipment rooms, buildings or other enclosures, such areas shall be provided with explosion (*deflagration*) venting or an *approved* explosion suppression system complying with Section 911.

2803.3 Waste removal. Sawmills, planning mills and other woodworking plants shall be equipped with a waste removal system that will collect and remove sawdust and shavings. Such systems shall be installed in accordance with Chapter 22 and the *International Mechanical Code*.

Exception: Manual waste removal where *approved*.

2803.3.1 Housekeeping. Provisions shall be made for a systematic and thorough cleaning of the entire plant at sufficient intervals to prevent the accumulations of *combustible dust* and spilled combustible or flammable liquids.

2803.3.2 Metal scrap. Provision shall be made for separately collecting and disposing of any metal scrap so that such scrap will not enter the wood handling or processing equipment.

2803.4 Electrical equipment. Electrical wiring and equipment shall comply with NFPA 70.

2803.5 Control of ignition sources. Protection from ignition sources shall be provided in accordance with Sections 2803.5.1 through 2803.5.3.

2803.5.1 Cutting and welding. Cutting and welding shall comply with Chapter 35.

2803.5.2 Static electricity. Static electricity shall be prevented from accumulating on machines and equipment subject to static electricity buildup by permanent grounding and bonding wires or other *approved* means.

2803.5.3 Smoking. Where smoking constitutes a fire hazard, the *fire code official* is authorized to order the *owner* or occupant to post *approved* "No Smoking" signs complying with Section 310. The *fire code official* is authorized to designate specific locations where smoking is allowed.

2803.6 Fire apparatus access roads. Fire apparatus access roads shall be provided for buildings and facilities in accordance with Section 503.

2803.7 Access plan. Where storage pile configurations could change because of changes in product operations and processing, the access plan shall be submitted for approval where required by the *fire code official*.

SECTION 2804
FIRE PROTECTION

2804.1 General. Fire protection in timber and lumber production mills, plywood and veneer mills and agro-industrial facilities shall comply with Sections 2804.2 through 2804.4.

2804.2 Fire alarms. An *approved* means for transmitting alarms to the fire department shall be provided in timber and lumber production mills and plywood and veneer mills.

2804.2.1 Manual fire alarms. A manual fire alarm system complying with Section 907.2 shall be installed in areas of timber and lumber production mills and for plywood and veneer mills that contain product dryers.

Exception: Where dryers or other sources of ignition are protected by a supervised *automatic sprinkler system* complying with Section 903.

2804.3 Portable fire extinguishers or standpipes and hose. Portable fire extinguishers or standpipes and hose supplied from an *approved* water system shall be provided within a 50-foot (15 240 mm) distance of travel from any machine producing shavings or sawdust. Portable fire extinguishers shall be provided in accordance with Section 906 for extra-high hazards.

2804.4 Automatic sprinkler systems. *Automatic sprinkler systems* shall be installed in accordance with Section 903.3.1.1.

SECTION 2805
PLYWOOD, VENEER AND COMPOSITE BOARD MILLS

2805.1 General. Plant operations of plywood, veneer and composite board mills shall comply with Sections 2805.2 and 2805.3.

2805.2 Dryer protection. Dryers shall be protected throughout by an *approved*, automatic deluge water-spray suppression system complying with Chapter 9. Deluge heads shall be inspected quarterly for pitch buildup. Deluge heads shall be flushed during regular maintenance for functional operation. Manual activation valves shall be located within 75 feet (22 860 mm) of the drying equipment.

2805.3 Thermal oil-heating systems. Facilities that use heat transfer fluids to provide process equipment heat through piped, indirect heating systems shall comply with this code and NFPA 664.

SECTION 2806
LOG STORAGE AREAS

2806.1 General. Log storage areas shall comply with Sections 2806.2 and 2806.3.

2806.2 Cold decks. Cold decks shall not exceed 500 feet (152.4 m) in length, 300 feet (91 440 mm) in width and 20 feet (6096 mm) in height. Cold decks shall be separated from adjacent cold decks or other exposures by not less than 100 feet (30 480 mm).

Exception: The size of cold decks shall be determined by the *fire code official* where the decks are protected by special fire protection including, but not limited to, additional fire flow, portable turrets and deluge sets, and hydrant hose houses equipped with *approved* fire-fighting equipment capable of reaching the entire storage area in accordance with Chapter 9.

2806.3 Pile stability. Log and pole piles shall be stabilized by *approved* means.

SECTION 2807
STORAGE OF WOOD CHIPS AND HOGGED MATERIAL ASSOCIATED WITH TIMBER AND LUMBER PRODUCTION FACILITIES

2807.1 General. The storage of wood chips and hogged materials associated with timber and lumber production facilities shall comply with Sections 2807.2 through 2807.5.

2807.2 Size of piles. Piles shall not exceed 60 feet (18 288 mm) in height, 300 feet (91 440 mm) in width and 500 feet (152 m) in length. Piles shall be separated from adjacent piles or other exposures by *approved* fire apparatus access roads.

Exception: The *fire code official* is authorized to allow the pile size to be increased where additional fire protection is provided in accordance with Chapter 9. The increase shall be based on the capabilities of the system installed.

2807.3 Pile fire protection. Automatic sprinkler protection shall be provided in conveyor tunnels and combustible enclosures that pass under a pile. Combustible or enclosed conveyor systems shall be equipped with an *approved automatic sprinkler system*.

2807.4 Material-handling equipment. *Approved* material-handling equipment shall be readily available for moving wood chips and hogged material.

2807.5 Emergency plan. The *owner* or operator shall develop a plan for monitoring, controlling and extinguishing spot fires. The plan shall be submitted to the *fire code official* for review and approval.

SECTION 2808
STORAGE AND PROCESSING OF WOOD CHIPS, HOGGED MATERIAL, FINES, COMPOST, SOLID BIOMASS FEEDSTOCK AND RAW PRODUCT ASSOCIATED WITH YARD WASTE, AGRO-INDUSTRIAL AND RECYCLING FACILITIES

2808.1 General. The storage and processing of wood chips, hogged materials, fines, compost, solid biomass feedstock and raw product produced from yard waste, debris and agro-industrial and recycling facilities shall comply with Sections 2808.2 through 2808.10.

2808.2 Storage site. Storage sites shall be level and on solid ground, elevated soil lifts or other all-weather surface. Sites shall be thoroughly cleaned before transferring wood products to the site.

2808.3 Size of piles. Piles shall not exceed 25 feet (7620 mm) in height, 150 feet (45 720 mm) in width and 250 feet (76 200 mm) in length.

Exception: The *fire code official* is authorized to allow the pile size to be increased where a fire protection plan is provided for approval that includes, but is not limited to, the following:

1. Storage yard areas and materials-handling equipment selection, design and arrangement shall be based on sound fire prevention and protection principles.
2. Factors that lead to spontaneous heating shall be identified in the plan, and control of the various factors shall be identified and implemented, including provisions for monitoring the internal condition of the pile.
3. The plan shall include means for early fire detection and reporting to the public fire department; and facilities needed by the fire department for fire extinguishment including a water supply and fire hydrants.
4. Fire apparatus access roads around the piles and access roads to the top of the piles shall be established, identified and maintained.
5. Regular yard inspections by trained personnel shall be included as part of an effective fire prevention maintenance program.

Additional fire protection called for in the plan shall be provided and shall be installed in accordance with this code. The increase of the pile size shall be based on the capabilities of the installed *fire protection systems* and features.

2808.4 Pile separation. Piles shall be separated from adjacent piles by *approved* fire apparatus access roads.

2808.5 Combustible waste. The storage, accumulation and handling of combustible materials and control of vegetation shall comply with Chapter 3.

2808.6 Static pile protection. Static piles shall be monitored by an *approved* means to measure temperatures within the static piles. Internal pile temperatures shall be monitored and recorded weekly. Such records shall be maintained. An operational plan indicating procedures and schedules for the inspection, monitoring and restricting of excessive internal temperatures in static piles shall be submitted to the *fire code official* for review and approval.

2808.7 Pile fire protection. Automatic sprinkler protection shall be provided in conveyor tunnels and combustible enclosures that pass under a pile. Combustible conveyor systems and enclosed conveyor systems shall be equipped with an *approved automatic sprinkler system.*

2808.8 Fire extinguishers. Portable fire extinguishers complying with Section 906 and with a minimum rating of 4-A:60-B:C shall be provided on all vehicles and equipment operating on piles and at all processing equipment.

2808.9 Material-handling equipment. *Approved* material-handling equipment shall be available for moving wood chips, hogged material, wood fines and raw product during fire-fighting operations.

2808.10 Emergency plan. The *owner* or operator shall develop a plan for monitoring, controlling and extinguishing spot fires and submit the plan to the *fire code official* for review and approval.

SECTION 2809
EXTERIOR STORAGE OF FINISHED LUMBER AND SOLID BIOFUEL PRODUCTS

2809.1 General. Exterior storage of finished lumber and solid biofuel products shall comply with Sections 2809.2 through 2809.5.

2809.2 Size of piles. Exterior storage shall be arranged to form stable piles with a maximum height of 20 feet (6096 mm). Piles shall not exceed 150,000 cubic feet (4248 m^3) in volume.

2809.3 Fire apparatus access roads. Fire apparatus access roads in accordance with Section 503 shall be located so that a maximum grid system unit of 50 feet by 150 feet (15 240 mm by 45 720 mm) is established.

2809.4 Security. Permanent storage areas shall be surrounded with an *approved* fence. Fences shall be not less than 6 feet (1829 mm) in height.

Exceptions:

1. Lumber piles inside of buildings and production mills for lumber, plywood and veneer.
2. Solid biofuel piles inside of buildings and agro-industrial processing facilities for solid biomass feedstock.

2809.5 Fire protection. An *approved* hydrant and hose system or portable fire-extinguishing equipment suitable for the fire hazard involved shall be provided for open storage yards. Hydrant and hose systems shall be installed in accordance with NFPA 24. Portable fire extinguishers complying with Section 906 shall be located so that the distance of travel from the nearest unit does not exceed 75 feet (22 860 mm).

SECTION 2810
OUTDOOR STORAGE OF PALLETS AT PALLET MANUFACTURING AND RECYCLING FACILITIES

2810.1 General. The outside storage of wood pallets and wood composite pallets on the same site as a pallet manufacturing or recycling facility shall comply with Sections 2810.2 through 2810.11.

2810.2 Site plan. Each site shall maintain a current site plan that includes a general description of the property, the boundaries of the lot, the size and location of buildings, and all of the following:

1. Utilities.
2. Type of construction and presence of sprinkler protection for other buildings on the site.
3. Water supply sources for fire-fighting purposes.
4. Location of hazardous material storage areas.
5. Location of pallet storage.
6. Equipment protected with a dust collection system.
7. *Fire apparatus access roads.*
8. Designated smoking areas.
9. Location of fire alarm control panels.

2810.3 Fire prevention plan. The *owner* or *owner's* authorized representative shall prepare an *approved* fire prevention plan that includes all of the following:

1. Frequency of walk-through inspections to verify compliance with the plan.
2. Hot work permit program in accordance with Chapter 35.
3. Preventive maintenance program for equipment associated with pallet activities.
4. Inspection, testing and maintenance of *fire protection systems* in accordance with Chapter 9.

2810.4 Fire safety and emergency evacuation plan. The *owner* or *owner's* authorized representative shall prepare and train employees in an *approved* fire safety and emergency evacuation plan in accordance with Chapter 4.

2810.5 Security management plan. The *owner* or *owner's* authorized representative shall prepare a security management plan based on a security risk assessment and shall make the plan and assessment available to the *fire code official* upon request.

2810.6 Clearance to property line. Stacks of pallets shall not be stored within 0.75 times the stack height or 8 feet (2438 mm) of the property line, whichever is greater, or shall comply with Section 2810.11.

2810.7 Clearance to important buildings. Stacks of pallets shall not be stored within 0.75 times the stack height of any important building on site, or shall comply with Section 2810.11.

2810.8 Height. Pallet stacks shall not exceed 20 feet (6096 mm) in height.

2810.9 Fire flow. Fire-flow requirements for the site shall be determined by the *fire code official*.

2810.10 Portable fire extinguishers. Portable fire extinguishers shall be provided within 75 feet (22 860 mm) of any pallet stack.

2810.11 Alternative approach. Where *approved* by the *fire code official*, pallet stacks located closer to a property line or structure than as required by Sections 2810.6 and 2810.7 shall be provided with additional fire protection including, but not limited to, the following:

1. The storage yard areas and materials-handling equipment selection, design, and arrangement are based on an *approved* risk assessment.
2. Automatic fire detection that transmits an alarm to a supervising station in accordance with NFPA 72.
3. *Fire apparatus access roads* around all storage areas.