[S] CHAPTER 36

MARINAS AND BOATYARDS

User note:

About this chapter: *Chapter 36 addresses the fire protection and prevention requirements for marinas. It was developed in response to the complications encountered by a number of fire departments responsible for the protection of marinas as well as fire loss history in marinas that lacked fire protection. Compliance with this chapter intends to establish safe practices in marina areas, provide an identification method for mooring spaces in the marina, and provide fire fighters with safe operational areas and fire protection methods to extend hose lines in a safe manner.*

SECTION 3601
SCOPE

[S] 3601.1 Scope. *Marina* and boatyard facilities shall be in accordance with this chapter and Seattle Building Code Section 429. This chapter applies to the construction and operation of marinas serving small recreational and commercial craft, yachts, and other craft of not more than 300 gross tons, docking facilities associated with multiple-family residences, and all associated *piers*, *docks*, and *floats*. This chapter also applies to boatyard facilities and structures used for construction, repair, storage, hauling and launching, or fueling of vessels if fire on a pier would pose an immediate threat to these facilities, or if a fire at a referenced facility would pose an immediate threat to a docking facility.

Exceptions:

1. Designated marine hot work facilities and shipyards shall be in accordance with Seattle Building Code Section 429 and Administrative Rule 26.02.09, Designated Hot Work Facilities and Shipyards, and any future revisions of this rule adopted by the fire code official.
2. Marine Terminals shall be in accordance with Seattle Building Code Section 429 and Administrative Rule 27.01.09, Marine Terminals, and any future revisions of this rule adopted by the fire code official.
3. Other waterfront structures, piers, wharves and buildings shall be in accordance with Seattle Building Code Section 429.
4. Private, noncommercial docking facilities constructed or occupied for the use of the owners or residents of the associated single-family dwelling.
5. Floating homes in accordance with Seattle Residential Code.

Marinas and covered moorage in existence at the time of the adoption of this code shall be in accordance with Chapter 94.

3601.2 Plans and approvals. Plans for *marina* fire protection facilities shall be *approved* prior to installation. The work shall be subject to final inspection and approval after installation.

SECTION 3602
DEFINITIONS

[W][S] 3602.1 Definitions. The following terms are defined in Chapter 2:

BERTH.

BOAT.

BOATYARD.

COVERED BOAT MOORAGE.

DESIGNATED HOT WORK FACILITY.

FLOAT.

MARINA.

MARINE TERMINAL.

PIER.

SLIP.

((~~VESSEL.~~))

WHARF.

SECTION 3603
GENERAL PRECAUTIONS

3603.1 Combustible debris. Combustible debris and rubbish shall not be deposited or accumulated on land beneath *marina* structures, *piers* or *wharves.*

3603.2 Sources of ignition. Open-flame devices used for lighting or decoration on the exterior of a ((~~*vessel,*~~)) *float, pier* or wharf shall be *approved.*

3603.3 Flammable or combustible liquid spills. Spills of flammable or *combustible liquids* at or on the water shall be reported immediately to the fire department or jurisdictional authorities.

3603.4 Rubbish containers. Containers with tight-fitting or self-closing lids shall be provided for temporary storage of combustible debris, rubbish and waste material. The rubbish containers shall be constructed entirely of materials that comply with any one of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m^2 where tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m^2 in the horizontal orientation.

3603.5 Electrical equipment. Electrical equipment shall be installed and used in accordance with its listing, Section 605 of this code and Chapter 5 of NFPA 303 as required for wet, damp and hazardous locations.

3603.6 Berthing and storage. Berthing and storage shall be in accordance with Chapter 7 of NFPA 303.

[S] 3603.7 ((~~Slip identification~~)) Signage. ((~~Slips and mooring spaces shall be individually identified by an *approved* numeric or alphabetic designator. Space designators shall be posted at the space. Signs indicating the space designators located on finger *piers* and *floats* shall be posted at the base of all *piers,* finger *piers, floats* and finger *floats.*~~)) Marinas and boatyards shall be provided with conspicuous signage indicating the address of the *piers*, *wharves* and *floats* and, for those structures that are designed to support vehicles, the weight limit the structure can support. Numbers and letters shall be easily legible and have high contrast with the color of the sign background. Numbers and letters shall not be less than 5 inches (127 mm) in height.

[S] 3603.8 Emergency plan. Owners of piers, wharves, floats and marinas shall prepare an emergency plan for the facility. The plan shall include procedures for fire department notification and fire evacuation, and shall include the location of portable fire extinguishers and hose cabinets, sprinkler and standpipe system control valves, fire department connections and electrical disconnects.

[S] 3603.8.1 The marina or boatyard operator shall post in a prominent location, or provide to boat operators using a marina or boatyard for mooring, repair, servicing, or storage, a list of safe operating procedures containing the following:

1. Procedures for disposal of trash;
2. Location of nonsmoking areas;
3. Location of fire extinguishers and hoses;
4. Procedures for turning in a fire alarm; and
5. Fueling procedures.

SECTION 3604
FIRE PROTECTION EQUIPMENT

[S] 3604.1 General. ((~~*Piers, marinas* and *wharves* with facilities for mooring or servicing five or more *vessels,*~~)) Marinas and boatyards and marine motor fuel-dispensing facilities shall be equipped with fire protection ((~~equipment~~)) features in accordance with Sections 3604.2 through ((~~3604.6~~)) 3604.11.

[S] 3604.2 Standpipes. *Marinas* and boatyards shall be equipped throughout with ((~~standpipe systems in accordance with NFPA 303~~)) a manual Class I standpipe system in accordance with NFPA 14, or Class III standpipe system in accordance with NFPA 14, if approved by the *fire code official*, shall be provided for *piers*, *wharves* and *floats* if the hose lay distance from the fire apparatus to the most remote accessible portion of the *pier*, *wharf* or *float* exceeds 150 feet (45 720 mm). ((~~Systems shall be provided with hose connections located such that no point on the *marina pier* or *float* system exceeds 150 feet (15 240 mm) from a standpipe hose connection.~~))

Approved plastic pipe may be used if installed underwater, or if another approved method of protection from fire is provided.

The standpipe piping shall be a minimum of 4 inches (102 mm), sized to provide a minimum of 500 gpm (365 L/s) at 130 psi (896 kPa) at the most remote hose connection, with a simultaneous flow of 500 gpm (365 L/s) at the third most remote hose connection on the same pier while maintaining a maximum system pressure of 175 psi (1206 kPA).

[S] 3604.2.1 Hose connections. Hose connection stations on required standpipes shall be provided at the water end of the *pier*, *wharf* or *float*, and along the entire length of the *pier*, *wharf* or *float* at spacing not to exceed 150 feet (45 720 mm) and as close as practical to the land end. Each hose connection shall consist of a valved 2-1/2 inch (64 mm) fire department hose

outlet. Outlet caps shall have a predrilled 1/8-inch (3.2 mm) hole for pressure relief and be secured with a short length of chain or cable to prevent falling after removal. Listed equipment shall be used.

Exception: The hose connection at the land end of the *pier*, *wharf* or *float* may be omitted when a hose connection is located within 150 feet (45 720 mm) of the fire apparatus access road.

((~~3604.2.1~~)) 3604.2.2 Identification of standpipe outlets. Standpipe hose connection locations shall be clearly identified by a flag or other *approved* means designed to be readily visible from the *pier* accessing the *float* system.

[S] 3604.3 Access and water supply. ((~~*Piers* and *wharves*~~)) Marinas and boatyards shall be provided with fire apparatus access roads ((~~and water-supply systems with on-site fire hydrants where required by the *fire code official*~~)) so located as to provide fire department apparatus access to within 50 feet (15 240 mm) travel distance to the shore end of all *piers*, *wharves* and *floats*. ((~~Such roads and water systems shall be provided and maintained in accordance with Sections 503 and 507.~~)) The fire apparatus access roads shall be in accordance with Section 503, Appendix D and the Seattle Right of Way Improvement Manual.

Marinas and boatyards shall be provided with at least two fire hydrants. One fire hydrant shall be located within 500 feet (152 400 mm) of the closest point of fire department apparatus access to the shore end of the marina *piers*, *wharves* or *floats*, or to the fire department connection (FDC) for those *piers*, *wharves*, or *floats* that are equipped with standpipes. The second fire hydrant shall be located within 1000 feet (304 800 mm) of the closest point of fire department apparatus access to the shore end of the marina *piers*, *wharves* or *floats*, or to the FDC for those *piers*, *wharves* or *floats* that are equipped with standpipes. All required fire hydrants shall be capable of delivering not less than 1,000 gpm (63 L/s) at a minimum residual pressure of 20 psi (138 kPa) each. Such roads and water systems shall be maintained in accordance with Sections 503 and 507.

[S] 3604.4 Portable fire extinguishers. One portable fire extinguisher ((~~of the ordinary (moderate) hazard type~~)) having a minimum rating of 2A 20BC shall be provided at each required standpipe hose connection. Additional portable fire extinguishers, suitable for the hazards involved, shall be provided and maintained in accordance with Section 906 and NFPA 10.

[S] 3604.5 Communications. A telephone not requiring a coin to operate or other *approved*, clearly identified means to notify the fire department shall be provided within 75 feet (22 860 mm) of all portions of piers, wharves and floats. If applicable, additional fire extinguishers, suitable for the hazards involved, shall be provided on the site in a location *approved* by the *fire code official*. The street address of the marina and emergency telephone number(s) shall be displayed prominently on a sign at the telephone.

3604.6 Emergency operations staging areas. Space shall be provided on all *float* systems for the staging of emergency equipment. Emergency operation staging areas shall provide a minimum of 4 feet wide by 10 feet long (1219 mm by 3048 mm) clear area exclusive of walkways and shall be located at each standpipe hose connection. Emergency operation staging areas shall be provided with a curb or barrier having a minimum height of 4 inches (102 mm) and maximum space between the bottom edge and the surface of the staging area of 2 inches (51 mm) on the outboard sides of the staging area.

An *approved* sign reading FIRE EQUIPMENT STAGING AREA—KEEP CLEAR shall be provided at each staging area.

[W] 3604.7 Smoke and heat vents. Approved automatic smoke and heat vents shall be provided in covered boat moorage areas exceeding 2,500 sq. ft. (232 m^2) in area, excluding roof overhangs.

Exception: Smoke and heat vents are not required in areas protected by automatic sprinklers.

3604.7.1 Design and installation. Where smoke and heat vents are required they shall be installed near the roof peak, evenly distributed and arranged so that at least one vent is over each covered berth. The effective vent area shall be calculated using a ratio of one square foot of vent to every 15 square feet of covered berth area (1:15). Each vent shall provide a minimum opening size of 4 ft. x 4 ft.

3604.7.1.1 Smoke and heat vents. Smoke and heat vents shall operate automatically by actuation of a heat-responsive device rated at 100ºF (56ºC) above ambient.

Exception: Gravity-operated drop out vents.

3604.7.1.2 Gravity-operated drop out vents. Gravity-operated drop out vents shall fully open within 5 minutes after the vent cavity is exposed to a simulated fire represented by a time-temperature gradient that reaches an air temperature of 500ºF (260ºC) within 5 minutes.

[W] 3604.8 Draft curtains. Draft curtains shall be provided in covered boat moorage areas exceeding 2,500 sq. ft. (232 m^2) in area, excluding roof overhangs.

Exception: Draft curtains are not required in areas protected by automatic sprinklers.

3604.8.1 Draft curtain construction. Draft curtains shall be constructed of sheet metal, gypsum board or other approved materials that provide equivalent performance to resist the passage of smoke. Joints and connections shall be smoke tight.

3604.8.2 Draft curtain location and depth. The maximum area protected by draft curtains shall not exceed 2,000 sq. ft. (186 m^2) or two slips or berths, whichever is smaller. Draft curtains shall not extend past the piling line. Draft curtains shall have a minimum depth of 4 feet and shall not extend closer than 8 feet (2438 mm) to the walking surface of the pier.

[S] 3604.9 Automatic sprinkler system. Approved automatic sprinkler systems shall be installed in accordance with sections 3604.9.1 through 3604.9.3 and section 903.

3604.9.1 Covered boat moorage. Automatic sprinklers shall be provided for covered boat moorage exceeding 500 square feet in projected roof area per *pier*, *wharf* or *float*. The sprinkler system shall be designed and installed in accordance with NFPA 13 for Extra Hazard Group 2 occupancy. If sprinklers are required by this chapter for covered boat moorage, the sprinklers shall be extended to any structure on the *pier*, *wharf* or *float* exceeding 500 square feet (46.5 m^2) in projected roof area. For the purposes of this chapter, the projected roof area means the footprint of the roof.

3604.9.2 Substructure. Automatic sprinklers shall be installed under the substructure of every new marina and boatyard facility in accordance with NFPA 307 and as specified in Chapter 9.

Exceptions:

1. Combustible substructures whose deck area does not exceed 8,000 square feet (743.2 m^2) supporting no superstructures.
2. Combustible substructures whose deck area does not exceed 8,000 square feet (743.3 m^2) supporting superstructures not required to be provided with an approved automatic sprinkler system as specified in Section 429.9 of the Seattle Building Code.
3. Noncombustible substructures with or without superstructures.
4. Substructures, over other than tidal water, where sprinkler heads cannot be installed with a minimum clearance of 4 feet (1219 mm) above mean high water.
5. Substructures resulting from walkways or finger piers that do not exceed 10 feet (3048 mm) in width.

3604.9.3 Superstructure. Automatic sprinklers shall be provided in superstructures as specified in Chapter 9.

[S] 3604.10 Fire department connections. Standpipe and sprinkler systems shall be equipped with not less than a two-way 2-1/2-inch (64 mm) fire department connection (FDC), which shall be readily visible and located at the fire department apparatus access.

[S] 3604.11 Draft stops. Draft stops shall be provided under substructures in accordance with Section 429 of the Seattle Building Code.

SECTION 3605
MARINE MOTOR FUEL-DISPENSING FACILITIES

3605.1 Fuel dispensing. Marine motor fuel-dispensing facilities shall be in accordance with Chapter 23.