

2. Aisles complying with Section 1017.
3. Corridors complying with Section 1018.2.
4. Stage stairways and catwalks complying with Section 1015.6.

SECTION 1006 MEANS OF EGRESS ILLUMINATION

1006.2 Illumination level. Illumination shall be provided at every point in ((~~⌘~~))the means of egress. The illumination level shall not be less than 1 foot-candle (11 lux) at the walking surface. Luminaires shall be installed whenever exit signs are required as specified in Section 1011.

Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances to not less than 0.2 foot-candle (2.15 lux), provided that the required illumination is automatically restored upon activation of a premises' fire alarm system where such system is provided.

Code Alternate CA1006.2: Compliance with the following paragraphs will be deemed to satisfy the requirement for means of egress illumination at every point in the means of egress. Means of egress illumination systems that comply with this Code Alternate shall also comply with Section 1006.3.

1. Location and Fixture Placement. Means of egress illumination shall be located in stairways, corridors, halls, passenger elevator cars, lobbies, rooms with an occupant load of 100 or more, and other areas required to provide safe egress from the premises and immediately outside of the building exit when required by the building official. Fixtures shall be installed to not less than the following schedule:

- | | |
|--|--|
| 1.1 Interior and exterior stairways and landings and outside building exit | <u>At least one per landing</u> |
| 1.2 Corridors and halls and designated means of egress paths in parking garages | <u>At least one for each 40 lineal feet</u> |
| 1.3 Lobbies, vestibules, foyers, elevator cars and other similar areas as required | <u>At least one for each 250 square feet</u> |
| 1.4 Warehouses | <u>See Item 2 below.</u> |

These fixtures are permitted to be included in the watts per square foot calculation for means of egress illumination.

2. Amount of Illumination. Where means of egress illumination is required, illumination shall be provided at the rate of 0.1 watt of fluorescent illumination per square foot of area. Installations using incandescent lamps shall have a minimum wattage of at least 3 times the fluorescent requirements. Use of other light sources is subject to the approval of the building official.

Exceptions:



1. In warehouses, the allowable minimum illumination is permitted to be 0.1 watt per square foot (0.03 watts for fluorescent) provided fixtures are placed either:
 - 1.1 Where means of egress pathways are not designated, fixtures shall be placed to cover an area not larger than 1,600 square feet, or
 - 1.2 Where means of egress pathways are designated, fixtures shall be placed at least one for every 40 lineal feet.
2. In theaters, auditoriums or other places of assembly where motion pictures or other projections are made by means of directed light, the minimum allowable illumination is permitted to be reduced to 0.05 watts per square foot of floor area (0.02 watts for fluorescent). The higher level of required illumination shall be automatically restored upon activation of a premises fire alarm system where such system is provided.
3. In Groups B, F-1, M and S-1 occupancies, when approved by the building official, the minimum allowable illumination is permitted to be reduced to 0.05 watts per square foot (0.02 watts for fluorescent) of floor area.
4. In Group B occupancies and open parking garages, when approved by the building official, the illumination is permitted to be eliminated when within 50 feet of a window wall or open side and where light is not totally obscured.

Means of egress illumination fixtures shall be spaced and designed to give adequate distribution of light for safe egress and so that the failure of any individual lighting element, such as the burning out of a light bulb, will not leave any space in total darkness. Illumination from battery operated fixtures shall provide the same level of illumination required for hard-wired fixtures.

1006.3 Illumination ((emergency)) power supply. The power supply for *means of egress* illumination shall normally be provided by the premises' electrical supply. In the event of power supply failure, an emergency ((~~electrical~~)) power system shall automatically illuminate all of the following areas:

1. *Aisles* and unenclosed egress *stairways* in rooms and spaces that require two or more *means of egress*.
2. *Corridors*, *exit enclosures* and *exit passageways* in buildings required to have two or more *exits*.
3. Exterior egress components at other than their *levels of exit discharge* until *exit discharge* is accomplished for buildings required to have two or more *exits*.
4. Interior *exit discharge* elements, as permitted in Section 1027.1, in buildings required to have two or more *exits*.
5. Exterior landings as required by Section 1008.1.6 for *exit discharge* doorways in buildings required to have two or more *exits*.



1 The emergency power system shall provide power for a duration of not less than 90 minutes
2 and shall consist of storage batteries, unit equipment or an on-site generator. The installation of
the emergency power system shall be in accordance with Chapter 27.

SECTION 1007

ACCESSIBLE MEANS OF EGRESS

4 **[W] 1007.1 Accessible means of egress required.** *Accessible means of egress* shall comply with
5 this section. *Accessible spaces* shall be provided with not less than one *accessible means of*
6 *egress*. Where more than one *means of egress* are required by Section 1015.1 or 1021.1 from
7 any *accessible space*, each *accessible* portion of the space shall be served by not less than two
accessible means of egress.

Exceptions:

- 8 1. *Accessible means of egress* are not required in alterations to existing buildings.
- 9 2. One *accessible means of egress* is required from an *accessible mezzanine* level in
accordance with Section 1007.3, 1007.4 or 1007.5.
- 10 3. In assembly areas with sloped or stepped *aisles*, one *accessible means of egress* is
11 permitted where the common path of travel is *accessible* and meets the requirements in
Section 1028.8.
- 12 4. In parking garages, *accessible means of egress* are not required to serve parking areas
that do not contain *accessible* parking spaces or other accessible elements.

13 **1007.2 Continuity and components.** Each required *accessible means of egress* shall be
14 continuous to a *public way* and shall consist of one or more of the following components:

- 15 1. *Accessible routes* complying with Section 1104 of the *International Building Code*.
- 16 2. *Interior exit stairways* complying with Sections 1007.3 and 1022.
- 17 3. *Exterior exit stairways* complying with Sections 1007.3 and 1026.
4. Elevators complying with Section 1007.4.

18 **Interpretation I1007.2a:** An exit passageway is not required on the level of exit
19 discharge to connect the elevator with the exterior exit door.

- 20 5. Platform lifts complying with Section 1007.5.
- 21 6. *Horizontal exits* complying with Section 1025.
- 22 7. *Ramps* complying with Section 1010.
- 23 8. *Areas of refuge* complying with Section 1007.6.

Exceptions:

- 24 1. Where the *exit discharge* is not *accessible*, an exterior area for assisted rescue must be
25 provided in accordance with Section 1007.7.
- 26 2. Where the *exit stairway* is open to the exterior, the *accessible means of egress* shall
27 include either an *area of refuge* in accordance with Section 1007.6 or an exterior area for
28 assisted rescue in accordance with Section 1007.7.



1007.2.1 Elevators required. In buildings where a required *accessible* floor is four or more stories above or below a *level of exit discharge*, at least one required *accessible means of egress* shall be an elevator complying with Section 1007.4.

Interpretation I1007.2b: The level of exit discharge is not counted when determining whether an accessible floor is four stories above or below a level of exit discharge.

Exceptions:

1. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a *horizontal exit* and located at or above the *levels of exit discharge*.
2. In buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1010.

Interpretation I1007.2c: In exception 2, the ramp shall be part of an accessible means of egress.

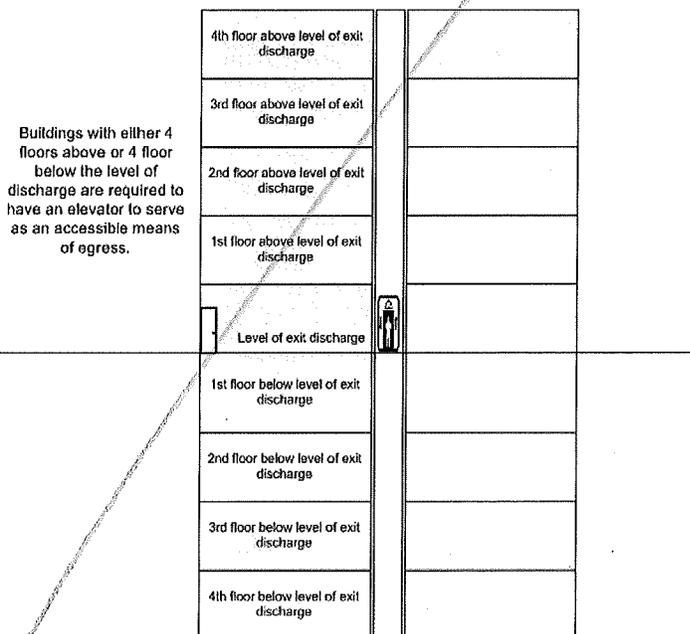


Figure 1007.2b



1 **1007.4 Elevators.** In order to be considered part of an *accessible means of egress*, an elevator
2 shall comply with the emergency operation and signaling device requirements of Section 2.27 of
3 ASME A17.1. ~~((Standby))~~ A legally required standby power system shall be provided for
4 operation of the elevator, the shunt trip and elevator car lighting in accordance with Chapter 27
of the *International Building Code* and ~~((3003))~~ the *Seattle Electrical Code*. The elevator shall be
accessed from either an *area of refuge* complying with Section 1007.6 or a *horizontal exit*.

Exceptions:

- 5 1. Elevators are not required to be accessed from an *area of refuge* or *horizontal exit* in
6 *open parking garages*.
- 7 2. Elevators are not required to be accessed from an *area of refuge* or *horizontal exit* in
8 buildings and facilities equipped throughout with an *automatic sprinkler system* installed
9 in accordance with Section 903.3.1.1 or 903.3.1.2.
- 10 3. Elevators not required to be located in a shaft in accordance with Section 708.2 of the
11 *International Building Code* are not required to be accessed from an *area of refuge* or
12 *horizontal exit*.
- 13 4. Elevators are not required to be accessed from an *area of refuge* or *horizontal exit* for
14 smoke protected seating areas complying with Section 1028.6.2.

15 **1007.5 Platform lifts.** Platform (wheelchair) lifts shall not serve as part of an *accessible means*
16 *of egress*, except where allowed as part of a required *accessible route* in Section 1109.7, Items 1
17 through 9 of the *International Building Code*. ~~((Standby))~~ Legally required standby power
18 system as defined by the *Seattle Electrical Code* shall be provided in accordance with ~~((Section~~
19 ~~604.2.6 of this code))~~ Chapter 27 of the *Seattle Building Code* for platform lifts permitted to serve
20 as part of a *means of egress*.

21 **1007.5.1 Openness.** Platform lifts on an *accessible means of egress* shall not be installed in a
22 fully enclosed hoistway.

23 **1007.6 Areas of refuge.** Every required *area of refuge* shall be *accessible* from the space it
24 serves by an *accessible means of egress*. The maximum travel distance from any *accessible* space
25 to an *area of refuge* shall not exceed the travel distance permitted for the occupancy in
26 accordance with Section 1016.1. Every required *area of refuge* shall have direct access to a
27 *stairway* within an *exit enclosure* complying with Sections 1007.3 and 1022 or an elevator
28 complying with Section 1007.4. Where an elevator lobby is used as an *area of refuge*, the shaft
and lobby shall comply with Section ~~((1022.9 for smokeproof enclosures))~~ 708.14.2 of the
Seattle Building Code for elevator hoistway pressurization except where the elevators are in an
area of refuge formed by a *horizontal exit* or *smoke barrier*.

Exceptions:

1. A *stairway* serving an *area of refuge* is not required to be enclosed where permitted in
Sections 1016.1 and 1022.1.



1 2. (~~Smokeproof enclosure~~) Elevator hoistway pressurization is not required for an
2 elevator lobby used as an *area of refuge* not required to be enclosed.

3 ***

4 **1007.8 Two-way communication.** A two-way communication system shall be provided at the
5 elevator landing on each *accessible* floor that is one or more stories above or below the *story* of
6 *exit discharge* complying with Sections 1007.8.1 and 1007.8.2.

7 **Exceptions:**

8 1. Two-way communication systems are not required at the elevator landing where the
9 two-way communication system is provided within *areas of refuge* in accordance with
10 Section 1007.6.3.

11 2. Two-way communication systems are not required on floors provided with *exit ramps*
12 conforming to the provisions of Section 1010.

13 **[W] 1007.8.1 System requirements.** Two-way communication systems shall provide
14 communication between each required location and the fire command center or a central control
15 point location *approved* by the fire department.

16 Where the central control point is not constantly attended, a two-way communication system
17 shall have a timed automatic telephone dial-out capability to a monitoring location (~~or 911~~).

18 The two-way communication system shall include both audible and visible signals. The two-way
19 communication system shall have a battery backup or an approved alternate source of power that
20 is capable of 90 minutes use upon failure of the normal power source.

21 **1007.8.2 Directions.** Directions for the use of the two-way communication system,
22 instructions for summoning assistance via the two-way communication system and written
23 identification of the location shall be posted adjacent to the two-way communication system.

24 ***

25 **SECTION 1008**

26 **DOORS, GATES AND TURNSTILES**

27 **1008.1 Doors.** *Means of egress* doors shall meet the requirements of this section. Doors serving a
28 *means of egress* system shall meet the requirements of this section and Section 1020.2. Doors
provided for egress purposes in numbers greater than required by this code shall meet the
requirements of this section. See Section 3201 of the *Seattle Building Code* for doors swinging
over public property.

Means of egress doors shall be readily distinguishable from the adjacent construction and
finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting
materials shall not be used on *means of egress* doors. *Means of egress* doors shall not be
concealed by curtains, drapes, decorations or similar materials.



1 **1008.1.4 Special doors.** Special doors and security grilles shall comply with the requirements
2 of Sections 1008.1.4.1 through 1008.1.4.5.

3 **1008.1.4.1 Revolving doors.** Revolving doors shall comply with the following:

- 4 1. Each revolving door shall be capable of collapsing into a bookfold position with parallel
5 egress paths providing an aggregate width of 36 inches (914 mm).
- 6 2. A revolving door shall not be located within 10 feet (3048 mm) of the foot of or top of *stairs*
7 or escalators. A dispersal area shall be provided between the *stairs* or escalators and the
8 revolving doors.
- 9 3. The revolutions per minute (rpm) for a revolving door shall not exceed those shown in Table
10 1008.1.4.1.
- 11 4. Each revolving door shall have a side-hinged swinging door which complies with Section
12 1008.1 in the same wall and within 10 feet (3048 mm) of the revolving door.
- 13 5. Revolving doors shall not be part of an *accessible route* required by Section 1007 and Chapter
14 11.

15 **1008.1.4.1.1 Egress component.** A revolving door used as a component of a *means of*
16 *egress* shall comply with Section 1008.1.4.1 and the following three conditions:

- 17 1. Revolving doors shall not be given credit for more than 50 percent of the required egress
18 capacity.
- 19 2. Each revolving door shall be credited with no more than a 50-person capacity.
- 20 3. Each revolving door shall be capable of being collapsed when a force of not more than 130
21 pounds (578 N) is applied within 3 inches (76 mm) of the outer edge of a wing.

22 **1008.1.4.1.2 Other than egress component.** A revolving door used as other than a
23 component of a *means of egress* shall comply with Section 1008.1.4.1. The collapsing force of a
24 revolving door not used as a component of a *means of egress* shall not be more than 180 pounds
25 (801 N).

26 **Exception:** A collapsing force in excess of 180 pounds (801 N) is permitted if the
27 collapsing force is reduced to not more than 130 pounds (578 N) when at least one of the
28 following conditions is satisfied:

1. There is a power failure or power is removed to the device holding the door
wings in position.
2. There is an actuation of the *automatic sprinkler system* where such system is
provided.
3. There is an actuation of a smoke detection system which is installed in
accordance with Section 907 to provide coverage in areas within the building
which are within 75 feet (22 860 mm) of the revolving doors.
4. There is an actuation of a manual control switch, in an *approved* location and
clearly defined, which reduces the holding force to below the 130-pound (578 N)
force level.



1 **1008.1.4.2 Power-operated doors.** Where *means of egress* doors are operated by power,
2 such as doors with a photoelectric-actuated mechanism to open the door upon the approach of a
3 person, or doors with power-assisted manual operation, the design shall be such that in the event
4 of power failure, the door is capable of being opened manually to permit *means of egress* travel
5 or closed where necessary to safeguard *means of egress*. The forces required to open these doors
6 manually shall not exceed those specified in Section 1008.1.3, except that the force to set the
7 door in motion shall not exceed 50 pounds (220 N). The door shall be capable of swinging from
8 any position to the full width of the opening in which such door is installed when a force is
9 applied to the door on the side from which egress is made. Full-power-operated doors shall
10 comply with BHMA A156.10. Power-assisted and low-energy doors shall comply with BHMA
11 A156.19.

8 **Exceptions:**

- 9 1. Occupancies in Group I-3.
- 10 2. Horizontal sliding doors complying with Section 1008.1.4.3.
- 11 3. For a biparting door in the emergency breakout mode, a door leaf located within a
12 multiple-leaf opening shall be exempt from the minimum 32-inch (813 mm) single-leaf
13 requirement of Section 1008.1.1, provided a minimum 32-inch (813 mm) clear opening is
14 provided when the two biparting leaves meeting in the center are broken out.

13 **1008.1.4.3 Horizontal sliding doors.** In other than Group H occupancies, horizontal
14 sliding doors permitted to be a component of a *means of egress* in accordance with Exception 6
15 to Section 1008.1.2 shall comply with all of the following criteria:

- 16 1. The doors shall be power operated and shall be capable of being operated manually in the
17 event of power failure.
- 18 2. The doors shall be openable by a simple method from both sides without special knowledge or
19 effort.
- 20 3. The force required to operate the door shall not exceed 30 pounds (133 N) to set the door in
21 motion and 15 pounds (67 N) to close the door or open it to the minimum required width.
- 22 4. The door shall be openable with a force not to exceed 15 pounds (67 N) when a force of 250
23 pounds (1100 N) is applied perpendicular to the door adjacent to the operating device.
- 24 5. The door assembly shall comply with the applicable *fire protection rating* and, where rated,
25 shall be self-closing or automatic closing by smoke detection in accordance with Section
26 715.4.8.3 of the *International Building Code*, shall be installed in accordance with NFPA 80 and
27 shall comply with Section 715 of the *International Building Code*.
- 28 6. The door assembly shall have an integrated standby power supply.
7. The door assembly power supply shall be electrically supervised.
8. The door shall open to the minimum required width within 10 seconds after activation of the
operating device.



1 **1008.1.4.4 Access-controlled egress doors.** The entrance doors in a *means of egress* in
2 buildings with an occupancy in Group A, B, E, I-2, M, R-1 or R-2 and entrance doors to tenant
3 spaces in occupancies in Groups A, B, E, I-2, M, R-1 and R-2 are permitted to be equipped with
4 an *approved* entrance and egress access control system which shall be installed in accordance
5 with all of the following criteria:

- 6 1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the
7 doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
- 8 2. Loss of power to that part of the access control system which locks the doors shall
9 automatically unlock the doors.
- 10 3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48
11 inches (1016mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the
12 secured doors. Ready access shall be provided to the manual unlocking device and the device
13 shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual
14 unlocking device shall result in direct interruption of power to the lock—independent of the
15 access control system electronics—and the doors shall remain unlocked for a minimum of 30
16 seconds.
- 17 4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors,
18 and the doors shall remain unlocked until the fire alarm system has been reset.
- 19 5. Activation of the building automatic sprinkler or fire detection system, if provided, shall
20 automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has
21 been reset.
- 22 6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured
23 from the egress side during periods that the building is open to the general public.
- 24 7. The access control system shall be listed or shall be comprised of approved components.

25 **Note:** Components bearing a "recognized component" mark from an approved agency shall
26 be approved.

27 **1008.1.4.5 Security grilles.** In Groups B, F, M and S, horizontal sliding or vertical security
28 grilles are permitted at the main exit and shall be openable from the inside without the use of a
key or special knowledge or effort during periods that the space is occupied. The grilles shall
remain secured in the full-open position during the period of occupancy by the general public.
Where two or more *means of egress* are required, not more than one-half of the *exits* or *exit*
access doorways shall be equipped with horizontal sliding or vertical security grilles.

* * *

1008.1.6 Landings at doors. Landings shall have a width not less than the width of the
stairway or the door, whichever is greater. Doors in the fully open position shall not reduce a
required dimension by more than 7 inches (178 mm). When a landing serves an *occupant load* of
50 or more, doors in any position shall not reduce the landing to less than one-half its required
width. When doors open over landings, doors in any position shall not reduce the landing length



1 to less than 12 inches (305 mm). Landings shall have a length measured in the direction of travel
2 of not less than 44 inches (1118 mm).

3 **Exception:** Landing length in the direction of travel in Groups R-3 and U and within
4 individual units of Group R-2 need not exceed 36 inches (914 mm).

5 **Interpretation I1008.1.6:** Landing length, width and slope shall be measured as specified in
6 Section 1009.5 and 1009.6.1. See Figures 1008.1.6(1), 1008.1.6(2) and 1008.1.6(3) for
7 illustrations of the requirements of this section.

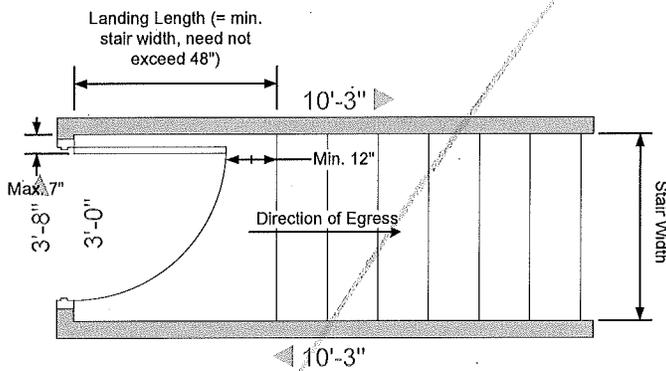


Figure 1008.1.6(1)
(Landing Dimensions Only)

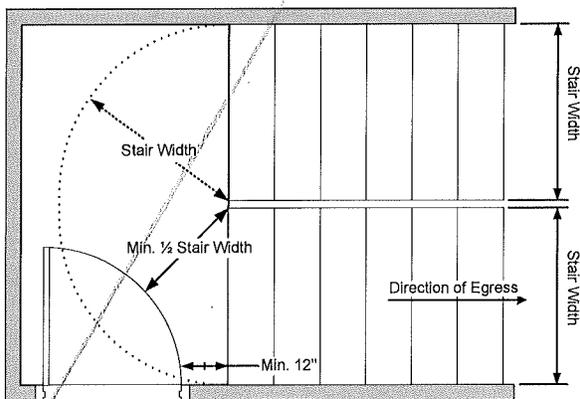


Figure 1008.1.6(2)
(Landing Dimensions Only)

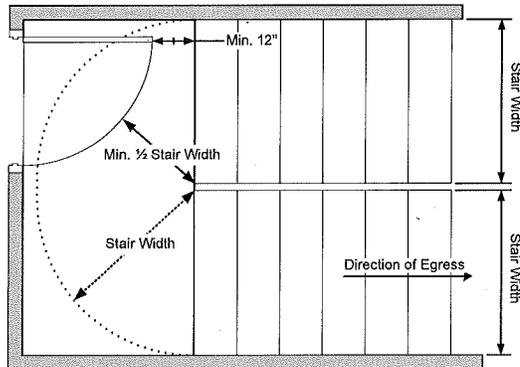


Figure 1008.1.6(3)
(Landing Dimensions Only)

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1008.1.9 Door operations. Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.9.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be *accessible* by Chapter 11 of the *International Building Code* shall not require tight grasping, tight pinching or twisting of the wrist to operate.

1008.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

1008.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint as approved by the building official.
2. In buildings in occupancy Group A having an *occupant load* of 300 or less, Groups B, F, M and S, and in *places of religious worship*, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
 - 2.1. The locking device is readily distinguishable as locked;
 - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED ((WHEN BUILDING IS OCCUPIED))

1 DURING BUSINESS HOURS. The sign shall be in letters 1 inch (25 mm) high on a
2 contrasting background; and

3 2.3. The use of the key-operated locking device is revokable by the *building official* for
4 due cause.

5 3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be
6 used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-
7 mounted hardware on the egress side of the door.

8 4. Doors from individual dwelling or sleeping units of Group R occupancies having an *occupant*
9 *load* of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain,
10 provided such devices are openable from the inside without the use of a key or tool.

11 5. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in
12 accordance with listed fire door test procedures.

13 6. Approved, listed locks without delayed egress shall be permitted in Group R-2 boarding
14 homes licensed by Washington state, provided that:

15 6.1. The clinical needs of one or more patients require specialized security measures for
16 their safety.

17 6.2. The doors unlock upon actuation of the automatic sprinkler system or automatic fire
18 detection system.

19 6.3. The doors unlock upon loss of electrical power controlling the lock or lock
20 mechanism.

21 6.4. The lock shall be capable of being deactivated by a signal from a switch located in an
22 approved location.

23 6.5. There is a system, such as a keypad and code, in place that allows visitors, staff
24 persons and appropriate residents to exit. Instructions for exiting shall be posted within
25 six feet of the door.

26 7. Doors from elevator lobbies providing access to exits are permitted to be locked during or after
27 business hours where items 7.1 through 7.5 are satisfied.

28 7.1. The lobby doors shall unlock automatically upon fire alarm.

7.2. The lobby doors shall unlock automatically upon power loss.

7.3. The alarm system shall include smoke detection in the elevator lobby and at least two
detectors on the tenant side within 15 feet of the door;

7.4. Access through the tenant portion of the building to both exits shall be unobstructed;
and

7.5. The building shall have an automatic sprinkler system throughout in accordance with
Section 903.3.1.1 or 903.3.1.2.

1008.1.9.4 Bolt locks. Manually operated flush bolts or surface bolts are not permitted on
required means of egress doors.

Exceptions:

1. On doors not required for egress in individual dwelling units or sleeping units.



1 2. Where a pair of doors serves a storage or equipment room, manually operated edge- or
surface-mounted bolts or self-latching flush bolts are permitted on the inactive leaf.

2 3. Where a pair of doors serves an *occupant load* of less than 50 persons in a Group B, F
3 or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the
inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating
4 hardware.

5 4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge- or
surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not
6 needed to meet egress width requirements and the building is equipped throughout with
an *automatic sprinkler system* in accordance with Section 903.3.1.1. The inactive leaf
7 shall contain no doorknobs, panic bars or similar operating hardware.

8 5. Where a pair of doors serves patient care rooms in Group I-2 occupancies, self-latching
edge or surface-mounted bolts are permitted on the inactive leaf provided that the inactive
9 leaf is not needed to meet egress width requirements and the inactive leaf contains no
doorknobs, panic bars or similar operating hardware.

10 **1008.1.9.5 Unlatching.** The unlatching of any door or leaf shall not require more than one
11 operation.

12 **Exceptions:**

13 1. Places of detention or restraint.

14 2. Where manually operated bolt locks are permitted by Section 1008.1.9.4.

15 3. Doors with automatic flush bolts as permitted by Section 1008.1.9.3, Exception 3.

16 4. Doors from individual dwelling units and sleeping units of Group R occupancies as
permitted by Section 1008.1.9.3, Exception 4.

17 ~~((1008.1.9.5.1 Closet and bathroom doors in Group R-4 occupancies. In Group R-4
18 occupancies, closet doors that latch in the closed position shall be openable from inside the
closet, and bathroom doors that latch in the closed position shall be capable of being unlocked
from the ingress side.))~~

19 **1008.1.9.6 Special locking arrangements in Group I-2.** *Approved* ~~((delayed egress))~~
locks shall be permitted in a Group I-2 occupancy where the clinical needs of persons receiving
20 care require such locking. ~~((Delayed egress locks))~~ Locks shall be permitted in such occupancies
21 where the building is equipped throughout with an *automatic sprinkler system* in accordance with
Section 903.3.1.1 or an *approved* automatic smoke or heat detection system installed in
22 accordance with Section 907, provided that the doors unlock in accordance with Items 1 through
23 6 below. ~~((A building occupant shall not be required to pass through more than one door
equipped with a delayed egress lock before entering an exit.))~~

24 1. The doors unlock upon actuation of the *automatic sprinkler system* or automatic fire detection
system.

25 2. The doors unlock upon loss of power controlling the lock or lock mechanism.



1 3. The door locks shall have the capability of being unlocked by a signal from the fire command
center, a nursing station or other *approved* location.

2 4. The procedures for the operation(s) of the unlocking system shall be described and *approved*
as part of the emergency planning and preparedness required by Chapter 4.

3 5. ~~((All clinical staff shall have the keys, codes or other means necessary to operate the locking
4 devices.))~~ There is a system, such as a keypad and code, in place that allows visitors, staff persons
5 and appropriate residents to exit. Instructions for exiting shall be posted within six feet of the
6 door.

6 6. Emergency lighting shall be provided at the door.

7 **Exception:** Items 1 through 3 and 5 shall not apply to doors to areas where persons who,
8 because of clinical needs, require restraint or containment as part of the function of a
9 Group I-2 mental hospital provided that all clinical staff shall have the keys, codes or
10 other means necessary to operate the locking devices.

11 **1008.1.9.7 Delayed egress locks.** *Approved, listed*, delayed egress locks shall be permitted
12 to be installed on doors serving any occupancy except Group A, E and H occupancies in
13 buildings that are equipped throughout with an *automatic sprinkler system* in accordance with
14 Section 903.3.1.1 or an *approved* automatic smoke or heat detection system installed in
15 accordance with Section 907, provided that the doors unlock in accordance with Items 1 through
16 6 below. Delayed egress locks are permitted in libraries in both Group A and E occupancies in
17 locations other than at main exit doors, and in Group E day care occupancies. A building
18 occupant shall not be required to pass through more than one door equipped with a delayed
19 egress lock before entering an *exit*.

20 1. The doors unlock upon actuation of the *automatic sprinkler system* or automatic fire detection
21 system.

22 2. The doors unlock upon loss of power controlling the lock or lock mechanism.

23 3. The door locks shall have the capability of being unlocked by a signal from the fire command
24 center.

25 4. The initiation of an irreversible process which will release the latch in not more than 15
26 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release
27 device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the
28 door. Once the door lock has been released by the application of force to the releasing device,
relocking shall be by manual means only.

Exception: Where approved, a delay of not more than 30 seconds is permitted.

5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the
release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15
[30] SECONDS.

6. Emergency lighting shall be provided at the door.

1008.1.9.8 Electromagnetically locked egress doors. Doors in the *means of egress* that
are not otherwise required to have panic hardware in buildings with an occupancy in Group A, B,



1 E, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, M, R-1 or R-2 shall be permitted
2 to be electromagnetically locked if equipped with *listed* hardware that incorporates a built-in
switch and meet the requirements below:

- 3 1. The *listed* hardware that is affixed to the door leaf has an obvious method of operation that is
readily operated under all lighting conditions.
- 4 2. The *listed* hardware is capable of being operated with one hand.
- 5 3. Operation of the *listed* hardware releases to the electromagnetic lock and unlocks the door
immediately.
- 6 4. Loss of power to the *listed* hardware automatically unlocks the door.

7 **1008.1.9.9 Locking arrangements in correctional facilities.** In occupancies in Groups A-
8 2, A-3, A-4, B, E, F, I-2, I-3, M and S within correctional and detention facilities, doors in *means*
9 *of egress* serving rooms or spaces occupied by persons whose movements are controlled for
security reasons shall be permitted to be locked when equipped with egress control devices which
shall unlock manually and by at least one of the following means:

- 10 1. Activation of an *automatic sprinkler system* installed in accordance with Section 903.3.1.1;
- 11 2. Activation of an *approved* manual alarm box; or
- 12 3. A signal from a *constantly attended location*.

13 **1008.1.9.10 Stairway doors.** *Interior stairway means of egress* doors shall be openable
from both sides without the use of a key or special knowledge or effort.

14 **Exceptions:**

- 15 1. *Stairway* discharge doors shall be openable from the egress side and shall only be
locked from the opposite side.
- 16 2. This section shall not apply to doors arranged in accordance with Section 403.5.3.
- 17 3. In *stairways* serving not more than four stories, doors are permitted to be locked from
18 the side opposite the egress side, provided they are openable from the egress side and
capable of being unlocked simultaneously without unlatching upon a signal from the fire
19 command center, if present, or a signal by emergency personnel from a single location
inside the main entrance to the building.

20 **1008.1.10 Panic and fire exit hardware.** Doors serving a Group H occupancy and doors
21 serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall
not be provided with a latch or lock unless it is panic hardware or *fire exit hardware*.

22 **Exception:** A main *exit* of a Group A occupancy in compliance with Section 1008.1.9.3,
Item 2.

23 Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm)
24 wide that contain overcurrent devices, switching devices or control devices with *exit* or *exit*
25 *access* doors shall be equipped with panic hardware or *fire exit hardware*. The doors shall swing
in the direction of egress travel.



1 **1018.4 Dead ends.** Where more than one *exit* or *exit access doorway* is required, the *exit access*
2 shall be arranged such that there are no dead ends in *corridors* more than ~~((20 feet (6096 mm) in~~
3 length.)) 25 feet (7620 mm) in length.

4 **Exceptions:**

5 1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.4), the
6 dead end in a *corridor* shall not exceed 50 feet (15 240 mm).

7 2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, ~~((R-4,))~~ S and U, where the
8 building is equipped throughout with an *automatic sprinkler system* in accordance with
9 Section 903.3.1.1, the length of the dead-end *corridors* shall not exceed 50 feet (15 240
10 mm).

11 3. A dead-end *corridor* shall not be limited in length where the length of the dead-end
12 *corridor* is less than 2.5 times the least width of the dead-end *corridor*.

13 4. Dead ends are permitted to be 75 feet (22 860 mm) in length in areas containing Group
14 B offices in buildings of Types IA and IB construction, where the cumulative occupant
15 load does not exceed 50 for all areas for which the dead end serves as the only means of
16 egress.

17 **1018.5 Air movement in corridors.** *Corridors* shall not serve as supply, return, exhaust, relief
18 or ventilation air ducts or plenums except as allowed by *Seattle Mechanical Code* Section 601.2.

19 **((Exceptions:**

20 1. ~~Use of a *corridor* as a source of makeup air for exhaust systems in rooms that open directly~~
21 ~~onto such *corridors*, including toilet rooms, bathrooms, dressing rooms, smoking lounges and~~
22 ~~janitor closets, shall be permitted, provided that each such *corridor* is directly supplied with~~
23 ~~outdoor air at a rate greater than the rate of makeup air taken from the *corridor*.~~

24 2. ~~Where located within a dwelling unit, the use of *corridors* for conveying return air shall not be~~
25 ~~prohibited.~~

26 3. ~~Where located within tenant spaces of 1,000 square feet (93 m²) or less in area, utilization of~~
27 ~~*corridors* for conveying return air is permitted.~~

28 4. ~~Incidental air movement from pressurized rooms within health care facilities, provided that the~~
~~*corridor* is not the primary source of supply or return to the room.))~~

1018.5.1 Corridor ceiling. Use of the space between the *corridor* ceiling and the floor or roof
structure above as a return air plenum is permitted for one or more of the following conditions:

1. The *corridor* is not required to be of fire-resistance-rated construction;

2. The *corridor* is separated from the plenum by fire-resistance-rated construction;

3. The air-handling system serving the *corridor* is shut down upon activation of the air-handling
unit *smoke detectors* required by the *International Mechanical Code*;

4. The air-handling system serving the *corridor* is shut down upon detection of sprinkler
waterflow where the building is equipped throughout with an *automatic sprinkler system*; or



1 5. The space between the *corridor* ceiling and the floor or roof structure above the *corridor* is
2 used as a component of an *approved* engineered smoke control system.

3 **1018.6 Corridor continuity.** Fire-resistance-rated corridors shall be continuous from the point
4 of entry to an *exit*, and shall not be interrupted by intervening rooms.

5 **Exceptions:**

6 1. Foyers, lobbies or reception rooms constructed as required for *corridors* shall not be
7 construed as intervening rooms.

8 [W] 2. In Group R-2 boarding homes and residential treatment facilities licensed by
9 Washington state, seating areas shall be allowed to be open to the corridor provided:

10 2.1 The seating area is constructed as required for the corridor;

11 2.2 The floor is separated into at least two compartments complying with Section
12 407.4;

13 2.3 Each individual seating area does not exceed 150 square feet (13.9 m²),
14 excluding the corridor width;

15 2.4 The combined total space of seating areas per compartment does not exceed
16 300 square feet, excluding the corridor width;

17 2.5 Combustible furnishings located within the seating area shall be in accordance
18 with Section 805; and

19 2.6 Emergency means of egress lighting is provided as required by Section 1006
20 to illuminate the area.

21 **SECTION 1019**
22 **EGRESS BALCONIES**

23 ***

24 **1019.2 Wall separation.** Exterior egress balconies shall be separated from the interior of the
25 building by walls and opening protectives as required for *corridors*.

26 **Exceptions:**

27 1. Separation is not required where the exterior egress balcony is served by at least two
28 *stairs* and a dead-end travel condition does not require travel past an unprotected opening
to reach a *stair*.

2. Separation is not required in buildings equipped throughout with an automatic
sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

SECTION 1020
EXITS

1020.2 Exterior exit doors. Buildings or structures used for human occupancy shall have at least
one exterior door that meets the requirements of Section 1008.1.1, Section 1008.1.2 and Section
1008.1.3.



MINIMUM NUMBER OF EXITS FOR OCCUPANT LOAD

OCCUPANT LOAD	MINIMUM NUMBER OF EXITS
(persons per story)	(per story)
1-500	2
501-1,000	3
More than 1,000	4

1021.2 Single exits. ~~((Only one exit shall be required from Group R-3 occupancy buildings or from stories of other buildings as indicated in Table 1021.2.))~~ Occupancies shall be permitted to have a single *exit* in buildings otherwise required to have more than one *exit* if the areas served by the single *exit* do not exceed the limitations of Table 1021.2 or Section 1021.2.1. ~~((Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where applicable, cumulative occupant loads from adjacent occupancies shall be considered in accordance with the provisions of Section 1004.1.))~~ Basements with a single *exit* shall not be located more than one story below grade plane.

Mixed occupancies shall be permitted to be served by single exits provided each individual occupancy complies with the applicable requirements of Table 1021.2 for that occupancy. Where occupants from accessory spaces egress through a primary space, the occupant load of the primary space shall be calculated in accordance with Section 1004.1. In each story of a mixed occupancy building, the maximum number of occupants served by a single exit shall be such that the sum of the ratios of the calculated number of occupants of the space divided by the allowable number of occupants for each occupancy shall not exceed one.

1021.2.1 Single exits allowed. Only one *exit* is required from the following:

1. Group R-3 occupancy buildings are permitted to have one exit.
2. Occupied roofs with an occupant load of 10 or less are permitted to have one exit.
3. Not more than 5 stories of Group R-2 occupancy are permitted to be served by a single exit under the following conditions:
 - 3.1 The building has not more than 6 stories above grade plane.
 - 3.2 The building does not contain a boarding house.
 - 3.3 There shall be no more than four dwelling units on any floor.
 - 3.4 The building shall be of not less than one-hour fire-resistive construction and shall also be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Residential-type sprinkler heads shall be used in all habitable spaces in each dwelling unit.
 - 3.5 There shall be no more than two single exit stairway conditions on the same property.
 - 3.6 An exterior stairway or exit enclosure shall be provided. The exit enclosure, including any related exit passageway, shall be pressurized in accordance with Section 909.21. Doors in the exit enclosure shall swing into the exit enclosure regardless of the occupant load served.



provided that doors from the exit enclosure to the building exterior are permitted to swing in the direction of exit travel.

3.7 A corridor shall separate each dwelling unit entry/exit door from the door to an exit enclosure, including any related exit passageway, on each floor. Dwelling unit doors shall not open directly into an enclosed stairway. Dwelling unit doors are permitted to open directly into an exterior stairway.

3.8 There shall be no more than 20 feet (6096 mm) of travel to the exit stairway from the entry/exit door of any dwelling unit.

3.9 Travel distance measured in accordance with Section 1016.1 shall not exceed 125 feet.

3.10 The exit shall not terminate in an exit court where the court depth exceeds the court width unless it is possible to exit in either direction to the public way.

3.11 Elevators shall be pressurized in accordance with Section 708.14.2 of the *Seattle Building Code* or shall open into elevator lobbies. Elevator lobbies shall be separated from the remainder of the building and from the exit stairway with fire partitions. Doors shall be automatic closing actuated by smoke detector. Where approved by the building official, natural ventilation is permitted to be substituted for pressurization where the ventilation would prevent the accumulation of smoke or toxic gases.

3.12 Other occupancies are permitted in the same building provided they comply with all the requirements of this code. Other occupancies shall not communicate with the Group R occupancy portion of the building or with the single-exit stairway.

Exception: Parking garages accessory to the Group R occupancy are permitted to communicate with the exit stairway.

3.13 The exit serving the Group R occupancy shall not discharge through any other occupancy, including an accessory parking garage.

3.14 There shall be no openings within 10 feet (3048 mm) of unprotected openings into the stairway other than required exit doors having a one-hour fire-resistance rating.

**TABLE 1021.2
 STORIES WITH ONE EXIT**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B ^d , E ^e , F ^d , M, U, S ^d	49 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S ^a	29 occupants and 100 feet travel distance
Second story	B ^b , F, M, Sa	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2 ^c	4 dwelling units and 50 feet travel



distance

For SI: 1 foot = 304.8 mm.

- a. For the required number of exits for parking structures, see Section 1021.1.2.
- b. For the required number of exits for air traffic control towers, see Section 412.3 of the *International Building Code*.
- c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
- d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
- e. Day care occupancies shall have a maximum occupant load of 10.

SECTION 1022 EXIT ENCLOSURES

1022.1 Enclosures required. *Interior exit stairways* and *interior exit ramps* shall be enclosed with *fire barriers* constructed in accordance with Section 707 of the *International Building Code* or *horizontal assemblies* constructed in accordance with Section 712 of the *International Building Code*, or both. *Exit enclosures* shall have a *fire-resistance rating* of not less than 2 hours where connecting more than four stories (~~or more~~) and not less than 1 hour where connecting (~~less than~~) four stories and less. The number of stories connected by the *exit enclosure* shall include any basements but not any *mezzanines*. *Exit enclosures* shall have a *fire-resistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours. *Exit enclosures* shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an *exit passageway* conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An *exit enclosure* shall not be used for any purpose other than means of egress, circulation and access.

Exceptions:

1. In all occupancies, other than Group H and I occupancies, a *stairway* is not required to be enclosed when the *stairway* serves an *occupant load* of less than 10 and the *stairway* complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.

1.1. The *stairway* is open to not more than one *story* above its *level of exit discharge*; or

1.2. The *stairway* is open to not more than one *story* below its *level of exit discharge*.

2. *Exits* in buildings of Group A-5 where all portions of the *means of egress* are essentially open to the outside need not be enclosed.

3. *Stairways* serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.



1 4. *Stairways* in open parking structures that serve only the parking structure are not
required to be enclosed.

2 5. *Stairways* in Group I-3 occupancies, as provided for in Section 408.3.8 of the
International Building Code, are not required to be enclosed.

3 6. *Means of egress stairways* as required by Sections 410.5.3 of the *International*
Building Code and 1015.6.1 are not required to be enclosed.

4 7. *Means of egress stairways* from balconies, galleries or press boxes as provided for in
5 Section 1028.5.1 are not required to be enclosed.

6 **1022.2 Termination.** *Exit enclosures* shall terminate at an *exit discharge* or a *public way*.

7 **Exception:** An *exit enclosure* shall be permitted to terminate at an *exit passageway*
8 complying with Section 1023, provided the *exit passageway* terminates at an *exit*
discharge or a *public way*.

9 **1022.2.1 Extension.** Where an *exit enclosure* is extended to an *exit discharge* or a *public way*
10 by an *exit passageway*, the *exit enclosure* shall be separated from the *exit passageway* by a *fire*
11 *barrier* constructed in accordance with Section 707 of the *International Building*
12 *Code*, or both. The *fire-resistance rating* shall be at least equal to that required for the *exit*
13 *enclosure*. A *fire door assembly* complying with Section 715.4 of the *International Building*
14 *Code* shall be installed in the *fire barrier* to provide a *means of egress* from the *exit enclosure* to
the *exit passageway*. Openings in the *fire barrier* other than the *fire door assembly* are
prohibited. Penetrations of the *fire barrier* are prohibited.

15 **Exceptions:**

16 1. Penetrations of the *fire barrier* in accordance with Section 1022.4 shall be permitted.

17 2. A *fire barrier* and *fire door assembly* are not required to separate an *exit passageway*
from a *pressurized stairway*.

18 **1022.3 Openings ((and penetrations)).** *Exit enclosure* opening protectives shall be in
accordance with the requirements of Section 715 of the *International Building Code*.

19 Openings in *exit enclosures* other than unprotected exterior openings shall be limited to those
20 necessary for *exit access* to the enclosure from normally occupied spaces and for egress from the
enclosure.

21 Elevators shall not open into an *exit enclosure*.

22 **Interpretation I1022.3:** Accessory rooms such as restrooms, storage closets, laundry rooms,
23 electrical, communication closets and similar spaces shall not open into an exit enclosure.

24 **1022.4 Penetrations.** Penetrations into and openings through an *exit enclosure* are prohibited
25 except for the following:

1. required *exit* doors,
2. equipment and ductwork necessary for independent ventilation or pressurization,
3. sprinkler piping, standpipes,
4. electrical raceway for fire department communication systems and sprinkler monitoring terminating at a steel box not exceeding 16 square inches (0.010 m²).
5. electrical raceway serving the *exit enclosure* and terminating at a steel box not exceeding 16 square inches (0.010 m²)
6. piping used exclusively for the drainage of rainfall runoff from roof areas, provided the roof is not used for a helistop or heliport.
7. Unfired unit heaters required for freeze protection of fire protection equipment are permitted to penetrate one membrane; the conduit serving the heater is permitted to penetrate both membranes.
8. Equipment necessary for electrically-controlled stairway door locks and security cameras are permitted to penetrate one membrane; the conduit serving the equipment is permitted to penetrate both membranes.

Such penetrations shall be protected in accordance with Section 713 of the *International Building Code*. There shall be no penetrations or communication openings, whether protected or not, between adjacent *exit enclosures*.

Interpretation I1022.4: Ducts passing through exit enclosures shall be separated from the enclosure by construction having a fire-resistance rating at least equal to the exit enclosure walls. At least one side of the duct enclosure shall abut the exit enclosure.

1022.8 Floor identification signs. A sign shall be provided at each floor landing in *exit enclosures* connecting more than three stories designating the floor level, the terminus of the top and bottom of the *exit enclosure* and the identification of the *stair* or *ramp*. The signage shall also state the *story* of, and the direction to, the *exit discharge*, ~~((and the availability of))~~ whether there is roof access from the enclosure for the fire department, and whether the roof access is accessed by roof hatch. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. Floor level identification signs in tactile characters complying with ICC A117.1 shall be located at each floor level landing adjacent to the door leading from the enclosure into the corridor to identify the floor level.

1022.8.1 Signage requirements. *Stairway* identification signs shall comply with all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457 mm) by 12 inches (305 mm).

1 2. The letters designating the identification of the stair enclosure shall be a minimum of 11/2
inches (38 mm) in height.

2 3. The number designating the floor level shall be a minimum of 5 inches (127 mm) in height
and located in the center of the sign.

3 4. All other lettering and numbers shall be a minimum of 1 inch (25 mm) in height.

4 5. Characters and their background shall have a nonglare finish. Characters shall contrast with
their background, with either light characters on a dark background or dark characters on a light
5 background.

6 6. When signs required by Section 1022.8 are installed in interior *exit enclosures* of buildings
subject to Section 1024, the signs shall be made of the same materials as required by Section
7 1024.4.

8 **1022.9 ((Smokeproof enclosures and p)) Pressurized stairways. ((In buildings))** Where
9 required by Sections 403.5.4 or 405.7.2 of the *Seattle Building Code*, ((to comply with Section
10 403 or 405, each of the)) *exit enclosures* ((serving a story with a floor surface located more than
11 75 feet (22 860 mm) above the lowest level of fire department vehicle access or more than 30
12 feet (9144 mm) below the finished floor of a level of exit discharge serving such stories)) shall be
13 ((smokeproof enclosure or)) pressurized stairways in accordance with Section 909.20.

14 **1022.9.1 Termination and extension.** A ((*smokeproof enclosure or*)) pressurized stairway
15 shall terminate at an *exit discharge* or a *public way*. The ((*smokeproof enclosure or*))-pressurized
16 stairway shall be permitted to be extended by an *exit passageway* in accordance with Section
17 1022.2. The *exit passageway* shall be without openings other than ((*the fire door assembly*
18 *required by Section 1022.2 and*)) those necessary for egress from the *exit passageway*. The *exit*
19 *passageway* shall be separated from the remainder of the building by 2-hour *fire barriers*
20 constructed in accordance with Section 707 of the *International Building Code* or *horizontal*
21 *assemblies* constructed in accordance with Section 712 of the *International Building Code*, or
22 both. The exit passageway shall be protected and pressurized in the same manner as the
23 pressurized stairway.

24 **Exception(s):**

25 ((1. Openings in the *exit passageway* serving a *smokeproof enclosure* are permitted where
26 the *exit passageway* is protected and pressurized in the same manner as the *smokeproof*
27 *enclosure*, and openings are protected as required for access from other floors.

28 2. Openings in the *exit passageway* serving a pressurized stairway are permitted where
the *exit passageway* is protected and pressurized in the same manner as the pressurized
stairway.

3 The *fire barrier* separating the *smokeproof enclosure* or pressurized stairway from the
exit passageway is not required, provided the *exit passageway* is protected and
pressurized in the same manner as the *smokeproof enclosure* or pressurized stairway.

4) A ((*smokeproof enclosure or*)) pressurized stairway shall be permitted to egress
through areas on the level of discharge or vestibules as permitted by Section 1027.



1
2 ~~((1022.9.2 Enclosure access. Access to the stairway within a smokeproof enclosure shall be by way of a vestibule or an open exterior balcony.~~

3 ~~**Exception:** Access is not required by way of a vestibule or exterior balcony for stairways using the pressurization alternative complying with Section 909.20.5.)~~

4
5 **1022.10 Equipment in exit enclosures.** Equipment is prohibited in exit enclosures except for equipment necessary for independent pressurization, lighting of the exit enclosure, sprinkler piping, standpipes, electrical equipment for fire department communication and sprinkler monitoring, and unit heaters required to protect fire protection equipment from freezing.

6
7
8 **SECTION 1023**
9 **EXIT PASSAGEWAYS**

10 **1023.1 Exit passageway.** Exit passageways serving as an exit component in a means of egress system shall comply with the requirements of this section. An exit passageway shall not be used for any purpose other than as a means of egress, circulation and access.

11
12 ***

13 **1023.5 Openings and penetrations.** Exit passageway opening protectives shall be in accordance with the requirements of Section 715 of the *International Building Code*.

14 Except as permitted in Section 402.4.6 of the *International Building Code*, openings in exit passageways other than exterior openings shall be limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway.

15 Where an exit enclosure is extended to an exit discharge or a public way by an exit passageway, the exit passageway shall also comply with Section 1022.2.1.

16 Elevators shall not open into an exit passageway.

17
18 **Interpretation I1023.5:** Accessory rooms such as restrooms, storage closets, laundry rooms, electrical, communication closets and similar spaces shall not open into exit passageways.

19
20 **Code Alternate CA1023.5:** An elevator is permitted to open into an exit passageway when the following conditions are met:

21 1. A lobby shall separate the elevator from the exit passageway. This is allowed at only one location in the building. The lobby is required whether the elevator hoistway is pressurized or not.

22 2. The separation shall be constructed as a fire barrier having a fire-resistive rating and opening protectives as for the exit passageway. The door between the lobby and the exit passageway shall also comply with Section 715.4.3. The door shall have listed gaskets installed at head, jambs and meeting edges. This only applies to the walls common with the exit passageway.



1 3. The lobby shall have a minimum depth of 36 inches. (Note that areas of refuge may require a
2 larger dimension).

3 4. An elevator lobby constructed as a smoke partition shall be provided at every floor below the
4 level of the exit passageway served by the elevator. Hoistway pressurization is permitted to be
5 used in lieu of the lobbies on floors below the level of the exit passageway.

6 5. A door as required by Section 1022.2.1 between an exit enclosure and the exit passageway
7 shall be provided.

8 6. An automatic sprinkler system in accordance with Section 903.3.1.1 shall be provided
9 throughout the floor on which the exit passageway is located.

10 This alternate does not apply to vertical exit enclosures.

11 **1023.6 Penetrations.** Penetrations into and openings through an *exit passageway* are prohibited
12 except for required *exit* doors, equipment and ductwork necessary for independent pressurization,
13 sprinkler piping, standpipes, electrical raceway for fire department communication and electrical
14 raceway serving the *exit passageway* and terminating at a steel box not exceeding 16 square
15 inches (0.010m²). Such penetrations shall be protected in accordance with Section 713 of the
16 *International Building Code*. There shall be no penetrations or communicating openings, whether
17 protected or not, between adjacent *exit passageways*.

18 **Exception:** Unfired unit heaters allowed by Section 1022.10 to be installed in exit
19 enclosures are permitted to penetrate one membrane. The conduit serving the heater is
20 permitted to penetrate both membranes.

21 ***

22 **SECTION 1026**
23 **EXTERIOR EXIT RAMPS AND STAIRWAYS**

24 ***

25 **1026.3 Open side.** *Exterior exit ramps and stairways* serving as an element of a required *means*
26 *of egress* shall be at least 50 percent open on at least one side. An open side shall have a
27 minimum of ~~((35))~~ 28 square feet ~~((3.3))~~ 2.6 m² of aggregate open area adjacent to each floor
28 level, ~~((and the level of each intermediate landing. The required open area shall be located not~~
~~less than 42 inches (1067 mm) above the adjacent floor or landing level.))~~ The open area shall be
distributed to prevent accumulation of smoke or toxic gases.

SECTION 1027
EXIT DISCHARGE

1027.1 General. *Exits* shall discharge directly to the exterior of the building. The *exit discharge*
shall be at grade or shall provide direct access to grade. The *exit discharge* shall not reenter a
building except into an exit or as otherwise approved by the building official. The combined use



1 of Exceptions 1 and 2 below shall not exceed 50 percent of the number and capacity of the
2 required *exits*.

3 **Exceptions:**

4 1. A maximum of 50 percent of the number and capacity of the *exit enclosures* is
5 permitted to egress through areas on the level of discharge provided all of the following
6 are met:

7 1.1. Such *exit enclosures* egress to a free and unobstructed path of travel to an
8 exterior *exit* door and such *exit* is readily visible and identifiable from the point of
9 termination of the *exit* enclosure.

10 1.2. The entire area of the *level of exit discharge* is separated from areas below by
11 construction conforming to the *fire-resistance rating* for the *exit enclosure*.

12 1.3. The egress path from the *exit enclosure* on the *level of exit discharge* is
13 protected throughout by an *approved automatic sprinkler system*. All portions of
14 the *level of exit discharge* with access to the egress path shall either be protected
15 throughout with an *automatic sprinkler system* installed in accordance with
16 Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance
17 with the requirements for the enclosure of *exits*.

18 2. A maximum of 50 percent of the number and capacity of the *exit enclosures* is
19 permitted to egress through a vestibule provided all of the following are met:

20 2.1. The entire area of the vestibule is separated from areas below by construction
21 conforming to the *fire-resistance rating* for the *exit enclosure*.

22 2.2. The depth from the exterior of the building is not greater than 10 feet (3048
23 mm) and the length is not greater than 30 feet (9144 mm).

24 2.3. The area is separated from the remainder of the *level of exit discharge* by
25 construction providing protection at least the equivalent of *approved wired glass*
26 in steel frames.

27 2.4. The area is used only for *means of egress* and *exits* directly to the outside.

28 3. *Stairways* in *open parking garages* complying with Section 1022.1, Exception 4, are
permitted to egress through the *open parking garage* at their *levels of exit discharge*.

4. *Horizontal exits* complying with Section 1025 shall not be required to discharge
directly to the exterior of the building.

1027.5 Egress courts. *Egress courts* serving as a portion of the *exit discharge* in the *means of*
egress system shall comply with the requirements of Section 1027.

1027.5.1 Width. The width of *egress courts* shall be determined as specified in Section
1005.1, but such width shall not be less than 44 inches (1118 mm), except as specified herein.
Egress courts serving Group R-3 and U occupancies shall not be less than 36 inches (914 mm) in
width. The required width of *egress courts* shall be unobstructed to a height of 7 feet (2134 mm).

Exception: Doors complying with Section 1005.2.



1 Where an *egress court* exceeds the minimum required width and the width of such *egress*
2 *court* is then reduced along the path of *exit* travel, the reduction in width shall be gradual. The
3 transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and
4 shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the *egress*
5 *court* along the path of egress travel. In no case shall the width of the *egress court* be less than
6 the required minimum.

7 **1027.5.2 Construction and openings.** Where an *egress court* serving a building or portion
8 thereof is less than 10 feet (3048 mm) in width, the *egress court* walls shall have not less than 1-
9 hour *fire-resistance-rated* construction for a distance of 10 feet (3048 mm) above the floor of the
10 *court*. Openings within such walls shall be protected by opening protectives having a *fire*
11 *protection rating* of not less than ¾ hour.

12 **Exceptions:**

- 13 1. *Egress courts* serving an *occupant load* of less than 10.
14 2. *Egress courts* serving Group R-3.
15 3. In buildings other than those which have a single means of egress under Section
16 1021.2.1 item 3, opening protection need not be provided where it is possible to exit in
17 two directions from the court.

18 ***

19 **SECTION 1028**
20 **ASSEMBLY**

21 ***

22 **1028.13 Handrails.** Ramped *aisles* having a slope exceeding one unit vertical in 15 units
23 horizontal (6.7-percent slope) and *aisle stairs* shall be provided with *handrails* located either at
24 the side or within the *aisle* width.

25 **Exceptions:**

- 26 1. *Handrails* are not required for ramped *aisles* having a gradient no greater than one unit
27 vertical in eight units horizontal (12.5-percent slope) and seating on both sides.
28 2. *Handrails* are not required if, at the side of the *aisle*, there is a *guard* that complies
with the graspability requirements of *handrails*.
3. *Handrail* extensions are not required at the top and bottom of *aisle stairs* and *aisle*
ramp runs to permit crossovers within the *aisles*.

1 **1028.13.1 Discontinuous handrails.** Where there is seating on both sides of the *aisle*, the
2 *handrails* shall be discontinuous with gaps or breaks at intervals not exceeding five rows to
3 facilitate access to seating and to permit crossing from one side of the *aisle* to the other. These
4 gaps or breaks shall have a clear width of at least 22 inches (559 mm) and not greater than 36
5 inches (914 mm), measured horizontally, and the *handrail* shall have rounded terminations or
6 bends.



1 ~~((1028.13.2 Intermediate handrails. Where handrails are provided in the middle of aisle stairs,~~
2 ~~there shall be an additional intermediate handrail located approximately 12 inches (305 mm)~~
3 ~~below the main handrail.))~~

4 Section 12. Chapter 12 of the 2009 International Fire Code is amended as follows:

5 ***

6 **1207.3 Solvent storage tanks.** Solvent storage tanks for Class II, IIIA and IIIB liquids shall
7 conform to the requirements of Chapter 34 and be located underground or outside, above ground.
8 **Exceptions:** 1. As provided in NFPA 32 for inside storage or treatment tanks.
2. Solvent tanks located within approved rooms or buildings in accordance with Section 3405.3.7
for use, mixing and dispensing of flammable and combustible liquids.

9 ***

10 Section 13. Chapter 13 of the 2009 International Fire Code is amended as follows:

11 ***

12 **1303.1.1 Static accumulation.** If processes or conditions exist where combustible dust could
13 be ignited by static electricity, means shall be provided to prevent the accumulation of a static
14 charge.

15 ***

16 **1303.3 Dust collection equipment and interlocks.** Suitable dust-collecting equipment shall be
17 installed on all dust producing machinery and interlocked with the machinery power supply so
18 that the machinery cannot be operated without the dust-collection equipment also operating.

19 **[M] 1303.4 Model shops and other intermittent use facilities.** Equipment or machinery located
20 inside buildings that emit dust but are used on an intermittent basis, including, but not limited to,
21 model shops, research and development facilities, hobby, and other non-production uses, shall be
22 provided with a local, point of use dust collection system. The dust collector can be a portable
23 type with high efficiency filters to allow exhaust air to be discharged back into the space. Such
24 collectors are not required to be provided with an approved explosion-control system. Such
25 systems shall be limited to no more than 1,000 cfm.

26 ***

27 Section 14. Chapter 14 of the 2009 International Fire Code is amended as follows:

28 **CHAPTER 14**
FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

SECTION 1401



GENERAL

1401.1 Scope. This chapter shall apply to structures in the course of construction, *alteration* or demolition, including those in underground locations. Compliance with NFPA 241 is required for items not specifically addressed herein.

Construction, alteration and demolition of fixed guideway transit and passenger rail systems tunnels shall comply with NFPA 130 as amended and WAC 296-155, Part Q, underground Construction.

1401.1.1 Point of Information

Adopted local amendments to NFPA 130 can be accessed at <http://www.seattle.gov/fire/FMO/firecode/nfpaAmendments.htm>

Construction, alteration and demolition of road tunnels shall comply shall comply with NFPA 502 as amended and WAC 296-155, Part Q, Underground Construction.

1401.1.2 Point of Information

Adopted local amendments to NFPA 502 can be accessed at <http://www.seattle.gov/fire/FMO/firecode/nfpaAmendments.htm>

1404.5 Fire watch. Fire watch for buildings under construction or alteration shall be provided in accordance with the Administrative Rule 9.06.07, *Out-Of-Service Fire Alarm, Standpipe, Fire Sprinkler and Emergency Alarm Systems* and any future revisions of this rule adopted by the *fire code official*. When required by the *fire code official* for building demolition that is hazardous in nature, qualified personnel shall be provided to serve as an on-site fire watch. Fire watch personnel shall be provided with at least one *approved* means for notification of the fire department and their sole duty shall be to perform constant patrols and watch for the occurrence of fire.

1404.6 (~~Cutting and welding.~~ Operations involving the use of cutting and welding shall be done)) **Hot work.** Hot work operations shall be conducted in accordance with Chapter 26.



1 **[B] 1411.3 Stairway floor number signs.** Temporary stairway floor number signs shall be
2 provided in accordance with the requirements of Section 1022.8.1.

3 ***

4 **1413.1 Where required.** In buildings required to have standpipes by Section 905.3.1, not less
5 than one Class I standpipe shall be provided, in accordance with Section 905, for use during
6 construction. Such standpipes shall be installed when the progress of construction is not more
7 than 40 feet (12 192 mm) in height above the lowest level of fire department ((vehicle)) access.
8 Such standpipe shall be provided with fire department hose connections at accessible locations
9 adjacent to usable stairs. Such standpipes shall be extended as construction progresses to within
10 one floor of the highest point of construction having secured decking or flooring.

11 ***

12 **1414.1 Completion before occupancy.** In buildings where an *automatic sprinkler system* is
13 required by this code or the *International Building Code*, it shall be unlawful to occupy any
14 portion of a building or structure until the *automatic sprinkler system* installation has been tested
15 and *approved*, except as provided in Section 105.3.4, and Administrative Rule 9.07.07,
16 *Partial/Phased Occupancy, Occupancy During Construction and Temporary Certificates of*
17 *Occupancy* and any future revisions of this rule adopted by the *fire code official*.

18 Section 15. Chapter 15 of the 2009 International Fire Code is amended as follows:

19 ***

20 **1501.2 Nonapplicability.** This chapter shall not apply to:

21 1. S((s))pray finishing utilizing flammable or *combustible liquids* which do not sustain
22 combustion, including:

23 1.1 Liquids that have no fire point when tested in accordance with ASTM D 92.

24 1.2((-)) Liquids with a flashpoint greater than 95°F (35°C) in a water-miscible solution or
25 dispersion with a water and inert (noncombustible) solids content of more than 80 percent
26 by weight.

27 2. Mobile spray coaters registered with, and meeting the requirements of, the Puget Sound Clean
28 Air Agency.

1501.2 Point of Information

Details relating to the Puget Sound Clean Air Agency's (PSCAA) rules and requirements can be
obtained online at:

www.pscleanair.org/regulated/mobilespraycoaters/assistance.aspx
or by contacting PSCAA at (206) 434-8800.



1504.2 Location of spray-finishing operations. Spray finishing operations conducted in buildings used for Group A, E, I or R occupancies shall be located in a spray room protected with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 and separated vertically and horizontally from other areas in accordance with the *International Building Code*. In other occupancies, spray-finishing operations shall be conducted in a spray room, spray booth or spraying space *approved* for such use.

Exceptions:

1. Automobile undercoating spray operations and spray-on automotive lining operations conducted in areas with *approved* natural or mechanical ventilation shall be exempt from the provisions of Section 1504 when *approved* and where utilizing Class IIIA or IIIB *combustible liquids*.

2. In buildings other than Group A, E, I or R occupancies, *approved* limited spraying space in accordance with Section 1504.9.

3. Resin application areas used for manufacturing of reinforced plastics complying with Section 1509 shall not be required to be located in a spray room, spray booth or spraying space.

Spray-finishing operations are allowed in basements only if confined to either an *approved* spray booth or an *approved* spray room protected by an *approved* automatic fire sprinkler system and if such basement is protected throughout by an *approved* automatic sprinkler system in accordance with Chapter 9.

1504.7.8.5 Filter disposal. Discarded filter pads shall be immediately (~~removed to a safe, detached location or~~) placed in a noncombustible container with a tight-fitting lid and disposed of (~~properly~~) in accordance with local and state hazardous waste regulations.

1504.9 Limited spraying spaces. Limited spraying spaces shall comply with Sections 1504.9.1 through 1504.9.4.

Limited spraying spaces are prohibited if they are used as the exclusive location for spray finishing operations and auto refinishing and collision repair are the primary business.

1504.9.1 Job size. The aggregate surface area to be sprayed shall not exceed 9 square feet (0.84 m²).

1504.9.2 Frequency. Spraying operations shall not be of a continuous nature.



1 **1504.9.3 Ventilation.** Positive mechanical ventilation providing a minimum of six complete
2 air changes per hour shall be installed. Such system shall meet the requirements of this code for
3 handling flammable vapor areas. Explosion venting is not required.

4 **Exception:** Negative mechanical ventilation, providing a minimum of six complete air
5 changes per hour, is allowed if a fan rated for Class I, Division 2 hazardous locations in
6 accordance with the Electrical Code is installed.

7 **1504.9.4 Electrical wiring and equipment.** Electrical wiring and equipment within 10 feet
8 (3048 mm) of the floor and 20 feet (6096 mm) horizontally of the limited spraying space shall be
9 designed for Class I, Division 2 locations in accordance with NFPA 70.

10 ***

11 Section 16. Chapter 17 of the 2009 International Fire Code is amended as follows:

12 ***

13 **1703.2.1 Electricity.** Electricity shall be shut off.

14 **Exception:** Circulating fans that have been specifically designed for utilization in hazardous
15 atmospheres and installed in accordance with NFPA 70 and temporary remote control power
16 leads with control switches located outside the fumigant space for powering such fans.

17 ***

18 Section 17. Chapter 21 of the 2009 International Fire Code is amended as follows:

19 **CHAPTER 21**
20 **((INDUSTRIAL)) OVENS, DRYERS, AND FURNACES**

21 **SECTION 2101**
22 **GENERAL**

23 **2101.1 Scope.** This chapter shall apply to the installation and operation of Class A, Class B, and
24 Class C ((industrial))ovens, dryers and furnaces operating at approximately atmospheric pressure
25 and used for commercial or industrial processing of materials and Class D ovens and furnaces
26 operating above ambient temperatures to over 5,000 °F (2,670 °C) and at pressures normally
27 below atmospheric to 10⁻⁸ torr (1.33 x 10⁻⁶ Pa). This chapter does not apply to listed equipment
28 with a heating system that supplies a total input not exceeding 150,000 Btu/hr (44kW) or to coal
or solid fuel-fired food service equipment. ~~Industrial Ovens, dryers and furnaces~~ shall comply
with the applicable provisions of NFPA 86, the *International Fuel Gas Code*, *International*
Mechanical Code and this chapter. The terms “ovens”, “dryers” and “furnaces” are used
interchangeably in this chapter.



1 **2102.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as
2 used elsewhere in this code, have the meanings shown herein.

3 **FURNACE CLASS A.** An oven or furnace that has heat utilization equipment operating at
4 approximately atmospheric pressure wherein there is a potential explosion or fire hazard that
5 could be occasioned by the presence of flammable volatiles or combustible materials processed
6 or heated in the furnace.

7 **2102.1.1 Point of Information**

8 ((**Note:**)) Such flammable volatiles or combustible materials can, for instance, originate from the
9 following:

- 10 1. Paints, powders, inks, and adhesives from finishing processes, such as dipped, coated, sprayed
11 and impregnated materials.
12 2. The substrate material.
13 3. Wood, paper and plastic pallets, spacers or packaging materials.
14 4. Polymerization or other molecular rearrangements.

15 Potentially flammable materials, such as quench oil, water-borne finishes, cooling oil or cooking
16 oils that present a hazard are ventilated according to Class A standards.

17 **FURNACE CLASS B.** An oven or furnace that has heat utilization equipment operating at
18 approximately atmospheric pressure wherein there are no flammable volatiles or combustible
19 materials being heated.

20 **FURNACE CLASS C.** An oven or furnace that has a potential hazard due to a flammable or
21 other special atmosphere being used for treatment of material in process.

22 **2101.1.2 Point of Information**

23 This type of furnace can use any type of heating system and includes a special atmosphere supply
24 system. Also included in the Class C classification are integral quench furnaces and molten salt
25 bath furnaces.

26 **FURNACE CLASS D.** An oven or furnace that is a pressure vessel that operates under vacuum
27 for all or part of the process cycle, operates at temperatures from above ambient to over 5,000°F
28 (2760°C) and at pressures normally below atmospheric using any type of heating system. These
furnaces can include the use of special processing atmospheres.

2101.1.3 Point of Information



1 minimum tread depth of 11 inches (279 mm) measured between the vertical planes of the
2 foremost projection of adjacent treads at the intersections with the walkline and a minimum tread
3 depth of 10 inches (254 mm) within the clear width of the *stair*.

4 **Exceptions:**

- 5 1. *Alternating tread devices* in accordance with Section 1009.10.
- 6 2. Ship ladders in accordance with Section 1009.11.
- 7 3. *Spiral stairways* in accordance with Section 1009.9.
- 8 4. *Aisle stairs* in assembly seating areas where the *stair* pitch or slope is set, for sightline
9 reasons, by the slope of the adjacent seating area in accordance with Section 1028.11.2.
- 10 5. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in
11 Group U occupancies that are accessory to a Group R-3 occupancy or accessory to
12 individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 7-
13 3/4 inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the
14 minimum *winder* tread depth at the walkline shall be 10 inches (254 mm); and the
15 minimum *winder* tread depth shall be 6 inches (152 mm). A *nosing* not less than 3/4 inch
16 (19.1 mm) but not more than 1-1/4 inches (32 mm) shall be provided on *stairways* with
17 solid risers where the tread depth is less than 11 inches (279 mm).
- 18 6. See Section 3404.1 of the *International Building Code* for the replacement of existing
19 *stairways*.
- 20 7. In Group I-3 facilities, *stairways* providing access to guard towers, observation stations
21 and control rooms, not more than 250 square feet (23 m²) in area, shall be permitted to
22 have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9
23 inches (229 mm).

24 **1009.4.3 Winder treads.** *Winder* treads are not permitted in *means of egress stairways* except
25 within a dwelling unit.

26 **Exceptions:**

- 27 1. Curved *stairways* in accordance with Section 1009.8.
- 28 2. *Spiral stairways* in accordance with Section 1009.9.

1 **1009.4.4 Dimensional uniformity.** *Stair* treads and risers shall be of uniform size and shape.
2 The tolerance between the largest and smallest riser height or between the largest and smallest
3 tread depth shall not exceed 3/8 inch (9.5 mm) in any *flight of stairs*. The greatest *winder* tread
4 depth at the walkline within any *flight of stairs* shall not exceed the smallest by more than 3/8
5 inch (9.5 mm).

6 **Exceptions:**

- 7 1. Nonuniform riser dimensions of *aisle stairs* complying with Section 1028.11.2.
- 8 2. Consistently shaped *winders*, complying with Section 1009.4.2, differing from
9 rectangular treads in the same *stairway flight*.

1 Where the bottom or top riser adjoins a sloping *public way*, walkway or driveway having an
2 established grade and serving as a landing, the bottom or top riser is permitted to be reduced
3 along the slope. ((to less than 4 inches (102 mm) in height, with the variation in height of the
4 bottom or top riser not to exceed one unit vertical in 12 units horizontal (8 percent slope) of
5 stairway width. The nosings or leading edges of treads at such nonuniform height risers shall
6 have a distinctive marking stripe, different from any other nosing marking provided on the stair
7 flight. The distinctive marking stripe shall be visible in descent of the stair and shall have a slip-
8 resistant surface. Marking stripes shall have a width of at least 1 inch (25 mm) but not more than
9 2 inches (51 mm).))

7 **1009.4.5 Profile.** The radius of curvature at the leading edge of the tread shall be not greater
8 than 9/16 inch (14.3 mm). Beveling of *nosings* shall not exceed 9/16 inch (14.3 mm). Risers shall
9 be solid and vertical or sloped under the tread above from the underside of the *nosing* above at an
10 angle not more than 30 degrees (0.52 rad) from the vertical. The leading edge (*nosings*) of treads
11 shall project not more than 1-1/4 inches (32 mm) beyond the tread below and all projections of
12 the leading edges shall be of uniform size, including the leading edge of the floor at the top of a
13 *flight*.

11 **Exceptions:**

- 12 1. Solid risers are not required for *stairways* that are not required to comply with Section
- 13 1007.3, provided that the opening between treads does not permit the passage of a sphere
- 14 with a diameter of 4 inches (102 mm).
- 15 2. Solid risers are not required for occupancies in Group I-3 or in Group F, H and S
- 16 occupancies other than areas accessible to the public. There are no restrictions on the size
- 17 of the opening in the riser.
- 18 3. Solid risers are not required for *spiral stairways* constructed in accordance with
- 19 Section 1009.9.
- 20 4. Solid risers are not required for *alternating tread devices* constructed in accordance
- 21 with Section 1009.10.

18 ***

18 **1009.7 Vertical rise.** A *flight* of *stairs* shall not have a vertical rise greater than 12 feet (3658
19 mm) between floor levels or landings.

20 **Exceptions:**

- 21 1. *Aisle stairs* complying with Section 1028.
- 22 2. *Alternating tread devices* used as a *means of egress* shall not have a rise greater than 20
- 23 feet (6096 mm) between floor levels or landings.
- 24 3. Stairways that are not part of a required means of egress.

23 ***

24 **[W] 1009.15 Stairways in individual dwelling units.** Stairs or ladders within individual
25 dwelling units used for access to areas of 200 square feet (18.6 m²) or less which do not contain
26 the primary bathroom or kitchen are exempt from the requirements of Section 1009.



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**SECTION 1010
RAMPS**

1010.1 Scope. The provisions of this section shall apply to *ramps* used as a component of a *means of egress*.

Exceptions:

1. Other than *ramps* that are part of the *accessible routes* providing access in accordance with Sections 1108.2 through 1108.2.4 and 1108.2.6 of the *International Building Code*, ramped *aisles* within assembly rooms or spaces shall conform with the provisions in Section 1028.11.

2. Curb *ramps* shall comply with ICC A117.1.

3. Vehicle ramps in parking garages for pedestrian *exit access* shall not be required to comply with Sections 1010.3 through 1010.9 when they are not an *accessible route* serving *accessible parking spaces*(~~(s)~~) or other required accessible elements (~~(or part of an accessible means of egress)~~).

4. In a parking garage where one accessible means of egress serving accessible parking spaces or other accessible elements is provided, a second accessible means of egress serving that area shall be permitted to include a vehicle ramp that does not comply with Sections 1010.4, 1010.5 and 1010.8. A landing complying with Sections 1010.6.1 and 1010.6.4 shall be provided at any change of direction in the accessible means of egress.

**SECTION 1011
EXIT SIGNS**

1011.1 Where required. *Exits* and *exit access* doors shall be marked by an *approved exit* sign readily visible from any direction of egress travel. The path of egress travel to *exits* and within *exits* shall be marked by readily visible *exit* signs to clearly indicate the direction of egress travel in cases where the *exit* or the path of egress travel is not immediately visible to the occupants. Intervening *means of egress* doors within *exits* shall be marked by *exit* signs. *Exit* sign placement shall be such that no point in an *exit access corridor* or *exit passageway* is more than 100 feet (30 480 mm) or the *listed* viewing distance for the sign, whichever is less, from the nearest visible *exit* sign. Either exit signs or exit placards shall be located at any other location determined by the building official to be necessary to clearly indicate the direction of egress.

Exceptions:

1. *Exit* signs are not required in rooms or areas that require only one *exit* or *exit access* other than in buildings designed with a single exit stairway according to Section 1021.2.1 item 3.

2. Main exterior *exit* doors or gates that are obviously and clearly identifiable as *exits* need not have *exit* signs where *approved* by the *building official*.

3. *Exit* signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2 or R-3.



1 4. *Exit* signs are not required in dayrooms, sleeping rooms or dormitories in occupancies
in Group I-3.

2 5. In occupancies in Groups A-4 and A-5, *exit* signs are not required on the seating side of
vomitories or openings into seating areas where *exit* signs are provided in the concourse that
3 are readily apparent from the vomitories. Egress lighting is provided to identify each
4 vomitory or opening within the seating area in an emergency.

5 6. Exit signs are not required on exterior stairways serving exterior exit balconies.

6 **Interpretation I1011.1:** Exit placards are permitted to be used to identify exits in occupancies
7 where exit signs are not required.

8 ***

9 **1011.5 Externally illuminated exit signs.** Externally illuminated *exit* signs shall comply with
Sections 1011.5.1 through 1011.5.3.

10 **1011.5.1 Graphics.** Every *exit* sign, exit placard and directional *exit* sign shall have plainly
legible letters not less than 6 inches (152 mm) high with the principal strokes of the letters not
11 less than 3/4 inch (19.1 mm) wide. The word "EXIT" shall have letters having a width not less
12 than 2 inches (51 mm) wide, except the letter "I," and the minimum spacing between letters shall
13 not be less than 3/8 inch (9.5 mm). Signs and placards larger than the minimum established in
this section shall have letter widths, strokes and spacing in proportion to their height.

14 The word "EXIT" shall be in high contrast with the background and shall be clearly
15 discernible when the means of *exit* sign illumination is or is not energized. If a chevron
16 directional indicator is provided as part of the *exit* sign or placard, the construction shall be such
that the direction of the chevron directional indicator cannot be readily changed.

17 **Exception:** Existing exit signs or placards with letters at least 5 inches (127 mm) in height
18 are permitted to be reused.

19 **1011.5.2 Exit sign illumination.** The face of an *exit* sign illuminated from an external source
shall have an intensity of not less than 5 foot-candles (54 lux).

20 **1011.5.3 Power source.** *Exit* signs shall be illuminated at all times. To ensure continued
21 illumination for a duration of not less than 90 minutes in case of primary power loss, the sign
22 illumination means shall be connected to an emergency power system provided from storage
23 batteries, unit equipment or an on-site generator. The installation of the emergency power system
shall be in accordance with Chapter 27 of the *International Building Code*.

24 **Exception:** Approved exit sign illumination means that provide continuous illumination
25 independent of external power sources for a duration of not less than 90 minutes, in case
26 of primary power loss, are not required to be connected to an emergency ((electrical))
power system.

1 **1011.6 Not-an-exit warnings.** Placards reading “NOT AN EXIT” shall be installed at all
2 doorways, passageways or stairways which are not exits, exit accesses or exit discharges, and
3 which may be mistaken for an exit. A sign indicating the use of the doorway, passageway or
4 stairway, such as “TO BASEMENT”, “STORE ROOM”, “LINEN CLOSET”, is permitted in
5 lieu of the “NOT AN EXIT” sign.

SECTION 1012 HANDRAILS

6 **1012.4 Continuity.** *Handrail*-gripping surfaces shall be continuous, without interruption by
7 newel posts or other obstructions.

Exceptions:

- 8 1. *Handrails* within dwelling units are permitted to be interrupted by a newel post at a
9 turn or landing.
- 10 2. Within a dwelling unit, the use of a volute, turnout, starting easing or starting newel is
11 allowed over the lowest tread.
- 12 3. *Handrail* brackets or balusters attached to the bottom surface of the *handrail* that do
13 not project horizontally beyond the sides of the *handrail* within 1-1/2 inches (38 mm) of
14 the bottom of the *handrail* shall not be considered obstructions. For each 1/2 inch (12.7
15 mm) of additional *handrail* perimeter dimension above 4 inches (102 mm), the vertical
16 clearance dimension of 1-1/2 inches (38 mm) shall be permitted to be reduced by 1/8 inch
17 (3 mm).
- 18 4. Where *handrails* are provided along walking surfaces with slopes not steeper than
19 1:20, the bottoms of the *handrail* gripping surfaces shall be permitted to be obstructed
20 along their entire length where they are integral to rash rails or bumper guards.
- 21 5. Handrails on stairways that are not part of a required means of egress need not be
22 continuous.

18 **1012.6 Handrail extensions.** *Handrails* shall return to a wall, *guard* or the walking surface or
19 shall be continuous to the *handrail* of an adjacent *stair flight* or ramp run. Where *handrails* are
20 not continuous between *flights*, the *handrails* shall extend horizontally at least 12 inches (305
21 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom
22 riser. At *ramps* where *handrails* are not continuous between runs, the *handrails* shall extend
23 horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of *ramp*
24 runs. The extensions of *handrails* shall be in the same direction of the *stair flights* at *stairways*
25 and the *ramp* runs at *ramps*.

Exceptions:

- 23 1. *Handrails* within a dwelling unit that is not required to be *accessible* need extend only
24 from the top riser to the bottom riser.
- 25 2. *Aisle handrails* in Group A and E occupancies in accordance with Section 1028.13.

1 3. *Handrails* for *alternating tread devices* and ship ladders are permitted to terminate at a
2 location vertically above the top and bottom risers. *Handrails* for *alternating tread*
3 *devices* and ship ladders are not required to be continuous between *flights* or to extend
4 beyond the top or bottom risers.

5 4. Handrail extensions are not required on handrails on stairways that are not part of a
6 required means of egress.

7 ***

SECTION 1014

EXIT ACCESS

8 ***

9 **1014.2 Egress through intervening spaces.** Egress through intervening spaces shall comply
10 with this section.

11 1. Egress from a room or space shall not pass through adjoining or intervening rooms or areas,
12 except where such adjoining rooms or areas and the area served are accessory to one or the other,
13 are not a Group H occupancy and provide a discernible path of egress travel to an *exit*.

14 **Exception:** *Means of egress* are not prohibited through adjoining or intervening rooms or
15 spaces in a Group H, S or F occupancy when the adjoining or intervening rooms or spaces
16 are the same or a lesser hazard occupancy group.

17 2. An *exit access* shall not pass through a room that can be locked to prevent egress.

18 3. *Means of egress* from dwelling units or sleeping areas shall not lead through other sleeping
19 areas, toilet rooms or bathrooms.

20 4. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar
21 purposes.

Exceptions:

22 1. *Means of egress* are not prohibited through a kitchen area serving adjoining rooms
23 constituting part of the same dwelling unit or sleeping unit.

24 2. *Means of egress* are not prohibited through stockrooms in Group M occupancies when all
25 of the following are met:

26 2.1. The stock is of the same hazard classification as that found in the main retail area;

27 2.2. Not more than 50 percent of the *exit access* is through the stockroom;

28 2.3. The stockroom is not subject to locking from the egress side; and

29 2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) *aisle* defined by full- or
30 partial-height fixed walls or similar construction that will maintain the required width and
31 lead directly from the retail area to the *exit* without obstructions.

32 5. Unless approved by the building official, where two or more exits are required, exit travel shall
33 not pass through an exit enclosure as the only way to reach another exit.

34 **1014.2.1 Multiple tenants.** Where more than one tenant occupies any one floor of a building
35 or structure, each tenant space, dwelling unit and sleeping unit shall be provided with access to
36 the required *exits* without passing through adjacent tenant spaces, dwelling units and sleeping
37 units.



1 **Exception:** The *means of egress* from a smaller tenant space shall not be prohibited from
2 passing through a larger adjoining tenant space where such rooms or spaces of the smaller
3 tenant occupy less than 10 percent of the area of the larger tenant space through which
4 they pass; are the same or similar occupancy group; a discernable path of egress travel to
5 an *exit* is provided; and the *means of egress* into the adjoining space is not subject to
6 locking from the egress side. A required *means of egress* serving the larger tenant space
7 shall not pass through the smaller tenant space or spaces.

8 **[W] 1014.2.2 Group I-2. Habitable spaces and suites in Group I-2 occupancies are permitted**
9 **to comply with this Section 1014.2.2.**

10 **1014.2.2.1 Exit access doors.** Habitable (~~rooms or~~) spaces and suites in Group I-2
11 occupancies shall have an *exit access* door leading directly to a *corridor*.

12 **Exception:** Rooms with *exit* doors opening directly to the outside at ground level.

13 **1014.2.2.2 Exit access through suites.** Exit access from areas not classified as a Group I-2
14 occupancy suite shall not pass through a suite. In a suite required to have more than one exit, one
15 exit access may pass through an adjacent suite if all other requirements of Section 1014.2 are
16 satisfied.

17 **1014.2.2.3 Separation.** Suites in Group I-2 occupancies shall be separated from other
18 portions of the building by a smoke partition complying with Section 711 of the *Seattle Building*
19 *Code*. Partitions within suites are not required to be smoke-resistant or fire-resistance-rated
20 unless required by another section of this code.

21 ~~((1014.2.3))~~ **1014.2.2.4 Suites ((in)) containing patient sleeping areas.** Patient sleeping
22 areas in Group I-2 occupancies shall be permitted to be divided into *suites* with one intervening
23 room if one of the following conditions is met:

- 24 1. The intervening room within the *suite* is not used as an *exit access* for more than eight patient
25 beds.
26 2. The arrangement of the *suite* allows for direct and constant visual supervision by nursing
27 personnel.

28 ~~((1014.2.3.1))~~ **1014.2.2.4.1 Area.** *Suites* of sleeping rooms shall not exceed 5,000 square
feet (465/m²).

~~((1014.2.3.2))~~ **1014.2.2.4.2 Exit access.** Any patient sleeping room, or any *suite* that
includes patient sleeping rooms, of more than 1,000 square feet (93 m²) shall have at least two
exit access doors (~~remotely~~) located (~~from each other~~) in accordance with Section 1015.2.

1 ~~((1014.2.3.3))~~ **1014.2.2.4.3 Travel distance.** The travel distance between any point in a
2 *suite* of sleeping rooms and an *exit access* door of that *suite* shall not exceed 100 feet (30 480
3 mm). The travel distance between any point in a Group I-2 occupancy patient sleeping room and
4 an exit access door in that room shall not exceed 50 feet (15,240 mm).

5 ~~((1014.2.4))~~ **1014.2.2.5 Suites ((in areas other than)) not containing patient sleeping**
6 **areas.** Areas other than patient sleeping areas in Group I-2 occupancies shall be permitted to be
7 divided into *suites* that comply with Sections 1014.2.2.5.1 through 1014.2.2.5.4.

8 ~~((1014.2.4.1))~~ **1014.2.2.5.1 Area.** *Suites* of rooms, other than patient sleeping rooms,
9 shall not exceed 10,000 square feet (929 m2).

10 ~~((1014.2.4.2))~~ **1014.2.2.5.2 Exit access.** Any room or *suite* of rooms, other than patient
11 sleeping rooms, of more than 2,500 square feet (232 m2) shall have at least two *exit access* doors
12 ((remotely)) located ((from each other)) in accordance with Section 1015.2.

13 ~~((1014.2.4.3))~~ **1014.2.2.5.3 One intervening room.** For rooms other than patient
14 sleeping rooms, *suites* of rooms are permitted to have one intervening room if the travel distance
15 within the *suite* to the *exit access* door is not greater than 100 feet (30 480 mm).

16 ~~((1014.2.4.4))~~ **1014.2.2.5.4 Two intervening rooms.** For rooms other than patient
17 sleeping rooms located within a *suite*, *exit access* travel from within the *suite* shall be permitted
18 through two intervening rooms where the travel distance to the *exit access* door is not greater
19 than 50 feet (15 240 mm).

20 ~~((1014.2.5 Exit access through suites. Exit access from all other portions of a building not
21 classified as a suite in a
22 Group I-2 occupancy shall not pass through a suite.~~

23 ~~1014.2.6 Travel distance.~~ The travel distance between any point in a Group I-2 occupancy
24 patient sleeping room and an *exit access* door in that room shall not exceed 50 feet (15 240 mm).

25 ~~1014.2.7 Separation. Suites in Group I-2 occupancies shall be separated from other portions of
26 the building by a smoke partition complying with Section 711.)~~

27 **1014.3 Common path of egress travel.** In occupancies other than Groups H-1, H-2 and H-3, the
28 *common path of egress travel* shall not exceed 75 feet (22 860 mm). In Group H-1, H-2 and H-3
occupancies, the *common path of egress travel* shall not exceed 25 feet (7620 mm). For *common
path of egress travel* in Group A occupancies and assembly occupancies accessory to Group E
occupancies having fixed seating, see Section 1028.8.

Exceptions:

1. The length of a *common path of egress travel* in Group B, F and S occupancies shall not be more than 100 feet (30 480 mm), provided that the building is equipped



1 throughout with an *automatic sprinkler system* installed in accordance with Section
2 903.3.1.1.

3 2. Where a tenant space in Group B, S and U occupancies has an *occupant load* of not
4 more than 30, the length of a *common path of egress travel* shall not be more than 100
5 feet (30 480 mm).

6 3. The length of a *common path of egress travel* in a Group I-3 occupancy shall not be
7 more than 100 feet (30 480 mm).

8 4. The length of a common path of egress travel in a Group R-2 or R-3 occupancy shall
9 not be more than 125 feet (38 100 mm), provided that the building is protected
10 throughout with an *approved automatic sprinkler system* in accordance with Section
11 903.3.1.1 or 903.3.1.2.

12 SECTION 1015 13 EXIT AND EXIT ACCESS DOORWAYS

14 **1015.1 Exits or exit access doorways from spaces.** Two *exits* or *exit access doorways* from any
15 space shall be provided where one of the following conditions exists:

16 **Exception:** Group I-2 occupancies shall comply with Section 1014.2.2 through 1014.2.7.

17 1. The *occupant load* of the space exceeds one of the values in Table 1015.1.

18 **Exception:** In Group R-2 and R-3 occupancies, one *means of egress* is permitted within
19 and from individual dwelling units with a maximum *occupant load* of 20 where the
20 dwelling unit is equipped throughout with an *automatic sprinkler system* in accordance
21 with Section 903.3.1.1 or 903.3.1.2.

22 2. The *common path of egress travel* exceeds one of the limitations of Section 1014.3.

23 3. Where required by Section 1015.3, 1015.4, 1015.5, 1015.6 or 1015.6.1.

24 Where a building contains mixed occupancies, each individual occupancy shall comply with
25 the applicable requirements for that occupancy. Where applicable, cumulative *occupant loads*
26 from adjacent occupancies shall be considered in accordance with the provisions of Section
27 1004.1.

28 **Note:** See Section 1008.1.9.3 for conditions in which exit access doors from elevator lobbies
are permitted to be locked.

1015.1.1 Three or more exits or exit access doorways. Three *exits* or *exit access doorways*
shall be provided from any space with an *occupant load* of 501 to 1,000. Four *exits* or *exit access*
doorways shall be provided from any space with an *occupant load* greater than 1,000.

TABLE 1015.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT
-----------	------------------



	LOAD
A, B, E ^a , F, M, U	49
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

1015.2 Exit or exit access doorway arrangement. Required *exits* shall be located in a manner that makes their availability obvious. *Exits* shall be unobstructed at all times. *Exit* and *exit access doorways* shall be arranged in accordance with Sections 1015.2.1 and 1015.2.2.

1015.2.1 Two exits or exit access doorways. Where two *exits* or *exit access doorways* are required from any portion of the *exit access*, the *exit* doors or *exit access doorways* shall be placed 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 *exit* doors or *exit access doorways*. Interlocking or *scissor stairs* and stairways that share a wall with other *exit enclosures* shall be counted as one *exit stairway*.

Exceptions:

1. Where *exit enclosures* are provided as a portion of the required *exit* and are interconnected by a 1-hour fire-resistance-rated *corridor* conforming to the requirements of Section 1018, the required *exit* separation shall be measured along the shortest direct line of travel within the *corridor*.

Interpretation I1015.2: Exception 1 applies only where corridors have a one-hour fire-resistance-rating even where Section 1018 would allow non-rated corridors.

2. Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the *exit* doors or *exit access doorways* shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

3. Where it is not practical to separate exits by one-half the diagonal dimension, exits from retail and office tenant spaces in Group B and M occupancies and within dwelling units shall be as far apart as reasonably practicable as determined by the building official.

1015.2.2 Three or more exits or exit access doorways. Where access to three or more *exits* is required, at least two *exit* doors or *exit access doorways* shall be arranged in accordance with the provisions of Section 1015.2.1.

**SECTION 1016
EXIT ACCESS TRAVEL DISTANCE**



1016.1 Travel distance limitations. Exits shall be so located on each story such that the maximum length of exit access travel, measured from the most remote point within a story along the natural and unobstructed path of egress travel to an exterior exit door at the level of exit discharge, an entrance to a vertical exit enclosure, an exit passageway, a horizontal exit, an exterior exit stairway or an exterior exit ramp, shall not exceed the distances given in Table 1016.1.

Exceptions:

1. Travel distance in open parking garages is permitted to be measured to the closest riser of open exit stairways.
2. In outdoor facilities with open exit access components and open exterior exit stairways or exit ramps, travel distance is permitted to be measured to the closest riser of an exit stairway or the closest slope of the exit ramp.
3. In other than occupancy Groups H and I, the exit access travel distance to a maximum of 50 percent of the exits is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps when connecting a maximum of two stories. The two connected stories shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories.
4. In other than occupancy Groups H and I, exit access travel distance is permitted to be measured from the most remote point within a building to an exit using unenclosed exit access stairways or ramps in the first and second stories above grade plane in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. The first and second stories above grade plane shall be provided with at least two means of egress. Such interconnected stories shall not be open to other stories.

Where applicable, travel distance on unenclosed exit access stairways or ramps and on connecting stories shall also be included in the travel distance measurement. The measurement along stairways shall be made on a plane parallel and tangent to the stair tread nosings in the center of the stairway.

Note: Additional exit enclosures or corridors constructed as smoke barriers may be required for standpipe hose connections. See Section 905.4.

**TABLE 1016.1
 EXIT ACCESS TRAVEL DISTANCE^a**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 ^b
I-1	Not Permitted	250 ^c
B	200	300 ^c



	F-2, S-2, U	300	400°
1	H-1	Not Permitted	75°
2	H-2	Not Permitted	100°
3	H-3	Not Permitted	150°
4	H-4	Not Permitted	175°
5	H-5	Not Permitted	200°
6	I-2, I-3, I-4	Not Permitted	200°

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:

Section 402.4 of the *International Building Code*: For the distance limitation in malls.

Section 404.9 of the *International Building Code*: For the distance limitation through an atrium space.

Section 407.4 of the *International Building Code*: For the distance limitation in Group I-2.

Sections 408.6.1 and 408.8.1 of the *International Building Code*: For the distance limitations in Group I-3.

Section 411.4 of the *International Building Code*: For the distance limitation in special amusement buildings.

Section 1014.2.2: For the distance limitation in Group I-2 hospital suites.

Section 1015.4: For the distance limitation in refrigeration machinery rooms.

Section 1015.5: For the distance limitation in refrigerated rooms and spaces.

Section 1021.2: For buildings with one exit.

Section 1028.7: For increased limitation in assembly seating.

Section 1028.7: For increased limitation for assembly open-air seating.

((Section 3103.4: For temporary structures.))

Section 3104.9 of the *International Building Code*: For pedestrian walkways.

b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.

c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

SECTION 1018 CORRIDORS

1018.1 Construction. *Corridors* shall be fire-resistance rated in accordance with Table 1018.1. The *corridor* walls required to be fire-resistance rated shall comply with Section 709 of the *International Building Code* for *fire partitions*.

Exceptions:

1. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has at least one door opening directly to the exterior and rooms for assembly purposes have at least one-half of the required *means of egress*



- 1 doors opening directly to the exterior. Exterior doors specified in this exception are
 2 required to be at ground level.
- 3 2. A fire-resistance rating is not required for corridors contained within a dwelling or
 4 sleeping unit in an occupancy in Group R.
- 5 3. A fire-resistance rating is not required for corridors in open parking garages.
- 6 4. A fire-resistance rating is not required for corridors in an occupancy in Group B
 7 which is a space requiring only a single means of egress complying with Section 1015.1.
- 8 5. In office areas located in buildings of Types IA or IB construction, corridor walls need
 9 not be of fire-resistance-rated construction where the corridor side of the corridor walls is
 10 finished with materials having a maximum Class B rating as defined in Chapter 8 of the
 11 Seattle Building Code. This exception does not apply to outpatient clinics and medical
 12 offices.
- 13 6. The occupant load of Group B conference rooms, lunch rooms without grease-
 14 producing cooking and other assembly rooms with an occupant load of less than 50 in
 15 each room need not be considered when determining whether corridor construction is
 16 required, provided such rooms are accessory to an office tenant located in a building of
 17 Type IA or IB construction. This provision is permitted to be used in other construction
 18 types when the floor on which the assembly room is located is equipped with an
 19 automatic sprinkler system.

20 **TABLE 1018.1**
 21 **CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system ^c
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	((Greater than 10)) All	Not Permitted	((0.5)) 1
I-2 ^a , I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1b

22 a. For requirements for occupancies in Group I-2, see Section 407.3 of the *International Building*
 23 *Code*.

24 b. For a reduction in the fire-resistance rating for occupancies in Group I-3, see Section 408.7 of
 25 the *International Building Code*.

26 c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section
 27 903.3.1.1 or 903.3.1.2 where allowed.



1 Class D furnaces operate at or below atmospheric pressure (vacuum) and do not fall into the
2 jurisdiction of the Boiler and Pressure Vessel Code.

3 ***

4 **2103.1 Ventilation.** Enclosed rooms or *basements* containing ~~((industrial))~~ ovens or furnaces
5 shall be provided with combustion air in accordance with the *International Mechanical Code* and
6 the *International Fuel Gas Code*, and with ventilation air in accordance with the *International*
7 *Mechanical Code*.

7 ***

8 **2103.3 Ignition source.** ~~((Industrial ovens, dryers, and furnaces))~~ Ovens, dryers, and furnaces shall be located so as not to
9 pose an ignition hazard to flammable vapors or mists or *combustible dusts*.

10 ***

11 **SECTION 2104**
12 **FUEL PIPING**

13 **2104.1 Fuel-gas piping.** Fuel-gas piping serving ~~((industrial))~~ ovens shall comply with the
14 *International Fuel Gas Code*. Piping for other fuel sources shall comply with this section.

15 **2104.2 Shutoff valves.** Each ~~((industrial))~~ oven, dryer or furnace shall be provided with an
16 *approved* manual fuel shutoff valve in accordance with the *International Mechanical Code* or the
17 *International Fuel Gas Code*.

17 ***

18 Section 18. Chapter 22 of the 2009 International Fire Code is amended as follows:

19 **CHAPTER 22**
20 **MOTOR FUEL-DISPENSING FACILITIES AND REPAIR GARAGES**

21 **SECTION 2201**
22 **GENERAL**

23 **2201.1 Scope.** Automotive motor fuel-dispensing facilities, marine motor fuel-dispensing
24 facilities, fleet vehicle motor fuel-dispensing facilities, aircraft motor-vehicle fuel-dispensing
25 facilities and repair garages shall be in accordance with this chapter and the *International*
26 *Building Code*, *City of Seattle Source Control Technical Requirements Manual (DPD Director's*



1 Rule 15-2009), *International Fuel Gas Code* and *International Mechanical Code*. Such
2 operations shall include both those that are accessible to the public and private operations.

3 **2201.1 Point of Information**

4 For provisions relating to the transfer of flammable and combustible liquids directly from tank
5 vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental or
6 manufacturing establishments, see Section 3406.5.4.5.

7 ***

8 **FIRE DISTRICT.** Shall consist of that part of the city within the boundary described in Section
9 401 of the *Seattle Building Code* as follows:

10 Beginning at the intersection of the center line of Alaskan Way and Clay Street; thence
11 northeasterly along the center line of Clay Street to an intersection with the center line of Denny
12 Way; thence easterly along the center line of Denny Way to an intersection with the center line of
13 Yale Avenue; thence southeasterly along the center line of Yale Avenue to an intersection with
14 the center line of Interstate Highway 5; thence southerly and southeasterly along the center line of
15 Interstate 5 to an intersection with the center line of 7th Avenue South; thence southerly along
16 the center line of 7th Avenue South to an intersection with the center line of Dearborn Street;
17 thence westerly along the center line of Dearborn Street to an intersection with the center line of
18 Airport Way; thence northwesterly along the center line of Airport Way to an intersection with
19 the center line of 4th Avenue South; thence southerly along the center line of 4th Avenue south
20 to an intersection with the center line of South Royal Brougham Way; thence westerly along said
21 center line of South Royal Brougham Way to an intersection with the center line of South
22 Alaskan Way; thence southerly along the center line of South Alaskan Way to an intersection
23 with the center line of South Massachusetts Street; thence westerly along the centerline of South
24 Massachusetts Street to the Outer Harbor Line in Elliott Bay; thence northerly and northwesterly
25 along said Outer Harbor Line to an intersection with the center line of West Harrison Street;
26 thence easterly along the center line of West Harrison Street to an intersection with the center
27 line of Alaskan Way; then southeasterly along the center line of Alaskan Way to the point of
28 beginning.

29 **2202.1.1 Point of Information**

30 For a map of the City of Seattle *Fire District*, see the *Seattle Building Code*.

31 ***

32 **2202.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as
33 used elsewhere in this code, have the meanings shown herein.

34 ***



1 **MARINE MOTOR FUEL-DISPENSING FACILITY.** That portion of property where
2 flammable or *combustible liquids* or gases used as fuel for ~~((watercraft))~~*vessels* are stored and
3 dispensed from fixed equipment on shore, piers, wharves, floats or barges into the fuel tanks of
4 ~~((watercraft))~~*vessels* and shall include all other facilities used in connection therewith.

5 **2202.1.2 Point of Information**

6 Marine motor fuel-dispensing facilities are not to be confused with marine bulk plants that
7 transfer fuel by way of flange-to-flange connections. Marine motor fuel-dispensing facilities use
8 automotive-type dispensing equipment for fueling primarily pleasure craft.

9 **MOTOR VEHICLE** Includes, but is not limited to, a vehicle, machine, tractor, trailer or
10 semitrailer, or any combination thereof, propelled or drawn by mechanical power and used upon
11 the highways in the transportation of passengers or property. It does not include a vehicle,
12 locomotive or car operated exclusively on a rail or rails, or a trolley bus operated by electric
13 power derived from a fixed overhead wire, furnishing local passenger transportation similar to
14 street-railway service. The term “motor vehicle” also includes freight containers or cargo tanks
15 used, or intended for use, in connection with motor vehicles.

16 **2202.1.3 Point of Information**

17 For reference, see 49 CFR Pt. 171.8 (October 2009).

18 **MOTOR VEHICLE, UNATTENDED** A motor vehicle in such a condition that the driver
19 cannot see the motor vehicle or hear noises in or near the motor vehicle.

20 **Exceptions:**

- 21 1. Necessary absence in connection with loading and unloading the motor vehicle.
- 22 2. Stops for meals during the day or night, if the point of parking is well lighted.
- 23 3. If in case of accident or other emergency, the driver must leave to obtain assistance.

24 ***

25 **2203.2 Emergency disconnect switches.** An *approved*, clearly identified and readily accessible
26 emergency disconnect switch shall be provided at an *approved* location, to stop the transfer of
27 fuel to the fuel dispensers in the event of a fuel spill or other emergency. An emergency
28 disconnect switch for exterior fuel dispensers shall be located within 100 feet (30 480 mm) of,
but not less than 20 feet (6096 mm) from, the fuel dispensers. For interior fuel-dispensing
operations, the emergency disconnect switch shall be installed at an *approved* location. Such
devices shall be distinctly *labeled* as: EMERGENCY FUEL SHUTOFF. Signs shall be provided



1 in approved locations and letters shall not be less than 3 inches (76.2 mm) in height and 1/2 inch
2 (12.7 mm) in stroke.

3 ***

4 **2204.4.1 Approved containers required.** Class I, II and IIIA liquids shall not be dispensed
5 into a portable container unless such container does not exceed a 6-gallon (22.7 L) capacity, is
6 *listed* or of *approved* material and construction, and has a tight closure with a screwed or spring-
7 loaded cover so designed that the contents can be dispensed with-out spilling. Liquids shall not
8 be dispensed into portable or cargo tanks.

9 It is unlawful to sell, offer for sale or distribute any container for the storage and/or handling of
10 flammable liquids, unless such container has been approved for such purpose under applicable
11 provisions of this code.

12 ***

13 **2205.1 Tank filling operations for Class I, II (~~(or)~~) IIIA liquids, or IIIB liquids.** Delivery
14 operations to tanks for Class I, II, (~~(or)~~) IIIA, or IIIB liquids shall comply with Sections 2205.1.1
15 through 2205.1.3 and the applicable requirements of Chapter 34.

16 ***

17 **2206.2 Method of storage.** *Approved* methods of storage for Class I, II, (~~(and)~~) IIIA, and IIIB
18 liquid fuels at motor fuel-dispensing facilities shall be in accordance with Sections 2206.2.1
19 through 2206.2.5.

20 ***

21 **2206.2.2 Above-ground tanks located inside buildings.** Above-ground tanks for the storage
22 of Class I, II, (~~(and)~~) IIIA, and IIIB liquid fuels are allowed to be located in buildings. Such tanks
23 shall be located in special enclosures complying with Section 2206.2.6, in a liquid storage room
24 or a liquid storage warehouse complying with Chapter 34(~~(, or shall be listed and labeled as~~
25 ~~protected above-ground tanks)~~).

26 **Exceptions:**

27 1. Above-ground tanks listed and labeled as protected above-ground tanks containing Class I
28 flammable liquids and having an individual capacity not exceeding 120 gallons (454 L) are not
required to be located in special enclosures or in a liquid storage room or warehouse.

2. Above-ground tanks listed and labeled as protected above-ground tanks containing Class II or
III-A combustible liquids and having an individual capacity not exceeding 660 gallons (908 L)
are not required to be located in special enclosures or in a liquid storage room or warehouse.

3. Aboveground tanks for Class III-B liquids not exceeding a maximum individual capacity of
13,200 in unsprinklered buildings.

4. Aboveground tanks for Class III-B liquids in sprinklered buildings.



1 **2206.2.3 Above-ground tanks located outside, above grade.** Above-ground tanks shall not
2 be used for the storage of Class I, II, ~~((or))~~ IIIA, and IIIB liquid motor fuels except as provided by
3 this section.

4 1. Above-ground tanks used for outside, above-grade storage of Class I liquids shall be *listed* and
5 *labeled* as *protected above-ground tanks* and be in accordance with Chapter 34. Such tanks shall
6 be located in accordance with Table 2206.2.3.

7 2. Above-ground tanks used for outside, above-grade storage of Class II or IIIA liquids ~~((are
8 allowed to))~~ shall be *protected above-ground tanks* ~~((or, when approved by the fire code official,
9 other above-ground tanks that comply))~~ and shall be in accordance with Chapter 34. Tank
10 locations shall be in accordance with Table 2206.2.3.

11 3. Above-ground tanks containing Class I liquids for fueling motor vehicles are prohibited in the
12 fire district.

13 4. Above-ground tanks containing Class I liquids for fueling motor vehicles are allowed outside
14 the fire district only if located within an industrial [I] zone, as defined in the *Seattle Land Use
15 Code.*

16 5. ~~((3)).~~ Tanks containing Class I fuels shall not exceed 12,000 gallons (45 420 L) in individual
17 capacity or ~~((48,000))~~12,000 gallons ~~((181 680))~~45 420 L) in aggregate capacity. Tanks
18 containing Class II or III-A liquid fuels shall not exceed 12,000 gallons (45 420 L) in individual
19 capacity or 48,000 gallons (181 680 L) in aggregate capacity. The total maximum aggregate
20 quantity of all flammable and combustible liquids in above-ground storage tanks on site shall not
21 exceed 48,000 gallons (181 680 L).

22 Installations with the maximum allowable aggregate capacity shall be separated from other such
23 installations by not less than 100 feet (30 480 mm).

24 6~~((4)).~~ Tanks located at farms, construction projects, or rural areas shall comply with Section
25 3406.2.

26 7. Above-ground tanks used for outside, above-grade storage of Class III-B liquid motor fuels
27 shall be listed and labeled as protected aboveground tanks or listed and labeled in accordance
28 with UL 142, *Standard for Steel Aboveground Tanks.*

2206.2.4 Above-ground tanks located in above-grade vaults or below-grade vaults.

Above-ground tanks used for storage of Class I, II or IIIA liquid motor fuels are allowed to be
installed in vaults located above grade or below grade in accordance with Section 3404.2.8 and



1 shall comply with Sections 2206.2.4.1 and 2206.2.4.2. Tanks in above-grade vaults shall also
2 comply with Table 2206.2.3.

3 **2206.2.4.1 Tank capacity limits.** Tanks storing Class I liquids are limited to maximum
4 individual capacity of 12,000 gallons (45 420 L) and an aggregate capacity at an individual site
5 of 12,000 gallons (45 420 L). Tanks storing ~~((and))~~ Class II and Class III-A liquids at an
6 individual site shall be limited to a maximum individual capacity of ~~((15,000))~~ 12,000 gallons
7 ~~((56-775))~~ 45 420 L) and an aggregate capacity of 48,000 gallons (181 680 L).

8 **2206.2.4.2 Above-ground tanks located in vaults at ~~((F))~~ fleet vehicle motor fuel-**
9 **dispensing facilities.** Vaulted ~~((F))~~ tanks storing Class II and Class IIIA liquids at a fleet vehicle
10 motor fuel-dispensing facility shall be limited to a maximum individual capacity of 20,000
11 gallons (75 700 L) and an aggregate capacity of 80,000 gallons (302 800 L).

12 **2206.2.5 Portable tanks.** Where *approved* by the fire code official, portable tanks are allowed
13 to be temporarily used in conjunction with the dispensing of Class I, II, ~~((or))~~ IIIA, or IIIB liquids
14 into the fuel tanks of motor vehicles or motorized equipment on premises not normally accessible
15 to the public. The approval shall include a definite time limit.

16 ***

17 **2206.6.2 Piping, valves, fittings and ancillary equipment for above-ground tanks for**
18 **Class I, II, ~~((and))~~ IIIA, and IIIB liquids.** Piping, valves, fittings and ancillary equipment for
19 above-ground tanks shall comply with Sections 2206.6.2.1 through 2206.6.2.6.

20 ***

21 **2206.7.6.1 Special requirements for nozzles.** Where dispensing of Class I, II, ~~((or))~~ IIIA,
22 or IIIB liquids is performed, a *listed* automatic-closing-type hose nozzle valve shall be used
23 incorporating all of the following features:

- 24 1. The hose nozzle valve shall be equipped with an integral latch-open device.
- 25 2. When the flow of product is normally controlled by devices or equipment other than the hose
26 nozzle valve, the hose nozzle valve shall not be capable of being opened unless the delivery hose
27 is pressurized. If pressure to the hose is lost, the nozzle shall close automatically.

28 **Exception:** Vapor recovery nozzles incorporating insertion interlock devices designed to
achieve shutoff on disconnect from the vehicle fill pipe.

3. The hose nozzle shall be designed such that the nozzle is retained in the fill pipe during the
filling operation.

4. The system shall include *listed* equipment with a feature that causes or requires the closing of
the hose nozzle valve before the product flow can be resumed or before the hose nozzle valve can
be replaced in its normal position in the dispenser.



1 **2207.1.1 Prohibited locations.** Motor fuel-dispensing facilities for liquefied petroleum gas
(LP-gas) fuel are prohibited in the *fire district*.

2 ***

3 **2209.1.1 Prohibited locations.** Hydrogen motor fuel-dispensing and generation facilities are
prohibited in the *fire district*.

4 ***

5 Section 19. Chapter 24 of the 2009 International Fire Code is amended as follows:

6 ***

7 **2403.2 Approval required.** Tents and membrane structures having an area in excess of 400
square feet (37 m²) shall not be erected(~~(, operated)~~) or maintained for any purpose without first
8 obtaining a permit and approval from the *fire code official*.

9 **Exceptions:**

- 10 1. Tents used exclusively for recreational camping purposes.
2. Funeral tents and curtains or extensions attached thereto, when used for funeral services.

11 ~~((2))~~ 3. Tents open on all sides which comply with all of the following:

12 ~~((2))~~ 3.1. Individual tents having a maximum size of 700 square feet (65 m²).

13 ~~((2))~~ 3.2. The aggregate area of multiple tents placed side by side without a fire break
clearance of 12 feet (3658 mm), not exceeding 700 square feet (65 m²) total.

14 ~~((2))~~ 3.3. A minimum clearance of 12 feet (3658 mm) to all structures and other tents.

15 ***

16 **2404.2 Flame propagation performance treatment.** Before a permit is granted, the *owner* or
agent shall file with the fire code official a certificate executed by an approved testing laboratory
certifying that the tents and membrane structures and their appurtenances; sidewalls, drops and
17 tarpaulins; floor coverings, bunting and combustible decorative materials and effects, including
sawdust when used on floors or passageways, are composed of material meeting the flame
propagation performance criteria of NFPA 701 or other *approved standard*, or shall be treated
18 with a flame retardant in an *approved* manner and meet the flame propagation performance
criteria of NFPA 701, and that such flame propagation performance criteria are effective for the
19 period specified by the permit.

20
21 **2404.2 Point of Information**

22 Accepted flame certificates for decorative materials include:

23 1. Certificates indicating compliance with NFPA 701.

24 2. Certificates verifying approval through the California State Fire Marshal.

25 3. Certificates indicating compliance with CPAI-84 (*Canvas Products Association*
International).

26 ***



1 Section 20. Chapter 25 of the 2009 International Fire Code is amended as follows:

2 ***

3 **2505.4 Distance from lot lines and buildings.** Tire storage piles shall be located at least 50 feet
4 (15 240 mm) from *lot lines* and buildings.

5 Exception: When stored on a single rack having dimensions not exceeding 68 inches by
6 48 inches by 76 inches (1727 mm by 1219 mm by 1930 mm) for commercial display, the
7 distance to property lines that can be built upon may be reduced to 10 feet (3048 mm) and
8 no separation is required from buildings on the same property.

9 ***

10 Section 21. Chapter 26 of the 2009 International Fire Code is amended as follows:

11 **CHAPTER 26**
12 **WELDING AND OTHER HOT WORK**

13 **SECTION 2601**
14 **GENERAL**

15 **2601.1 Scope.** Welding, cutting, open torches and other hot work operations and equipment shall
16 comply with this chapter.

17 Exception: Hot work on board marine vessels at dock or under construction or repair
18 shall be in accordance with Administrative Rules 26.01.09, *Cutting, Welding and Other*
19 *Hot Work on Marine Vessels* and 26.02.09 *Designated Marine Hot Work Facilities and*
20 *Shipyards* and any future revisions of this rule adopted by the *fire code official*.

21 ***

22 **2601.5 Design and installation of oxygen-fuel gas systems.** ~~((The design and installation of))~~
23 A((a))n oxygen-fuel gas system with two or more manifolded cylinders of oxygen shall be in
24 accordance with NFPA 51.

25 ***

26 **2602.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as
27 used elsewhere in this code, have the meanings shown herein.

28 **HOT WORK.** Operations including cutting, welding, Thermit welding, brazing, soldering,
grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems, glass
blowing, weed burning, or any other similar spark, arc or flame-producing activity.



1 **P_F DEVICE.** A wet or dry device (or assembly of devices) in a fuel gas line designed to perform
2 the following three functions:

- 3 (a) Prevent backflow of oxygen into the fuel gas supply system;
4 (b) Prevent the passage of flame into the fuel gas supply system (flashback);
5 (c) Prevent the development of a fuel gas-oxygen mixture at sufficient pressure so that its
6 ignition would achieve combustion pressures that could cause failure to perform functions (a)
7 and (b).

8 This device is given a diagram symbol, P_F. A wet P_F device is commonly known as a hydraulic
9 seal, hydraulic valve or hydraulic back-pressure valve.

10 ***

11 **2604.2.2 Location.** The fire watch shall include the entire hot work area and be positioned so
12 that the extinguishment of a spot fire is not delayed. Hot work conducted in areas with vertical or
13 horizontal fire exposures that are not observable by a single individual shall have additional
14 personnel assigned to fire watches to ensure that exposed areas are monitored.

15 **2604.2.3 Duties.** Individuals designated to fire watch duty shall have no other duties except to
16 watch for fire. ~~((fire extinguishing equipment readily available and shall be trained in the use of~~
17 ~~such equipment. Individuals assigned to fire watch duty shall be responsible~~
18 ~~for))~~ extinguish ~~((ing))~~ spot fires and communicate ~~((ing))~~ an alarm.

19 **2604.2.4 Fire extinguishing equipment training.** The individuals responsible for performing
20 the hot work and individuals responsible for providing the fire watch shall ~~((be trained in the use~~
21 ~~of portable fire extinguishers))~~ have fire-extinguishing equipment readily available and shall be
22 trained in the use of such equipment.

23 **2604.2.5 Fire hoses.** Where hoselines are required, they shall be connected, charged and ready
24 for operation.

25 **2604.2.6 Fire extinguisher.** A minimum of one portable fire extinguisher complying with
26 Section 906 and with a minimum ~~((2))~~3-A:~~((20))~~40-B:C rating shall be readily accessible within
27 30 feet (9144 mm) of the location where hot work is performed.

28 ***

2605.4 Fuel gases and liquid oxygen.

2605.4.1 Acetylene gas and other nonliquefied flammable gases.

2605.4.1.1 Prohibitions. Acetylene gas shall not be:

1. ~~((p))~~ Piped except in approved cylinder manifolds and cylinder manifold connections, or



1 2. ((#)) Utilized at a pressure exceeding 15 pounds per square inch gauge (psig) (103 kPa) unless
2 dissolved in a suitable solvent in cylinders manufactured in accordance with DOTn 49 CFR Part
3 178.

4 2605.4.1.2 Unalloyed copper. Acetylene gas shall not be brought in contact with unalloyed
5 copper, except in a blowpipe or torch.

6 2605.4.1.3 Maximum acetylene and other nonliquefied flammable gas quantities inside
7 buildings. The maximum quantity of acetylene and other nonliquefied flammable gas used and
8 stored inside buildings in conjunction with hot work operations shall be in accordance with this
9 section.

10 2605.4.1.3.1 Group A, B, E, I, M and R occupancies.
11 Acetylene gas and other nonliquefied flammable gas shall not be stored or used in Group A, B, E,
12 I, M or R occupancies.

13 Exceptions:

14 1. Individual cylinders not exceeding 150 cubic feet (4m3) each at normal temperature and
15 pressure (NTP). Aggregate quantity of flammable gas shall not exceed 1,000 cubic feet (28 m3)
16 in unsprinklered buildings and 2,000 cubic feet (57m3) in sprinklered buildings.

17 2. Buildings under construction or demolition where individual acetylene gas and other
18 nonliquefied flammable gas cylinders do not exceed 300 cubic feet (8 m3) each at normal
19 temperature and pressure and the aggregate storage quantity inside the building does not exceed
20 1,000 cubic feet (28 m3).

21 2605.4.1.3.2 Group F and S occupancies. Acetylene and other nonliquefied flammable
22 gas shall not be stored or used in Group F and S occupancies in excess of the maximum
23 allowable quantities set forth in Table 2703.1.1 (1).

24 2605.4.1.3.3 Mixed use occupancies. Individual fuel gas cylinders within F or S
25 occupancies in buildings having any other use shall be limited to 250 cubic feet (7 m3) at normal
26 temperature and pressure and shall be limited to a total aggregate gas capacity of 1,000 cubic feet
27 (70.8 m3) at normal temperature and pressure of acetylene or other nonliquefied flammable gas.

28 2605.4.2 Liquefied petroleum gas (LP-gas) and methylacetylenepropadiene (MAPP gas).

2605.4.2.1 Maximum LP-gas and MAPP gas quantities inside buildings. The maximum
quantity of LP-gas and MAPP gas used and stored inside buildings in conjunction with hot work
operations shall be in accordance with this section.

2605.4.2.1.1 Group A, B, E, I, M and R occupancies. LP-gas and MAPP shall not be
stored or used in Group A, B, E, I, M or R occupancies.



Exceptions:

- 1 1. A single LP-gas or a single MAPP gas cylinder not exceeding 50-pounds (22.7 kg)
2 water capacity [nominal 20 pounds (9 kg) LP-gas] in Group E and M occupancies.
- 3 2. Individual LP-gas or MAPP gas cylinders not exceeding 12-pounds (5.4 kg) water
4 capacity [nominal 5 pounds (2.3 kg) LP-gas] in Group I occupancies.
- 5 3. Unoccupied buildings under construction or demolition where individual LP-gas or
6 MAPP gas cylinders do not exceed 240-pounds (109 kg) water capacity [nominal 100
7 pounds (45.4 kg) LP-gas] and the aggregate quantity inside the building does not exceed
8 an aggregate water capacity of 735 pounds (333.4 kg) [nominal 300 pounds (136 kg) LP-
9 gas] on the site.
- 10 4. Occupied buildings under construction or demolition where individual LP-gas or
11 MAPP gas cylinders do not exceed 104-pounds (47 kg) water capacity [nominal 43.5
12 pounds (19.7 kg) LP-gas] and the aggregate quantity inside the building does not exceed
13 357-pounds (162 kg) water capacity [nominal 150 pounds (68 kg) LP-gas].
- 14 5. Approved self-contained torch assemblies fueled by LP-gas containers having an
15 individual water capacity not exceeding 2.7 pounds (1.2 kg).

16 **2605.4.2.1.2 Group F and S occupancies.** LP-gas and MAPP gas shall not be stored or
17 used in excess of 735 pounds (333.4 kg) aggregate water capacity [nominal 300 pounds (136 kg)
18 LP-gas] in Group F and S occupancies.

19 **2605.4.2.1.3 Mixed use occupancies.** LP-gas and MAPP gas storage and use inside
20 Group F and S occupancies within buildings having any other use shall be limited to cylinders
21 having an individual water capacity not exceeding 50 pounds (22.7 kg) [nominal 20 pounds (9
22 kg) LP-gas] and a total aggregate water capacity not to exceed 144 pounds (65 kg) [nominal 60
23 pounds (27 kg) LP-gas].

24 **2605.4.3 Liquid oxygen (LOX).** Liquid oxygen shall not be stored or used in an
25 unsprinklered building in an aggregate quantity exceeding 45 gallons (170 L) per control area or
26 an aggregate quantity of 90 gallons (340 L) per control area in a sprinklered building.

27 **2605.4.4 Separation of cylinders in storage.** Fuel gas cylinders shall be separated from
28 compressed oxygen cylinders and liquid oxygen containers by a minimum of 20 feet (6096 mm)
or by a barrier of noncombustible construction at least 5 feet (1524 mm) high having a fire-
resistive rating of at least 1/2 hour. The barrier shall interrupt all lines of sight between oxygen
and fuel gas cylinders within 20 feet (6096 mm) of each other.

2605.5 Remote locations. Oxygen and fuel-gas cylinders and acetylene generators shall be
located away from the hot work area to prevent such cylinders or generators from being heated
by radiation from heated materials, sparks or slag, or misdirection of the torch flame.



1 **2605.6 Cylinders shutoff.** The torch valve shall be closed and the gas supply to the torch
2 completely shut off when gas (~~welding or cutting~~) hot work operations are discontinued for a
period of 1 hour or more.

3 **2609.8 PF devices.** PF devices shall be designed and installed in fuel gas lines in accordance
4 with NFPA 51.

5 Section 22. Chapter 27 of the 2009 International Fire Code is amended as follows:

6 **CHAPTER 27**
7 **HAZARDOUS MATERIALS—GENERAL PROVISIONS**

8 **SECTION 2701**
9 **GENERAL**

10 **2701.1 Scope.** Prevention, control and mitigation of dangerous conditions related to storage,
11 dispensing, use and handling of hazardous materials and notification of biosafety level 3 and
12 biosafety level 4 operations shall be in accordance with this chapter. This chapter shall apply to
13 all hazardous materials, including those materials regulated elsewhere in this code, except that
when specific requirements are provided in other chapters, those specific requirements shall
14 apply in accordance with the applicable chapter. Where a material has multiple hazards, all
hazards shall be addressed.

14 **Exceptions:**

- 15 1. The quantities of alcoholic beverages, medicines, foodstuffs, cosmetics and consumer
16 or industrial products containing not more than 50 percent by volume of water-miscible
17 liquids and with the remainder of the solutions not being flammable, in retail or
wholesale sales occupancies, are unlimited when packaged in individual containers not
18 exceeding 1.3 gallons (5 L).
- 19 2. Application and release of pesticide and agricultural products and materials intended
for use in weed abatement, erosion control, soil amendment or similar applications when
20 applied in accordance with the manufacturers' instructions and label directions.
- 21 3. The off-site transportation of hazardous materials when in accordance with Department
of Transportation (DOTn) regulations.
- 22 4. Building materials not otherwise regulated by this code.
- 23 5. Refrigeration systems (see Section 606).
- 24 6. Stationary storage battery systems regulated by Section 608.
- 25 7. The display, storage, sale or use of fireworks and *explosives* in accordance with
Chapter 33.
- 26 8. *cryogenics* utilized in personal and household products in the manufacturers' original
consumer packaging in Group M occupancies.
- 27 9. The storage of distilled spirits and wines in wooden barrels and casks.



10. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids when in accordance with Section 3405.5.

11. Hazardous materials handled at marine terminals in accordance with Section 2701.1.2.

2701.1.1 Waiver. The provisions of this chapter are waived when the *fire code official* determines that such enforcement is preempted by other codes, statutes or ordinances. The details of any action granting such a waiver shall be recorded and entered in the files of the ~~((code enforcement agency))~~ *fire code official*.

2701.1.2 Hazardous materials at marine terminals. Hazardous materials that are handled and temporarily located at marine terminals and are incidental to transportation shall be in accordance with the Administrative Rule 27.01.09, *Marine Terminals* and any future revisions of this rule adopted by the *fire code official*.

2701.1.3 Underground storage tanks. Pursuant to Section 106.5.1, the *fire code official* approves permits to install underground tanks issued by and inspections of underground tanks conducted by the Washington State Department of Ecology.

2701.5.2 Hazardous Materials Inventory Statement (HMIS). Where required by the *fire code official*, ~~((an))~~ each application for a permit shall include a HMIS ~~((such as Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Tier II Report or other approved statement))~~. Where required by the *fire code official*, ~~((F))~~ the HMIS shall be in an approved format, updated annually and include the following information:

1. Product name.
2. Component.
3. Chemical Abstract Service (CAS) number.
4. Location where stored or used.
5. Container size.
6. Hazard classification.
7. Amount in storage.
8. Amount in use-closed systems.
9. Amount in use-open systems.

2701.5.2 Point of Information

Prior to developing a HMIS, please contact the Special Hazards Unit of the Fire Prevention Division for specific guidelines, format and assistance.



1 **2701.6.1 Temporarily out-of-service facilities.** Facilities that are temporarily out of service
2 shall continue to maintain a permit and be monitored and inspected. Facilities for which a closure
3 plan is required in accordance with Section 2701.5 shall notify the *fire code official* when the
4 facility out-of-service period exceeds 15 days.

5 **2701.7 Biosafety level 3 and biosafety level 4 operations.** The *fire code official* shall be
6 notified in writing annually of locations where biosafety level 3 (BSL-3) or biosafety level 4
7 (BSL-4) operations as defined by the U.S. Department of Health and Human Services Centers for
8 Disease Control and Prevention and National Institutes of Health (CDC/NIH) are being
9 performed. Such notification shall identify the specific location(s) within the building where
10 BSL-3 and BSL-4 operations are conducted and shall certify compliance with the CDC/NIH's
11 recommended practices for such operations.

12 **2703.2.2.2 Additional regulations for supply piping for health-hazard materials.**
13 Supply piping and tubing for gases and liquids having a health-hazard ranking of 3 or 4 in
14 accordance with NFPA704 shall be in accordance with ASME B31.3, the *Seattle Mechanical*
15 *Code* and the following:

- 16 1. Piping and tubing utilized for the transmission of highly toxic, toxic or highly volatile
17 *corrosive* liquids and gases shall have welded, threaded or flanged connections throughout except
18 for connections located within a ventilated enclosure if the material is a gas, or an *approved*
19 method of drainage or containment is provided for connections if the material is a liquid.
- 20 2. Piping and tubing shall not be located within *corridors*, within any portion of a *means of*
21 *egress* required to be enclosed in fire-resistance-rated construction or in concealed spaces in
22 areas not classified as Group H occupancies.

23 **Exception:** Piping and tubing within the space defined by the walls of *corridors* and the
24 floor or roof above or in concealed spaces above other occupancies when installed in
25 accordance with Section 415.8.6.3 of the *International Building Code* for Group H-5
26 occupancies.

27 **2703.2.4.1 Underground tanks.**

28 **2703.2.4.1.1 General.** Underground tanks used for the storage of liquid hazardous
materials shall be located, installed and protected in accordance with this code and applicable
state and federal regulations. Pursuant to Section 106.5.1, the *fire code official* approves permits
to install underground tanks issued by and inspections of underground tanks conducted by the
Washington State Department of Ecology.

2703.2.4.1.2 Secondary containment for underground tanks. Underground tanks used
for the storage of liquid hazardous materials shall be provided with secondary containment. In



1 lieu of providing secondary containment for an underground tank, an above-ground tank in an
2 underground vault complying with Section 3404.2.8 shall be permitted.

3 ***

4 **2703.2.6 Maintenance.** In addition to the requirements of Section 2703.2.3, equipment,
5 machinery and required detection and alarm systems associated with hazardous materials shall be
6 maintained as specified by the manufacturer and in an operable condition. Defective containers,
7 cylinders and tanks shall be removed from service, repaired or disposed of in an *approved*
8 manner. Defective equipment or machinery shall be removed from service and repaired or
9 replaced. Required detection and alarm systems shall be replaced or repaired where defective.

10 ***

11 **2703.2.9.1 Equipment, devices and systems requiring testing.** The following equipment,
12 systems and devices shall be tested in accordance with Sections 2703.2.9 and 2703.2.9.2.

- 13 1. Gas detection systems, alarms and automatic emergency shutoff valves required by Section
14 3704.2.2.10 for highly toxic and toxic gases.
- 15 2. Limit control systems for liquid level, temperature and pressure required by Sections 2703.2.7,
16 2704.8 and 2705.1.4.
- 17 3. Emergency alarm systems and supervision required by Sections 2704.9 and 2705.4.4.
- 18 4. Monitoring and supervisory systems required by Sections 2704.10 and 2705.1.6.
- 19 5. Manually activated shutdown controls required by Section 4103.1.1.1 for *compressed gas*
20 systems conveying pyrophoric gases.
- 21 6. Gas detectors installed in repair garages for vehicles using lighter-than-air fuels in accordance
22 with Section 2211.7.
- 23 7. Refrigerant equipment required in accordance with Section 606.

24 ***

25 **2703.3.1 Unauthorized discharges.** The fire code official shall be immediately notified and
26 the requirements in Section 2703.3.1.1 through 2703.3.1.4 shall be complied with ((W))when
27 hazardous materials are released in quantities reportable under state, federal or local regulations,
28 or when any spill or accidental release, inside or outside of a building, could present a fire safety
hazard. ((the fire code official shall be notified and the following procedures required in
accordance with Sections 2703.3.1.1 through 2703.3.1.4.))

29 **2703.3.1 Point of Information**

30 Spill emergencies should be immediately reported to the Fire Department via 911. See also
31 Section 401.3.

32 ***



1 **2704.7 Standby or emergency power.** Where mechanical ventilation, treatment systems,
2 temperature control, alarm, detection or other electrically operated systems are required, such
3 systems shall be provided with an emergency or *legally required standby power* system in
4 accordance with NFPA 70 and Section 604.

5 **Exceptions:**

- 6 1. Mechanical ventilation for storage of Class IB and Class IC flammable and *combustible*
7 *liquids* in closed containers not exceeding 61/2 gallons (25 L) capacity.
8 2. Storage areas for Class 1 and 2 oxidizers.
9 3. Storage areas for Class II, III, IV and V organic peroxides.
10 4. Storage areas for asphyxiant, irritant and radioactive gases.
11 5. For storage areas for highly toxic or toxic materials, see Sections 3704.2.2.8 and 3704.3.4.2.
12 6. *Legally required ((S))standby power* for mechanical ventilation, treatment systems and
13 temperature control systems shall not be required where an *approved* fail-safe engineered system
14 is installed.

15 ***

16 **2704.13 Weather protection.** Where overhead noncombustible construction is provided for
17 sheltering outdoor hazardous material storage areas, such storage shall not be considered indoor
18 storage when the area is constructed in accordance with the requirements for weather protection
19 as required by Section 414.6 of the *International Building Code*.

20 **Exception:** Storage of *explosive* materials shall be considered as indoor storage.

21 **2704.13 Point of Information**

22 When this code allows for the reduction of the set back distance required from outdoor storage
23 areas to adjacent buildings by the construction of a fire-resistive wall in specific chapters
24 elsewhere in this code, that reduction allowance is not considered to meet the intent of the
25 requirement for distance in Item 2 of Section 414.6.1 in the *Seattle Building Code*. The fire-
26 resistive wall and the reduction in distance combined with a weather protection canopy are
27 considered to be indoor storage.

28 ***

1 **2705.1.5 Standby or emergency power.** Where mechanical ventilation, treatment systems,
2 temperature control, manual alarm, detection or other electrically operated systems are required,
3 such systems shall be provided with an emergency or *legally required standby power* system in
4 accordance with NFPA 70 and Section 604.

5 **Exceptions:**

- 6 1. *Legally required ((S))standby power* for mechanical ventilation, treatment systems and
7 temperature control systems shall not be required where an *approved* fail-safe engineered system
8 is installed.
9 2. Systems for highly toxic or toxic gases shall be provided with emergency power in accordance
10 with Sections 3704.2.2.8 and 3704.3.4.2.



1 **2705.3.9 Weather protection.** Where overhead noncombustible construction is provided for
2 sheltering outdoor hazardous material use areas, such use shall not be considered indoor use
3 when the area is constructed in accordance with the requirements for weather protection as
4 required in Section 414.6 of the *International Building Code*.

Exception: Use of *explosive* materials shall be considered as indoor use.

5 **2705.3.9 Point of Information**

6 When this code allows for the reduction of the set back distance required from outdoor storage
7 areas to adjacent buildings by the construction of a fire-resistive wall in specific chapters
8 elsewhere in this code, that reduction allowance is not considered to meet the intent of the
9 requirement for distance in Item 2 of Section 414.6.1 in the *Seattle Building Code*. The fire-
10 resistive wall and the reduction in distance combined with a weather protection canopy are
11 considered to be indoor storage.

12 ***

13 Section 23. Chapter 28 of the 2009 International Fire Code is amended as follows:

14 ***

15 **2802.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as
16 used elsewhere in this code, have the meanings shown herein.

17 ***

18 **AEROSOL CONTAINER.** A metal can, or a glass or plastic bottle designed to dispense an
19 aerosol. ((Metal cans shall be limited to a maximum size of 33.8 fluid ounces (1000 ml). Glass or
20 plastic bottles shall be limited to a maximum size of 4 fluid ounces (118 ml).))

21 ***

22 **2804.1.1 Aerosol container size limits.** Metal cans are limited to a maximum size of 33.8
23 fluid ounces (1000 ml). Glass or plastic bottles are limited to a maximum size of 4 fluid ounces
24 (118 ml).

25 ***

26 Section 24. Chapter 30 of the 2009 International Fire Code is amended as follows:

27 **CHAPTER 30**
28 **COMPRESSED GASES**

SECTION 3001
GENERAL

3001.1 Scope. Storage, use and handling of *compressed gases* in *compressed gas* containers,
cylinders, tanks and systems shall comply with this chapter, including those gases regulated



1 elsewhere in this code. (~~Partially full compressed gas containers, cylinders or tanks containing~~
2 ~~residual gases shall be considered as full for the purposes of the controls required.~~)

3 **Exceptions:**

- 4 1. Gases used as refrigerants in refrigeration systems (see Section 606).
5 2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter
6 22, NFPA 52 and the *International Fuel Gas Code*.

7 Partially full compressed gas containers, cylinders or tanks containing residual gases shall be
8 considered as full for the purposes of the controls required.

9 (~~Cutting and welding~~) Hot work gases shall also comply with Chapter 26. *Cryogenic fluids* shall
10 comply with Chapter 32.

11 Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.

12 *Compressed gases* classified as hazardous materials shall also comply with Chapter 27 for
13 general requirements and chapters addressing specific hazards, including Chapters 35
14 (Flammable Gases), 37 (Highly Toxic and Toxic Materials), 40 (Oxidizers, Oxidizing Gases and
15 Oxidizing Cryogenic Fluids) and 41 (Pyrophoric Materials).

16 LP-gas shall also comply with Chapter 38 and the *International Fuel Gas Code*.

17 ***

18 (~~3006.4 Medical gas systems. Medical gas systems including, but not limited to, distribution~~
19 ~~pipng, supply manifolds, connections, pressure regulators and relief devices and valves, shall~~
20 ~~comply with NFPA 99 and the general provisions of this chapter.~~)

21 ***

22 Section 25. Chapter 33 of the 2009 International Fire Code is amended as follows:

23 **CHAPTER 33**
24 **EXPLOSIVES AND FIREWORKS**

25 **SECTION 3301**
26 **GENERAL**

27 **3301.1 Scope.** The provisions of this chapter shall govern the possession, manufacture, storage,
28 handling, sale and use of *explosives, explosive materials*, fireworks and small arms ammunition.
The manufacture, storage, handling, sale and use of fireworks are governed by Chapter 70.77
RCW and by Chapter 212-17 WAC.

Exceptions:



1. The Armed Forces of the United States, Coast Guard or National Guard.
2. *Explosives* in forms prescribed by the official United States Pharmacopoeia.
3. The possession, storage and use of small arms ammunition when packaged in accordance with DOTn packaging requirements.
4. The possession, storage and use of not more than 1 pound (0.454 kg) of commercially manufactured sporting black powder, 20 pounds (9 kg) of smokeless powder and 10,000 small arms primers for hand loading of small arms ammunition for personal consumption. For the purposes of this code, the term "for personal consumption" means for use by private individuals and not for resale.
5. The use of *explosive materials* by federal, state and local regulatory, law enforcement and fire agencies acting in their official capacities.
6. Special industrial *explosive* devices which in the aggregate contain less than 50 pounds (23 kg) of *explosive materials*.
7. The possession, storage and use of blank industrial-power load cartridges when packaged in accordance with DOTn packaging regulations.
8. Transportation in accordance with DOTn 49 CFR Parts 100-185.
9. Items preempted by federal regulations.
10. Explosive material, fireworks, pyrotechnic special effect material and small arms ammunition located at permitted marine terminals in accordance with Administrative Rule 27.01.09, *Marine Terminals* and any future revisions of this rule adopted by the *fire code official*.

3301.1.1 Explosive material standard. In addition to the requirements of this chapter, NFPA 495 shall govern the manufacture, transportation, storage, sale, handling and use of *explosive materials*. See also Chapter 70.74 RCW and Chapter 296-52 WAC.

3301.1.2 Explosive material terminals. In addition to the requirements of this chapter, the operation of *explosive material* terminals shall conform to the provisions of NFPA 498.

3301.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 3304.
(~~2. Manufacture, assembly and testing of fireworks as allowed in Section 3305.~~)
- (~~3~~)2. The use of fireworks for fireworks displays as allowed in Section 3308.
(~~4. The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provided such fireworks comply with CPSC 16 CFR, Parts 1500 and 1507, and DOTn 49 CFR, Parts 100-185, for consumer fireworks.~~)

3301.1.4 Rocketry. The storage, handling and use of model and high-power rockets shall comply with the requirements of NFPA 1122, NFPA 1125 and NFPA 1127.



1 Manufacturing and firing of model rockets is prohibited.

2 Display of model rocket motors shall be in accordance with Section 3306.5.

3
4 A permit is not required for model rocket motors stored in Group R-3 Occupancies meeting the
5 requirements of NFPA 1122, 1125 and 1127 and in accordance with the United States Bureau of
6 Alcohol, Tobacco, Firearms and Explosives.

7 ***

8 **3301.2.4 Financial responsibility.** Before a permit is issued, as required by Section 3301.2,
9 ~~((the applicant shall file with the jurisdiction a corporate surety bond in the principal sum of~~
10 ~~\$100,000 or a public liability insurance policy for the same amount, for the purpose of the~~
11 ~~payment of all damages to *persons* or property which arise from, or are caused by, the conduct of~~
12 ~~any act authorized by the permit upon which any judicial judgment results. The *fire code official*~~
13 ~~is authorized to specify a greater or lesser amount when, in his or her opinion, conditions at the~~
14 ~~location of use indicate a greater or lesser amount is required. Government entities shall be~~
15 ~~exempt from this bond requirement.))liability insurance in accordance with Section 105.3.7 of~~
16 this code shall be obtained.

17 ***

18 ~~((**3301.2.4.2 Fireworks display.** The permit holder shall furnish a bond or certificate of~~
19 ~~insurance in an amount deemed adequate by the *fire code official* for the payment of all potential~~
20 ~~damages to a *person* or *persons* or to property by reason of the permitted display, and arising~~
21 ~~from any acts of the permit holder, the agent, employees or subcontractors.))~~

22 **3301.3 Prohibited explosives and activities.**

23 **3301.3.1 Prohibited explosives.** Permits shall not be issued or renewed for possession,
24 manufacture, storage, handling, sale or use of the following materials and such materials
25 currently in storage or use shall be disposed of in an *approved* manner.

- 26 1. Liquid nitrogen.
- 27 2. Dynamite containing more than 60-percent liquid *explosive* ingredient.
- 28 3. Dynamite having an unsatisfactory absorbent or one that permits leakage of a liquid *explosive*
ingredient under any conditions liable to exist during storage.
4. Nitrocellulose in a dry and uncompressed condition in a quantity greater than 10 pounds (4.54
kg) of net weight in one package.
5. Fulminate of mercury in a dry condition and fulminate of all other metals in any condition
except as a component of manufactured articles not hereinafter forbidden.
6. *Explosive* compositions that ignite spontaneously or undergo marked decomposition, rendering
the products of their use more hazardous, when subjected for 48 consecutive hours or less to a
temperature of 167°F(75°C).



1 7. New *explosive materials* until *approved* by DOTn, except that permits are allowed to be issued
to educational, governmental or industrial laboratories for instructional or research purposes.

2 8. *Explosive materials* condemned by DOTn.

3 9. *Explosive materials* containing an ammonium salt and a chlorate.

4 10. *Explosives* not packed or marked as required by DOTn
49 CFR, Parts 100-185.

5 **Exception:** Gelatin dynamite.

6 **3301.3.2 Prohibited activities.** The following activities are prohibited:

7 1. The manufacture, assembly and testing of explosives, ammunition, blasting agents and
8 fireworks.

9 **Exceptions:**

10 1. The hand loading of small arms ammunition prepared for personal use and not offered
11 for sale.

12 2. The mixing and loading of blasting agents at blasting sites in accordance with
13 NFPA495.

14 3. The use of binary explosives or phosphoric materials in blasting or pyrotechnic special
15 effects applications in accordance with NFPA 495 or 1126.

16 2. The storage of explosive materials for more than 24 hours unless under permit from the Seattle
17 Fire Department.

18 3. The construction of Class 1 magazines.

19 ***

20 **3305.1 General.** The manufacture, assembly and testing of *explosives*, ammunition, blasting
21 agents and fireworks (~~(shall comply with the requirements of this section and NFPA 495 or~~
22 ~~NFPA 1124.)) are prohibited.~~

23 **Exceptions:**

24 1. The hand loading of small arms ammunition prepared for personal use and not offered
25 for resale.

26 2. The mixing and loading of blasting agents at blasting sites in accordance with NFPA
27 495.

28 3. The use of binary *explosives* or phosphoric materials in blasting or pyrotechnic special
effects applications in accordance with NFPA 495 or NFPA 1126.

3305.3 Intraplant separation of operating buildings. *Explosives* manufacturing buildings and
fireworks manufacturing buildings, including those where *explosive* charges are assembled,
manufactured, prepared or loaded utilizing Division 1.1, 1.2, 1.3, 1.4 or 1.5 *explosives*, shall be
separated from all other buildings, including magazines, within the confines of the manufacturing
plant, at a distance not less than those shown in Table 3305.3 or 3304.5.2(3), as appropriate.

~~((Exception: Fireworks manufacturing buildings separated in accordance with NFPA 1124.))~~



1 **3305.4 Separation of manufacturing operating buildings from inhabited buildings, public**
2 **traffic routes and magazines.** When an operating building on an *explosive* materials plant site is
3 designed to contain *explosive* materials, such a building shall be located away from inhabited
4 buildings, public traffic routes and magazines in accordance with Table 3304.5.2(2) or
5 3304.5.2(3) as appropriate, based on the maximum quantity of *explosive* materials permitted to
6 be in the building at one time (see Section 3301.8).

7 ~~((Exception: Fireworks manufacturing buildings constructed and operated in accordance with
8 NFPA 1124.))~~

9 **3305.5 Buildings and equipment.** Buildings or rooms that exceed the *maximum allowable*
10 *quantity per control area* of *explosive materials* shall be operated in accordance with this section
11 and constructed in accordance with the requirements of the *International Building Code* for
12 Group H occupancies.

13 ~~((Exception: Fireworks manufacturing buildings constructed and operated in accordance with
14 NFPA 1124.))~~

15 SECTION 3306

16 SMALL ARMS AMMUNITION, MODEL ROCKET MOTORS, AND MARINE FLARES

17 **3306.1 General.** Indoor storage and display of black powder, smokeless propellants and small
18 arms ammunition shall comply with this section and NFPA 495. Indoor display of model rocket
19 motors and marine flares shall comply with this section.

20 **3306.5.1.2 Black powder.** No ~~((more than 1 pound (0.454 kg) of))~~ black powder shall be
21 displayed in Group M occupancies.

22 **3306.5.1.3 Small arms primers.** No more than 10,000 small arms primers shall be
23 displayed in Group M occupancies.

24 **3306.5.1.4 Model rocket motors.** Model rocket motors on display in Group M
25 Occupancies shall not exceed an individual motor weight of 1 pound (0.45 kg). The maximum
26 aggregate motor weight on display shall not exceed 20 pounds (9.1 kg). Model rocket motors
27 shall be located a minimum of 15 feet (4572 mm) from exits.

28 **3306.5.1.5 Marine flares.** U.S. Coast Guard approved marine flares on display in Group M
Occupancies shall not exceed an individual device weight of 2 pounds (0.90 kg). The maximum
aggregate device weight on display shall not exceed 40 pounds (18.2 kg). Marine flares shall be
located a minimum of 15 feet (4572 mm) from exits.



3306.5.1.5 Point of Information

1 Device weight of U.S. Coast Guard approved marine flares means the gross weight of the
2 smokeless propellant, other chemical components and the primary casing of the flare. The device
3 weight is not to include carrying cases, manufacturer's packaging, detachable handles or
4 unattached activating devices that may also be present and sold with the flare as a unit.

5 **3306.5.2 Storage.** Storage of small arms ammunition shall comply with Sections 3306.5.2.1
6 through 3306.5.2.3.

7 **3306.5.2.1 Smokeless propellant.** Commercial stocks of smokeless propellants shall be
8 stored as follows:

9 1. Quantities exceeding 20 pounds (9 kg), but not exceeding 100 pounds (45 kg) shall be stored
10 in portable wooden boxes having walls of at least 1 inch (25 mm) nominal thickness.

11 2. Quantities exceeding 100 pounds (45 kg), but not exceeding ~~((800))~~400 pounds ~~((363))~~181.5
12 kg), shall be stored in nonportable storage cabinets having walls at least 1 inch (25 mm) nominal
13 thickness. Not more than ~~((400))~~200 pounds

14 ~~((182))~~91 kg) shall be stored in any one cabinet, and cabinets shall be separated by a distance of
15 at least 25 feet (7620 mm) or by a fire partition having a fire-resistance rating of at least 1 hour.

16 3. Storage of quantities exceeding ~~((800))~~400 pounds ~~((363))~~181.5 kg), but not exceeding 5,000
17 pounds (2270 kg) in a building shall comply with all of the following:

18 3.1. The warehouse or storage room is unaccessible to unauthorized personnel.

19 3.2. Smokeless propellant shall be stored in nonportable storage cabinets having wood
20 walls at least 1 inch (25 mm) nominal thickness and having shelves with no more than 3
21 feet (914 mm) of separation between shelves.

22 3.3. No more than ~~((400))~~200 pounds ~~((182))~~91 kg) is stored in any one cabinet.

23 3.4. Cabinets shall be located against walls of the storage room or warehouse with at least
24 40 feet (12 192 mm) between cabinets.

25 3.5. The minimum required separation between cabinets shall be 20 feet (6096 mm)
26 provided that *barricades* twice the height of the cabinets are attached to the wall, midway
27 between each cabinet. The *barricades* must extend a minimum of 10 feet (3048 mm)
28 outward, be firmly attached to the wall and be constructed of steel not less than 1/4 inch
thick (6.4 mm), 2-inch (51 mm) nominal thickness wood, brick or concrete block.

3.6. Smokeless propellant shall be separated from materials classified as *combustible
liquids*, flammable liquids, flammable solids or oxidizing materials by a distance of 25
feet (7620 mm) or by a *fire partition* having a *fire-resistance rating* of 1 hour.

3.7. The building shall be equipped throughout with an *automatic sprinkler system*
installed in accordance with Section 903.3.1.1.

4. Smokeless propellants not stored according to Item 1, 2, or 3 above shall be stored in a Type 2
or 4 magazine in accordance with Section 3304 and NFPA 495.



1 **3306.5.2.2 Black powder.** Commercial stocks of black powder in quantities less than
2 5((0)) pounds (((23))2.3 kg) shall be allowed to be stored in Type 2 or 4 indoor or outdoor
3 magazines. Quantities greater than 5((0)) pounds (((23))2.3 kg) shall be stored in outdoor Type 2
4 or 4 magazines. When black powder and smokeless propellants are stored together in the same
5 magazine, the total quantity shall not exceed that permitted for black powder.

6 **3306.5.2.3 Small arms primers.** Commercial stocks of small arms primers shall be stored
7 as follows:

8 1. Quantities not to exceed ((750,000))20,000 small arms primers stored in a building shall be
9 arranged such that not more than ((100,000))20,000 small arms primers are stored in any one pile
10 and piles are at least 15 feet (4572 mm) apart.

11 2. Quantities exceeding ((750,000))20,000 small arms primers stored in a building shall comply
12 with all of the following:

13 2.1. The warehouse or storage building shall not be accessible to unauthorized personnel.

14 2.2. Small arms primers shall be stored in cabinets. No more than ((200,000))20,000
15 small arms primers shall be stored in any one cabinet.

16 2.3. Shelves in cabinets shall have vertical separation of at least 2 feet (610 mm).

17 2.4. Cabinets shall be located against walls of the warehouse or storage room with at least
18 40 feet (12 192 mm) between cabinets. The minimum required separation between
19 cabinets shall be allowed to be reduced to 20 feet (6096 mm) provided that *barricades*
20 twice the height of the cabinets are attached to the wall, midway between each cabinet.
21 The *barricades* shall be firmly attached to the wall and shall be constructed of steel not
22 less than 1/4 inch thick (6.4 mm), 2-inch (51 mm) nominal thickness wood, brick or
23 concrete block.

24 2.5. Small arms primers shall be separated from materials classified as *combustible*
25 *liquids*, flammable liquids, flammable solids or oxidizing materials by a distance of 25
26 feet (7620 mm) by a *fire partition* having a *fire-resistance rating* of 1 hour.

27 2.6. The building shall be protected throughout with an *automatic sprinkler system*
28 installed in accordance with Section 903.3.1.1.

3 3. Small arms primers not stored in accordance with Item 1 or 2 of this section shall be stored in
4 a magazine meeting the requirements of Section 3304 and NFPA 495.

SECTION 3308 FIREWORKS DISPLAY

3308.1 **General.** The sale, possession, use or discharge of fireworks and pyrotechnic special effects in the City of Seattle is prohibited except where authorized by a fire department permit or exempted under this section.

Exceptions:



- 1 1. The use of fireworks by railroads or other transportation agencies for signaling or illumination.
- 2 2. The sale or use of blank cartridges or fireworks if approved by the fire code official for
3 theatrics, signaling or ceremonial purposes.
- 4 3. The use of fireworks by the United States Armed Forces.

5 Outdoor fireworks displays, use of pyrotechnics before a *proximate audience* and pyrotechnic
6 special effects in motion picture, television, theatrical and group entertainment productions shall
7 comply with Sections 3308.2 through 3308.10 and NFPA 1123 or NFPA 1126.

8 **3308.2 Permit application.** Prior to issuing permits for a fireworks display, plans for the
9 fireworks display, inspections of the display site and demonstrations of the display operations
10 shall be *approved*. A plan establishing procedures to follow and actions to be taken in the event
11 that a shell fails to ignite in, or discharge from, a mortar or fails to function over the fallout area
12 or other malfunctions shall be provided to the *fire code official*.

13 No person under 18 years of age may apply for or receive a permit under this section.

14 An application for a permit shall be made in writing to the *fire code official* at least 30 days in
15 advance of the display. At the time the permit application is submitted, the *fire code official* shall
16 be consulted regarding requirements for standby fire apparatus.

17 ***

18 **3308.4 Clearance.** Spectators, spectator parking areas, and *dwellings*, buildings or structures
19 shall not be located within the display site.

20 **Exception(s):**

21 ~~((1-)) This provision shall not apply to pyrotechnic special effects and fireworks displays using
22 Division 1.4G materials before a *proximate audience* in accordance with NFPA 1126.~~

23 ~~((2. This provision shall not apply to unoccupied *dwellings*, buildings and structures with the
24 approval of the building owner and the *fire code official*.)~~

25 **3308.4.1 Display site.** The radius of the display site for outdoor water or land displays shall
26 be at least 100 foot per inch (1200 per mm) based on the internal mortar diameter of the largest
27 aerial shell to be fired.

28 The designated landing areas shall be an approved large, clear, open area. Spectators, vehicles
and combustible materials shall not be allowed within the designated landing area. The
designated landing area shall not be within 100 feet (30 480 mm) of tents and membrane
structures. The firing and storage site shall be located not less than 200 feet (60 960 mm) from a
building, tent or membrane structure.



1 When the display is fired from a barge, such barge shall be of noncombustible construction or
2 have a noncombustible surface.

3 When the display is fired from a barge or vessel, a security area shall be established around the
4 barge to prevent boats from entering the area. No boats shall be allowed within 200 feet (60 960
5 mm) of the firing or storage site. A boat shall be on standby to remove personnel from the barge
6 or water in an emergency. All personnel aboard the barge shall have approved flotation devices.

7 Additional water-filled fire extinguishers, rated 2-A minimum, shall be on the barge and so
8 spaced that an extinguisher shall be available within 30 feet (9144 mm) at all times.

9 ***

10 Section 26. Chapter 34 of the 2009 International Fire Code is amended as follows:

11 ***

12 **3401.2 Nonapplicability.** This chapter shall not apply to liquids as otherwise provided in other
13 laws or regulations or chapters of this code, including:

- 14 1. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages,
15 airports and marinas in Chapter 22.
- 16 2. Medicines, foodstuffs, cosmetics, and commercial, institutional and industrial products in the
17 same concentration and packaging containing not more than 50 percent by volume of water-
18 miscible liquids and with the remainder of the solution not being flammable, and alcoholic
19 beverages in retail or wholesale sales or storage uses when packaged in individual containers not
20 exceeding 1.3 gallons (5 L).
- 21 3. Storage and use of fuel oil in tanks and containers connected to ~~((oil))~~ fuel-burning equipment.
22 Such storage and use shall be in accordance with Section 603. For abandonment of fuel oil tanks,
23 this chapter applies.
- 24 4. Refrigerant liquids and oils in refrigeration systems (see Section 606).
- 25 5. Storage and display of aerosol products complying with Chapter 28.
- 26 6. Storage and use of liquids that have no fire point when tested in accordance with ASTM D 92.
- 27 7. Liquids with a *flash point* greater than 95°F (35°C) in a water-miscible solution or dispersion
28 with a water and inert (noncombustible) solids content of more than 80 percent by weight, which
do not sustain combustion.
8. Liquids without *flash points* that can be flammable under some conditions, such as certain
halogenated hydrocarbons and mixtures containing halogenated hydrocarbons.
9. The storage of distilled spirits and wines in wooden barrels and casks.

3401.4 Permits. Permits shall be required as set forth in Sections 105.6 and 105.7.

Exception: Pursuant to Section 106.5.1, permits issued by the Department of Ecology to
install underground tanks are *approved* by the *fire code official*.



1 ***

2 **3402.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as
3 used elsewhere in this code, have the meanings shown herein.

4 * * *

5 **VAULT.** An enclosure consisting of four walls, a floor and a top for the purpose of containing a
6 liquid storage tank and not intended to be occupied by personnel other than for inspection, repair
or maintenance of the vault, the storage tank or related equipment. [NFPA 30: 3.3.55]

7 ***

8 **3404.2.7.4 Emergency venting.**

9 **3404.2.7.4.1 General.**

10 Stationary, aboveground tanks shall be equipped with additional venting that will relieve
11 excessive internal pressure caused by exposure to fires. Emergency venting devices shall be
12 listed or approved. ((Emergency vents for Class I, II and IIIA liquids shall not discharge inside
buildings.)) The venting shall be installed and maintained in accordance with Section 22.7 of
NFPA 30.

13 The requirement for additional venting applies to each compartment of a compartmentalized
14 tank, the interstitial space (annulus) of a secondary containment- type tank and the enclosed
15 space of tanks of closed-top dike construction. The requirement for additional venting also
16 applies to spaces or enclosed volumes, such as those intended for insulation, membranes or
17 weather shields that can contain liquid because of a leak from the primary vessel and that can
inhibit venting during fire exposure. The insulation, membrane or weather shield shall not
interfere with emergency venting.

18 **Exception:** Tanks larger than 12,000 gallons (45 420 L) in capacity storing Class IIIB liquids
19 which are not within the diked area or the drainage path of Class I or II liquids do not require
emergency relief venting.

20 **3404.2.7.4.2 Emergency vent pipe outlets.** Emergency vents for Class I, II and IIIA
21 liquids shall not discharge inside buildings, and outlets shall be in accordance with Section
3404.2.7.3.3.

22 **Exception:** Protected above-ground tanks located inside buildings containing Class II or Class
23 IIIA liquids for emergency or standby generators installed in accordance with the Administrative
24 Rule 34.01.04, *Use of Protected Aboveground Tanks for Fuel Storage Inside Buildings* and any
future revisions of this rule adopted by the fire code official, are allowed to vent inside buildings.



1 **3404.2.7.4.3 Extension of emergency vent piping.** Piping to or from approved
2 emergency vent devices for atmospheric and low-pressure tanks shall be sized to provide
3 emergency vent flows that limit the back pressure to less than the maximum pressure permitted
4 by the design of the tank. Piping to or from approved emergency vent devices for pressure
5 vessels shall be sized in accordance with the ASME Boiler and Pressure Vessel Code.

6 ***

7 **3404.2.7.5.6 Location of connections that are made or broken.** Filling, withdrawal
8 and vapor recovery connections for Class I, II and IIIA liquids which are made and broken shall
9 be located outside of buildings, not more than 5 feet (1524 mm) above the finished ground level,
10 in an *approved* location in close proximity to the parked delivery vehicle. Such location shall be
11 away from sources of ignition and not less than 5 feet (1524 mm) away from building openings.
12 Such connections shall be closed and liquid tight when not in use and shall be properly
13 identified.

14 **Exception:** Fill connections for diesel fuel tanks attached to emergency generators may be
15 located within dedicated loading docks of buildings if installed within 10 feet (3048 mm) of the
16 exterior opening of the loading dock and if the loading dock entrance doors have openings
17 comprising at least 50 percent of the door area.

18 ***

19 **3404.2.7.10.1 Leaking tank disposition.** Leaking tanks shall be promptly emptied,
20 repaired and returned to service, abandoned or removed in accordance with Section 3404.2.13 or
21 3404.2.14 and in accordance with WAC 173-360-325.

22 **3404.2.7.11 Tank lining.** Steel tanks are allowed to be lined only for the purpose of
23 protecting the interior from corrosion or providing compatibility with a material to be stored.
24 Only those liquids tested for compatibility with the lining material are allowed to be stored in
25 lined tanks.

26 Tank lining shall be conducted in accordance with the applicable provisions of NFPA 326,
27 Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning and Repair and
28 WAC 173-360-325.

3404.2.9.2 Fire protection. Fire protection for aboveground tanks shall comply with
Sections 3404.2.9.2.1 through 3404.2.9.2.4.

Above-ground tanks located outside buildings and used for the storage of Class I flammable
liquids shall be protected with an approved foam fire protection system.

Exception: Protected above-ground tanks.



<u>TYPE OF LIQUID</u>	<u>MAXIMUM PRIMARY TANK CAPACITY</u>		
	<u>LOCATION OF TANK</u>		
	<u>Within Fire District</u>	<u>Within I-zone^{a,b}</u>	<u>Outside I-zone^{a,b}</u>
<u>Class I liquids</u>	<u>Prohibited</u>	<u>1,000 gallons^c</u>	<u>500 gallons^c</u>
<u>Class II liquids for open use</u>	<u>660 gallons^c</u>	<u>1,000 gallons^c</u>	<u>660 gallons^c</u>
<u>Combination of Class I and Class II liquids in compartmentalized tanks for open use</u>	<u>Prohibited</u>	<u>3,000 gallons^{c,d}</u>	<u>1,000 gallons^{c,d}</u>
<u>Class II liquids outside for closed use (e.g. emergency generators)</u>	<u>2,000 gallons^c</u>	<u>4,000 gallons^c</u>	<u>2,000 gallons^c</u>

For SI: 1 foot = 304.8 mm, 1 gallon = 3.785 L

a. I-zone means Industrial zones identified in accordance with the City Land Use Code.

b. Additional tanks are allowed on the same site if separated from one another by a minimum of 100 feet.

c. Maximum tank capacities are allowed to be doubled if *protected aboveground tanks* in accordance with the requirements of this chapter have been provided.

d. Maximum individual compartment capacities shall not exceed the maximum allowable primary tank capacity for the class of liquid.

3404.2.11 Underground tanks. Underground storage of flammable and *combustible liquids* in tanks shall comply with Section 3404.2 and Sections 3404.2.11.1 through 3404.2.11.5.2.

Pursuant to Section 106.5.1, the fire code official approves permits to install underground tanks issued by and inspections of underground tanks conducted by the Washington State Department of Ecology.

3404.2.13 Abandonment and status of tanks. Tanks taken out of service shall be removed in accordance with Section 3404.2.14, or safeguarded in accordance with Sections 3404.2.13.1 through 3404.2.13.2.3 and API 1604. Residential heating oil tanks required by this code to be removed or decommissioned shall also comply with Administrative Rule 34.02.07.



1 Decommissioning Residential Heating Oil Tanks and any future revisions of this rule adopted by
2 the fire code official.

3 ***

4 **3404.2.13.1.4 Tanks abandoned in place.** Tanks abandoned in place shall be as
5 follows:

- 6 1. Flammable and *combustible liquids* shall be removed from the tank and connected piping.
- 7 2. The suction, inlet, gauge, vapor return and vapor lines shall be disconnected.
- 8 3. The tank shall be filled completely with an *approved* inert solid material.

9 **Exception:** Residential heating oil tanks of 1,100 gallons (4164 L) or less if the fill line is
10 permanently removed to a point below grade to prevent refilling of the tank.

- 11 4. Remaining underground piping shall be capped or plugged.
- 12 5. A record of tank size, location and date of abandonment shall be retained.
- 13 6. All exterior above-grade fill piping shall be permanently removed when tanks are abandoned
14 or removed.

15 ***

16 **3404.3.1.1 Approved containers.** Only *approved* containers and portable tanks shall be
17 used.

18 It shall be unlawful to sell, offer for sale or distribute any container for the storage and/or use of
19 flammable liquids, unless such container has been approved for such purpose under applicable
20 provisions of this code.

21 ***

22 **3404.3.4.4 Liquids for maintenance and operation of equipment.** In all occupancies,
23 quantities of flammable and *combustible liquids* in excess of 10 gallons (38 L) used for
24 maintenance purposes and the operation of equipment shall be stored in liquid storage cabinets in
25 accordance with Section 3404.3.2. Quantities not exceeding 10 gallons (38 L) are allowed to be
26 stored outside of a cabinet when in *approved* containers located in private garages or other
27 *approved* locations.

28 In Groups A, B, E, F, I, M, R and S occupancies, quantities of flammable and combustible
liquids used for demonstration, treatment and laboratory work exceeding 10 gallons (37.85 L)
shall be stored in liquid storage cabinets in accordance with Section 3404.3.2. Quantities not
exceeding 10 gallons (38 L) shall be in approved containers in approved locations.

3404.3.5 Storage in control areas. Storage of flammable and *combustible liquids* in *control*
areas shall be in accordance with Sections 3404.3.5.1 through 3404.3.5.4.

3404.3.5.1 Basement storage. Class I liquids shall be allowed to be stored in *basements*
~~((in amounts not exceeding the maximum allowable quantity per control area for use open~~
~~systems in Table 2703.1.1(1), provided that automatic suppression and other fire protection are~~



1 provided in accordance with Chapter 9.) protected throughout by an approved automatic
2 sprinkler system required in accordance with Chapter 9. The maximum aggregate quantity of all
3 combined Class I flammable liquids in a basement shall not exceed 30 gallons (113.5 L) and
4 Class IA flammable liquids shall not exceed 10 gallons (37.85 L).

5 Quantities of Class I flammable liquids in basements in excess of 10 gallons shall be stored in
6 approved liquid storage cabinets in accordance with Section 3404.3.2.

7 **Exception:** Class I liquids stored and used in basement areas of research laboratories in
8 accordance with Administrative Rule 34.03.04, *Flammable Liquid Storage and Use in Basement*
9 *Level Laboratories* and any future revisions of this rule adopted by the fire code official.

10 Class II and IIIA liquids shall also be allowed to be stored in *basements*, provided that automatic
11 suppression and other fire protection are provided in accordance with Chapter 9.

12 ***

13 **3404.3.6.1 Container type.** Containers for Class I liquids shall be metal.

14 **Exception:** In sprinklered buildings, an aggregate quantity of 120 gallons (454 L) of water-
15 miscible Class IB and Class IC liquids is allowed in nonmetallic containers, each having a
16 capacity of 16 ounces (0.473 L) or less.

17 Plastic containers may be used for Class II and III liquids only if individual containers are:

- 18 1. Stored less than 5 feet (1524 mm) high; or
- 19 2. Confined to box bins protected by automatic sprinklers within racks.

20 ***

21 **3404.3.7.3 Spill control and secondary containment.** Liquid storage rooms shall be
22 provided with spill control and secondary containment in accordance with Section 2704.2.

23 **3404.3.7.3 Point of Information**

24 If secondary containment of nonwater-miscible flammable or combustible liquids is to be
25 achieved through the use of recessed floors or liquid-tight sills as allowed for in Section 2704.2,
26 the room must be protected by an automatic-foam system in accordance with Section
27 3404.3.7.5.1.

28 **3404.3.7.4 Ventilation.** Liquid storage rooms shall be ventilated in accordance with
Section 2704.3.

3404.3.7.5 Fire protection. Fire protection for liquid storage rooms shall comply with
Sections 3404.3.7.5.1 and 3404.3.7.5.2.

If secondary containment of nonwater-miscible flammable or combustible liquids is achieved
through the use of recessed floors or liquid-tight sills as allowed for in Section 2704.2, an



1 automatic foam system shall be provided in the room and must be approved by the fire code
2 official.

3 **3404.3.7.5 Point of Information**

4 Nonwater-miscible flammable and combustible liquids are those flammable and combustible
5 liquids that are unable to dissolve uniformly with water. Whether a flammable or combustible
6 liquid is soluble with water is dependent on the chemical nature of the liquid. A source of
7 information regarding the water solubility of common flammable and combustible liquids can be
8 found in NFPA 325M.

9 ***

10 **3404.3.8.2 Spill control and secondary containment.** Liquid storage warehouses shall be
11 provided with spill control and secondary containment as set forth in Section 2704.2.

12 **3404.3.8.2 Point of Information**

13 If secondary containment of nonwater-miscible flammable or combustible liquids is to be
14 achieved through the use of recessed floors or liquid-tight sills as allowed for in Section 2704.2,
15 the room must be protected by an automatic-foam system in accordance with Section
16 3404.3.7.5.1.

17 ***

18 **3404.3.8.4 Fire-extinguishing systems.** Liquid storage warehouses shall be protected by
19 *automatic sprinkler systems* installed in accordance with Chapter 9 and Tables 3404.3.6.3(4)
20 through 3404.3.6.3(7) and Table 3404.3.7.5.1, or Section 16.4 and Tables 16.5.2.1 through
21 16.5.2.6 of NFPA 30. In-rack sprinklers shall also comply with NFPA 13. Automatic foam-water
22 systems and automatic AFFF water sprinkler systems shall not be used except when *approved*.
23 Protection criteria developed from fire modeling or full-scale fire testing conducted at an
24 *approved* testing laboratory are allowed in lieu of the protection as shown in Tables
25 3404.3.6.3(2) through 3404.3.6.3(7) and Table 3404.3.7.5.1 when *approved*.

26 If secondary containment of nonwater-miscible flammable or combustible liquids is achieved
27 through the use of recessed floors or liquid-tight sills as allowed for in Section 2704.2, an
28 automatic foam system shall be provided throughout the warehouse and shall be approved by the
fire code official.

3405.4 Solvent distillation units. Solvent distillation units shall comply with Sections 3405.4.1
through 3405.4.9.

3405.4.1 Unit with a capacity of 60 gallons or less. Solvent distillation units used to
((recycle))process Class I, II or IIIA liquids having a distillation chamber capacity of 60 gallons



(227 L) or less shall be *listed, labeled* and installed in accordance with Section 3405.4 and UL 2208.

Exceptions:

1. Solvent distillation units installed in dry cleaning plants in accordance with Chapter 12.
2. Solvent distillation units used in continuous through-put industrial processes where the source of heat is remotely supplied using steam, hot water, oil or other heat transfer fluids, the temperature of which is below the auto-ignition point of the solvent.
(~~3. Solvent distillation units listed for and used in laboratories.~~)
- (~~4.~~)3. Custom and noncommercial solvent distillation units that are (~~not~~) *approved* by the *fire code official* for research, testing and experimental processes.
4. Solvent distillation units installed or in service prior to September 27, 1998 if in accordance with Sections 3405.4.10.1 through 3405.4.10.6.

3405.4.10 Existing units.

3405.4.10.1 General. Solvent distillation units installed or placed in service prior to September 27, 1998 shall be in accordance with Section 3405.4.10.

Exceptions:

1. Existing commercially produced high purity column stills with a chamber capacity of 60 gallons (227 L) or less that are constructed of UL or CSA approved components and provided with an enclosed cabinet, mechanical ventilation, and microprocessor control. Such units shall be located in a laboratory or similar controlled environment approved by the *fire code official*, maintained at least 3 feet (914 mm) from ignition sources, and separated from exit ways by 1-hour fire-resistant construction.
2. Existing commercially produced solvent distillation units, including glass apparatus and electric heating mantels, with a chamber capacity of 1.5 liters (0.4 gal.) or less that are used for research, testing and experimental purposes in a laboratory setting or similar controlled environment.

3405.4.10.1 Point of Information

For solvent distillation units installed or placed in service after September 27, 1998, see Sections 3405.4.1 through 3405.4.9.

3405.4.10.2 Listing. Solvent distillation units used to process Class I, II or IIIA liquids shall be listed in accordance with the *Seattle Electrical Code* for Class 1, Division 1 or 2 hazardous locations.

Exception: If approved by the *fire code official*, existing commercially produced units having a chamber capacity of 60 gallons (227 L) or less separated from exits and exit ways by 1-hour fire-resistant construction and located at least 3 feet (914 mm) away from ignition sources.



3405.4.10.2 Point of Information

For solvent distillation units installed or placed in service after September 27, 1998, see Sections 3405.4.1 through 3405.4.9.

3405.4.10.3 Location. Solvent distillation units shall not be used in basements. Units processing Class I, II or IIIA liquids, having a distillation capacity exceeding 60 gallons (227 L) shall be used in locations that comply with the use and mixing requirement of Section 3405 and other applicable provisions in Chapter 34.

3405.4.10.4 Overfill protection. A means to automatically interrupt distillation and prevent collection containers and portable tanks from overfilling, or an overfill containment pan sized to contain the entire capacity of the distillation chamber shall be provided.

3405.4.10.5 Safety limit controls. Safety limit controls that shut off the unit in the event of a malfunction that increases the risk of fire or explosion shall be provided.

3405.4.10.6 Maximum temperature. The maximum temperature of the unit distillation chamber shall not exceed the autoignition temperature of the liquid being distilled.

3405.4.11 Units installed outdoors. Solvent distillation units installed outdoors shall be in accordance with Sections 3405.4.7 through 3405.4.10 and the following:

Units shall be located a minimum of 15 feet (4572 mm) from public ways, property lines, combustible construction and openings to buildings.

Spill control is required around the unit in accordance with Section 2704.2.

An attendant is required while the unit is in operation.

The unit shall be empty if unattended or shut down and the area secured in an approved manner.

3406.5.4.5 Commercial, industrial, governmental or manufacturing. Dispensing of Class II and III motor vehicle fuel from tank vehicles into the fuel tanks of motor vehicles located at commercial, industrial, governmental or manufacturing establishments is allowed where permitted, provided such dispensing operations are conducted in accordance with the following:
1. Dispensing shall occur only at sites that have been issued a permit to conduct mobile fueling.



1 2. The *owner* of a mobile fueling operation shall provide to the jurisdiction a written response
2 plan which demonstrates readiness to respond to a fuel spill and carry out appropriate mitigation
measures, and describes the process to dispose properly of contaminated materials.

3 3. A detailed site plan shall be submitted with each application for a permit. The site plan shall
4 indicate: all buildings, structures and appurtenances on site and their use or function; all uses
5 adjacent to the property lines of the site; the locations of all storm drain openings, adjacent
6 waterways or wetlands; information regarding slope, natural drainage, curbing, impounding and
how a spill will be retained upon the site property; and the scale of the site plan.

7 Provisions shall be made to prevent liquids spilled during dispensing operations from flowing
8 into buildings or off-site. Acceptable methods include, but shall not be limited to, grading
driveways, raising doorsills or other *approved* means.

9 4. The *fire code official* is allowed to impose limits on the times and days during which mobile
10 fueling operations is allowed to take place, and specific locations on a site where fueling is
11 permitted.

12 5. Mobile fueling operations shall be conducted in areas not accessible to the public or shall be
13 limited to times when the public is not present.

14 6. Mobile fueling shall not take place within 15 feet (4572 mm) of buildings, property lines,
combustible storage or storm drains.

15 **Exceptions:**

16 1. The distance to storm drains shall not apply where an *approved* storm drain cover or an
17 *approved* equivalent that will prevent any fuel from reaching the drain is in place prior to
18 fueling or a fueling hose being placed within 15 feet (4572 mm) of the drain. Where
19 placement of a storm drain cover will cause the accumulation of excessive water or
20 difficulty in conducting the fueling, such cover shall not be used and the fueling shall not
take place within 15 feet (4572 mm) of a drain.

21 2. The distance to storm drains shall not apply for drains that direct influent to *approved*
oil interceptors.

22 7. The tank vehicle shall comply with the requirements of NFPA 385 and local, state and federal
23 requirements. The tank vehicle's specific functions shall include that of supplying fuel to motor
24 vehicle fuel tanks. The vehicle and all its equipment shall be maintained in good repair.

25 8. Signs prohibiting smoking or open flames within 25 feet (7620 mm) of the tank vehicle or the
26 point of fueling shall be prominently posted on three sides of the vehicle including the back and
27 both sides.



1 9. A portable fire extinguisher with a minimum rating of 40:BC shall be provided on the vehicle
2 with signage clearly indicating its location.

3 10. The dispensing nozzles and hoses shall be of an *approved* and *listed* type and the inside
4 diameter of the hose shall not exceed 1 1/4 inches (32mm).

5 11. The dispensing hose shall not be extended from the reel more than 100 feet (30 480 mm) in
6 length.

7 All pressure hoses and couplings shall be inspected at intervals appropriate to the service. Any
8 hose showing materials deterioration, signs of leakage or weakness in its carcass or at the
9 couplings shall be withdrawn from service or repaired or discarded.

10 12. Absorbent materials, nonwater-absorbent pads capable of absorbing a minimum of 16 gallons
11 (61 L), a 10-foot-long (3048 mm) containment boom, an *approved* container with lid and a
12 nonmetallic shovel and a storm drain spill kit shall be provided to mitigate a minimum 5-gallon
13 (19 L) fuel spill.

14 13. Tank vehicles shall be equipped with a "fuel limit" switch such as a count-back switch, to
15 limit the amount of a single fueling operation to a maximum of 500 gallons (1893 L) before
16 resetting the limit switch.

17 **Exception:** Tank vehicles where the operator carries and can utilize a remote emergency
18 shutoff device which, when activated, immediately causes flow of fuel from the tank
19 vehicle to cease.

20 14. *Persons* responsible for dispensing operations shall be trained in the appropriate mitigating
21 actions in the event of a fire, leak or spill. Training records shall be maintained by the dispensing
22 company and shall be made available to the *fire code official* upon request.

23 15. Operators of tank vehicles used for mobile fueling operations shall have in their possession at
24 all times an emergency communications device to notify the proper authorities in the event of an
25 emergency.

26 16. The tank vehicle dispensing equipment shall be constantly attended and operated only by
27 designated personnel who are trained to handle and dispense motor fuels.

28 17. Fuel dispensing shall be prohibited within 25 feet (7620 mm) of any source of ignition.

18. The engines of vehicles being fueled shall be shut off during dispensing operations.

19. Nighttime fueling operations shall only take place in adequately lighted areas.



1 20. The tank vehicle shall be positioned with respect to vehicles being fueled to prevent traffic
2 from driving over the delivery hose.

3 21. During fueling operations, tank vehicle brakes shall be set, chock blocks shall be in place and
4 warning lights shall be in operation.

5 22. Motor vehicle fuel tanks shall not be topped off.

6 23. The dispensing hose shall be properly placed on an *approved* reel or in an *approved*
7 compartment prior to moving the tank vehicle.

8 24. The *fire code official* and other appropriate authorities shall be notified without delay by the
9 fuel delivery operator ((when))if a reportable spill or unauthorized discharge occurs or if any spill
10 or accidental release, inside or outside of a building, could present a fire or life safety hazard.

11 25. Operators shall place a drip pan or an absorbent pillow, in good condition, under each fuel fill
12 opening prior to and during dispensing operations. Drip pans shall be liquid-tight. The pan or
13 absorbent pillow shall have a capacity of not less than ((3))5 gallons (((11.36))19 L). Spills
14 retained in the drip pan or absorbent pillow need not be reported.

15 Operators, when fueling, shall have on their *person* an absorbent pad capable of capturing diesel
16 foam overfills. Except during fueling, the nozzle shall face upward and an absorbent pad shall be
17 kept under the nozzle to catch drips. Contaminated absorbent pads or pillows shall be disposed of
18 regularly in accordance with local, state and federal requirements.

19 26. It is the responsibility of the permit applicant to ensure that all persons and parties with an
20 interest in the property (i.e., property owner, lessor, real-estate company, property manager as
21 well as operators of the property) have given explicit consent to allow mobile fueling to occur on
22 the property. Managers, lessees, renters and other persons cannot solely give permission for
23 mobile fueling to occur on the property.

24 27. Fueling locations shall have a surface that will be protected by continuous pavement (cement
25 or asphalt) that is in good repair. Good repair means that a surface has no cracks, holes or means
26 through which a spill could reach soil.

27 **Exception:** Demonstration by the vehicle operator that the flow of fuel can be stopped
28 from the farthest fueling location within 15 seconds.

Section 27. Chapter 38 of the 2009 International Fire Code is amended as follows:



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CHAPTER 38
LIQUEFIED PETROLEUM GASES

SECTION 3801
GENERAL

3801.1 Scope. Storage, handling and transportation of liquefied petroleum gas (LP-gas) and the installation of LP-gas equipment pertinent to systems for such uses shall comply with this chapter, NFPA 54, National Fuel Gas Code and NFPA 58, Liquefied Petroleum Gas Code as amended.

Exceptions:

1. LP-gas used with oxygen for hot work operations shall be in accordance with Chapter 26.
2. LP-gas used in connection with outdoor patio heaters shall be in accordance with Section 603.4.

Properties of LP-gases shall be determined in accordance with Appendix B of NFPA 58 as amended.

3801.1 Point of Information

Adopted local amendments to NFPA 58 can be accessed at
<http://www.seattle.gov/fire/FMO/firecode/nfpaAmendments.htm>

3801.3 Construction documents. Where a single LP-gas container is more than ~~((2,000))~~500 gallons ~~((7570 L))~~(1892.5 L) in water capacity or the aggregate water capacity of LP-gas containers is more than ~~((4,000))~~1000 gallons ~~((15140 L))~~(3785 L) and for all mounded or underground LP-gas containers, the installer shall submit construction documents to the fire code official for approval of ~~((for))~~ such installation ~~((prior to beginning the installation))~~ before starting the installation.

3803.1 General. LP-gas equipment shall be installed in accordance with ~~((the International))~~ NFPA 54, National Fuel Gas Code and NFPA 58 as amended, except as otherwise provided in this chapter.

3803.2.1 Portable containers. Portable LP-gas containers, as defined in NFPA 58 as amended, shall not be used in buildings except as specified in NFPA 58 as amended and Sections 3803.2.1.1 through 3803.2.1.7.



3803.2.1.2 Construction, renovation and temporary heating. Portable LP-gas containers are allowed to be used in buildings or areas of buildings undergoing construction, renovation or for temporary heating as set forth in Sections 6.19.4, 6.19.5 and 6.19.8 of NFPA 58 as amended.

Individual LP-gas container capacities and aggregate quantities of LP-gas allowed within buildings undergoing construction or renovation shall be in accordance with Table 3803.2.1.2.

TABLE 3803.2.1.2
USE OF LP-GAS INSIDE BUILDINGS UNDERGOING CONSTRUCTION or
RENOVATION¹

<u>Location</u>	<u>Maximum Individual Container Capacity</u>	<u>Maximum Aggregate Quantity per Floor</u>	<u>Maximum Aggregate Quantity inside the Building</u>
<u>Within Occupied A Occupancies</u>	<u>Limits established by permit issued by Special Events Section</u>		
<u>Within Occupied Buildings other than A Occupancies</u>	<u>50 lbs. water capacity (nominal 20 lb LP-gas capacity)</u>	<u>Number of cylinders shall not exceed the number of workers assigned to use the LP-gas.</u>	<u>Number of cylinders shall not exceed the number of workers assigned to use the LP-gas.</u>
<u>Unoccupied Buildings</u>	<u>239 lbs. water capacity (nominal 100 lb LP-gas capacity)</u>	<u>735 lbs. water capacity (nominal 300 lb LP-gas capacity)</u>	<u>4410 lbs. water capacity (nominal 1800 lb LP-gas capacity)</u>

¹ Weight of LP-gas per gallon = 4.20 lbs.

3803.2.1.4 Group B, E and I occupancies. In Group B, E and I laboratory occupancies, portable LP-gas containers are allowed to be used for research and experimentation. Such containers shall not be used in classrooms. Such containers shall not exceed a 50-pound (23 kg) water capacity in occupancies used for educational or research purposes and shall not exceed a 12-pound (5 kg) water capacity in occupancies used for institutional purposes. Where more than one such container is present in the same room, each container shall be separated from other containers by a distance of not less than 20 feet (6096 mm).



3803.2.1.7 Use for food preparation. Where *approved, listed* LP-gas commercial food service appliances are allowed to be used for food-preparation within restaurants and in attended commercial food-catering operations in accordance with NFPA 54, the ((*International*)) *National Fuel Gas Code*, the *International Mechanical Code* and NFPA58 as amended.

3803.2.2 Industrial vehicles and floor maintenance machines. LP-gas containers on industrial vehicles and floor maintenance machines shall comply with Sections 11.12 and 11.13 of NFPA 58 as amended.

3803.3 Location of equipment and piping. Equipment and piping shall not be installed in locations where such equipment and piping is prohibited by NFPA 54, the ((*International*)) *National Fuel Gas Code*.

3803.4 Use of LP-gas containers on roofs or exterior balconies. LP-gas containers on roofs or exterior balconies shall be in accordance with Sections 3803.4.1 through 3803.4.2.

3803.4.1 LP-gas containers on roofs of buildings. LP-gas containers are prohibited on the roofs of buildings and parking garages. [NFPA 58 6.6.7.1]

Exceptions:

1. Temporary installations at construction sites in accordance with Section 3803.5.
2. A single LP-gas container having an individual water capacity not exceeding 48 pounds [nominal 20 lb (9 kg) LP-gas] connected to a LP-gas grill.

3803.4.2 LP-gas containers on exterior balconies. LP-gas containers with a water capacity greater than 2.5 pounds (1 kg) shall not be located on decks or balconies above the first floor that are attached to a Group R-1 or R-2 Occupancy. [NFPA 58 6.19.11.2]

Exceptions:

1. LP-gas containers not exceeding a water capacity of 48 pounds (21.8 kg) [nominal 20 pounds (9 kg) LP-gas] may be used on balconies served by outside stairways if only such stairways are used to transport the container.
2. A single LP-gas container having an individual water capacity not exceeding 48 pounds (21.8 kg) [nominal 20 pounds (9 kg) LP-gas] connected to a LP-gas grill may be located on each exterior balcony of any occupancy except Group R-2 that is licensed by the Washington State Department of Health and Social Services or Washington State Department of Health, if a portable fire extinguisher having a minimum rating of 20-B is located within 30 feet (9144 mm) of the grill.

3803.5 Special uses of LP-gas outside of buildings. Individual container capacities and maximum aggregate quantities of LP-gas used for outdoor cooking, fueling equipment at



1 construction sites, fueling tar kettles, fueling hot tar tank trucks and used in conjunction with
 2 torch-applied roofing operations shall be limited in accordance with Table 3803.5.

3 Portable LP-gas-fired heating appliances located outdoors are allowed in accordance with
 4 Section 603.4.2.

5 **TABLE 3803.5**
 6 **SPECIAL USES OF LP-GAS OUTSIDE OF BUILDINGS**

<u>Use/Activity</u>	<u>Location</u>	<u>Maximum Individual Container Capacity</u>	<u>Maximum Aggregate Quantity</u>
<u>Outdoor Cooking</u> <u>(except R-2 and R-3 where allowed)</u>	<u>Fire District</u>	<u>50 lbs. water capacity¹ (nominal 20 lbs. LP-gas capacity)</u>	<u>100 lbs. water capacity (nominal 40 lbs. LP-gas capacity)</u>
	<u>Elsewhere</u>	<u>50 lbs. water capacity (nominal 20 lbs. LP-gas capacity)</u>	<u>357 lbs. water capacity (nominal 150 lbs. LP-gas capacity)</u>
<u>Fueling Temporary Heating Equipment at Construction Sites</u>	<u>Fire District</u>	<u>Prohibited</u>	<u>Prohibited</u>
	<u>Elsewhere</u>	<u>500 gallons</u>	<u>500 gallons</u>
<u>Fueling Tar Kettles</u>	<u>Fire District</u>	<u>200 lbs. water capacity (nominal 84 lbs. LP-gas capacity)</u>	<u>400 lbs. water capacity (nominal 168 lbs. LP-gas capacity)</u>
	<u>Elsewhere</u>	<u>3024 lbs. water capacity (nominal 1260 lbs. LP-gas capacity)</u>	<u>3024 lbs. water capacity (nominal 1260 lbs. LP-gas capacity)</u>
	<u>On Roofs of Buildings</u>	<u>200 lbs. water capacity (nominal 84 lbs. LP-gas capacity)</u>	<u>400 lbs. water capacity (nominal 168 lbs. LP-gas capacity)</u>



<u>Fueling Hot Tar Tank Trucks</u>	<u>Fire District</u>	<u>200 lbs. water capacity (nominal 84 lbs. LP-gas capacity)</u>	<u>400 lbs. water capacity (nominal 168 lbs. LP-gas capacity)</u>
	<u>Elsewhere</u>	<u>500 gallons</u>	<u>500 gallons</u>
<u>Fueling Roofing Torches</u>	<u>Occupied Buildings</u>	<u>72 lbs. water capacity (nominal 30 lbs. LP-gas capacity)</u>	<u>300 lbs. water capacity (nominal 126 lbs. LP-gas capacity)</u>
	<u>Unoccupied Buildings</u>	<u>72 lbs. water capacity (nominal 30 lbs. LP-gas capacity)</u>	<u>605 lbs. water capacity (nominal 252 lbs. LP-gas capacity)</u>

¹ When the LP-gas is separated from the public by a minimum of 30 feet, or by a noncombustible partition, the maximum allowable individual container size may be increased to 239 lbs. water capacity (nominal 100 lbs. LP-gas capacity) and the maximum allowable aggregate quantity may be increased to 1,000 lbs. water capacity (nominal 420 lbs. LP-gas capacity).

**SECTION 3804
 LOCATION OF LP-GAS CONTAINERS**

3804.1 General. The storage and handling of LP-gas and the installation and maintenance of related equipment shall comply with NFPA58 as amended and be subject to the approval of the *fire code official*, except as provided in this chapter.

3804.2 Maximum capacity within established limits. ~~((Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7570 L) (see Section 3 of the Sample Ordinance for Adoption of the International Fire Code on page xiii).~~

Exception: ~~))~~ In particular installations, ~~((this))~~ the location and capacity limit of LP-gas installations ((shall)) may be determined by the fire code official, after consideration of special features such as topographical conditions, nature of occupancy, and proximity to buildings, capacity of proposed LP-gas containers, degree of fire protection to be provided, proximity to residential, educational and institutional occupancies and other high-risk areas and capabilities of the local fire department.



1 **3804.2.1 Fire District restrictions.** Storage and use of LP-gas containers having an individual
2 capacity in excess of 239 pounds (108.4 kg) water capacity [nominal 100 pounds (48.3 kg) LP-
3 gas] and all stationary installations are prohibited in the *Fire District*.

4 **Exception:** Containers and stationary installations up to 500 gallons (1892 L) LP-gas capacity
5 west of Alaskan Way.

6 ***

7 **3804.3.1 Special hazards.** LP-gas containers shall also be located with respect to special
8 hazards including, but not limited to, above-ground flammable or *combustible liquid* tanks,
9 oxygen or gaseous hydrogen containers, flooding or electric power lines as specified in Section
10 6.4.5 of NFPA 58 as amended.

11 **3804.4 Multiple LP-gas container installations.** Multiple LP-gas container installations with a
12 total water storage capacity o more than 180,000 gallons (681 300 L) [150,000-gallon (567 750
13 L) LP-gas capacity] shall be subdivided into groups containing not more than 180,000 gallons
14 (681 300 L) in each group. Such groups shall be separated by a distance of not less than 50 feet
15 (15 240 mm), unless the containers are protected in accordance with one of the following:

- 16 1. Mounded in an *approved* manner.
- 17 2. Protected with *approved* insulation on areas that are subject to impingement of ignited gas
18 from pipelines or other leakage.
- 19 3. Protected by firewalls of *approved* construction.
- 20 4. Protected by an *approved* system for application of water as specified in Table 6.4.2 of NFPA
21 58 as amended.
- 22 5. Protected by other *approved* means.

23 Where one of these forms of protection is provided, the separation shall not be less than 25 feet
24 (7620 mm) between LP-gas container groups.

25 ***

26 **3806.2 Overfilling.** LP-gas containers shall not be filled or maintained with LP-gas in excess of
27 either the volume determined using the fixed liquid-level gauge installed by the manufacturer or
28 the weight determined by the required percentage of the water capacity marked on the container.
Portable LP-gas containers shall not be refilled unless equipped with an overfilling prevention
device (OPD) where required by Section 5.7.3 of NFPA 58 as amended.

3806.3 Dispensing locations. The point of transfer of LP-gas from one LP-gas container to
another shall be separated from exposures as specified in NFPA 58 as amended.

3807.2 Smoking and other sources of ignition. "No Smoking" signs complying with Section
310 shall be posted when required by the *fire code official*. Smoking within 25 feet (7620 mm) of



1 a point of transfer, while filling operations are in progress at LP-gas containers or vehicles, shall
2 be prohibited.

3 Control of other sources of ignition shall comply with Chapter 3 of this code and Section 6.22 of
4 NFPA 58 as amended.

5 ***

6 **3808.1 General.** Fire protection shall be provided for installations having storage LP-gas
7 containers with a water capacity of more than 4,000 gallons (15 140 L), as required by Section
8 6.25 of NFPA 58 as amended.

9 **3808.2 Portable fire extinguishers.** Portable fire extinguishers complying with Section 906
10 shall be provided as specified in NFPA 58 as amended.

11 ***

12 **3809.9 Storage within buildings accessible to the public and residential occupancies.** Storage
13 of LP-gas within buildings accessible to the public and in residential occupancies shall be in
14 accordance with this section.

15 **3809.9.1 Storage within buildings accessible to the public.** Department of Transportation
16 (DOTn) specification cylinders with maximum water capacity of 21/2 pounds (1 kg) (~~used in~~
17 ~~completely self-contained hand torches and similar application~~) are allowed to be stored or
18 displayed in a building accessible to the public. The quantity of LP-gas shall not exceed (~~200~~
19 ~~pounds (91 kg))~~ 25 pounds (11.4 kg) in the Fire District and 100 pounds (45.3 kg) outside the
20 Fire District except as provided in Section 3809.11.

21 **Exception:** Storage in restaurants and at food service locations of 10-oz (238-g) butane
22 nonrefillable containers is limited to no more than 24 containers, and an additional 24 10-oz
23 (238-g) butane nonrefillable containers stored in another location within the building if
24 constructed with at least a 2-hour fire wall protection. [NFPA 8.3.2.3]

25 **3809.9.2 Storage within residential occupancies.** Storage of containers within residential
26 occupancies, including the basement or any storage area in a common basement storage area in
27 multi-family occupancies and attached or detached garages, is limited to containers each having a
28 maximum water capacity of 2.5 pounds (1 kg) and not exceeding 5.4 pound (2.4-kg) aggregate
water capacity per living space unit. [NFPA 58 8.3.5]

3809.10 Storage within buildings not accessible to the public. The maximum quantity allowed
in one storage location in buildings not accessible to the public, such as industrial buildings, shall
not exceed a water capacity of 735 pounds (334 kg) [nominal 300 pounds (136 kg) of LP-gas].
Where additional storage locations are required on the same floor within the same building, they



shall be separated by a minimum of 300 feet (91 440 mm). Storage beyond these limitations shall comply with Section 3809.11.

Individual LP-gas container capacities and aggregate quantities of LP-gas allowed to be stored within buildings not accessible to the public are limited in accordance with Table 3809.10.

TABLE 3809.10
STORAGE WITHIN BUILDINGS NOT ACCESSIBLE TO THE PUBLIC¹

<u>Location</u>	<u>Max Individual Container Capacity</u>	<u>Maximum Aggregate Quantity</u>
<u>Fire District</u>	<u>72 lbs. water capacity (nominal 30 lbs. LP-gas capacity)</u>	<u>144 lbs. water capacity (nominal 60 lbs. LP-gas)</u>
<u>Elsewhere</u>	<u>72 lbs. water capacity (nominal 30 lbs. LP-gas capacity)</u>	<u>735 lbs. water capacity (nominal 300 lbs. LP-gas capacity)</u>

¹ Weight of LP-gas per gallon = 4.20 lbs.

3809.11.2 Construction. The construction of such buildings and rooms shall comply with requirements for Group H occupancies in the *International Building Code*, Chapter 10 of NFPA 58 as amended and both of the following:

1. Adequate vents shall be provided to the outside at both top and bottom, located at least 5 feet (1524 mm) from building openings.
2. The entire area shall be classified for the purposes of ignition source control in accordance with Section 6.22 of NFPA 58 as amended.

3809.12 Location of storage outside of buildings. Storage outside of buildings of LP-gas containers awaiting use, resale or part of a cylinder exchange program shall be located in accordance with Table 3809.12-A.



TABLE 3809.12-A
SEPARATION FROM EXPOSURES OF LP-GAS CONTAINERS AWAITING USE,
RESALE OR EXCHANGE STORED OUTSIDE OF BUILDINGS

MINIMUM SEPARATION DISTANCE FROM STORED CYLINDERS TO (feet):							
QUANTITY OF LP-GAS STORED (pounds)	Nearest important building or group of buildings or line of adjoining property that may be built upon	Line of adjoining property occupied by schools, places of religious worship, hospitals, athletic fields or other points of public gathering; busy thoroughfares; or sidewalks	LP-gas dispensing station	Doorway or opening to a building with two or more means of egress	Doorway or opening to a building with one means of egress	Combustible materials	Motor vehicle fuel dispenser
720 or less	0	0	5	5	10	10	20
721 - 2,500	(0) 10	10	10	5 ¹	10	10	20
2,501 - 6,000	10	10	10	10	10	10	20
6,001 - 10,000	20	20	20	20	20	10	20
Over 10,000	25	25	25	25	25	10	20

For SI: 1 foot = 304.8 mm, 1 pound = 0.454 kg.

¹5 foot (1524 mm) setback allowed to one of the two exits; 10 foot (3048 mm) setback required to second exit.

Maximum aggregate quantities of LP-gas located outside of buildings accessible to the public shall be in accordance with Table 3809.12-B.

TABLE 3809.12-B
STORAGE OUTSIDE BUILDINGS ACCESSIBLE TO THE PUBLIC¹

<u>Location</u>	<u>Max Individual Container Capacity</u>	<u>Maximum Aggregate Quantity</u>



Fire District	<u>72 lbs. water capacity (nominal 30 lbs. LP-gas)</u>	<u>357 lbs. water capacity (nominal 150 lbs. LP-gas)</u>
<u>Elsewhere</u>	<u>72 pounds water capacity (nominal 30 lbs. LP-gas)</u>	<u>2592 lbs. water capacity (nominal 1080 lbs. LP-gas)²</u>

¹ Weight of LP-gas per gallon = 4.20 lbs.

² Actual maximum quantity shall be determined on a case by case basis but shall not exceed the maximum quantity set forth here.

3809.13 Protection of containers. LP-gas containers shall be stored within a suitable enclosure or otherwise protected against tampering. Vehicular protection shall be provided in accordance with Section 312 ((as)) if required by the *fire code official*.

3811.3 Garaging. Garaging of LP-gas tank vehicles shall be as specified in NFPA 58 as amended. Vehicles with LP-gas fuel systems are allowed to be stored or serviced in garages as specified in Section 11.15 of NFPA 58 as amended.

Point of Information

The following Tables may be used to approximate container capacity conversions.

FOR PORTABLE DOT/ ICC/ CTC CYLINDER APPLICATIONS:

<u>Propane Capacity</u>		<u>Water Capacity</u>	
<u>(lb)</u>	<u>(gal)</u>	<u>(lb)</u>	<u>(gal)</u>
<u>5</u>	<u>1.2</u>	<u>12</u>	<u>1.4</u>



<u>10</u>	<u>2.4</u>	<u>23.8</u>	<u>2.8</u>
<u>14</u>	<u>3.3</u>	<u>34</u>	<u>4.1</u>
<u>20</u>	<u>4.7</u>	<u>48</u>	<u>5.7</u>
<u>25</u>	<u>5.9</u>	<u>59.5</u>	<u>7.1</u>
<u>30</u>	<u>7.1</u>	<u>72</u>	<u>8.6</u>
<u>40</u>	<u>9.5</u>	<u>95</u>	<u>11</u>
<u>60</u>	<u>14</u>	<u>144</u>	<u>17</u>
<u>100</u>	<u>24</u>	<u>239</u>	<u>29</u>
<u>150</u>	<u>35</u>	<u>357</u>	<u>43</u>
<u>200</u>	<u>47</u>	<u>477</u>	<u>57</u>
<u>300</u>	<u>71</u>	<u>715</u>	<u>86</u>
<u>420</u>	<u>99</u>	<u>1,000</u>	<u>119</u>

FOR STATIONARY ASTM CONTAINER APPLICATIONS:

<u>Water Capacity (gallons)</u>	<u>LP-gas Capacity (gallons)*</u>	<u>LP-gas Capacity (pounds)</u>
<u>100</u>	<u>80</u>	<u>338</u>
<u>125</u>	<u>100</u>	<u>423</u>
<u>150</u>	<u>120</u>	<u>508</u>
<u>250</u>	<u>200</u>	<u>848</u>
<u>325</u>	<u>260</u>	<u>-</u>
<u>500</u>	<u>400</u>	<u>-</u>
<u>1,000</u>	<u>800</u>	<u>-</u>

* Based on propane specific gravity of .508 at 60°F

Section 28. Chapter 45 of the 2009 International Fire Code is amended as follows:

**CHAPTER 45
 MARINAS**

**SECTION 4501
 SCOPE**

4501.1 Scope. Marina facilities shall be in accordance with this chapter.



1 **Exception:** Approved designated facilities and shipyards in accordance with the
2 Administrative Rule 26.02.09, *Designated Hot Work Facilities and Shipyards* and any
3 future revisions of this rule adopted by the *fire code official*.

4 ***

5 **4502.1 Definitions.** The following words and terms shall, for the purpose of this chapter and as
6 used elsewhere in this code, have the meanings shown herein.

7 **COVERED BOAT MOORAGE.** A pier or system of floating or fixed accessways to which
8 vessels on water may be secured, 50 percent or more of which is covered by a roof.

9 **DESIGNATED HOT WORK FACILITY.** Those piers, designated by the *fire code official*,
10 which by virtue of their construction, location, fire protection, emergency vehicle access and fire
11 hydrant availability, are suitable to allow certain repairs to *vessels*.

12 **FLOAT.** A floating structure normally used as a point of transfer for passengers and goods, or
13 both, for mooring purposes.

14 **MARINA.** Any portion of the ocean or inland water, either naturally or artificially protected, for
15 the mooring, servicing or safety of vessels, and ~~((shall include))~~including artificially protected
16 works, the public or private lands ashore, ~~((and))~~ structures or facilities, other than floating
17 homes, provided within the enclosed body of water and ashore for the mooring or servicing of
18 vessels or the servicing of their crews or passengers.

19 **PIER.** ~~((A structure built over the water, supported by pillars or piles, and used as a landing~~
20 ~~place, pleasure pavilion or similar purpose.))~~ A structure, usually of greater length than width, of
21 timber, stone, concrete or other material, having a deck and projecting from the shore into waters
22 so that *vessels* may be moored alongside for loading, unloading, storage, repairs or commercial
23 uses.

24 **[B] SUBSTRUCTURE.** That portion of the construction below and including the deck
25 immediately above the water.

26 **[B] SUPERSTRUCTURE.** That portion of construction above the deck.

27 **Exception:** *Covered boat moorage.*

28 **VESSEL.** A ~~((motorized))~~ watercraft, other than a seaplane on the water, used or capable of
being used as a means of transportation. ~~((Non-transportation vessels, such as houseboats and
boathouses, are included in this definition.))~~



1 **WHARF.** A structure or bulkhead constructed of wood, stone, concrete or similar material built
2 ~~((at the shore of a harbor, lake or river))~~ along and parallel to waters for *vessels* to lie alongside
of, and to anchor piers or floats.

3 ***

4 **4503.5.1 Labeling electrical disconnects.** Electrical transformers, control panels and breaker
5 panels shall be readily accessible, clearly labeled and indicate the areas they service. See also
6 Section 605.

7 **4503.6 Berthing and storage.** Berthing and storage shall be in accordance with Chapter 7 of
8 NFPA 303.

9 **4503.7 ~~((Slip identification.))~~ Signage.** At the shore end of *piers, wharves and floats*
10 conspicuous signage shall be located indicating the address of the *piers, wharves and floats* and,
11 for those structures that are designed to support vehicles, the weight limit the structure can
12 support. Numbers and letters shall be easily legible and have high contrast with the color of the
13 sign background. Numbers and letters shall not be less than 5 inches (127 mm) in height.

14 Slips and mooring spaces shall be individually identified by an *approved* numeric or alphabetic
15 designator. Space designators shall be posted at the space. Signs indicating the space designators
16 located on finger piers and floats shall be posted at the base of all piers, finger piers, floats and
17 finger floats.

18 **4503.8 Emergency Plan.** Owners of piers, wharves, floats and marinas shall prepare an
19 emergency plan for the facility. The plan shall include procedures for fire department notification
20 and fire evacuation, and shall include the location of portable fire extinguishers and hose
21 cabinets, sprinkler and standpipe system control valves, fire department connections and
22 electrical disconnects.

23 **4503.8 Point of Information**

24 For examples of emergency plans, see information bulletins located at www.seattle.gov/fire titled
25 Emergency Procedures for Public Occupancies and Fire Evacuation Planning.

26 **SECTION 4504**

27 **FIRE PROTECTION EQUIPMENT**

28 **4504.1 General.** Piers, marinas, ~~((and-))~~ wharves ~~((with facilities for mooring or servicing five or~~
~~more vessels))~~, and marine motor fuel-dispensing facilities shall be equipped with fire protection
~~((equipment))~~ features in accordance with Sections 4504.2 through 4504.6.

~~4504.2 Standpipes. ((Marinas and boatyards shall be equipped throughout with standpipe~~
~~systems in accordance with NFPA 303. Systems shall be provided with hose connections located~~

