

CHAPTER 31

SPECIAL CONSTRUCTION

SECTION 3101 GENERAL

3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, awnings and canopies, marquees, signs, and towers and antennas.

SECTION 3102 MEMBRANE STRUCTURES

3102.1 General. The provisions of this section shall apply to air-supported, air-inflated, membrane-covered cable and membrane-covered frame structures, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with the *International Fire Code*. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy, are required to meet only the requirements of Sections 3102.3.1 and 3102.7.

3102.2 Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein:

AIR-INFLATED STRUCTURE. A building where the shape of the structure is maintained by air pressurization of cells or tubes to form a barrel vault over the usable area. Occupants of such a structure do not occupy the pressurized area used to support the structure.

AIR-SUPPORTED STRUCTURE. A building wherein the shape of the structure is attained by air pressure and occupants of the structure are within the elevated pressure area. Air-supported structures are of two basic types:

Double skin. Similar to a single skin, but with an attached liner that is separated from the outer skin and provides an airspace which serves for insulation, acoustic, aesthetic or similar purposes.

Single skin. Where there is only the single outer skin and the air pressure is directly against that skin.

CABLE-RESTRAINED, AIR-SUPPORTED STRUCTURE. A structure in which the uplift is resisted by cables or webbings which are anchored to either foundations or dead men. Reinforcing cable or webbing is attached by various methods to the membrane or is an integral part of the membrane. This is not a cable-supported structure.

MEMBRANE-COVERED CABLE STRUCTURE. A nonpressurized structure in which a mast and cable system provides support and tension to the membrane weather barrier and the membrane imparts stability to the structure.

MEMBRANE-COVERED FRAME STRUCTURE. A nonpressurized building wherein the structure is composed of a

rigid framework to support a tensioned membrane which provides the weather barrier.

NONCOMBUSTIBLE MEMBRANE STRUCTURE. A membrane structure in which the membrane and all component parts of the structure are noncombustible.

3102.3 Type of construction. Noncombustible membrane structures shall be classified as Type IIB construction. Noncombustible frame or cable-supported structures covered by an approved membrane in accordance with Section 3102.3.1 shall be classified as Type IIB construction. Heavy timber frame-supported structures covered by an approved membrane in accordance with Section 3102.3.1 shall be classified as Type IV construction. Other membrane structures shall be classified as Type V construction.

Exception: Plastic less than 30 feet (9144 mm) above any floor used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers is not required to meet the fire propagation performance criteria of NFPA 701.

3102.3.1 Membrane and interior liner material. Membranes and interior liners shall be either noncombustible as set forth in Section 703.4 or meet the fire propagation performance criteria of NFPA 701 and the manufacturer's test protocol.

Exception: Plastic less than 20 mil (0.5 mm) in thickness used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers is not required to meet the fire propagation performance criteria of NFPA 701.

3102.4 Allowable floor areas. The area of a membrane structure shall not exceed the limitations set forth in Table 503, except as provided in Section 506.

3102.5 Maximum height. Membrane structures shall not exceed one story nor shall such structures exceed the height limitations in feet set forth in Table 503.

Exception: Noncombustible membrane structures serving as roofs only.

3102.6 Mixed construction. Membrane structures shall be permitted to be utilized as specified in this section as a portion of buildings of other types of construction. Height and area limits shall be as specified for the type of construction and occupancy of the building.

3102.6.1 Noncombustible membrane. A noncombustible membrane shall be permitted for use as the roof or as a skylight of any building or atrium of a building of any type of construction provided it is at least 20 feet (6096 mm) above any floor, balcony or gallery.

3102.6.1.1 Membrane. A membrane meeting the fire propagation performance criteria of NFPA 701 shall be permitted to be used as the roof or as a skylight on build-

ings of Type IIB, III, IV and V construction, provided it is at least 20 feet (6096 mm) above any floor, balcony or gallery.

3102.7 Engineering design. The structure shall be designed and constructed to sustain dead loads; loads due to tension or inflation; live loads including wind, snow or flood and seismic loads and in accordance with Chapter 16.

3102.8 Inflation systems. Air-supported and air-inflated structures shall be provided with primary and auxiliary inflation systems to meet the minimum requirements of Sections 3102.8.1 through 3102.8.3.

3102.8.1 Equipment requirements. This inflation system shall consist of one or more blowers and shall include provisions for automatic control to maintain the required inflation pressures. The system shall be so designed as to prevent overpressurization of the system.

3102.8.1.1 Auxiliary inflation system. In addition to the primary inflation system, in buildings exceeding 1,500 square feet (140 m²) in area, an auxiliary inflation system shall be provided with sufficient capacity to maintain the inflation of the structure in case of primary system failure. The auxiliary inflation system shall operate automatically when there is a loss of internal pressure and when the primary blower system becomes inoperative.

3102.8.1.2 Blower equipment. Blower equipment shall meet the following requirements:

1. Blowers shall be powered by continuous-rated motors at the maximum power required for any flow condition as required by the structural design.
2. Blowers shall be provided with inlet screens, belt guards and other protective devices as required by the building official to provide protection from injury.
3. Blowers shall be housed within a weather-protecting structure.
4. Blowers shall be equipped with backdraft check dampers to minimize air loss when inoperative.
5. Blower inlets shall be located to provide protection from air contamination. The location of inlets shall be approved.

3102.8.2 Standby power. Wherever an auxiliary inflation system is required, an approved standby power-generating system shall be provided. The system shall be equipped with a suitable means for automatically starting the generator set upon failure of the normal electrical service and for automatic transfer and operation of all of the required electrical functions at full power within 60 seconds of such service failure. Standby power shall be capable of operating independently for a minimum of 4 hours.

3102.8.3 Support provisions. A system capable of supporting the membrane in the event of deflation shall be provided for in air-supported and air-inflated structures having an occupant load of 50 or more or where covering a swimming pool regardless of occupant load. The support system shall be capable of maintaining membrane structures used

as a roof for Type I construction not less than 20 feet (6096 mm) above floor or seating areas. The support system shall be capable of maintaining other membranes at least 7 feet (2134 mm) above the floor, seating area or surface of the water.

SECTION 3103 TEMPORARY STRUCTURES

3103.1 See Section 106.13. (~~General.~~ The provisions of this section shall apply to structures erected for a period of less than 180 days. Tents and other membrane structures erected for a period of less than 180 days shall comply with the *International Fire Code*. Those erected for a longer period of time shall comply with applicable sections of this code.

~~**3103.1.1 Permit required.** Temporary structures that cover an area in excess of 120 square feet (11.16 m²), including connecting areas or spaces with a common means of egress or entrance which are used or intended to be used for the gathering together of 10 or more persons, shall not be erected, operated or maintained for any purpose without obtaining a permit from the building official.~~

~~**3103.2 Construction documents.** A permit application and construction documents shall be submitted for each installation of a temporary structure. The construction documents shall include a site plan indicating the location of the temporary structure and information delineating the means of egress and the occupant load.~~

~~**3103.3 Location.** Temporary structures shall be located in accordance with the requirements of Table 602 based on the fire-resistance rating of the exterior walls for the proposed type of construction.~~

~~**3103.4 Means of egress.** Temporary structures shall conform to the means of egress requirements of Chapter 10 and shall have a maximum exit access travel distance of 100 feet (30 480 mm).)~~

SECTION 3104 PEDESTRIAN WALKWAYS AND TUNNELS

3104.1 General. This section shall apply to connections between buildings such as pedestrian walkways or tunnels, located at, above or below grade level, that are used as a means of travel by persons. The pedestrian walkway shall not contribute to the building area or the number of stories or height of connected buildings.

3104.2 Separate structures. Connected buildings shall be considered to be separate structures.

Exceptions:

1. Buildings on the same lot in accordance with Section 503.1.2.
2. For purposes of calculating the number of Type B units required by Chapter 11, structurally connected buildings and buildings with multiple wings shall be considered one structure.

3104.3 Construction. The pedestrian walkway shall be of noncombustible construction.

Exceptions:

1. Combustible construction shall be permitted where connected buildings are of combustible construction.
2. Fire-retardant-treated wood, in accordance with Section 603.1, Item 1.3, shall be permitted for the roof construction of the pedestrian walkway where connected buildings are a minimum of Type I or II construction.

3104.4 Contents. Only materials and decorations approved by the building official shall be located in the pedestrian walkway.

3104.5 Fire barriers between pedestrian walkways and buildings. Walkways shall be separated from the interior of the building by fire-barrier walls with a fire-resistance rating of not less than 2 hours. This protection shall extend vertically from a point 10 feet (3048 mm) above the walkway roof surface or the connected building roof line, whichever is lower, down to a point 10 feet (3048 mm) below the walkway and horizontally 10 feet (3048 mm) from each side of the pedestrian walkway. Openings within the 10-foot (3048 mm) horizontal extension of the protected walls beyond the walkway shall be equipped with devices providing a $\frac{3}{4}$ -hour fire protection rating in accordance with Section 715.

Exception: The walls separating the pedestrian walkway from a connected building are not required to have a fire-resistance rating by this section where any of the following conditions exist:

1. The distance between the connected buildings is more than 10 feet (3048 mm), the pedestrian walkway and connected buildings, except for open parking garages, are equipped throughout with an automatic sprinkler system in accordance with NFPA 13 and the wall is constructed of a tempered, wired or laminated glass wall and doors subject to the following:
 - 1.1. The glass shall be protected by an automatic sprinkler system in accordance with NFPA 13 and the sprinkler system shall completely wet the entire surface of interior sides of the glass wall when actuated.
 - 1.2. The glass shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler operates.
 - 1.3. Obstructions shall not be installed between the sprinkler heads and the glass.
2. The distance between the connected buildings is more than 10 feet (3048 mm) and both sidewalls of the pedestrian walkway are at least 50 percent open with the open area uniformly distributed to prevent the accumulation of smoke and toxic gases.
3. Buildings are on the same lot in accordance with Section 503.1.2.
4. Where exterior walls of connected buildings are required by Section 704 to have a fire-resistance rating greater than 2 hours, the walkway shall be equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.

The previous exceptions shall apply to the pedestrian walkways that have a maximum height above grade of three stories or 40 feet (12 192 mm), or five stories or 55 feet (16 764 mm) where sprinklered.

3104.6 Public way. Pedestrian walkways over a public way shall also comply with Chapter 32 and the Street Use Ordinance, Seattle Municipal Code Title 15.

3104.7 Egress. Access shall be provided at all times to a pedestrian walkway that serves as a required exit.

3104.8 Width. The unobstructed width of pedestrian walkways shall not be less than 36 inches (914 mm). The total width shall not exceed 30 feet (9144 mm).

3104.9 Exit access travel. The length of exit access travel shall not exceed 200 feet (60 960 mm).

Exceptions:

1. Exit access travel distance on a pedestrian walkway equipped throughout with an automatic sprinkler system in accordance with NFPA 13 shall not exceed 250 feet (76 200 mm).
2. Exit access travel distance on a pedestrian walkway constructed with both sides at least 50 percent open shall not exceed 300 feet (91 440 mm).
3. Exit access travel distance on a pedestrian walkway constructed with both sides at least 50 percent open, and equipped throughout with an automatic sprinkler system in accordance with NFPA 13, shall not exceed 400 feet (122 m).

3104.10 Tunneled walkway. Separation between the tunneled walkway and the building to which it is connected shall not be less than 2-hour fire-resistant construction and openings therein shall be protected in accordance with Table 715.4.

SECTION 3105 AWNINGS AND CANOPIES

~~((3105.1 General. Awnings or canopies shall comply with the requirements of this section and other applicable sections of this code.~~

~~3105.2 Definition. The following term shall, for the purposes of this section and as used elsewhere in this code, have the meaning shown herein:~~

~~**RETRACTABLE AWNING.** A retractable awning is a cover with a frame that retracts against a building or other structure to which it is entirely supported.~~

~~3105.3 Design and construction. Awnings and canopies shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings shall have frames of noncombustible material, fire-retardant-treated wood, wood of Type IV size, or 1-hour construction with combustible or noncombustible covers and shall be either fixed, retractable, folding or collapsible.~~

3105.4 Canopy materials. Canopies shall be constructed of a rigid framework with an approved covering that meets the fire propagation performance criteria of NFPA 701 or has a flame spread index not greater than 25 when tested in accordance with ASTM E 84.)

3105.1 Scope. All awnings and canopies are subject to the requirements of this section. Awnings and canopies containing electrical wiring and light fixtures are also subject to the *Seattle Electrical Code*. Awnings and canopies over a public place shall comply with the Street Use Ordinance (Title 15, *Seattle Municipal Code*).

3105.2 DEFINITIONS. For the purposes of this chapter, certain terms are defined as follows:

AWNING. A protective covering with a nonrigid surface projecting from a building.

AWNING SIGN. A sign applied to the surface of an awning or canopy.

CANOPY. A protective covering with a rigid surface projecting from a building. Marquees are a type of canopy.

FIRE-RETARDANT COVERING. Material with a flame spread rating of less than 15 when tested to ASTM E 84.

SIGN. See Section 3107.3.

VENEER. See Section 1402.1.

3105.3 Permits.

3105.3.1 Permits required. No awning or canopy shall be erected, constructed, altered or structurally revised without a permit issued by the building official, except as specifically exempted in Section 106.2.

A sign/awning permit shall be required for an awning or canopy specific to any business entity. A single permit may be issued for a single awning or canopy which serves a multi-tenant building. A single permit may be issued for all awning signs for each business entity installed concurrently. Awnings signs for separate business entities shall have a separate sign permit whether or not located on a separate awning. Subsequent installation of an awning, canopy or awning sign shall require a separate permit.

Painting, cleaning, repair and other maintenance does not require a permit unless a structural change is made or the awning is covered with new fabric.

3105.3.2 Permit application. To obtain a permit required by this chapter, the applicant shall file an application which shall include the following:

1. The location of the proposed awning or canopy on the building;
2. Plans or drawings and specifications;
3. Signature of the building owner or an authorized agent;
4. Permit fee as specified in the Fee Subtitle.

3105.4 Maintenance. All awnings and canopies, together with their supports, braces and anchors, shall be kept in good repair and in a proper state of preservation. The surface of all awnings and canopies shall be kept clean and protected with a sealer-type solution. The building official is

authorized to order the removal of any awning or canopy not properly maintained or no longer in use and may revoke the permit.

3105.5 Materials. Awnings shall have approved fire-retardant coverings. Frames shall be of materials allowed for the type of construction of the building, except that aluminum frames are allowed with all construction types.

3105.6 Welding. All structural welding shall conform to the requirements of Chapter 20 for aluminum and Chapter 22 for steel.

3105.7 Electric signs and lights. No electric sign, including a neon assembly, shall be attached to, or located on, any part of the frame of an awning.

Where light fixtures are attached to an awning or canopy, adequate bracing shall be designed and installed to sustain the additional loads imposed by the weight of the fixtures.

Lamps shall be located at least 12 inches (305 mm) from combustible material.

3105.8 Obstruction of exits, light and ventilation. No portion of the surface or support of an awning or canopy, including a retracted awning, shall interfere with the free use of a fire escape, exit or standpipe.

Awnings and canopies shall not reduce the light or ventilation to any occupancy below requirements of Chapter 12 of this code.

3105.9 Location. All portions of awnings and canopies shall be at least 8 feet (2438 mm) above any walking surface immediately below.

All portions of awnings and canopies located over public property shall be at least 8 feet (2438 mm) above grade and at least 2 feet (610 mm) from the curb.

Awnings and canopies shall be located where they will not obstruct, obscure or interfere with any publicly maintained street tree, streetlight or utility pole.

3105.10 Supports. The supports for awnings and canopies shall be located on private property.

Exception: Where approved by the Director of Transportation, stanchions for awnings located at the entrance to buildings are permitted to be installed on public property if they are located in line with other street furniture. Individual stanchions shall have a cross sectional dimension or diameter no greater than 6 inches (152 mm).

3105.11 Drainage. Awnings and canopies shall be provided with conductors for water which shall drain back to the building line and be connected to a sewer or, if approved by the Director of Seattle Public Utilities, to a dry well or under a sidewalk to a gutter.

Exception: Awnings and canopies are permitted to drain away from the building line, provided the water drains uniformly over the edge. The upper surface of canopies shall be sloped a minimum of 1 unit vertical in 48 units horizontal (2 percent slope). Awnings and canopies complying with this exception are permitted to drain onto the public right of way.

3105.12 Design loads. Awnings and canopies shall be designed and constructed to resist all forces to which they are subject as specified in Chapter 16.

3105.13 Pitch. The upper surface of all awnings shall have a pitch of at least 30 degrees (0.52 rad) from the horizontal. The building official is authorized to approve awnings with a smaller pitch when the design is prepared by a licensed structural engineer.

3105.14 Attachment of awnings. All awnings attached to masonry, concrete or steel shall be safely secured with steel anchors and bolts, or approved rated expansion bolts of sufficient size and anchorage to support the loads safely. No support or attachment for an awning or canopy shall be connected to, supported by, or fastened to exterior veneer.

3105.15 Size. Where an awning or canopy is located at an exit door from a stairway or exit passageway that is fire-resistance-rated, the distance the awning or canopy projects from the building shall be no more than one-half the distance from the walking surface to the lowest point of the bottom of the awning or canopy.

SECTION 3106 (MARQUEES) No Requirements

((3106.1 General. Marquees shall comply with this section and other applicable sections of this code.

3106.2 Thickness. The maximum height or thickness of a marquee measured vertically from its lowest to its highest point shall not exceed 3 feet (914 mm) where the marquee projects more than two-thirds of the distance from the property line to the curb line, and shall not exceed 9 feet (2743 mm) where the marquee is less than two-thirds of the distance from the property line to the curb line.

3106.3 Roof construction. Where the roof or any part thereof is a skylight, the skylight shall comply with the requirements of Chapter 24. Every roof and skylight of a marquee shall be sloped to downspouts that shall conduct any drainage from the marquee in such a manner so as not to spill over the sidewalk.

3106.4 Location prohibited. Every marquee shall be so located as not to interfere with the operation of any exterior standpipe, and such that the marquee does not obstruct the clear passage of stairways or exit discharge from the building or the installation or maintenance of street lighting.

3106.5 Construction. A marquee shall be supported entirely from the building and constructed of noncombustible materials. Marquees shall be designed as required in Chapter 16. Structural members shall be protected to prevent deterioration.))

SECTION 3107 SIGNS

((3107.1 General. Signs shall be designed, constructed and maintained in accordance with this code.))

3107.1 Purpose. It is the purpose of this chapter to safeguard the life, health, property and welfare of the citizens of the City by regulating and controlling the design, quality of materials,

construction, location, illumination and maintenance of signs and sign structures visible from any portion of public property or rights-of-way.

3107.2 Enforcement.

3107.2.1 Authority. The Director of Transportation and the building official shall enforce the provisions of this chapter as it relates to signs over public places as defined in Section 15.02.040 of the *Seattle Municipal Code*.

3107.2.2 Other requirements. All signs shall comply with any additional regulations as to type, height, clearance, size, copy, design and location imposed by the *Land Use Code*, and Title 15, *Seattle Municipal Code*, Street Use Ordinance, as amended, and other ordinances of the City.

3107.3 Definitions. For the purposes of this chapter, certain terms shall be defined as follows:

BUILDING FAÇADE. The portion of any exterior elevation of a building extending from the grade of the building to the top of the parapet wall or eaves, for the entire width of the building elevation.

DISPLAY SURFACE. The area of a sign structure used to display the advertising message.

ELECTRIC SIGN. Any sign containing electrical wiring, but not including signs illuminated by an exterior light source.

NONSTRUCTURAL TRIM. The moldings, battens, caps, nailing strips, latticing or cutouts which are attached to the sign structure.

ON-PREMISE SIGN. A sign or sign device used solely by the business establishment on the lot where the sign is located which displays either 1) commercial messages which are strictly applicable only to a use of the premises on which it is located, including signs or sign devices indicating the business transacted, principal services rendered, goods sold or produced on the premises, name of the business, and name of the person, firm or corporation occupying the premises; or 2) noncommercial messages. This definition shall not include signs located within a structure except those signs oriented so as to be visible through a window.

PROJECTING SIGN. A sign other than a wall sign, which projects from and is supported by a wall of a building or structure.

PROJECTION. The distance by which a sign extends over public property or beyond the building line.

ROOF SIGN. A sign erected upon or above a roof or parapet of a building or structure.

SIGN. Any medium, including its structure and component parts, which is used or intended to be used to attract attention to the subject matter for advertising, identification or informative purposes.

SIGN STRUCTURE. Any structure which supports or is designed to support any sign as defined in this chapter. A sign structure may be a single pole or may be an integral part of the building.

WALL SIGN. Any sign attached to and supported by a wall of a building or structure, with the exposed face of the sign on a

plane parallel to the plane of the wall or any sign painted directly on a building.

3107.4 Permits.

3107.4.1 Permits required. A permit issued by the building official is required before any sign is erected, re-erected, constructed, painted, posted, applied, altered, structurally revised or repaired, except as provided in this chapter.

A permit is required for existing signs when a different business entity uses the sign.

Note: Electrical permits are required for branch circuits supplying power to electric signs pursuant to the *Seattle Electrical Code*, and street use permits shall be obtained for signs over any public place pursuant to the Street Use Ordinance, *Seattle Municipal Code* Chapter 15. Review by the Department of Neighborhoods is required for signs located on the site of a historic building, or in a landmark or special review district.

3107.4.2 Signs exempt from permits. Permits are not required for sign activity listed in this Section 3107.4.2. The owner of any such sign is responsible for erection and maintenance of such sign and for compliance with the provisions of this chapter and any other law or ordinance regulating signs:

1. Signs that are located within the interior of the building and that are not visible from the public right-of-way unless:
 - 1.1. The sign is mounted within an interior shared pedestrian mall of a multi-tenant retail facility; located over or adjoining the pedestrian walking surface; and
 - 1.2. When any individually mounted element of the sign is greater than 5 square feet (0.46 m²) in area or when it is an electric sign;
2. The changing of the advertising copy or message on lawfully erected signs specifically designed for the use of replaceable copy unless a different business entity uses the sign;
3. Normal maintenance such as painting, repainting, cleaning and repairing, unless a structural or electrical change is made or a different business entity uses the sign;
4. On-premises signs that are nonelectrical and nonilluminated with an aggregate area of 5 square feet (0.46 m²) or less located entirely on private property;
5. Signs for public facilities indicating danger and/or providing service or safety information.

3107.4.3 Permits not required for temporary signs. The erection, re-erection, construction, posting or placement of temporary signs permitted by Section 23.55.012 of the *Land Use Code* do not require a temporary sign permit. The owner of any such sign is responsible for compliance with the provisions of this section and other applicable laws or ordinances regulating signs. Permanent sign permits are required for signs that do not comply with the standards for

temporary signs found in Section 23.55.012 of the *Land Use Code* when required by Section 3107.4.1.

3107.4.4 Number of signs. Temporary signs permitted by Section 23.55.012 of the *Land Use Code* and signs not requiring a permit as specified in Section 3107.4.1 are not included as part of the maximum number of signs permitted under Chapter 23.55 of the *Land Use Code*.

3107.4.5 Attachments to signs. Ancillary devices, displays and attachments not originally a part of the sign for which a permit was issued shall not be added to an existing sign except as provided in this chapter, Chapter 23.55 of the *Land Use Code* and pursuant to another permit issued by the building official.

3107.5 Permit application. To obtain a sign permit, the applicant shall file an application which shall:

1. Clearly indicate the precise location of the proposed sign;
2. Be accompanied by adequate plans and specifications;

Exception: The building official is authorized to waive submission of plans and specifications when the structural aspect is of minor importance.
3. Be signed by the owner of the premises or an authorized agent; and
4. Be accompanied by the permit fee specified in the Fee Subtitle.

3107.6 Inspections. All signs regulated by this chapter are subject to inspection and periodic reinspection by the building official.

All footings shall be inspected by the building official.

All signs containing electrical wiring are subject to the *Seattle Electrical Code*. Refurbished, used electrical signs and field-assembled electrical signs shall be inspected by the building official.

3107.7 Maintenance and closure of business.

3107.7.1 Maintenance. The owners of signs shall keep their signs, together with all of their supports, braces, guys and anchors, in good repair and in a proper state of preservation. The owners shall keep display surface of all signs neatly painted or posted at all times. The building official is authorized to order the removal of all signs not properly maintained or no longer in use by the owner, occupant or lessee, and the permit therefore may be canceled.

3107.7.2 Closure of business — abandoned signs. Upon the closure and vacation of a business or activity, the operator of the business or activity is responsible for the removal of all signs relating to the business or activity within 90 days from the date of such closure. If the operator of the business or activity fails to remove the signs within the designated time period and the business or activity is not reoccupied or resumed during the 90-day period, then the owner of the premises upon which the signs are located is responsible for the removal of the signs within 180 days from the date of closure and vacation of the premises.

Note: A permit is required for existing signs when a different business entity uses the sign. See Section 3107.4.

3107.8 Nonconforming signs. A nonconforming sign is a sign or any portion thereof which, because of its location or construction, could not lawfully be reconstructed in its present location. A nonconforming sign shall have no additions or structural or electrical alterations thereto.

Exception: Minor additions or alterations which the building official finds necessary in the interest of safety.

3107.9 General requirements.

3107.9.1 General. All signs shall conform to the requirements of this section.

3107.9.2 Clearance from high voltage power lines. Signs shall be located no closer than 3 feet (914 mm) horizontally or 8 feet (2438 mm) vertically from overhead electrical conductors which are energized at 750 volts or less and not less than 10 feet (3048 mm) in any direction from overhead conductors energized at more than 750 volts. The term "overhead conductors" as used in this section means any electrical conductor, either bare or insulated, installed above the ground except such conductors as are enclosed in iron pipe or other material covering of equal strength.

3107.9.3 Clearance from fire escapes, exits or standpipes. No sign or sign structure shall be erected in such a manner that any portion of its surface or supports will interfere in any way with the free use of any fire escape, exit or standpipe.

3107.9.4 Obstruction of openings. No sign shall obstruct any openings to such an extent that light or ventilation is reduced to a point below that required by this code or the *International Mechanical Code*.

Signs erected within 5 feet (1524 mm) of an exterior wall in which there are openings within the area of the sign shall be constructed of noncombustible material or approved plastics.

3107.9.5 Supporting members. Signs mounted on and attached to buildings shall be so designed and mounted that secondary structural members shall be incorporated into and become a part of the sign display. Exterior bracing such as angle irons, guy wires, cables and similar devices are permitted only where no other reasonable method of fastening consistent with safety is possible.

3107.9.6 Nondisplay surfaces. If a sign is visible from more than one direction, all areas not intended as display surfaces, including the back and sides, shall be designed so that such areas are given a finished and pleasing appearance with the display surfaces visible only from the directions that they are intended to be seen.

3107.9.7 Label. Every permanent sign shall display the name of the sign erector.

3107.10 Design.

3107.10.1 General. Signs and sign structures shall be designed and constructed to resist all forces to which they are subject as specified in Chapter 16 and this section. All signs shall be designed and installed to transfer all forces directly to the structural frame of the building or structure.

The overturning moment produced from lateral forces shall in no case exceed two thirds of the dead load resisting

moment. Uplifts due to overturning shall be adequately resisted by proper anchorage to the ground or to the structural frame of the building. The weight of earth superimposed over footings is permitted to be used in determining the dead load resisting moment. Such earth shall be carefully placed and thoroughly compacted.

3107.10.2 Wind and seismic loads. Signs and sign structures shall be designed and constructed to resist wind and seismic forces as specified in Chapter 16 of this code.

3107.10.3 Allowable stresses. The design of wood, concrete, steel or aluminum members shall conform to the requirements of Chapters 19, 20, 22 and 23. Loads, both vertical and horizontal, exerted on the soil shall not produce stresses exceeding those specified in Chapter 16 of this code.

The working stresses of wire rope and its fastenings shall not exceed 25 percent of the ultimate strength of the rope or fasteners.

3107.11 Construction.

3107.11.1 General. The supports for all signs and sign structures shall be placed in or upon private property and shall be securely built, constructed, and erected in conformance with the requirements of this chapter. All structural welding on signs and sign structures shall conform to the requirements of Chapter 20 for aluminum and Chapter 22 for steel.

3107.11.2 Materials. Materials of construction for signs and sign structures shall be of quality and grade as specified for buildings in this code.

3107.11.2.1 Plastics. All plastics used in signs shall be approved plastics as defined in Chapter 26. Sections of approved plastics on wall signs shall not exceed 150 square feet (13.9 m²) in area.

Exceptions:

1. Outside the Fire District the area of approved plastics is permitted to be increased by 50 percent. See Section 401.2 for the definition of the Fire District.
2. Sections of approved plastics on signs other than wall signs are permitted to be of unlimited area if approved by the building official.

Sections of approved plastics on wall signs shall be separated 3 feet (914 mm) laterally and 6 feet (1829 mm) vertically by the required exterior wall construction.

Exception: Sections of approved plastics on signs other than wall signs need not be separated if approved by the building official.

3107.11.2.2 Other materials. In all signs and sign structures the materials and details of construction shall, in the absence of specified requirements, conform to the following:

1. Structural steel shall be of such quality as to conform with Chapter 22. Secondary members in contact with or directly supporting the display surface

are permitted to be formed of light gauge steel provided such members are designed in accordance with the specifications of the design of light gauge steel as specified in Chapter 22 and shall be galvanized. Secondary members, when formed integrally with the display surface, shall not be less than No. 24 gauge in thickness. When not formed integrally with the display surface, the minimum thickness of the secondary members shall be No. 12 gauge.

The minimum thickness of hot-rolled steel members furnishing structural support for signs shall be $\frac{1}{4}$ inch (6.4 mm) except that if galvanized, such members shall not be less than $\frac{1}{8}$ inch (3.2 mm) thick. Steel pipes shall be of such quality as to conform with Chapter 22. Steel members are permitted to be connected with one galvanized bolt provided the connection is adequate to transfer the stresses in the members.

2. Anchors and supports, when of wood and embedded in the soil, or within 6 inches (152 mm) of soil, shall be of all heartwood of a durable species or shall be pressure-treated with an approved preservative. Such members shall be marked or branded by an approved agency.

3107.11.2.3 Nonstructural trim. Nonstructural trim and portable display surfaces are permitted to be of wood, metal, approved plastics or any combination thereof.

3107.11.2.4 Approval of materials. The building official is permitted to require that sufficient technical data be submitted to substantiate the proposed use of any materials and is permitted to approve their use if it is determined that the evidence submitted is satisfactory for the use intended.

3107.11.3 Restrictions in the Fire District. In the Fire District all signs and sign structural members shall be constructed of noncombustible materials. See Section 401.2 for the definition of the Fire District.

Exceptions:

1. Regardless of fire-resistive requirements for exterior walls, certain elements of signs fronting on streets or yards having a width of 50 feet (15 240 mm) are permitted to be constructed as follows:

Wood veneer of boards not less than 1 inch (25 mm) nominal thickness or exterior type wood structural panels not less than $\frac{3}{8}$ inch (9.5 mm) nominal thickness is permitted to be applied to walls provided the veneer does not exceed 15 feet (4572 mm) above grade, and further provided such veneer shall be placed either directly against noncombustible surfaces or furred out from such surfaces not to exceed $1\frac{1}{8}$ inches (41 mm) with all concealed spaces fireblocked as provided by this code.

2. The display surface of a projecting sign is permitted to be of wood provided such sign is not more

than 42 square feet (3.9 m²) in area, is constructed of materials not less than 2 inches (51 mm) in nominal thickness and is not over 15 feet (4572 mm) in height, from ground level to the top of the sign.

3. Nonstructural trim as in Section 3107.11.2.3.

3107.11.4 Anchorage. Members supporting unbraced signs shall be so proportioned that the bearing loads imposed on the soil in either direction, horizontal or vertical, shall not exceed the safe values. Braced ground signs shall be anchored to resist the specified wind or seismic load acting in any direction. Anchors and supports shall be designed for safe bearing loads on the soil and for an effective resistance to pull-out amounting to a force 25 percent greater than the required resistance to overturning.

Signs attached to masonry, concrete or steel shall be safely and securely fastened thereto by means of metal anchors, bolts or approved expansion screws of sufficient size and anchorage to support safely the loads applied.

No wooden blocks or plugs or anchors with wood used in connection with screws or nails is considered proper anchorage except in the case of signs attached to wood framing.

No lead plugs or anchors shall be used to support signs.

No anchor or support of any sign shall be connected to or supported by an unbraced parapet wall unless the wall is designed or braced for the added forces.

3107.12 Roof signs.

3107.12.1 General. Roof signs shall be constructed of noncombustible material except as specified in Section 3107.11. When constructed on a building, the sign shall be thoroughly secured and anchored to the frame of the building on which it is constructed and erected.

3107.12.2 Clearance and access. A passage clear of all obstructions shall be left under or around, and immediately adjacent to, signs exceeding a height of 4 feet (1219 mm) above the roof. Such passage shall not be less than 3 feet (914 mm) wide and 4 feet (1219 mm) high and shall be at parapet or roof level.

There shall be one such passage or access opening as follows:

1. For each roof sign upon a building.
2. An access opening for every 50 lineal feet (15 240 mm) of horizontal roof sign extension.
3. Within 20 feet (6096 mm) of walls and parapets when roof signs are at right angles to a face of the building.

3107.13 Electric signs.

3107.13.1 Construction. Electric signs shall be constructed of noncombustible materials except as provided in Section 3107.11. The enclosed shell of electric signs shall be watertight except that service holes fitted with covers shall be provided into each compartment of such signs.

3107.13.2 Installation. Electrical equipment used in connection with display signs shall be installed in accordance with the *Seattle Electrical Code*.

3107.13.3 Display surfaces. Display surfaces of wood shall not be used in electric signs.

SECTION 3108 RADIO AND TELEVISION TOWERS

3108.1 General. Subject to the provisions of Chapter 16 and the requirements of Chapter 15 governing the fire-resistance ratings of buildings for the support of roof structures, radio and television towers shall be designed and constructed as herein provided.

3108.2 Location and access. Towers shall be located and equipped with step bolts and ladders so as to provide ready access for inspection purposes. Guy wires or other accessories shall not cross or encroach upon any street or other public space, or over above-ground electric utility lines, or encroach upon any privately owned property without written consent of the owner of the encroached-upon property, space or above-ground electric utility lines.

3108.3 Construction. Towers shall be constructed of approved corrosion-resistant noncombustible material. The minimum type of construction of isolated radio towers not more than 100 feet (30 480 mm) in height shall be Type IIB.

3108.4 Loads. Towers shall be designed to resist wind loads in accordance with TIA/EIA-222. Consideration shall be given to conditions involving wind load on ice-covered sections in localities subject to sustained freezing temperatures.

3108.4.1 Dead load. Towers shall be designed for the dead load plus the ice load in regions where ice formation occurs.

3108.4.2 Wind load. Adequate foundations and anchorage shall be provided to resist two times the calculated wind load.

3108.5 Grounding. Towers shall be permanently and effectively grounded.

SECTION 3109 SWIMMING POOL ENCLOSURES AND SAFETY DEVICES

3109.1 General. Swimming pools shall comply with the requirements of this section and other applicable sections of this code.

3109.2 Definition. The following word and term shall, for the purposes of this section and as used elsewhere in this code, have the meaning shown herein.

SWIMMING POOLS. Any structure intended for swimming, recreational bathing or wading that contains water over 24 inches (610 mm) deep. This includes in-ground, above-ground and on-ground pools; hot tubs; spas and fixed-in-place wading pools.

3109.3 Public swimming pools. Public swimming ((pools)) pool barriers are regulated by WAC 246-260-031(4). ((shall be completely enclosed by a fence at least 4 feet (1290 mm) in height or a screen enclosure. Openings in the fence shall not permit the passage of a 4-inch-diameter (102 mm) sphere. The fence or screen enclosure shall be equipped with self-closing and self-latching gates.))

3109.4 Residential swimming pools. Residential swimming pools shall comply with Sections 3109.4.1 through 3109.4.3.

Exception: A swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F 1346.

3109.4.1 Barrier height and clearances. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier that faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier that faces away from the swimming pool. Where the top of the pool structure is above grade, the barrier is authorized to be at ground level or mounted on top of the pool structure, and the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

3109.4.1.1 Openings. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

3109.4.1.2 Solid barrier surfaces. Solid barriers which do not have openings shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

3109.4.1.3 Closely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.4.1.4 Widely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.4.1.5 Chain link dimensions. Maximum mesh size for chain link fences shall be a 2.25 inch square (57 mm square) unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to no more than 1.75 inches (44 mm).

3109.4.1.6 Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than 1.75 inches (44 mm).

3109.4.1.7 Gates. Access gates shall comply with the requirements of Sections 3109.4.1.1 through 3109.4.1.6 and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Release mechanisms shall be in accordance with Sections 1008.1.8 and 1109.13. Where the release mechanism of the self-latching device

is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate, and the gate and barrier shall have no opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

3109.4.1.8 Dwelling wall as a barrier. Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds after the door and/or its screen, if present, are opened and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm shall be equipped with a manual means, such as touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for not more than 15 seconds. In dwellings not required to be Accessible, Type A or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings required to be Accessible, Type A or Type B units, the deactivation switch(es) shall be located at 54 inches (1372 mm) maximum and 48 inches (1219 mm) minimum above the threshold of the door.
2. The pool shall be equipped with a power safety cover that complies with ASTM F 1346.
3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the administrative authority, shall be accepted so long as the degree of protection afforded is not less than the protection afforded by Section 3109.4.1.8, Item 1 or 2.

3109.4.1.9 Pool structure as barrier. Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier which meets the requirements of Sections 3109.4.1.1 through 3109.4.1.8. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

3109.4.2 Indoor swimming pools. Walls surrounding indoor swimming pools shall not be required to comply with Section 3109.4.1.8.

3109.4.3 Prohibited locations. Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

3109.5 Entrapment avoidance. Suction outlets shall be designed to produce circulation throughout the pool or spa. Single-outlet systems, such as automatic vacuum cleaner systems, or other such multiple suction outlets whether isolated by valves or otherwise shall be protected against user entrapment.

3109.5.1 Suction fittings. All pool and spa suction outlets shall be provided with a cover that conforms to ASME A112.19.8M, a 12-inch by 12-inch (305 mm by 305 mm) drain grate or larger, or an approved channel drain system.

Exception: Surface skimmers.

3109.5.2 Atmospheric vacuum relief system required.

All pool and spa single- or multiple-outlet circulation systems shall be equipped with an atmospheric vacuum relief should grate covers located therein become missing or broken. Such vacuum relief systems shall include at least one approved or engineered method of the type specified herein, as follows:

1. Safety vacuum release systems conforming to ASME A112.19.17; or
2. Approved gravity drainage system.

3109.5.3 Dual drain separation. Single- or multiple-pump circulation systems shall be provided with a minimum of two suction outlets of the approved type. A minimum horizontal or vertical distance of 3 feet (914 mm) shall separate such outlets. These suction outlets shall be piped so that water is drawn through them simultaneously through a vacuum-relief-protected line to the pump or pumps.

3109.5.4 Pool cleaner fittings. Where provided, vacuum or pressure cleaner fitting(s) shall be located in an accessible position(s) at least 6 inches (152 mm) and not greater than 12 inches (305 mm) below the minimum operational water level or as an attachment to the skimmer(s).