

ORDINANCE NO. 613

AN ORDINANCE OF THE CITY OF SALEM, SD, AMENDING THE REVISED MUNICIPAL ORDINANCES OF THE CITY OF SALEM BY AMENDING CHAPTER 9.06, RESIDENTIAL CODE.

BE IT ORDAINED BY THE CITY OF SALEM, SD:

*Section 1. That Chapter 9.06 of the Revised Municipal Ordinances of Salem, SD, is hereby amended to read as follows:*

**CHAPTER 9.06 - RESIDENTIAL CODE**

9.0601 Adopted. The International Residential Code, 2012 edition—including Appendix E, Appendix G, and Appendix H—as published by the International Code Council Inc. as amended is hereby adopted as the residential building code by the City of Salem for regulating the design, construction, quality of materials, erection, installation, alteration, movement, repair, equipment, use and occupancy, location, removal, and demolition of detached one- and two-family dwellings and townhouses not more than three stories in height with a separate means of egress and their accessory structures, and provides for the issuance of permits and the collection of fees therefore. The minimum building standards in the 2012 edition of the International Residential Code and amendments thereto shall be applied to any building permit issued after June 24, 2015.

A printed copy as amended is on file with the Salem Finance Officer.

9.0602 Modifications by the City of Salem to the 2012 International Residential Code. The following sections and subsections of the 2012 International Residential Code adopted in this Chapter shall be amended, added, or not adopted by the City as set forth below. All other sections or subsections of the 2012 International Residential Code as published shall remain the same as published.

**R101.1 Title.** These provisions shall be known as the *Residential Code for One- and Two-family Dwellings* of the City of Salem, and shall be cited as such and will be referred to herein as “this code.”

**R101.2 Scope.** The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to the construction, *alteration*, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal, and demolition of detached one- and two-family dwellings and townhouses not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures*.

**Exceptions:**

1. Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family *dwellings* or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section 903.3.1.3 of the *International Building Code*.

**R102.4.1 Electrical.** The provisions of the Adopted Electrical Code of the South Dakota Electrical Commission shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings, and appurtenances thereto.

**R102.4.4 Plumbing.** The provisions of the Adopted Plumbing Code of the South Dakota Plumbing Commission shall apply to the installation, *alteration*, repair, and replacement of plumbing systems, including equipment, appliances, fixtures, fittings, and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system.

**R103.1 Enforcement officer.** There is hereby created the position of *building official* who shall be in charge of this code.

**R103.2 Appointment.** The City of Salem City Council shall appoint a *building official* for the City of Salem.

**R104.8 Liability.** The *building official* or employee charged with the enforcement of this code, while acting for the *jurisdiction* in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Any suit instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be afforded all the protection provided by the City's insurance and any immunities and defenses provided by other applicable state and federal law. The *building official* or any subordinate shall not be liable for cost in any action, suit, or proceeding that is instituted in pursuance of the provisions of this code.

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or the City be held as assuming any such liability by reason of the inspection authorized by this code or any permits or certificates issued under this code.

**R105.1 Required.** Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert, or replace any electrical, gas, mechanical, or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the *building official* and obtain the required *permit*. The building official may exempt permits for minor work.

**R105.2 Work exempt from permit.** *Permits* shall not be required for the following. Exemption from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this *jurisdiction*.

**Building:**

1. One-story detached *accessory structures* used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 200 square feet (18.58 m<sup>2</sup>).

2. Retaining walls that are not over 4 feet (1,219 mm) in height measured from the bottom of the grade elevation to the top of the wall, unless supporting a surcharge.
3. Water tanks supported directly upon *grade* if the capacity does not exceed 5,000 gallons (18,927 L) and the ratio of height to diameter or width does not exceed 2 to 1.
4. Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.
5. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.
6. Swings and other playground equipment.
7. Window awnings supported by an exterior wall which do not project more than 54 inches (1,372 mm) from the exterior wall and do not require additional support.
8. Decks not exceeding 200 square feet (18.58 m<sup>2</sup>) in area, that are not more than 30 inches (762 mm) above *grade* at any point, are not attached to a *dwelling* and do not serve the exit door required by Section R311.4.
9. Replacement or repairing siding.

**Electrical:** Not adopted by the City of Salem

**Gas:** Not adopted by the City of Salem

**Mechanical:** Not Adopted by the City of Salem

**R106.1 Submittal documents.** Submittal documents consisting of *construction documents* and other data shall be submitted with each application for a *permit*. The *construction documents* shall be prepared by a registered *design professional* where required by the statutes of the *jurisdiction* in which the project is to be constructed. Where special conditions exist, the *building official* is authorized to require additional *construction documents* to be prepared by a registered *design professional*.

**Exception:** The *building official* is authorized to waive the submission of *construction documents* and other data not required to be prepared by a registered *design professional* if it is found that the nature of the work applied for is such that reviewing of *construction documents* is not necessary to obtain compliance with this code.

**R106.3.1 Approval of construction documents.** When the *building official* issues a *permit*, the *construction documents* shall be submitted and reviewed. One set of *construction documents* so reviewed shall be retained by the *building official*.

**R108.2 Schedule of permit fees.** On buildings, structures or *alterations* requiring a *permit*, a fee for each *permit* shall be paid as required, in accordance with the schedule as established by the City. The fee schedule for the City of Salem shall be set by resolution by the City Council.

**R108.6 Work commencing before permit issuance.** Any person who commences work requiring a *permit* on a building or structure before obtaining the necessary permits shall be subject to a fee established by resolution by the City Council that shall be in addition to the required *permit* fees. Legal and/or civil proceedings may also be commenced.

**R108.7 Delinquent accounts.** The administrative authority may refuse to issue permits or conduct inspections for any person or business whose account is delinquent.

**R109.1.1 Footing inspection.** Inspection of the footings shall be made after poles or piers are set or trenches or *basement* areas are excavated and any required forms erected and any required reinforcing steel is in place and supported prior to the placing of concrete. The footing inspection shall include excavations for thickened slabs intended for the support of bearing walls, partitions, structural supports, or *equipment* and special requirements for wood foundations.

**R109.1.3 Floodplain inspections.** For construction in areas prone to flooding as established by Chapter the Floodplain Management Ordinance upon placement of the lowest floor, including *basement*, and prior to further vertical construction, the floodplain administrator shall require submission of documentation, prepared and sealed by a registered *design professional*, of the elevation of the lowest floor, including *basement*, required in the Floodplain Management Ordinance.

**R110.1 Use and occupancy.** No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the *building official* has issued a certificate of occupancy therefor as provided herein. An inspection placard shall be posted on the electrical panel, which is signed after final inspections have occurred by the electrical inspector and plumbing inspector for new one- and two-family dwelling units and multiple single-family dwellings (townhouses). Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the City. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the City shall not be valid.

**Exceptions:**

1. Certificates of occupancy are not required for work exempt from permits under Section R105.2.
2. Accessory buildings or structures.

**R110.6 Placards.** Placards or inspection record tags placed on the job by the inspectors to indicate approval of the work inspected shall not be removed, except when authorized by the building official.

**R112.1 General.** The City Council shall act as the Board of Appeals in order to hear and decide appeals of orders, decisions, or determinations made by the *building official* relative to the application and interpretation of this code.

The board in exercising its authority over house moving may deny the building request, or may require additional stipulations to be placed on the building permit to address the protection of the property values and neighborhood compatibility.

**R112.2 Limitations on authority.** An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The board shall have no authority relative to the interpretation of the administrative provisions of this code nor shall the board be empowered to waive requirements of this code.

**R113.3 Prosecution of violation.** If the notice of violation is not complied with in the time prescribed by such notice, the *building official* is authorized to request the City Attorney to deem the violation as a strict liability offense and institute the appropriate proceeding at law or in equity to restrain, correct, or abate such violation, or to require the removal or termination of the unlawful occupancy of the building or structure in violation of the provisions of this code or of the order or direction made pursuant thereto.

**Section R202. Definitions.** Add the following definition.

**Strict liability offense.** An offense in which the prosecution in a legal proceeding is not required to prove criminal intent as a part of its case. It is enough to prove that the defendant either did an act which was prohibited, or failed to do an act which the defendant was legally required to do.

**Table R301.2(1)  
Climatic and Geographic Design Criteria**

1.	Ground Snow Load (Footnote l).....	35 psf contour
2.	Wind Speed (Footnote d).....	100 mph
3.	Topographic Effects (Footnote k).....	no
4.	Seismic Design Category (Footnote f).....	A
5.	Weathering (Footnote a).....	Severe
6.	Frost Line Depth (Footnote b).....	42 inches (1,067 mm)
7.	Termite Damage (Footnote c).....	Slight to Moderate
8.	Winter Design Temperature.....	-10 Degrees Fahrenheit
9.	Ice Barrier Underlayment Requirement (Footnote i) .....	yes (one course ice barrier for 4/12 roof and steeper and two course ice barrier for less than 4/12 roof)
10.	Flood Hazards (Footnote g) Salem entered the regular phase of the National Flood Insurance Program on May 1, 1986.	
11.	Air Freezing Index (Footnote i) .....	3000
12.	Mean Annual Temperature .....	46 Degrees Fahrenheit

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

- a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., “negligible,” “moderate,” or “severe”) for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216, or C 652.
- b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The jurisdiction shall fill in the frost line depth column with the minimum depth of footing below finish grade.
- c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
- d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

- e. The outdoor design dry-bulb temperature shall be selected from the columns of 97 1/2 percent values for winter from Appendix D of the *Plumbing Code*. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experience as determined by the building official.
- f. The jurisdiction shall fill in this part of the table with the seismic design category determined from Section R301.2.2.1.
- g. To establish flood hazard areas, the City has adopted a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineered report entitled “The Flood Insurance Study for McCook County (and incorporated areas), South Dakota” dated June 18, 2013 (Map Number 46087C0135D), as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section. If there is a conflict between the provisions of this code and the City’s floodplain management ordinance, the provisions of the floodplain management ordinance shall prevail.
- h. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1, and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall fill in this part of the table with “NO.”
- i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99%) value on the National Climatic Data Center data table “Air Freezing Index- USA Method (Base 32°)” at [www.ncdc.noaa.gov/fpsf.html](http://www.ncdc.noaa.gov/fpsf.html).
- j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F)” at [www.ncdc.noaa.gov/fpsf.html](http://www.ncdc.noaa.gov/fpsf.html).
- k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the jurisdiction shall fill in this part of the table with “YES.” Otherwise, the jurisdiction shall indicate “NO” in this part of the table.
- l. On roof systems that are not engineered, conventionally framed roof slopes with a rise of 3 inches (76.2 mm) or less to 12 inches (305 mm) shall be designed for a full or unbalanced snow load of not less than 30 pounds per square foot (1.44 kN/square meter) of horizontal projection. Where a roof system is designed to slope less than 1/4 inch (6.35 mm) per 12 inches (305 mm), a surcharge load of not less than 5 pounds per square foot (0.24 kN/square meter) in addition to the required live load due to snow shall be designed for.

Roof slopes with over 3 inches (76.2 mm) of rise per 12 inches (305 mm) shall be designed for a full or unbalanced snow load of not less than 25 pounds per square foot (1.2 kN/square meter) of horizontal projection.

Potential unbalanced accumulation of snow at valleys, parapets, roof structures, and offsets in roofs of uneven configuration shall be considered.

**Table R301.5**  
**Minimum Uniformly Distributed Live Loads**  
**(in pounds per square foot)**

<b>USE</b>	<b>LIVE LOAD</b>
Attics without storage <sup>b</sup>	10
Attics with limited storage <sup>b, g</sup>	20
Habitable attics and attics served with fixed stairs	30
Balconies (exterior) and decks <sup>e</sup>	40
<b>USE</b>	<b>LIVE LOAD</b>
Fire escapes	40
Guardrails and handrails <sup>d</sup>	200 <sup>i</sup>
Guardrails in-fill components <sup>f</sup>	50 <sup>i</sup>
Passenger vehicle garages <sup>a</sup>	50 <sup>a</sup>
Rooms	40

For SI: 1 pound per square foot = 0.0479 kPa, 1 square inch = 645 mm<sup>2</sup>, 1 pound = 4.45 N.

- a. Elevated garage floors shall be capable of supporting a 2,000-pound load applied over a 20-square-inch area.
- b. Attics without storage are those where the maximum clear height between joist and rafter is less than 42 inches, or where there are not two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high by 2 feet wide, or greater, located within the plane of the truss. For attics without storage, this live load need not be assumed to act concurrently with any other live load requirements.
- c. Individual stair treads shall be designed for the uniformly distributed live load or a 300-pound concentrated load acting over an area of 4 square inches, whichever produces the greater stresses.
- d. A single concentrated load applied in any direction at any point along the top.
- e. See Section R502.2.2 for decks attached to exterior walls.
- f. Guard in-fill components (all those except the handrail), balusters, and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot. This load need not be assumed to act concurrently with any other live load requirement.
- g. For attics with limited storage and constructed with trusses, this live load need be applied only to those portions of the bottom chord where there are two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high or greater by 2 feet wide or greater, located within the plane of the truss. The rectangle shall fit between the top of the bottom chord and the bottom of any other truss member, provided that each of the following criteria is met.

1. The attic area is accessible by a pull-down stairway or framed in accordance with Section R807.1.
2. The truss has a bottom chord pitch less than 2:12.
3. Required insulation depth is less than the bottom chord member depth.

The bottom chords of trusses meeting the above criteria for limited storage shall be designed for the greater of the actual imposed dead load or 10 psf, uniformly distributed over the entire span.

- h. Glazing used in handrail assemblies and guards shall be designed with a safety factor of 4. The safety factor shall be applied to each of the concentrated loads applied to the top of the rail, and to the load on the in-fill components. These loads shall be determined independent of one another, and loads are assumed not to occur with any other live load.

**Table R302.1**  
**Exterior Walls**

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	<5 feet
	(Not fire-resistance rated)	0 hours	>5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	< 3 feet
	(Not fire-resistance rated)	0 hours	> 3 feet
Openings	Not allowed	N/A	< 3 feet
	25% Maximum of Wall Area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.3	< 5 feet
		None required	5 feet

N/A = Not Applicable

**R310.1 Emergency escape and rescue required.** Basements, habitable attics, and every sleeping room shall have at least one operable emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a *yard* or court that opens to a public way.

**Exception:** *Basements* used only to house mechanical *equipment* and not exceeding total floor area of 200 square feet (18.58 m<sup>2</sup>).

**R310.1.1 Minimum opening area.** All emergency escape and rescue openings shall have a minimum net clear opening of 5.0 square feet (0.465 m<sup>2</sup>).

**R310.2.1 Ladder and steps.** Window wells with a vertical depth greater than 48 inches (1,220 mm) shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position. Ladders or steps required by this section shall not be required to comply with Sections R311.7 and R311.8. Ladders or rungs shall have an inside width of at least 12 inches (305 mm), shall project at least 3 inches (76 mm) from the wall, and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.

**R311.3.1 Floor elevations at the required egress doors.** Landings or floors at the required egress door shall not be more than 1 1/2 inches (38 mm) lower than the top of the threshold.

**Exception:** The exterior landing or floor shall not be more than 8 inches (202 mm) below the top of the threshold provided the door does not swing over the landing or floor.

When exterior landings or floors serving the required egress door are not at *grade*, they shall be provided with access to *grade* by means of a ramp in accordance with Section R311.8 or a stairway in accordance with Section R311.7.

**R311.3.2 Floor elevations for other exterior doors.** Doors other than the required egress door shall be provided with landings or floors not more than 8 inches (202 mm) below the top of the threshold.

**Exception:** A landing is not required where a stairway of two or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway.

**R311.7.8.2 Continuity.** Handrails for stairways shall extend for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1 1/2 inch (38 mm) between the wall and the handrails.

**Exceptions:**

1. Handrails shall be permitted to be interrupted by a newel post at the turn.
2. The use of a volute, turnout, starting easing, or starting newel shall be allowed over the lowest tread.

**R311.7.8.3 Grip-size.** All required handrails shall be of one of the following types or provide equivalent graspability.

1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1 1/4 inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6 1/4 inches (160 mm) with a maximum cross section of dimension of 2 1/4 inches (57 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

2. Type II. Handrails with a perimeter greater than 6 1/4 inches (160 mm) shall have a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of 3/4 inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8 mm) within 7/8 inch (22 mm) below the widest portion of the profile. This required depth shall continue for at least 3/8 inch (10 mm) to a level that is not less than 1 3/4 inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1 1/4 inches (32 mm) to a maximum of 2 3/4 inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

**Exception:** Exterior stairs are allowed to have a horizontal 2X member to form a 1 1/2-inch graspable dimension in lieu of the above-referenced perimeter dimensions.

**R312.3 Opening limitations.** Required *guards* shall not have openings from the walking surface to the required *guard* height which allow passage of a sphere 5 inches (127 mm) in diameter.

**Exception:** The triangular openings at the open side of a stair, formed by the riser, tread, and bottom rail of a *guard*, shall not allow passage of a sphere 6 inches (153 mm) in diameter.

**R313.1 Townhouse automatic fire sprinkler systems.** Not adopted by the City of Salem.

**R313.1.1 Design and installation.** Not adopted by the City of Salem.

**R313.2 One- and two-family dwellings automatic fire systems.** Not adopted by the City of Salem.

**R313.2.1 Design and installation.** Not adopted by the City of Salem.

**R314.3 Location.** Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional *story* of the *dwelling*, including *basements* and habitable attics but not including crawl spaces and uninhabitable *attics*. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full *story* below the upper level.
4. Where the ceiling height of a room is open to the hallway serving a bedroom exceeds that of the hallway by 24 inches (610 mm) or more, smoke detectors shall be installed in the hallway and in the adjacent room.

**Exception.** Hallways less than 4 feet (1,220 mm) in length are allowed to omit the smoke detector within the hallway adjacent to the bedrooms.

When more than one smoke alarm is required to be installed within an individual *dwelling* unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

**R314.3.1 Alterations, repairs, and additions.** When *alterations*, repairs, or *additions* requiring a *permit* occur with a valuation in excess of \$1,000, or when one or more sleeping rooms are added or created in existing *dwelling*s, the new individual *dwelling unit* shall be equipped with smoke alarms located as required for new *dwelling*s.

**Exceptions:**

1. Work involving the exterior surfaces of *dwelling*s, such as the replacement of roofing or siding, or the *addition* or replacement of windows or doors, or the *addition* of a porch or deck, are exempt from the requirements of this section.
2. Installation, *alteration*, or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

**R317.1 Location required.** Protection of wood and wood based products from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative-treated in accordance with AWWPA U1 for the species, product, preservative, and end use. Preservatives shall be listed in Section 4 of AWWPA U1.

1. Wood joists or the bottom of a wood structural floor when closer than 18 inches (457 mm) or wood girders when closer than 12 inches (305 mm) to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
2. All wood framing members that rest on concrete or masonry exterior foundation walls and are less than 6 inches (152 mm) from the exposed ground.
3. Sills and sleepers supporting bearing walls on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
4. The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 1/2 inch (12.7 mm) on tops, sides, and ends.
5. Wood siding, sheathing, and wall framing on the exterior of a building having a clearance of less than 6 inches (152 mm) from the ground or less than 2 inches (51 mm) measured vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surfaces exposed to the weather.
6. Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.
7. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below *grade* except where an *approved* vapor retarder is applied between the wall and the furring strips or framing members.

**R319.1 Address numbers.** New and existing buildings shall have *approved* address numbers, building numbers, or *approved* building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole, or other sign or means shall be used to identify the structure.

Multi-building campus/complex developments addressed on private or public streets shall be provided with signage at the entrance to the campus/complex indicative of the address ranges within.

**R401.3 Drainage.** Surface drainage shall be diverted to a storm sewer conveyance or other *approved* point of collection that does not create a hazard or cause surface drainage to be diverted to or infiltrate the City's sanitary sewer system. *Lots* shall be graded to drain surface water away from foundation walls. The *grade* shall fall a minimum of 6 inches (152 mm) within the first 10 feet (3,048 mm).

**Exceptions:**

1. Where *lot lines*, walls, slopes, or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3,048 mm), the final grade shall slope away from the foundation at a minimum slope of 2 percent and the water shall be directed to drains or swales to ensure drainage away from the structure. Swales shall be sloped a minimum of 1 percent.
2. Impervious surfaces within 10 feet (3,048 mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.

**R403.1.4.1 Frost protection.** Except where otherwise protected from frost, foundation walls, piers, and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extended below the frost line specified in Table R301.2.(1);
2. Constructing in accordance with Section R403.3;
3. Constructing in accordance with ASCE 32; or
4. Erected on solid rock.

**Exceptions:**

1. Protection of freestanding *accessory structures* with an area of 1,500 square feet (139 m<sup>2</sup>) or less, of light-frame construction, with an eave height of 10 feet (3,048 mm) or less shall not be required.
2. Protection of freestanding *accessory structures* with an area of 400 square feet (37 m<sup>2</sup>) or less, of other than light-frame construction, with an eave height of 10 feet (3,048 mm) or less shall not be required.
3. Decks not supported by a dwelling need not be provided with footings that extend below the frost line.

Footings shall not bear on frozen soil unless the frozen condition is permanent.

**R404.4 Retaining walls.** Retaining walls that are not laterally supported at the top and that retain in excess of 48 inches (1,220 mm) of unbalanced fill shall be designed to ensure stability against overturning, sliding, excessive foundation pressure, and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

**R502.3.1 Sleeping areas and attic joists.** Table R502.3.1(1) shall be used to determine the maximum allowable span of floor joists that support sleeping areas and *attics* that are accessed by means of a fixed stairway in accordance with Section R311.7, provided that the design live load does not exceed 40 pounds per square foot (1.92 kPa) and the design dead load does not exceed 20 pounds per square foot (0.96 kPa). The allowable span of ceiling joists that support *attics* used for limited storage or no storage shall be determined in accordance with Section R802.4.

**TABLE R602.3(1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS; Row 5**

Description of Building Elements	Number and Type of Spacing of Fastener a, b, c, d	Spacing of
Top or sole plate to stud, end nail	2-12d (3½" x 0.135)	--

**R703.2.1 Weather-resistive sheathing papers.** House wraps or weather-resistive sheathing papers consisting of spun bonded olefin sheets of high density polyethylene fibers are required to be installed on the exterior side of the sheathing material directly underneath the exterior veneer.

**R907.3 Recovering versus replacement.** New roof coverings shall not be installed without first removing all existing layers of roof coverings where any of the following conditions exist:

1. Where the existing roof or roof covering is water-soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is wood shake, slate, clay, cement, or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.

**Exceptions:**

1. Complete and separate roofing systems, such as standing-seam metal roof systems, that are designed to transmit the roof loads directly to the building's structural system and that do not rely on existing roofs and roof coverings for support, shall not require the removal of existing roof coverings.
2. Installation of metal panel, metal shingle, and concrete and clay tile roof coverings over existing wood shake roofs shall be permitted when the application is in accordance with Section R907.4.
3. The application of new protective coating over existing spray polyurethane foam roofing systems shall be permitted without tear-off of existing roof coverings.

**M1305.1.4.1 Ground clearance.** *Equipment* and *appliances* supported from the ground shall be level and firmly supported on a concrete slab or other *approved* material extending not less than 1 1/2 inches (38 mm) above the adjoining ground. Such support shall be in accordance with the manufacturer's installation instructions. *Appliances* suspended from the floor shall have a clearance of not less than 6 inches (152 mm) from the ground.

**M1403.1 Heat pumps.** The minimum unobstructed total area of the outside and return air ducts or openings to a heat pump shall be not less than 6 square inches per 1,000 Btu/h (13,208 mm<sup>2</sup>/kW) output rating or as indicated by the conditions of the listing of the heat pump. Electric heat pumps shall conform to UL 1995.

**M1403.2 Foundations and supports.** Not adopted by the City of Salem.

**M1411.5 Insulation of refrigerant piping.** Piping and fittings for refrigerant vapor (suction) lines shall be insulated with insulation having a thermal resistivity of at least R-2 and having external surface permeance not exceeding 0.05 perm [2.87 ng/(s - m<sup>2</sup> - Pa)] when tested in accordance with ASTM E 96.

**M1502.4.4.1 Specified length.** The maximum length of the exhaust duct shall be 35 feet (10668 mm) from the connection to the transition duct from the dryer to the outlet terminal. Where fittings are used, the maximum length of the exhaust duct shall be reduced in accordance with Table M1502.4.4.1.

**Section M1508. Subslab Soil Exhaust Systems.**

**M1508.1 General.** When a subslab soil exhaust system is provided, the duct shall conform to the requirements of this section.

**M1508.2 Materials.** Subslab soil exhaust system duct material shall be air duct material listed and labeled to the requirements of UL 181 for Class 0 air ducts, or any of the following piping materials that comply with the *International Plumbing Code* as building sanitary drainage and vent pipe: cast iron; galvanized steel; brass or copper pipe; copper tube of a weight not less than that of copper drainage tube, Type DWV; and plastic piping.

**M1508.3 Grade.** Exhaust system ducts shall not be trapped and shall have a minimum slope of 1/8 unit vertical in 12 units horizontal (1-percent slope).

**M1508.4 Termination.** Subslab soil exhaust system ducts shall extend through the roof and terminate at least 6 inches (152 mm) above the roof and at least 10 feet (3,048 mm) from any operable openings or air intake.

**Table M1601.1.1(2)  
Gages of Metal Ducts and Plenums Used for Heating or Cooling**

<b>Duct Size</b>	<b>Minimum Thickness Inches and (mm)</b>	<b>Equivalent Galvanized Sheet No.</b>	<b>Minimum Thickness (In.)</b>
Round ducts and enclosed rectangular ducts	0.0157 (0.3950 mm)		
14 inches or less	0.0187 (0.4712 mm)	30	0.0175
>14 to 18 inches	0.0236 (0.6010 mm)	26	0.018
>18 inches and over	0.0236 (0.6010 mm)	24	0.023
Exposed rectangular ducts	0.0157 (0.3950 mm)	28	0.0175
14 inches or Over 14 <sup>2</sup> inches	0.0187 (0.4712 mm)	26	0.018

For SI: 1 inch = 25.4 mm.

- a. For duct gages and reinforcement requirements at static pressures of 1/2 inch, 1 inch and 2 inches w.g., SMACNA Duct Construction Standard Tables 2-1:2-2 and 2-3 shall apply.

**M1601.2 Factory-made ducts.** Factory-made air ducts or duct material shall be *approved* for the use intended, and shall be installed in accordance with the manufacturer's installation instructions. Each portion of a factory-made air *duct system* shall bear a *listing* and *label* indicating compliance with UL 181 and UL 181A or UL 181B.

Flexible air ducts shall be limited in length to 14 feet. Flexible air connectors are not allowed.

**M1601.4.3 Support.** Metal ducts shall be supported by 1/2-inch (13 mm) wide 18-gage, 1-inch (25 mm) wide 24 gage, or 1 1/2-inch (39 mm) wide 26 gage metal straps or 12-gage galvanized wire at intervals not exceeding 10 feet (3,048 mm) or other *approved* means. Nonmetallic ducts shall be supported in accordance with the manufacturer's installation instructions.

**G2407.6 (304.6) Outdoor combustion air.** Outdoor *combustion* air shall be provided through opening(s) to the outdoors in accordance with Section G2407.6.1, G2407.6.2, or G2407.6.3. The minimum dimension of air openings shall be not less than 3 inches (76 mm).

Combustion air intake openings located on the exterior of a building shall have the lowest side of such openings located not less than 12 inches (305 mm) vertically from the adjoining grade level.

Combustion air intake opening shall be located a minimum of 3 feet from a gas meter.

**G2407.6.3 Alternate combustion air sizing.** As an alternate to the above-referenced combustion air openings, the net free area of openings, ducts, or plenums supplying air to an area containing fuel-burning appliances shall be as specified below.

When all air is taken from the outdoors for appliances and the total input of the appliances is less than 300,000 Btu/hr (1,704,000 W/ meters squared K), one outside air duct may be used and shall terminate below the draft hood. An exterior opening may be used in place of a duct provided that it is located at least 1 foot below the draft hood.

**Combustion Air Requirements for Appliances Requiring an Outside Air Opening in  
Areas with 5,000 degrees Fahrenheit  
(2,777 degrees Celsius) or Greater Heating Days**

Total Input of Appliances Thousands of Btu/hr	Required Free Area of Air Supply Opening or Duct, Square Inches
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25 (26.4 KJ/h)	7 (4,516 mm <sup>2</sup> )
50 (52.8 KJ/h)	7 (4,516 mm <sup>2</sup> )
75 (79.1 KJ/h)	11 (7,097 mm <sup>2</sup> )
100 (106 KJ/h)	14 (9,032 mm <sup>2</sup> )
125 (132 KJ/h)	18 (11,610 mm <sup>2</sup> )
150 (158 KJ/h)	22 (14,190 mm <sup>2</sup> )
175 (185 KJ/h)	25 (16,130 mm <sup>2</sup> )
200 (211 KJ/h)	29 (18,710 mm <sup>2</sup> )
225 (237 KJ/h)	32 (20,650 mm <sup>2</sup> )
250 (264 KJ/h)	36 (23,230 mm <sup>2</sup> )
275 (290 KJ/h)	40 (25,810 mm <sup>2</sup> )
300 (317 KJ/h)	43 (27,740 mm <sup>2</sup> )

1. For total inputs that fall between the listing figures, use the next largest listed input.
2. These figures are based on the maximum equivalent duct length of 20 feet (6.1 m). For equivalent duct lengths in excess of 20 feet (6.1 m) to and including a maximum of 50 feet (15.2 m), increase round duct diameter by one size. A square or rectangular duct may be used only where the required duct size is 9 square inches (5,800 mm<sup>2</sup>) or larger and the smaller dimension must be not less than 3 inches (76.2 mm).

**G2427.4.1 Plastic piping.** Plastic *piping* used for venting *appliances* listed for use with such venting materials shall be *approved*.

Plastic pipe and fittings used to vent appliances shall be installed in accordance with the pipe manufacturer's installation instructions and the appliance manufacturer's installation instructions. Solvent cement joints between ABS pipe and fittings shall be cleaned. Solvent cement joints between CPVC and PVC pipe and fittings shall be primed. The primer shall be a contrasting color.

**Exception:** Where compliance with this section would conflict with the appliance manufacturer's installation instructions.

**Part VII—Plumbing.** Not adopted by the City of Salem.

**Part VIII—Electrical.** Not adopted by the City of Salem.

**AG102.1 General.** For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

**ABOVE-GROUND/ON-GROUND POOL.** See "Swimming pool."

**BARRIER.** A fence, wall, building wall, or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

**HOT TUB.** See "Swimming pool."

**IN-GROUND POOL.** See "Swimming pool."

**RESIDENTIAL.** That which is situated on the premises of a detached one- or two-family dwelling or a one-family *townhouse* not more than three stories in height.

**SPA, NONPORTABLE.** See "Swimming pool."

**SPA, PORTABLE.** A nonpermanent structure intended for recreational bathing, in which all controls, water-heating, and water-circulating *equipment* are an integral part of the product.

**SWIMMING POOL.** Any structure intended for swimming or recreational bathing that contains water over 18 inches (457 mm) deep. This includes in-ground, above-ground and on-ground swimming pools, hot tubs, and spas.

**SWIMMING POOL, INDOOR.** A swimming pool which is totally contained within a structure and surrounded on all four sides by the walls of the enclosing structure.

**SWIMMING POOL, OUTDOOR.** Any swimming pool which is not an indoor pool.

**AG105.1 Application.** The provisions of this chapter shall control the design of barriers for residential swimming pools, spas, and hot tubs. These design controls are intended to provide protection against potential drownings and near drownings by restricting access to swimming pools, spas, and hot tubs.

This requirement shall be applicable to all new swimming pools hereafter constructed, other than indoor pools, and shall apply to all existing pools, which have a depth of 18 inches (457 mm) or more of water. No person in possession of land within the City, either as owner, purchaser,

lessee, tenant, or a licensee, upon which is situated a swimming pool having a depth of 18 inches (457 mm) or more shall fail to provide and maintain such barrier as herein provided.

**AG105.2 Outdoor swimming pool.** An outdoor swimming pool, including an in-ground, aboveground or on-ground pool, hot tub, or spa shall be surrounded by a barrier that shall be installed, inspected, and approved prior to filling with water that completely surrounds and obstructs access to the swimming pool, which shall comply with the following:

1. The top of the barrier shall be at least 42 inches (1,067 mm) above *grade* measured on the side of the barrier which 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 which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.
3. Where an aboveground 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:
  - 3.1. The ladder or steps shall be capable of being secured, locked, or removed to prevent access; or
  - 3.2. The ladder or steps shall be surrounded by a barrier, which meets the requirements of Item 1 above. 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.
4. All gates or door openings through the barrier shall be equipped with self-closing and self-latching devices for keeping the door or gate securely closed at all times when the pool is not in actual use, except that the door of any dwelling that form part of the enclosure need not be so equipped.

**AG105.3 Indoor swimming pool.** Not adopted by the City of Salem.

**AG105.4 Prohibited Locations.** Not adopted by the City of Salem.

**AG105.5 Barrier exceptions.** Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

Modifications in individual cases, upon a showing of good cause with respect to height, nature, or location of a fence, wall, gates, or latches, or the necessity thereof, may be made by the building official, provided the protection as sought hereunder is not reduced thereby. The building official may grant permission for other protective devices or structures to be used as long as the degree of protection afforded by this substitute device or structure is not less than the protection afforded by the wall, fence, gate, and latch described herein. A reasonable period within which to comply with the requirements of this section for existing swimming pools shall be allowed, which period shall not exceed 90 days after notification by the building official.

Adopted this 27<sup>th</sup> day of May, 2015.

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Mayor

ATTEST:

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Finance Officer

Seal

First Reading: May 11, 2015

Second Reading & Adoption: May 27, 2015

Publication: June 4, 2015

Effective Date: June 24, 2015