

2103.12. Grout shall be prevented from bonding with the flue liner so that the flue liner is free to move with thermal expansion. For chimneys greater than 40 inches (1016 mm) wide, two additional No. 4 vertical bars shall be provided for each additional 40 inches (1016 mm) in width or fraction thereof.

**2113.3.2 Horizontal reinforcing.** Vertical reinforcement shall be placed enclosed within  $\frac{1}{4}$ -inch (6.4 mm) ties, or other reinforcing of equivalent net cross-sectional area, spaced not to exceed 18 inches (457 mm) o.c. in concrete, or placed in the bed joints of unit masonry, at a minimum of every 18 inches (457 mm) of vertical height. Two such ties shall be provided at each bend in the vertical bars.

**2113.4 Seismic anchorage.** Masonry and concrete chimneys and foundations in Seismic Design Category D shall be anchored at each floor, ceiling or roof line more than 6 feet (1829 mm) above grade, except where constructed completely within the exterior walls. Anchorage shall conform to the following requirements.

**2113.4.1 Anchorage.** Two  $\frac{3}{16}$ -inch by 1-inch (4.8 mm by 25 mm) straps shall be embedded a minimum of 12 inches (305 mm) into the chimney. Straps shall be hooked around the outer bars and extend 6 inches (152 mm) beyond the bend. Each strap shall be fastened to a minimum of four floor joists with two  $\frac{1}{2}$ -inch (12.7 mm) bolts.

**2113.5 Corbeling.** Masonry chimneys shall not be corbeled more than half of the chimney's wall thickness from a wall or foundation, nor shall a chimney be corbeled from a wall or foundation that is less than 12 inches (305 mm) in thickness unless it projects equally on each side of the wall, except that on the second story of a two-story dwelling, corbeling of chimneys on the exterior of the enclosing walls is permitted to equal the wall thickness. The projection of a single course shall not exceed one-half the unit height or one-third of the unit bed depth, whichever is less.

**2113.6 Changes in dimension.** The chimney wall or chimney flue lining shall not change in size or shape within 6 inches (152 mm) above or below where the chimney passes through floor components, ceiling components or roof components.

**2113.7 Offsets.** Where a masonry chimney is constructed with a fireclay flue liner surrounded by one wythe of masonry, the maximum offset shall be such that the centerline of the flue above the offset does not extend beyond the center of the chimney wall below the offset. Where the chimney offset is supported by masonry below the offset in an approved manner, the maximum offset limitations shall not apply. Each individual corbeled masonry course of the offset shall not exceed the projection limitations specified in Section 2113.5.

**2113.8 Additional load.** Chimneys shall not support loads other than their own weight unless they are designed and constructed to support the additional load. Masonry chimneys are permitted to be constructed as part of the masonry walls or concrete walls of the building.

**2113.9 Termination.** Chimneys shall extend at least 2 feet (610 mm) higher than any portion of the building within 10 feet (3048 mm), but shall not be less than 3 feet (914 mm) above the highest point where the chimney passes through the roof.

**2113.9.1 Spark arrestors.** All chimneys attached to any appliance or fireplace that burns solid fuel shall be equipped with an approved spark arrestor. The spark arrestor shall meet all of the following requirements:

1. The net free area of the spark arrestor shall not be less than four times the net free area of the outlet of the chimney.
2. The spark arrestor screen shall have heat and corrosion resistance equivalent to 12-gage wire, 19-gage galvanized wire or 24-gage stainless steel.
3. Openings shall not permit the passage of spheres having a diameter larger than  $\frac{1}{2}$  inch (12.7 mm) and shall not block the passage of spheres having a diameter of less than  $\frac{3}{8}$  inch (9.5 mm).
4. The spark arrestor shall be accessible for cleaning and the screen or chimney cap shall be removable to allow for cleaning of the chimney flue.

**2113.10 Wall thickness.** Masonry chimney walls shall be constructed of concrete, solid masonry units or hollow masonry units grouted solid with not less than 4 inches (102 mm) nominal thickness.

**2113.10.1 Masonry veneer chimneys.** Where masonry is used as veneer for a framed chimney, through flashing and weep holes shall be provided as required by Chapter 14.

**2113.11 Flue lining (material).** Masonry chimneys shall be lined. The lining material shall be appropriate for the type of appliance connected, according to the terms of the appliance listing and the manufacturer's instructions.

**2113.11.1 Residential-type appliances (general).** Flue lining systems shall comply with one of the following:

1. Clay flue lining complying with the requirements of ASTM C 315, or equivalent.
2. Listed chimney lining systems complying with UL 1777.
3. Factory-built chimneys or chimney units listed for installation within masonry chimneys.
4. Other approved materials that will resist corrosion, erosion, softening or cracking from flue gases and condensate at temperatures up to 1,800°F (982°C).

**2113.11.1.1 Flue linings for specific appliances.** Flue linings other than those covered in Section 2113.11.1 intended for use with specific appliances shall comply with Sections 2113.11.1.2 through 2113.11.1.4 and Sections 2113.11.2 and 2113.11.3.

**2113.11.1.2 Gas appliances.** Flue lining systems for gas appliances shall be in accordance with the *California Mechanical Code*.

**2113.11.1.3 Pellet fuel-burning appliances.** Flue lining and vent systems for use in masonry chimneys with pellet fuel-burning appliances shall be limited to flue lining systems complying with Section 2113.11.1 and pellet vents listed for installation within masonry chimneys (see Section 2113.11.1.5 for marking).

**2113.11.1.4 Oil-fired appliances approved for use with L-vent.** Flue lining and vent systems for use in