

**NON-BEARING NON-SHEAR MASONRY WALLS: 2016 CBC****Disciplines:** Structural**History:** Issued 05-08-19

Division of the State Architect (DSA) documents referenced within this publication may be found on the [DSA Publications](#) webpage.

**PURPOSE:** This Interpretation of Regulations (IR) clarifies requirements relating to non-bearing non-shear masonry walls on construction projects under the Division of the State Architect's (DSA) jurisdiction.

**1. SCOPE:** The requirements of this IR apply to non-bearing non-shear masonry walls submitted to DSA for review and approval, with prismatic cross sections full height, not supporting any other accessory element and meet one or more of the following:

- Non-bearing non-shear (NB-NS) masonry walls within the building envelope that comply with the definition of "nonbearing wall" per ASCE 7 Section 11.2 and also meet the criteria of "nonparticipating elements" as defined in TMS 402 Section 7.3.1. Where such walls are braced at the top to the primary structure, the bracing connections shall be configured to transfer wall out-of-plane forces only and accommodate the seismic relative displacements for in-plane movement per ASCE 7 Section 13.3.2.
- Site retaining masonry walls.
- Free-standing (FS) site masonry walls, such as fences, ball walls, or yard walls.

**2. BASIC REQUIREMENTS:** Masonry walls covered under the scope of this IR shall be designed, detailed, constructed, and have testing and special inspection as summarized in the following sections.

**2.1 Design, Detailing, and Construction Requirements:** Design, detailing, and construction shall be in accordance with the California Building Code (CBC) Chapter 21A and the following:

**2.1.1** Walls shall be designed for out-of-plane seismic forces per *DSA IR 16-11: Seismic Out-of-Plane Forces for Non-bearing Non-Shear Concrete and Masonry Walls: 2016 CBC*.

**2.1.2** The following modifications to code requirements are permitted for retaining walls less than 4 feet above the top of foundation with level backfill and no surcharge, as well as free-standing walls and non-bearing non-shear walls of any height:

- The total area of horizontal reinforcement shall not be less than 0.001 times the sectional area of the wall per CBC Section 2106A.1.1(1), but shall be spaced not more than 4'-0" on center, except for walls other than running bond as required by TMS 402 Section 7.4.5 for Seismic Design Categories E and F when applicable.
- Reinforced hollow-unit masonry laid in running bond may be grouted only in cells containing vertical and horizontal reinforcement per the exception in CBC Section 2104A.1.3.1.2.1.

**2.2 Testing and Special Inspection Requirements:** Testing and special inspection shall be in accordance with CBC Section 1705A.4 and Chapter 21A. Construction documents shall clearly state requirements for DSA testing and special inspection items accordingly as required on form *DSA-103: List of Required Structural Tests & Special Inspections – 2016 CBC*. As summarized in Appendix A, DSA testing and special inspection may be

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waived by the registered design professional in responsible charge of the project or delegated design professional with the approval of DSA; however, continuous inspection shall be performed by a DSA-certified project inspector for all stages of construction regardless of testing and special inspection requirements.

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**References:** California Code of Regulations (CCR) Title 24

Part 2: California Building Code, Sections 1705A.4, 2104A.1.3.1.2.1, 2105A.3, 2105A.4, 2106A.1.1.

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This Interpretation of Regulations (IR) is intended for use by the Division of the State Architect (DSA) staff and by design professionals to promote more uniform statewide criteria for plan review and construction inspection of projects within the jurisdiction of DSA which includes State of California public elementary and secondary schools (grades K–12), community colleges and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

This IR is reviewed on a regular basis and is subject to revision at any time. Please check DSA's website for currently effective IRs. Only IRs listed on the webpage at [www.dgs.ca.gov/dsa/Resources/IRManual.aspx](http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx) at the time of plan submittal to DSA are considered applicable.

**Appendix A–DSA Testing and Special Inspection Requirements<sup>1</sup>**

Wall Height <sup>2</sup>	Wall Type	DSA Special Inspection	DSA Testing				
			Masonry Unit <sup>3</sup>	Compressive Strength <sup>4</sup>	Mortar <sup>3,5</sup>	Grout <sup>3</sup>	Core <sup>6</sup>
< 4'-0"	Retaining <sup>7</sup>	No	Yes <sup>8</sup>	Yes <sup>9</sup>	No	No	No <sup>10</sup>
< 6'-0"	NB-NS, FS	No	Yes <sup>8</sup>	Yes <sup>9</sup>	No	No	No <sup>10</sup>
≤ 12'-0"	Retaining, NB-NS, FS	Yes	Yes	Yes	Yes	Yes	No <sup>10,11</sup>
> 12'-0"	Retaining, NB-NS, FS	Yes	Yes	Yes	Yes	Yes	Yes

Notes:

1. DSA testing and/or special inspection, as applicable, is not required if noted above and selected to be exempt by the design professional on form *DSA-103*, Appendix. Construction documents shall clearly state requirements accordingly.
2. Wall height is measured from top of foundation, except for NB-NS and FS walls less than 6'-0" that are measured from lowest adjacent grade.
3. Mortar and grout testing are not required when the compressive strength is determined by the prism test method during construction per the requirements of CBC Section 2105A.3. In addition, masonry unit testing may be exempted when the prism test method is used.
4. Compressive strength of masonry shall be determined by the unit strength method or prism test method in accordance with CBC Section 2105A.2.
5. Mortar testing may be limited or exempted per the requirements of CBC Section 2105A.3, Exception 1 or 2.
6. Masonry core sampling and testing shall meet the requirements of CBC Section 2105A.4. Such coring is not required, including those walls beyond the scope of this IR, when nondestructive test methods per CBC Section 2015A.4, Exception 2 are approved.
7. If retaining wall < 4'-0" has sloped backfill or supports a surcharge, then see requirements for retaining walls ≤ 12'-0".
8. Masonry unit testing may be exempted by providing material certificates certifying that the masonry units are in compliance.
9. Masonry compressive strength testing may be exempted if all of the following apply: i) mortar and grout testing are both exempted in accordance with the Table above and applicable footnotes, and ii) material certificates are provided certifying that the masonry units, mortar and grout are in compliance.
10. Masonry core sampling and testing is not required provided such walls meet the criteria listed in CBC Section 2105A.4, Exception 1.
11. Masonry core sampling and testing shall not be exempted where the wall is separated from an adjacent building or structure, means of egress, assembly area, or emergency vehicle access, as applicable, by a distance less than the wall height above adjacent grade.