



IBC Model Code Adoption Project

STAKEHOLDER INPUT PROCESS

DSA Structural Amendments under review are highlighted in Marginal Markings

Template 21-39

2001 CBC - Chapter 21A MASONRY

Section - TABLES

Subsection(s) - TABLE 21A-R

TABLE 21A-R—MINIMUM THICKNESS OF MASONRY WALLS^{1, 2}

TYPE OF MASONRY	MAXIMUM RATIO UNSUPPORTED HEIGHT OR LENGTH TO THICKNESS ^{2,3}	NOMINAL MINIMUM THICKNESS (inches)
BEARING OR SHEAR WALLS:		
1. Stone masonry	14	16
2. Reinforced grouted masonry	25	6
3. Reinforced hollow-unit masonry	25	6
NONBEARING WALLS:		
4. Exterior reinforced walls	30	6
5. Interior partitions reinforced	36	4

¹For walls of varying thickness, use the least thickness when determining the height or length to thickness ratio.

²In determining the height or length-to-thickness ratio of a cantilevered wall, the dimension to be used shall be twice the dimension of the end of the wall from the lateral support.

³Cantilevered walls not part of a building and not carrying applied vertical loads need not meet these minimum requirements but their design must comply with stress and overturning requirements.

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CBC Table 21A-R Minimum Thickness of Masonry Walls

DSA COMMENTS:

1. The 2006 IBC will reference ACI 530-05/ASCE 5-05/TMS 402-05. DSA is not planning to adopt the empirical design provisions (Chapter 5) of this standard.

2. Table 21A-R has been codified in Title 24 since at least the 1984 annual supplement (was Table No. 2-24-1) to the State Building Code. The only revisions to this table since that date are footnotes 1. and 3.

AVAILABLE EXCERPTS FROM PREVIOUS RULEMAKING RECORDS (April 1995 Monograph):

SUBITEM 14 - AMEND TABLE 21A-R OF THE CALIFORNIA BUILDING CODE AS FOLLOWS:

Amend TABLE 21A-R - MINIMUM THICKNESS OF MASONRY WALLS

Add a new Footnote 1 to read as follows and renumber existing footnotes [see Attachment A]:

TABLE NO. 21A-R -- MINIMUM THICKNESS OF MASONRY WALLS ²

TYPE OF MASONRY	MAXIMUM RATIO UNSUPPORTED HEIGHT OR LENGTH TO THICKNESS ^{2,3}	NOMINAL MINIMUM THICKNESS (inches)
BEARING OR SHEAR WALLS: 1. Stone masonry 2. Reinforced grouted masonry 3. Reinforced hollow-unit masonry	14 25 25	16 6 6
NONBEARING WALLS: 4. Exterior reinforced walls 5. Interior partitions reinforced	30 36	6 4

¹ *For walls of varying thickness, use the least thickness when determining the height or length to thickness ratio.*

² In determining the height or length-to-thickness ratio of a cantilever wall, the dimension to be used shall be twice the dimension of the end of the wall from the lateral support.

^{2,3} Cantilever walls not part of a building and not carrying applied vertical loads need not meet these minimum requirements but their design must comply with stress and overturning requirements.

THE FOLLOWING ARE THE REASONS FOR PROPOSING THIS PARTICULAR RULEMAKING ACTION.

...

These amendments were determined necessary to provide the seismic performance required for schools and essential services buildings. These facilities require a higher degree of post earthquake performance than ordinary structures, as they are used for post disaster recovery. Schools, while not explicitly listed as essential facilities, are generally used as post disaster shelters. The Uniform Building Code provisions are oriented to life safety and prevention of collapse, not continued function.

SUBITEM 14 - AMEND TABLE 21A-R

Clarification. The maximum h/t ratios are set to control buckling. Buckling is a function of the wall thickness. For conservatism and consistency, the least thickness should be used unless a rational analysis establishing the buckling parameters as a function of thickness is submitted.