

REFERENCED STANDARDS

UNIFORM BUILDING CODE STANDARD 21-4 HOLLOW AND SOLID LOAD-BEARING CONCRETE MASONRY UNITS

Based on Standard Specification C 90-95 of the ASTM International.
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ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428

Note: See Appendix Chapter 1, Section A106, California Existing Building Code

Section 21.401 — Scope

This standard covers solid (units with 75 percent or more net area) and hollow load-bearing concrete masonry units made from portland cement, water and mineral aggregates with or without the inclusion of other materials.

Section 21.402 — Classification

21.402.1 Types. Two types of concrete masonry units in each of two grades are covered as follows:

21.402.1.1 Type I, moisture-controlled units. Units designated as Type I shall conform to all requirements of this standard including the moisture content requirements of Table 21-4-A.

21.402.1.2 Type II, nonmoisture-controlled units. Units designated as Type II shall conform to all requirements of this standard except the moisture content requirements of Table 21-4-A.

21.402.2 Grades. Concrete masonry units manufactured in accordance with this standard shall conform to two grades as follows:

21.402.2.1 Grade N. Units having a weight classification of 85 pcf (1360 kg/m³) or greater, for general use such as in exterior walls below and above grade that may or may not be exposed to moisture penetration or the weather and for interior walls and backup.

21.402.2.2 Grade S. Units having a weight classification of less than 85 pcf (1360 kg/m³), for uses limited to above-grade installation in exterior walls with weather-protective coatings and in walls not exposed to the weather.

Section 21.403 — Materials

21.403.1 Cementitious materials. Materials shall conform to the following applicable standards:

1. Portland Cement—ASTM C 150 modified as follows:

Limitation on insoluble residue—1.5 percent maximum.

Limitation on air content of mortar,

Volume percent—22 percent maximum.

Limitation on loss on ignition—7 percent maximum.

Limestone with a minimum 85 percent calcium carbonate (CaCO₃) content may be added to the cement, pro-

vided the requirements of ASTM C 150 as modified above are met.

2. Blended Cements—ASTM C 595.

3. Hydrated Lime, Type S—UBC Standard 21-13.

21.403.2 Other constituents and aggregates. Air-entraining agents, coloring pigments, integral water repellents, finely ground silica, aggregates, and other constituents, shall be previously established as suitable for use in concrete or shall be shown by test or experience to not be detrimental to the durability of the concrete.

Section 21.404 — Physical Requirements

At the time of delivery to the work site, the units shall conform to the physical requirements prescribed in Table 21-4-B. The moisture content of Type I concrete masonry units at time of delivery shall conform to the requirements prescribed in Table 21-4-A.

At the time of delivery to the purchaser, the linear shrinkage of Type II units shall not exceed 0.065 percent.

Section 21.405 — Minimum Face-shell and Web Thicknesses

Face-shell (FST) and web (WT) thicknesses shall conform to the requirements listed in Table 21-4-C.

Section 21.406 — Permissible Variations in Dimensions

21.406.1 Precision units. For precision units, no overall dimension (width, height and length) shall differ by more than $\frac{1}{8}$ inch (3.2 mm) from the specified standard dimensions.

21.406.2 Particular feature units. For particular feature units, dimensions shall be in accordance with the following:

1. For molded face units, no overall dimension (width, height and length) shall differ by more than $\frac{1}{8}$ inch (3.2 mm) from the specified standard dimension. Dimensions of molded features (ribs, scores, hex-shapes, patterns, etc.) shall be within $\frac{1}{16}$ inch (1.6 mm) of the specified standard dimensions and shall be within $\frac{1}{16}$ inch (1.6 mm) of the specified placement of the unit.
2. For split-faced units, all non-split overall dimensions (width, height and length) shall differ by no more than $\frac{1}{8}$