

# CONCRETE MASONRY UNIT GUIDE SPECIFICATION

The following Guide Specification was written as the framework for a specification section. It appears in the CSI format on the left side with explanatory information in the Notes to Specifier on the right. When using this Guide Specification, the specifier must consider applicable building codes and particular requirements of each project. A complete reinforced concrete masonry construction Guide Specification is available from the NWCMA office.

## ■ PRODUCTS

### 2.01 CONCRETE MASONRY UNITS

A. Hollow and solid load-bearing concrete masonry units.

1. ASTM C 90-, *Specification for Load-Bearing Concrete Masonry Units*.
2. Nominal face dimensions: \_\_\_\_\_ in. x \_\_\_\_\_ in.
3. Linear shrinkage shall not exceed 0.065 percent.
4. Minimum concrete oven-dry density shall be \_\_\_\_\_ lb./cu. ft.  
  
Units shall be manufactured with aggregates conforming to ASTM C-33 and C-331.
5. (Optional provision, see specifier notes.) Units shall contain an integral water repellent admixture. Units shall be manufactured by a block producer qualified by the admixture supplier.

A qualification program shall include annual testing of the water repellency of a concrete masonry unit wall panel. Additionally, random unit testing shall be performed yearly by an admixture supplier representative who is certified by the National Concrete Masonry Association as a concrete masonry testing technician.

6. Units shall be manufactured by a member of the Northwest Concrete Masonry Association.
7. (Optional provision, see specifier notes.) Net area compressive strength of the units: \_\_\_\_\_ psi.
8. Testing of units shall be overseen by a qualified laboratory technician of an accredited testing agency.

## ■ NOTES TO SPECIFIER

2.01 Specify the size of units along with any special requirements regarding the configuration, texture, color and strength of the units.

When applicable, request submittal of a sample consisting of not less than four units, representing the range of texture and color. (Section 1.04.A.1)

2.01.A.1 Specify most recent version **year** of ASTM C-90.

2.01.A.2 Specify the nominal sizes of the units. Unit thickness and type shall be shown on the construction plans.

2.01.A.4 Concrete masonry unit weight affects numerous properties including strength, water absorption, shrinkage potential, sound transmission, thermal and fire resistance. Specifying block by concrete density rather than weight classification is recommended to meet performance requirements.

A minimum average concrete density of **95 lb./cu. ft.** is recommended for opaque coated or weather protected walls.

A minimum average concrete density of **105 lb./cu. ft.** is recommended for clear-sealed, weather-exposed walls or **110 lb./cu. ft.** when such walls are located in the wet weather climates of Western Washington and Western Oregon. Also, see note 2.01.A.5 below if **110 lb./cu. ft.** minimum density is specified.

A minimum concrete density of **105 lb./cu. ft.** is recommended for all 4-inch wide concrete masonry veneer units.

These density recommendations apply when using pumice aggregate per ASTM C-331. Pumice is the common lightweight aggregate used in the Northwest.

2.01.A.5 Include this provision when walls are clear sealed on the exterior and exposed to wet weather climates. This applies to Western Washington and Western Oregon locations.

When specifying units with an integral water repellent, the manufacturer recommended mortar admixture must be used in the mortar (Section 2.01.D). Request submittal of a copy of a current producer qualification certificate issued by the admixture supplier (Section 1.04.A). Certificates should be renewed annually.

2.01.A.7 Unless otherwise specified, concrete masonry units conforming to ASTM C-90 will have a minimum average net compressive strength of **2000 psi**. If stronger units are required, specify strength here. Structural notes should call out the masonry assembly compressive strength ( $f_m$ ) required and method of compliance, if so, omit this section.

2.01.A.8 Testing should be overseen by an individual certified through the American Concrete Institute. The laboratory performing masonry testing should be accredited in accordance with ASTM C-1093.

## Northwest Concrete Masonry Association

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Meridian, ID (208) 888-4050

Central Pre-Mix Concrete Products Co.  
Spokane, WA (509) 926-8235

Mutual Materials Co.  
Bellevue, WA (425) 452-2300  
Tualatin, OR (503) 624-8860

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Yakima, WA (509) 575-3000

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