

## 100% Lightweight Masonry Units *(Less than 93 pcf)*

### PART 1 - GENERAL

**A.** Concrete masonry units shall be of modular dimension, shall be of uniform appearance and shall be delivered to the project site in an air-dried condition. Units shall be manufactured with cement and 100% STALITE Expanded Slate Lightweight Aggregate conforming to ASTM C 331 and C 330.

**1. LEED OR RECYCLED CONTENT PROJECTS:** As directed by the Architect. Units shall be manufactured complying to the 500 mile job site radius with 100% STALITE Expanded Slate Lightweight Aggregate. Lightweight aggregates shall be certified by an independent testing facility recognized by USGBC verifying that the lightweight aggregate meets all requirements for 100% pre-consumer recycled waste aggregate content. The use of recycled concrete block, waste concrete without proper independent testing of the crushed material as an aggregate conforming to ASTM C 331 and/or ASTM C 330 shall not be allowed.

**B. LIGHTWEIGHT CONCRETE MASONRY UNITS:** Concrete masonry units shall comply with referenced standards as follows:

**1. Load-Bearing Units:** ASTM C 90 latest edition. Units shall not exceed 93 pcf density using 100% STALITE Expanded Slate Lightweight Aggregate conforming to ASTM C 331 and C 330, or ESCSI SmartWall System using approved rotary kiln expanded shale, clay or slate aggregates.

**2. Size:** Standard units with nominal face dimensions of 8 inches high x 16 inches long and nominal depths as indicated on the drawings for specific locations.

**3. Special Shapes:** Provide non-standard blocks configured for corners, lintels and other detailed conditions.

**4. Job Site Testing:** Per the request of the Architect, a random sample of the concrete masonry units may be taken from the job site to be tested for compliance with the specifications.

### C. LIMITS OF CONCRETE MASONRY UNITS MATERIAL USE:

#### WARNING

**1.** All units shall be free of organic impurities that will cause rusting, staining or pop outs and shall contain NO combustible matter.

The use of coal ash aggregate/bottom ash, cinders or similar waste products SHALL NOT be allowed. The use of Fly Ash contained within the cement paste may be used at the manufacturer's discretion.

**2.** All 8 inch deep or larger units shall meet ACI 216 requirements for a two-hour or greater fire rating (as required).

**3. Aggregate:** 100% Stalite rotary kiln expanded slate conforming to ASTM C 331 and C 330 with 12% maximum absorption when tested in accordance with ASTM C 128.

**4. CERTIFICATION:** The producer of the lightweight concrete masonry units shall furnish a letter of certification stating:

**a.** All lightweight aggregate used in the manufacture of the units was expanded slate produced by the rotary kiln process, STALITE or approved equal conforming to ASTM C 331 and C 330 with 12% maximum absorption when tested in accordance with ASTM C 128.

**b.** ASTM C 90 test and certification

**c.** Submit with Certification, a Certificate by an independent testing facility recognized by USGBC that the lightweight aggregate is 100% pre-consumer recycled waste aggregate content.

**d.** ACI 216 fire rating calculations

### D. CONCRETE BRICK: ASTM C 55

**1.** Cored or solid

**2. Size:** As indicated on drawings

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### PART 2 - REFERENCES

**ACI 216.1/TMS 0216.1** – Standard Method for Determining Fire Resistance of Concrete and Masonry Construction Assemblies

**ACI 530/ASCE 5/TMS 402** – Building Code Requirements for Masonry Structures

**ACI 530.1/ASCE6/TMS 602** – Specification for Masonry Structures

**ASTM C 55** – Standard Specification for Concrete Brick

**ASTM C 90** – Standard Specification for Loadbearing Concrete Masonry Units

**ASTM C 128** – Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate

**ASTM C 140** – Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units

**ASTM C 330** – Standard Specification for Lightweight Aggregates for Structural Concrete

**ASTM C 331** – Standard Specification for Lightweight Aggregates for Concrete Masonry Units

**ASTM C 331** – Standard Specification for Lightweight Aggregates for Concrete Masonry Units

**NOTE:** Typical Jobsite Block Weights for 100% Lightweight Concrete **Masonry Units:** **4x8x16 -- 18 lbs. | 6x8x16 -- 23 lbs. | 8x8x16 -- 26 lbs. | 12x8x16 -- 36 lbs.**