Guide Specification for

Lightweight Masonry Units

(95 pcf—105 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-dry condition. Units shall be manufactured with cement and 100% Stalite Lightweight Aggregate conforming to ASTM C 331 and ASTM C 330.
   1. LEED PROJECTS: As directed by the Architect. Units shall be manufactured complying to the 500 mile job site radius with 100% Expanded Slate Aggregate. **Lightweight aggregates shall be certified by an independent testing facility recognized by USGC verifying the lightweight aggregates meets all qualifications of recycled material.**

B. Lightweight Concrete Masonry Units:
   1. Lightweight concrete masonry units shall conform to the requirements of ASTM C 90, for load bearing and non-load bearing concrete masonry units. 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/bottom ash, cinders or aggregate/bottom ash, or similar waste products will not be allowed.
   2. All 8 inch deep or larger units shall meet ACI 216 requirements for a two-hour or greater fire rating (as required).
   3. All lightweight aggregate used in the concrete units shall be Stalite rotary kiln expanded slate conforming to ASTM C 331 and C 330 with 6% to 10% absorption when tested in accordance with ASTM C 128. All normal weight aggregate shall conform to the requirements of ASTM C 33.
   4. Manufacturer shall submit a written certification, with ASTM C 90 test reports and Lightweight Aggregate test data.
   5. 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 ASTM C 330 with 6% to 10% absorption when tested in accordance with ASTM C 128
      b. ASTM C 90 certification
      c. ACI 216 fire rating calculations
   6. 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 specifications.
   7. Concrete Brick: ASTM C 55
      a. Cored or solid
      b. Size: As indicated on drawings

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—Lightweight Aggregates for Concrete Masonry Units

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STALITE STRUCTURAL LIGHTWEIGHT AGGREGATE

REVISED 10/11/10

Guide Specification for

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

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

NOTE: Typical Jobsite Block Weights for 100% Lightweight Concrete Masonry Units:

4x8x16 -- 18 lbs.	6x8x16 -- 23 lbs.
8x8x16 -- 26 lbs.	12x8x16 -- 36 lbs.

STALITE STRUCTURAL LIGHTWEIGHT AGGREGATE

REVISED 4/24/12