

Technical Information Sheet Number 1

Q-LITE® QUALITY LIGHTWEIGHT CONCRETE MASONRY UNITS

Q-LITE® Quality Lightweight Concrete Masonry Units, developed by Arcosa Lightweight, represent the first major innovation in standard gray units in 30 years. Q-LITE concrete masonry units are the lightest-weight blended aggregate units available, and combine the benefits of blending with a U.L.-certified fire rating.

This Technical Information Sheet explains the features that give Q-LITE concrete masonry units their unique quality, and addresses specific Q-LITE attributes that will be of interest to specifiers, designers and other members of the construction industry.

Fire Resistance

FIRE RESISTANCE is the keystone of the Q-LITE system. Full scale fire tests conducted by Underwriters' Laboratories, Inc. resulted in 2-Hour certification for 8X8X16 units made with Q-LITE's exclusive "70-30" formulation, with an equivalent thickness of 3.8 inches. The "70-30" formulation is defined as a blend of 70% Rotary Kiln Expanded Clay lightweight aggregate manufactured by Arcosa Lightweight, and 30% natural aggregates, by volume. "Natural aggregates" include natural siliceous sand, limerock, limestone and granite. Fire resistance ratings for Q-LITE concrete masonry units having an equivalent thickness other than 3.8 inches can be calculated using the National Concrete Masonry Association's "Standard Method of Determining the Fire Resistance Rating of Concrete Masonry". For more information please refer to Technical Information Sheet No. 2, "Fire Resistance of Q-LITE Concrete Masonry Units".

Increasing Productivity

INCREASING PRODUCTIVITY is critical for growth of any manufacturing or construction industry. Q-LITE concrete masonry units allow increased productivity, delivery, handling, and installation of concrete masonry units. Tests conducted by the National Concrete Masonry Association, the Expanded Shale Clay & Slate Institute and Masonry Consultants, Inc. in the field and at NCMA's Research and Development Laboratory confirmed that lighter weight units result in improved mason productivity, compared to conventional units. Productivity improves even more when lightweight units of larger sizes are used. To optimize mason productivity, Q-LITE concrete masonry units can be made in 24-inch lengths. These oversize units weigh less than conventional size heavyweight units, and allow the mason to dramatically improve production – as much as 65%, according to one test. Increased productivity with Q-LITE CMU's will help the indus-



Q-LITE CMUs are the QUALITY LIGHTWEIGHT concrete masonry units. They are made with the PREMIUM lightweight aggregates produced by Arcosa Lightweight, America's Leader in Lightweight Aggregate. They are extremely lightweight, with dry unit weight of about 80 pcf. That means better mason productivity, lower delivery costs and reduced building dead loads. They have been fire tested by Underwriter's Laboratories. They have higher "R" (lower "U") values and high STC ratings. And they comply with all building codes.

With Q-LITE concrete masonry, the Q stands for QUALITY.



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try address the current mason shortage. Other advantages include lower delivery costs, increased payloads for delivery trucks, reduced handling costs and lower scaffolding costs. Productivity features of Q-LITE concrete masonry units are discussed in more detail in Technical Information Sheet No. 3, "Increased Mason Productivity with Q-LITE Concrete Masonry Units".

Energy Efficient Construction

ENERGY EFFICIENT CONSTRUCTION is an important consideration today and for the future. The affordability of residential, commercial and industrial construction is directly related to the energy efficiency of major construction materials. Q-LITE CMU's made with Arcosa Lightweight aggregates provide excellent thermal performance in a cost competitive wall system. Because insulating values are a function of concrete density, Q-LITE CMU's achieve superior thermal properties, with "U" values of 0.32 or lower for 8X8X16 units. This is equivalent to an "R" value of 3.12, which is 27% higher than a typical 28 lb. unit. Of course the thermal performance of Q-LITE concrete masonry can be further advanced by the use of insulation inserts, loose fill insulation, or rigid insulation applied to the exterior or interior of the wall. For more information on the thermal properties of Q-LITE concrete masonry units See Technical Information Sheet No. 4, "*Energy Efficient Construction with Q-LITE Concrete Masonry Units*".

Acoustical Properties

ACOUSTICAL PROPERTIES of concrete masonry are greatly enhanced with Q-LITE CMU's. The problem of noise pollution has become a primary consideration in the design of industrial, commercial and residential buildings. With each advance in technology comes more and more types of noise. Government agencies have tightened restrictions on noise pollution to protect the American public from long term exposure to high noise levels. Concrete masonry's mass and rigidity are extremely effective in reducing the transmission of unwanted sounds. With Q-LITE CMUs, superior sound reduction is maintained while reducing the weight of the

wall, a claim no other wall system can make. For more information please refer to Technical Information Sheet No. 5, "Acoustical Properties for Q-LITE Concrete Masonry Units".

Code Acceptance

MODEL BUILDING CODE ACCEPTANCE is a major consideration when specifying any construction product of system. Q-LITE concrete masonry units meet or exceed all Model Building Code requirements pertaining to concrete masonry. Q-LITE CMUs meet the requirements of A.S.T.M. C 90, Specification for Load-bearing Concrete Masonry Units and have been fire tested by Underwriters' Laboratories. In short, Q-LITE concrete masonry units ensure the building official, the designer and the consumer that they are receiving the QUALITY lightweight concrete masonry units. A detailed analysis of Q-LITE CMUs and the Model Building Codes may be found in Technical Information Sheet No. 6, "Q-LITE Concrete Masonry Units Compliance with Model Building Codes".

In summary, the development of Q-LITE Quality Lightweight concrete masonry units is a milestone in construction history. With Q-LITE CMUs, the masonry industry has a tool to provide stability and growth for the standard gray units in an ever-changing construction market.

Q-LITE Quality Lightweight concrete masonry units are manufactured using Rotary Kiln Expanded Clay lightweight aggregates in accordance with A.S.T.M. C 331, "*Specification for Lightweight Aggregates for Concrete Masonry Units*".

Arcosa Lightweight stands firmly behind the masonry industry through national, state and local masonry association participation. We are committed to the production of quality aggregates for quality concrete masonry units to ensure the future of the masonry industry. We welcome your comments and suggestions for improving the quality of masonry construction.