Technical Information Sheet Number 3

INCREASED MASON PRODUCTIVITY WITH Q-LITE® CONCRETE MASONRY UNITS

Unit masonry construction is a labor-intensive process in which units are placed by hand one at a time. The first major development in masonry materials to improve mason productivity was the introduction of the concrete block, which provided a face area 7 times larger than the traditional unit, the 2 1\4 X 8 inch brick. That meant that every time a mason laid a block, he put 7 times as much wall area in place as when he laid a brick. Now the next great development in masonry materials is setting a new standard in mason productivity.

The Q-LITE® concrete masonry unit allows the mason to lay more units per hour than the typical concrete block. Most hollow 8 X 8 X 16 CMU's weigh 28 to 36 pounds, depending on the local materials used to produce them. Q-LITE units of the same size weigh 23 pounds – a reduction of 18% to 36% in the weight of the unit. Studies have shown that reducing the weight of the unit increases the production rate of the mason. Tests were conducted to determine the effect size and weight of units have on productivity. The study confirmed that lighter units can be laid faster, and that the benefits of lightweight units increase with increasing unit size. Table 1 summarizes the effect of unit weight determined in the study. Table 2 shows the effect of unit size, while Table 3 reflects the combined effect of larger size, lighter weight units. Although the tests were limited in scope, the dramatic results clearly demonstrate the relationship of size and weight to production. And by increasing the productivity of the mason, Q-LITE units make masonry walls more cost effective. Q-LITE concrete masonry units come in a wide range of sizes to meet any requirement. In addition to their unique lightweight concrete formulation resulting in lighter unit weights, Q-LITE units are Fire Rated for peace of mind.

Suggested Specifications

Lightweight Concrete Masonry Units (CMUs) shall be Q-LITE CMUs conforming to the requirements of ASTM C 90, "Specification for Load- Bearing Concrete Masonry Units". The units shall be Type II, Nonmoisture Controlled Units. The producer of the Q-LITE lightweight concrete masonry units shall supply a current certification that all concrete masonry units use rotary kiln expanded clay, shale or slate aggregates produced by Arcosa Lightweight., conforming to ASTM C 331, "Specification for Lightweight Aggregates for Concrete Masonry Units". Natural aggregates shall conform to ASTM C 33 "Specification for Aggregates for Concrete". The mix design used in manufacturing the Q-Lite concrete masonry units shall include not less than 70% expanded clay aggregate (all gradations) and not more than 30% local natural aggregates (all gradations), by volume.

Table 1
Effect of Unit Weight on Mason Productivity

Size	Type	% Increase in Productivity
24" 24"	HW LW	+18.6%
16" 16"	HW LW	+14.9%

Table 2
Effect of Unit Size on Mason Productivity

Size	Type	% Increase in Productivity
16" 24"	LW LW	+43.6%
16" 24"	HW HW	+39.0%

Table 3
Combined Effect of Unit Size and Weight on Mason Productivity

Size	Type	% Increase in Productivity
16" 24"	LW LW	+64.9%

Source: Productivity Tests Conducted by National Concrete Masonry Association; Expanded Shale, Clay and Slate Institute and Masonry Consultants.

Note: The National Concrete Masonry Association, the Expanded Shale, Clay and Slate Institute, and Masonry Consultants make no claims, expressed or implied, as to the relevance of production rates determined as a result of the limited investigation to actual production rates which may be expected under actual job site conditions. Results of the study shall not be used for estimating purposes.

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