

## Mason Productivity

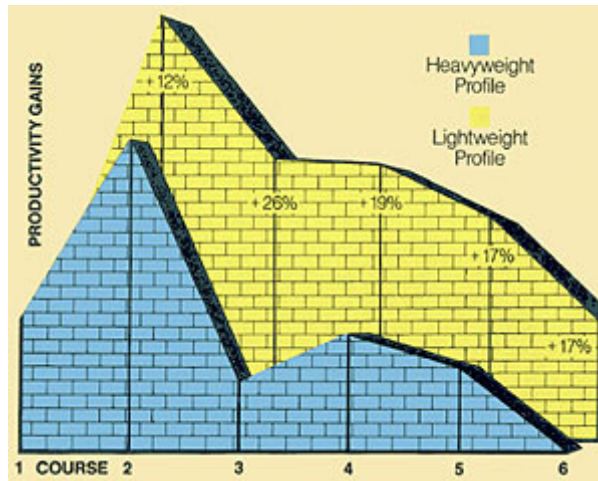
The masonry process is perceived to be one of the most labor intensive aspects of construction today. Since masonry units (blocks) must be handled and placed one-by-one, increased mason productivity is the key to effective management of masonry construction. In tests conducted both in the field and at the National Concrete Masonry Association Research and Development Laboratory it has been dramatically shown that the size and weight of masonry units are primary factors influencing the speed at which blocks can be laid.

The test results confirm that lightweight block made with expanded shale, clay or slate aggregate significantly increased mason productivity over heavyweight units, especially when 24" units were used. These facts alone make lightweight block walls cost competitive with any other wall system. But considering the reduced structural loading, better fire rating, greater strength, and much better thermal insulating and sound absorbing properties, lightweight concrete blocks are more than cost competitive. They are cost effective.

The productivity gained with 8 1/2' x 8 1/2' x 16" (standard size) lightweight block is represented by the "Field Test" graph. Although productivity improvement varied from course to course, the graph shows there was a significant overall increase in productivity with the lightweight units.

The Productivity Comparison Tables are based on laboratory data compiled during the construction of four wall sections. The figures shown reflect averages for all six courses of each wall section.

### Laboratory Test: Productivity Comparison Tables



**Table 1: Size Factor: 24" Blocks vs.16" Blocks**

16"	LW	Avg. of 6	41.6	86.5	76.9	
24"	LW	Avg. of 6	43.5	82.8	110.4	+43.6%
16"	HW	Avg. of 6	47.8	75.3	66.9	
24"	HW	Avg. of 6	51.6	69.8	93.1	+39.0%

**Table 2: Weight Factor: Lightweight vs. Heavyweight**

24"	HW	Avg. of 6	51.6	69.8	93.1	
24"	LW	Avg. of 6	43.5	82.8	110.4	+18.6%
16"	HW	Avg. of 6	47.8	75.3	66.9	
16"	LW	Avg. of 6	41.6	86.5	76.9	+14.9%

**Table 3: Size & Weight Factors Combined: 24" Lightweight vs.16" Heavyweight**

16"	HW	Avg. of 6	47.8	75.3	66.9	
24"	LW	Avg. of 6	43.5	82.8	110.4	+64.9%

Table 1 (Size Factor) compares 24" to 16" units. The table shows that the use of 24" masonry units significantly increases productivity: 39% with heavyweight units; 43.6% with lightweight units.

In Table 2 (Weight Factor) the gains in productivity attributed to lighter weight are shown. Productivity increased 14.9% with 16" lightweight units, and 18.6% with 24" lightweight units as compared to heavyweight units of the same sizes.

The test firmly establishes that masonry units of lighter weight and greater length dramatically increase mason productivity (Table 3 (Size & Weight Factor) compares the use of heavyweight 16" units to lightweight 24x11 units over the same time period. The result is an amazing 64.9% increase in productivity.

Although not specifically identified in the test, it is logical to believe that the use of lightweight units reduces the long term fatigue experienced by masons during the life of a job. This should result in even greater increases in productivity and improved mason morale.

In short, the use of expanded shale clay or slate lightweight masonry units is better business 100% of the time.

Construction with the speed of light. It's the smart way to conquer time and space.