

State-of-the-Art of Concrete Masonry Units

Maher K. Tadros¹, Gary L. Krause², Babrak Amiri³, and Steve Sweeney⁴

Abstract:

Current Concrete Masonry Unit (CMU) production methods are studied and presented in this paper. The basic steps of the most widespread production method, the vibropress manufacturing method, are given. The vibropress equipment could be classified as both mobile and stationary types. National associations, precast concrete manufacturers, international experts, as well as several leading national cement, lightweight aggregate and block manufacturers in the U.S., were contacted for their input on the state of the art of masonry block production. The state of the art of CMU in foreign countries was established based on information provided by organizations in Austria, Czechoslovakia, Finland, Germany, Great Britain, Hungary, and Norway. Results of the survey of U.S. organizations were analyzed and presented in tables and graphs. Important parameters of 8-in. standard blocks including mix design, block weight, compressive strength, and cost per block are provided. The studies reveal that the average weight of normal weight blocks is about 37 lbs. at a cost of 19 cents per block, while average weight of lightweight blocks is 26 lbs. at a cost of about 32 cents.

To purchase full article: Please use this direct link to purchase the TMS Journal Volume of this article, Volume 11, Issue 1: <https://masonrysociety.org/product/tms-ejournal-vol-11-no-1/>

Otherwise, consider becoming a TMS member for full access to all TMS Journal articles: <https://masonrysociety.org/membership/#join>

DOI: 10.70803/001c.140517

¹ Cheryl Prewett Professor and Director, Center for Infrastructure Research, University of Nebraska-Lincoln, Omaha Campus, NE.

² Assistant Professor, Center for Infrastructure Research, University of Nebraska-Lincoln, Omaha Campus, NE.

³ Graduate Research Assistant, Center for Infrastructure Research, University of Nebraska-Lincoln, Omaha Campus, NE.

⁴ U.S. Army Corps of Engineers, Construction Engineering Research Lab, Champaign, IL.