

Characterizing Compressive Strength of Compressed Stabilized Earth Blocks as a Function of Mix Design

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Abstract : Compressed Stabilized Earth Blocks (CSEB) are masonry units that combine soil, sand, stabilizer, and water under pressure to form an earth block. These CSEB's offer a cost-effective building solution for remote construction, using local resources and labor to minimize transportation and material costs. However, CSEB's, and earthen construction generally have not been widely adopted as standardized construction materials. One shortcoming is the difficulty in standardizing strength values of CSEB units and systems due to the inherent variations in mix design, including production compression. This research presents findings on compressive strengths of full-scale CSEB's from 60 different mix designs as a function of the amount of cement, sand, soil, and water added to the mixture. The full-scale results are compared with CSEB cylinder cores.

Keywords : CSEB, compressive strength, earth construction, mix design

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