MANUFACTURE OF MASONRY PRODUCTS CONTAINING LARGE AMOUNTS OF FLY ASH
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This investigation was conducted to establish database for manufacturing of concrete masonry products incorporating high volumes of ASTM Class F fly ash. A total of 15 mixture proportions for bricks, blocks, and paving stones, including reference mixture for each type of masonry product, was proportioned. The fly ash content was varied from 20 to 50% for brick and block mixtures, and from 15 to 30% for paving stone mixtures. All masonry products were tested for compressive strength, density, absorption, freezing and thawing resistance, drying shrinkage, and abrasion resistance. Test results indicated that bricks and blocks with up to 30% fly ash are suitable for use in both cold and warm climates. Other brick and block mixtures containing up to 50% fly ash were appropriate for building interior walls in cold regions and both interior and exterior walls in warm regions. None of the paving stone mixtures, including the control mixture, strictly conformed to all ASTM requirements. However, all the paving stone mixtures with and without fly ash are suitable for normal construction applications.