

Frost Durability Indexes of Segmental Retaining Wall Units

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20435487&lokasi=lokal>

Abstrak

As part of a larger investigation on segmental retaining wall (SRW) concrete durability, databases of ASTM C 1262 freezing and thawing mass loss were compared with SRW material characteristics to assess the usefulness of these characteristics as indexes of frost durability. It was determined that the paste to total (air and compaction) voids ratio consistently ranked among the most reliable parameters correlating with mass loss in the water. The national Concrete Masonry Association (NCMA) index also showed fair correlation to mass loss. The sapling factor and saturation coefficient, which are common frost durability criteria for other types of porous materials, displayed low correlation with mass loss, and their applicability to SRW concretes is thus questionable. Threshold values of material characteristics above or below which mass loss was significant were determined and compared with standard specification limits. Finally, results for tests in 3% NaCl solution were briefly examined and shown to have greater variability compared to results for tests in water. Thus, the correlation between frost resistance and material properties as determined from tests in water cannot be used to predict specimen performance in saline solution.