

Permeability and Confined Strength of Salt-Saturated Concrete

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ABSTRACT

Salt-saturated concrete is a durable seal material with a small void volume, adequate structural compressive strength, and low permeability. Though its use is testimony to favorable performance, quantification of triaxial strength and permeability properties are not usually available for either design or analysis. Often specified for seal applications in evaporite lithologies, salt-saturated concrete exhibits pressure-sensitive strength while axial, radial, and volumetric strains are used to calculate elastic properties that are similar to ordinary portland cement concrete. Laboratory and field measurements yield permeability values ranging from 10^{-22} to 10^{-17} m². These material properties are discussed along with other issues pertinent to use of salt-saturated concrete for sealing functions.

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