

IMPROVING THE CONCRETE CHARACTERISTICS EXPOSED TO CHLORIDES IN COASTAL ZONES

GAMAL SADEK EBAID¹, SONIA EL SERAFY²,
NAGY ALI HASSAN³ & TAREK ABD EL RADY MAHMOUD⁴

^{1,2,3}Professor, Department of water and hydraulic structures, Ain Shams University, Cairo, Egypt

⁴Research Scholar, Bachelor Civil Engineering, Master of Science, Ain Shams University, Cairo, Egypt

ABSTRACT

Due to the significance of acquiring concrete structures with longer life span in coastal zones, this research was commenced with the objective of improving the concrete characteristics when exposed to sodium chloride in coastal zones. Previous literature in the field of concrete in coastal zones was revised. Additives to improve the concrete characteristics (i. iron fillings, sika and fiber) were proposed. An experimental procedure was designed, where 12 beams were cast with traditional concrete and with concrete with one of the additives and immersed in 40,000 ppm salty water for 1,12 and 18 months. Investigations and measurements will be carried out to define their characteristics. Measurements were undertaken and results were discussed. Finally, conclusions were provided and recommendations were advocated.

KEYWORDS: Improving Concrete Characteristics, Investigations and Measurements