

# **Deterioration of concrete structures in the coastal regions of the Republic of Yemen**

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## **Abstract**

This study was conducted to survey, identify and qualify the wide spread of damages in the reinforced concrete structures in Al-Houdida city and determine their causes. To achieve the objectives of this research, survey of damages in fifteen buildings have been carried out as a first step. Secondly, information was collected from building industries, contractors and workmen about the construction practices and mix specifications. Also, powder and core samples were obtained from the buried structures in addition to samples of the materials used in making the concrete. Three groups of concrete panels with different mix specifications were made to study the relative effect of materials, mix specifications and construction practices on the durability of concrete. Chemical analysis have been conducted on the collected samples, panels and materials. The collected information have been correlated with laboratory investigation. Factors affecting reinforced concrete deterioration in Al-Houdida have been discussed. Finally, recommendations have been made to produce durable concrete in Al-Houdida city.