REHABILITATION OF RESIDENTIAL BUILDING WITH CORROSION DAMAGE: CASE STUDY IN AMMAN (MARJ - ALHAMAM), JORDAN

Abstract

Reinforced concrete structures and especially their reinforcing steel usually suffering from corrosion and damp and they are a worldwide problem that result in a economic and utilization issues. Many problems can be prevented by during the design phase and corrosion and damp. This can be Achieved by the isolation of the structure from their sources. This study focuses on the rehabilitation of existing structures damaged by corrosion and damp. A case study has been considered for residential building located in Amman, Jordan. The chosen building is 10 years old buildings damaged by a corrosion and damps which can be seen on the interior and exterior walls of the building. As well as a corroded steel informant bars have been seen after the removing of the concrete cover. This study aims to find a innovative technique that can rehabilitate the building and preventing the previously mentioned damages in the future. For this reason, a channel has been constructed along the damaged side of the building with two retaining walls to prevent water dissipation into the structural elements. The innovative technique has been tested by pumping a massive amount of water and no leaking or seepage have been noticed. It is concluded this technique has shown a very effective way to prevent a corrosion and damp damages.

Keywords: Corrosion, damp walls, steel reinforcement, rebars, reinforced concrete, carbonation of concrete, rehabilitation of buildings.