

## قائمة ملخصات الأبحاث

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### **ASSESSMENT OF PHYSICAL AND MECHANICAL CHARACTERISTICS OF MASONRY BUILDING MATERIALS IN HISTORIC MILITARY TOWERS IN ALEXANDRIA-EGYPT :A CASE STUDY**

#### **Abstract**

Historic masonry structures must have a full characterization of its building materials before starting in any rehabilitation procedures. As the same in medicine field, where, any treatment procedures must be preceded by a correct diagnosis. Mechanical and physical properties assessment gives important information about the current situation and a full characterization of building materials used in historical masonry structures. Limestone and lime or gypsum mortar is the most common masonry types used in construction of historic military structures in Alexandria, Egypt. The paper is concerned with assessment of building materials used in historical military towers in Alexandria - Egypt, which over the years its building materials suffered a lot of damage phenomena due to various causes (internal and external factors). The methodology, calibrated on historic tower No.3 located in Alexandria-Egypt dating back to 19th century. The methodology followed in the paper to assessment of masonry used in military structures allowed not only to assessment and record their properties but also to define and record the relation between building materials properties, surrounding environmental conditions and deterioration phenomena they present.