

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Cairo University

EFFECT OF SEAWATER AS A MIXING WATER AND CURING WATER ON MECHANICAL PROPERTIES OF GEO-POLYMER MORTAR AND CONCRETE OF FURNACE SLAG

By

Adel Abd-Elfatah Abd-Elfatah

A Thesis Submitted to the
Faculty of Engineering at Cairo University
In Partial Fulfilment of the
Requirements for the Degree of
MASTER OF SCIENCE
In
Structural Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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Title of Thesis:

**Effect of seawater as a mixing water and curing water on mechanical properties
of geo-polymer mortar and concrete of furnace slag.**

Key Words:

Tap water, seawater, fly-ash, Geopolymer composite, slag,

Summary:

This research study the use of seawater as mixing water and water for treatment On the mechanical properties of geopolymer mortar and concrete in which heat-treated kiln slag is used at temperatures ranging from 300 ° C to 900 ° C, then studying the effect of seawater and comparing with fresh water on a mortar consisting of sand and slag kilns in a ratio of 1:1 as well as many concrete mixes and studying pressure resistance at ages 7. 28. 90. 180 days after using seawater as treatment water for the samples and compared with freshwater as treatment water. The study proved that the treatment of furnace slag at 700 ° C gives the highest pressure resistance over time to the resistance of seawater. Also proved that the use of seawater as water for mixing or treatment gives better results than using freshwater as water for mixing or treatment in the case of using furnace slag of different types used during the research, where several types were used, including (Indian slag, Egyptian slag, and Turkish slag) as a carminative material instead of cement.

DISCLAIMER

I hereby declare that this thesis is my original work and that no part of having been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Adel Abd elfatah Date: / /2021

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DEDICATION

“Whoever follows a path in the pursuit of knowledge, Allah will make a path to Jannah (Paradise) easy for him”

-Muhammad (PBUH)

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