بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة /صفاء محمود عبد الشافى

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لايوجد

Cairo University

OPTIMIZING THE TYPES OF PERCENTAGE OF SUPER PLASTICIZER IN HYBRID NANO MATERIALS CONCRETE SUBJECTED TO CORROSION

By

Mahmoud Rashwan Ahmed Said Dwidar

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

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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Under the Supervision of

Prof. Dr. Ahmed M. Ragab

Professor of Materials
Civil Engineering Department
Faculty of Engineering, Cairo University

Ass. Prof. Dr. Muhammad S. El-Feky

Associated Professor
Civil Engineering Department
National Research Centre

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Examining Committee

Prof. Dr. Ahmed Mahmoud Maher Ragab (Thesis Main Advisor)
Professor of Strength of Materials - Faculty of Engineering - Cairo University

Ass.Prof. Dr. Muhammad Samy Abdul Hakeem El-Feky (Advisor)
Associate Professor of Materials in Civil Engineering Department - National Research Center

Prof. Dr. Mohamed Mohsen M. EL-Ataar (Internal Examiner)
Professor of Strength of Materials - Faculty of Engineering - Cairo University

Prof. Dr. Amr Amin El Hefnawy (External Examiner)
Professor of Properties of Materials - Housing and Building National Research Center

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Engineer's Name: Mahmoud Rashwan Ahmed Said Dwidar
Date of Birth: 25/10/1991
Nationality: Egyptian
E-mail: modedwidar100@yahoo.com
Phone: 002-0111-698-0663
Address: Villa Rashwan Shoubramant, Giza, Egypt.

Registration Date: 01/03/2015
Awarding Date: …./…./……..
Degree: Master of Science
Department: Structural Engineering

Supervisors: Prof. Dr. Ahmed M. Ragab
Ass.Prof. Dr. Muhammad S. El-Feky

Examiners: Prof. Dr. Ahmed M. Ragab (Thesis main advisor)
Ass.Prof. Dr. Muhammad Samy El-Feky (Advisor)
Civil Engineering Depatment – National Research Center
Prof. Dr. Mohamed M. El-Ataar (Internal Examiner)
Prof. Dr. Amr Amin El Hefnawy (External Examiner)
Professor of Properties of Materials – Housing and Building
National Research Center

Title of Thesis:

Optimizing the types OF Percentage of Super plasticizer In Hybrid Nano Materials concrete subjected to corrosion

Key Words:
Nano Silica; Carbon Nanotubes; Corrosion Resistance; Bond Strength; Sonication.

Summary:

This research thesis presents the results of a study on the performance of concrete containing Nano silica (1%) and carbon nanotube (0.2%) exposed to severe conditions in order to evaluate the effect of exposure to extreme environmental loading like corrosion on the Mechanical and Physical properties of the hybrid (Nano silica - carbon Nano tubes) concrete subjected to water curing. The results confirmed the ability of Nano silica and carbon Nano tube to enhance the mentioned properties.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has 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:

Date:../../…

Signature:

Dedication

To My Mum, Dad's soul & My Brothers,

My family that has a great effect on my life,

All my love to you for your care and support.

Acknowledgments

IN THE NAME OF ALLAH, THE MOST GRACIOUS AND THE MOST MERCIFUL

First and above all, I have to thank **Allah** for giving me wisdom and knowledge I have today. I praise **Allah** for His care and support and providing me with the opportunity to present my hard work in a beneficial knowledge to people.

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