COMPATIBILITY OF DIFFERENT TYPES OF CONCRETE ADMIXTURES USED FOR RETEMPERING OF FIBER REINFORCED CONCRETE

By

Aya Abdelmoneim Ezzelregal Mohamed AbouMoussa

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
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Under the Supervision of

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Title of Thesis:

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Key Words:
Fiber Reinforced Concerte; Polypropylene; Retempering; Silica fume; Superplasticizer

Summary:

Prolonged mixing is one of the problems that face ready–mixed concrete industries as it affects the workability of concrete. An experimental program was conducted to investigate enhancing the workability using retempering procedure. Three types of FRC mixes were exposed to prolonged mixing up to 2 hours mixed with 4 types of admixtures (Type G, Type D, Type F, Silica Fume) at initial mixing and then with superplasticizer (Type F) after two hours of mixing. Slump, Slump loss, temperature and setting time were measured as fresh concrete properties. Compressive strength, flexural strength, splitting strength, modulus of elasticity, permeability and density were measured as hardened concrete properties. results of the experimental work show that retempered Concrete Properties were enhanced comparing with non retempered mixes. Retempering procedure is recommended instead of wasting bulk concrete

Acknowledgments

First and above of all, I have to thank Allah for this great chance I have right now. I thank Allah for providing me with the opportunity to meet such helpful and wonderful people those who helped me from the start of this thesis. All praises to Allah for giving me knowledge, strength, support and patience to present this work.

I would like to express my deepest sense of gratitude to my respectable supervisor; **Prof. Dr. Hamed Hadhoud**; who offered me the honor to be one of his students. I thank him for his continuous advice and encouragement throughout the course of this thesis. I also thank him for the guidance, caring, patience, and great effort to provide me with an excellent atmosphere for doing this research.

I would like to thank my supervisor; **Dr. Ghada Diaa**; for her understanding, patience, support and extreme care about the work efficiency. She gave me a lot of experience about Nanotechnology. She spends very much time instructing me how to collect data and how to write my thesis, as well as providing useful suggestions about the experimental program. I have been lucky to get the opportunity to work under her supervision.

I would also like to express my deep thanks to my Family; who were always inspiring me with their support, love and patience, cheering me up and stood by me through the good and bad times.

I would like to thank my dear friends Salma Ehab and Passant Ahmed for their support and help to complete my thesis.

I would like to thank my close friends. They are all my true treasure in my life starting of my childhood right now.

Finally, I would like to thank the at Building Materials and Quality Control Institute, Housing and Building National Research Centre for providing me with the facilities and workman power to implement the research experimental plan.

Dedication

To my Mother & Father,
The reason of what I become today,
Thank you for your love, support and care.

To my brother and sisters,
I am really grateful to all of you,
you have been my inspiration and my soul mates.

To my family,
All the love and respect to you for your support.

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