



Cairo University

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

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ADMIXTURES USED FOR RETEMPERING OF FIBER REINFORCED
CONCRETE

Key Words:

Fiber Reinforced Concrete; 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 rettempering 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 rettempered Concrete Properties were enhanced comparing with non rettempered mixes. Rettempering procedure is recommended instead of wasting bulk concrete

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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.*

Table of Contents

ACKNOWLEDGMENTS	I
DEDICATION	II
TABLE OF CONTENTS	III
LIST OF TABLES	XII
LIST OF FIGURES	XIV
ABSTRACT	XXVIII
CHAPTER 1 : INTRODUCTION	1
1-1 GENERAL	1
1-2 MOTIVATION	2
1-3 OBJECTIVES	2
1-4 SCOPE OF WORK	3
1-5 THESIS LAYOUT	3
1-5-1 Chapter 1: Introduction	3
1-5-2 Chapter 2: Literature Review	3
1-5-3 Chapter 3: Experimental Program	4
1-5-4 Chapter 4: Results and Discussion	4
1-5-5 Chapter 5: Summary, Conclusion and Recommendation	4
CHAPTER 2 : LITERATURE REVIEW	4
2.1 INTRODUCTION	4
2.2 FIBER REINFORCED CONCRETE	5
2.2.1 General	5
2.2.2 Mechanical Properties of Fiber Reinforced Concrete	5
2.2.3 Applications of Fiber reinforced Concrete	8
2.3 EFFECT OF RETEMPERING ON MECHANICAL PROPERTIES OF CONCRETE	12
2.4 EFFECT OF USING CHEMICAL AND MINERAL ADMIXTURES ON PROPERTIES OF CONCRETE	20
CHAPTER 3 : EXPERIMENTAL PROGRAM	22
3-1 GENERAL	22

3-2 CHARACTERISTICS OF THE USED MATERIALS.....	22
3-2-1 Cement	22
3-2-2 Coarse Aggregate	23
3-2-3 Fine Aggregate	24
3-2-4 Water	25
3-2-5 Chemical Admixtures	26
3-2-6 Mineral Admixtures	27
3-2-7 Steel fiber	28
8-2-3 polypropylene	29
3-3 PROGRAM OF RESEARCH WORK	29
3-3-1 Mix Proportions	30
3-3-2 Mixing and Preparation of the Test Specimens	33
3-4 PROCEDURES OF TESTS	34
3-4-1 Fresh Concrete Tests	34
3-4-1-1 Slump and Slump Loss Test:	35
3-4-1-2 Temperature of freshly concrete:	35
3-4-1-3 Setting Time test:	36
3-4-2 Hardened Concrete Test	37
3-4-2-1 Compressive Strength Test:	37
3-4-2-2 Density of concrete	37
3-4-2-3 Flexural Strength Test:	38
3-4-2-4 Splitting strength test	39
3-4-2-5 Modulus of elasticity (young's modulus)	39
3-4-2-6 Permeability Test:	40
CHAPTER 4: TEST RESULTS AND DISCUSSION	41
4.1 GENERAL	41
4.2 FRESH CONCRETE PROPERTIES	42
4.2.1 Test Results of Concrete Mixes Incorporating Hooked End Steel Fiber 30mm	44
4.1.1.1 Properties of FRC incorporating Type G (Water Reducing High Range and Retarding Admixture)	45
4.1.1.1.1 <i>Slump and Slump loss</i>	45
4.1.1.1.2 <i>Setting Time</i>	46
4.1.1.2 Properties of FRC incorporating Type D (Water Reducing and Retarding Admixture)	46
4.1.1.2.1 <i>Slump and Slump loss</i>	46

4.1.1.2.2	<i>Setting Time</i>	48
4.1.1.3	Properties of FRC incorporating Type F (High Water Reducing High Range)	48
4.1.1.3.1	<i>Slump and Slump loss</i>	48
4.1.1.3.2	<i>Setting Time</i>	49
4.1.1.4	Properties of FRC incorporating Silica Fume + Type G	49
4.1.1.4.1	<i>Slump and Slump loss</i>	49
4.1.1.4.2	<i>Setting Time</i>	50
4.1.1.5	Comparison between different admixture types Incorporating Hooked End Steel Fiber 30mm	51
4.1.1.5.1	<i>Hooked end steel fiber (30mm) of volume 2%</i>	51
4.1.1.5.2	<i>Hooked end steel fiber (30mm) of ratio 1%</i>	53
4.2.2	Test Results of Concrete Mixes Incorporating Hooked End Steel Fiber 50mm	56
4.2.2.1	Properties of FRC incorporating Type G (Water Reducing High Range and Retarding Admixture)	56
4.2.2.1.1	<i>Slump and Slump loss</i>	56
4.2.2.1.2	<i>Setting Time</i>	57
4.2.2.2	Properties of FRC incorporating Type D (Water Reducing and Retarding Admixture)	57
4.2.2.2.1	<i>Slump and Slump loss</i>	57
4.2.2.2.2	<i>Setting Time</i>	57
4.2.2.3	Properties of FRC incorporating Silica Fume + Type G	58
4.2.2.3.1	<i>Slump and Slump loss</i>	58
4.2.2.3.2	<i>Setting Time</i>	58
4.2.2.4	Comparison between different admixture types Incorporating Hooked End Steel Fiber 50mm	58
4.2.3	Test Results of Concrete Mixes Incorporating Polypropylene	61
4.2.3.1	Properties of FRC incorporating Type G (Water Reducing High Range and Retarding Admixture)	61
4.2.3.1.1	<i>Slump and Slump loss</i>	61
4.2.3.1.2	<i>Setting Time</i>	62
4.2.3.2	Properties of FRC incorporating Type D (Water Reducing and Retarding Admixture)	62
4.2.3.2.1	<i>Slump and Slump loss</i>	62
4.2.3.2.2	<i>Setting Time</i>	63

4.2.3.3	Properties of FRC incorporating Type F (High Water Reducing High Range)	..... 63
4.2.3.3.1	<i>Slump and Slump loss</i>	..... 63
4.2.3.3.2	<i>Setting Time</i>	..... 63
4.2.3.4	Properties of FRC incorporating Silica Fume + Type G....	64
4.2.3.4.1	<i>Slump and Slump loss</i>	..... 64
4.2.3.4.2	<i>Setting Time</i>	..... 64
4.2.3.5	Comparison between different admixture types Incorporating polypropylene	..... 65
4.2.4	Comparison between different fiber types (30mm, 50mm and polypropylene)	.....67
4.2.4.1	Initial Setting Time	..... 67
4.2.4.1.1	<i>Mixes incorporating with Type G</i>	..... 67
4.2.4.1.2	<i>Mixes incorporating with Type D</i>	..... 69
4.2.4.1.3	<i>Mixes incorporating with Type F</i>	..... 70
4.2.4.1.4	<i>Mixes incorporating with Silica fume + Type G</i>	71
4.2.4.2	Final Setting Time	..... 72
4.2.4.2.1	<i>Mixes incorporating with Type G</i>	..... 72
4.2.4.2.2	<i>Mixes incorporating with Type D</i>	..... 74
4.2.4.2.3	<i>Mixes incorporating with Type F</i>	..... 75
4.2.4.2.4	<i>Mixes incorporating with Silica fume + Type G</i>	76
4.3	TEST RESULTS OF HARDENED CONCRETE	..... 77
4.3.1	Test Results of Concrete Mixes Incorporating Hooked End Steel Fiber 30mm	.....81
4.3.1.1	Properties of FRC incorporating Type G (Water reducing high range and retarding admixture)	..... 81
4.3.1.1.1	<i>Compressive Strength</i>	..... 81
4.3.1.1.2	<i>Density</i>	..... 82
4.3.1.1.3	<i>Flexural Strength</i>	..... 83
4.3.1.1.4	<i>Splitting Strength</i>	..... 84
4.3.1.1.5	<i>Modulus of Elasticity</i>	..... 86
4.3.1.1.6	<i>Permeability</i>	..... 86
4.3.1.2	Properties of FRC incorporating Type D (Water reducing and retarding admixture)	..... 86
4.3.1.2.1	<i>Compressive Strength</i>	..... 86
4.3.1.2.2	<i>Density</i>	..... 87
4.3.1.2.3	<i>Flexural Strength</i>	..... 88

4.3.1.2.4	<i>Splitting Strength</i>	89
4.3.1.2.5	<i>Modulus of elasticity</i>	91
4.3.1.2.6	<i>Permeability</i>	91
4.3.1.3	Properties of FRC incorporating Type F (High water reducing high range)	91
4.3.1.3.1	<i>Compressive Strength</i>	91
4.3.1.3.2	<i>Density</i>	92
4.3.1.3.3	<i>Flexural Strength</i>	93
4.3.1.3.4	<i>Splitting Strength</i>	94
4.3.1.3.5	<i>Modulus of Elasticity</i>	96
4.3.1.3.6	<i>Permeability</i>	96
4.3.1.4	Properties of FRC incorporating Silica fume + Type G	96
4.3.1.4.1	<i>Compressive Strength</i>	96
4.3.1.4.2	<i>Density</i>	97
4.3.1.4.3	<i>Flexural Strength</i>	98
4.3.1.4.4	<i>Splitting Strength</i>	99
4.3.1.4.5	<i>Modulus of Elasticity</i>	101
4.3.1.4.6	<i>Permeability</i>	101
4.3.1.5	Comparison between different admixture types Incorporating with Hooked End Steel Fiber 30mm	101
4.3.1.5.1	<i>Compressive strength</i>	101
4.3.1.5.2	<i>Density</i>	103
4.3.1.5.3	<i>Flexural Strength</i>	106
4.3.1.5.4	<i>Splitting Strength</i>	108
4.3.1.5.5	<i>Modulus of elasticity</i>	110
4.3.1.5.6	<i>Permeability</i>	112
4.3.2	Test Results of Concrete Mixes Incorporating Hooked end steel fiber 50mm	114
4.3.2.1	Properties of FRC incorporating Type G (Water reducing high range and retarding admixture)	114
4.3.2.1.1	<i>Compressive Strength</i>	114
4.3.2.1.2	<i>Density</i>	115
4.3.2.1.3	<i>Flexural Strength</i>	115
4.3.2.1.4	<i>Splitting Strength</i>	116
4.3.2.1.5	<i>Modulus of elasticity</i>	116
4.3.2.1.6	<i>Permeability</i>	116

4.3.2.2	Properties of FRC incorporating Type D (Water reducing and retarding admixture)	... 117
4.3.2.2.1	<i>Compressive Strength</i>	117
4.3.2.2.2	<i>Density</i>	117
4.3.2.2.3	<i>Flexural Strength</i>	118
4.3.2.2.4	<i>Splitting Strength</i>	119
4.3.2.2.5	<i>Modulus of elasticity</i>	119
4.3.2.2.6	<i>Permeability</i>	119
4.3.2.3	Properties of FRC incorporating Silica fume + Type G	120
4.3.2.3.1	<i>Compressive Strength</i>	120
4.3.2.3.2	<i>Density</i>	120
4.3.2.3.3	<i>Flexural Strength</i>	121
4.3.2.3.4	<i>Splitting Strength</i>	122
4.3.2.3.5	<i>Modulus of Elasticity</i>	122
4.3.2.3.6	<i>Permeability</i>	122
4.3.2.4	Comparison between different admixture types Incorporating with Hooked End Steel Fiber 50mm	122
4.3.2.4.1	<i>Compressive strength</i>	123
4.3.2.4.2	<i>Density</i>	124
4.3.2.4.3	<i>Flexural Strength</i>	125
4.3.2.4.4	<i>Splitting Strength</i>	126
4.3.2.4.5	<i>Modulus of Elasticity</i>	128
4.3.2.4.6	<i>Permeability</i>	129
4.3.3	Test Results of Concrete Mixes Incorporating polypropylene	130
4.3.3.1	Properties of FRC incorporating Type G (Water reducing high range and retarding admixture)	130
4.3.3.1.1	<i>Compressive Strength</i>	130
4.3.3.1.2	<i>Density</i>	130
4.3.3.1.3	<i>Flexural Strength</i>	131
4.3.3.1.4	<i>Splitting Strength</i>	131
4.3.3.1.5	<i>Modulus of Elasticity</i>	132
4.3.3.1.6	<i>Permeability</i>	132
4.3.3.2	Properties of FRC incorporating Type D (Water reducing and retarding admixture)	132
4.3.3.2.1	<i>Compressive Strength</i>	133
4.3.3.2.2	<i>Density</i>	133
4.3.3.2.3	<i>Flexural Strength</i>	134

4.3.3.2.4	<i>Splitting Strength</i>	.....	134
4.3.3.2.5	<i>Modulus of Elasticity</i>	.....	135
4.3.3.2.6	<i>Permeability</i>	.....	135
4.3.3.3	Properties of FRC incorporating Type F (High water reducing high range)	...	135
4.3.3.3.1	<i>Compressive Strength</i>	.....	135
4.3.3.3.2	<i>Density</i>	.....	136
4.3.3.3.3	<i>Flexural Strength</i>	.....	136
4.3.3.3.4	<i>Splitting Strength</i>	.....	137
4.3.3.3.5	<i>Modulus of Elasticity</i>	.....	137
4.3.3.3.6	<i>Permeability</i>	.....	137
4.3.3.4	Properties of FRC incorporating Silica fume + Type G	...	137
4.3.3.4.1	<i>Compressive Strength</i>	.....	138
4.3.3.4.2	<i>Density</i>	.....	138
4.3.3.4.3	<i>Flexural Strength</i>	.....	139
4.3.3.4.4	<i>Splitting Strength</i>	.....	139
4.3.3.4.5	<i>Modulus of Elasticity</i>	.....	140
4.3.3.4.6	<i>Permeability</i>	.....	140
4.3.3.5	Comparison between different admixture types Incorporating with Hooked End Steel Fiber 50mm	...	140
4.3.3.5.1	<i>Compressive strength</i>	.....	140
4.3.3.5.2	<i>Density</i>	.....	142
4.3.3.5.3	<i>Flexural Strength</i>	.....	143
4.3.3.5.4	<i>Splitting Strength</i>	.....	144
4.3.3.5.5	<i>Modulus of Elasticity</i>	.....	145
4.3.3.5.6	<i>Permeability</i>	.....	146
4.3.4	Comparison between different fiber types (30mm, 50mm, polypropylene)	.....	147
4.3.4.1	Compressive strength	...	147
4.3.4.1.1	<i>Mixes incorporating with Type G</i>	.....	147
4.3.4.1.2	<i>Mixes incorporating with Type D</i>	.....	148
4.3.4.1.3	<i>Mixes incorporating with Type F</i>	.....	149
4.3.4.1.4	<i>Mixes incorporating with Silica-Fume +Type G</i>	..	151
4.3.4.2	Density	...	152
4.3.4.2.1	<i>Mixes incorporating with Type G</i>	.....	152
4.3.4.2.2	<i>Mixes incorporating with Type D</i>	.....	153
4.3.4.2.3	<i>Mixes incorporating with Type F</i>	.....	154

4.3.4.2.4	<i>Mixes incorporating with Type F</i>	155
4.3.4.3	Flexural strength	... 157
4.3.4.3.1	<i>Mixes incorporating with Type G</i>	157
4.3.4.3.2	<i>Mixes incorporating with Type D</i>	158
4.3.4.3.3	<i>Mixes incorporating with Type F</i>	159
4.3.4.3.4	<i>Mixes incorporating with Silica Fume + Type G</i>	160
4.3.4.4	Splitting strength	... 162
4.3.4.4.1	<i>Mixes incorporating with Type G</i>	162
4.3.4.4.2	<i>Mixes incorporating with Type D</i>	163
4.3.4.4.3	<i>Mixes incorporating with Type F</i>	164
4.3.4.4.4	<i>Mixes incorporating with Silica Fume + Type G</i>	165
4.3.4.5	Modulus of Elasticity	... 166
4.3.4.5.1	<i>Mixes incorporating with Type G</i>	166
4.3.4.5.2	<i>Mixes incorporating with Type D</i>	167
4.3.4.5.3	<i>Mixes incorporating with Type F</i>	168
4.3.4.5.4	<i>Mixes incorporating with Silica Fume + Type G</i>	170
4.3.4.6	Permeability	... 171
4.3.4.6.1	<i>Mixes incorporating with Type G</i>	171
4.3.4.6.2	<i>Mixes incorporating with Type D</i>	172
4.3.4.6.3	<i>Mixes incorporating with Type F</i>	173
4.3.4.6.4	<i>Mixes incorporating with Silica Fume + Type G</i>	174
4.4	COMPARISON BETWEEN RETEMPERING OF FRC AND NORMAL CONCRETE	175
4.4.1	Compressive strength	178
4.4.1.1	Mixes incorporating with Type G	... 178
4.4.1.2	Mixes incorporating with Type D	... 179
4.4.2	Density	179
4.4.2.1	Mixes incorporating with Type G	... 180
4.4.2.2	Mixes incorporating with Type D	... 180
4.4.3	Flexural strength	181
4.4.3.1	Mixes incorporating with Type G	... 181
4.4.3.2	Mixes incorporating with Type D	... 182
4.4.4	Setting Time	182
4.4.4.1	Mixes incorporating with Type G	... 182
4.4.4.2	Mixes incorporating with Type D	... 183
CHAPTER 5:	SUMMARY AND CONCLUSION	185
5.1	SUMMARY	185

5.2	CONCLUSION	.....	186
5.2.1	Conclusion of the results for the experimental work	.....	186
5.2.1.1	Hooked end steel fiber (30mm) 2% mixes	...	186
5.2.1.2	Hooked end steel fiber (30mm) 1% mixes	...	187
5.2.1.3	Hooked end steel fiber (50mm) 2% mixes	...	188
5.2.1.4	Polypropylene mixes	...	189
5.2.2	Comparison between FRC mixtures and NC mixtures	.....	190
5.3	RECOMMENDATIONS FOR FUTURE WORKS		
	.....		192
	REFERENCES	.....	193