

MIX PROPORTIONING GUIDELINES FOR
HIGH-STRENGTH CONCRETE

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HIGH-STRENGTH CONCRETE

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REPORT

Presented to the Faculty of the Graduate School of
The University of Texas at Austin
in Partial Fulfillment
of the Requirements
for the Degree of

MASTER OF SCIENCE IN ENGINEERING

THE UNIVERSITY OF TEXAS AT AUSTIN

May 1984

C O N T E N T S

Chapter		Page
I	INTRODUCTION	1
	1.1 Definition of High-Strength Concrete	1
	1.2 Use of High-Strength Concrete	2
	1.3 Report Objective	3
II	HISTORICAL PERSPECTIVE ON PROPORTIONING CONCRETE	4
	2.1 Introduction	4
	2.2 Selection of Concrete Proportions	4
	2.2.1 Requirements of Concrete	4
	2.2.2 Early Developments in Mix Proportioning	4
	2.2.3 ACI Standard for Proportioning Concrete Mixes	5
	2.2.4 Assumptions and Concepts of the ACI Method.	6
	2.2.5 Early Disagreement Over The ACI Concepts	7
	2.2.6 Trends in Cement Characteristics ...	7
III	AN EVALUATION OF THE FACTORS INVOLVED IN MIX PROPORTIONS FOR HIGH-STRENGTH CONCRETE	11
	3.1 Introduction	11
	3.2 Strength Required	12
	3.3 Age of Cylinder Test	16
	3.4 Cement Characteristics	17
	3.5 Coarse Aggregate Characteristics	22
	3.6 Fine Aggregate Characteristics	32
	3.7 Aggregate Proportions	34
	3.8 Water/Cement Ratio	39
	3.9 Cement Content	41
	3.10 Chemical Admixture Characteristics	44
	3.10.1 Water-Reducing/Retarding Admixtures.....	44
	3.10.2 High-Range Water Reducers	49
	3.11 Mineral Admixtures	50
	3.11.1 Pozzolans	50
	3.11.2 Fly Ash	51

C O N T E N T S

Chapter		Page
IV	MIX PROPORTIONING FOR HIGH-STRENGTH CONCRETE..	64
4.1	Introduction	64
4.2	Description of Test Data	64
	4.2.1 Mixes Without Fly Ash	65
	4.2.2 Fly Ash Mixes	65
	4.2.3 Fly Ash Mixes (B)	65
	4.2.4 Superplasticized Mixes	66
4.3	Water/Cement Ratio Versus Compressive Strength...	66
	4.3.1 Water/Binder Ratio Versus 28-Day Compressive Strength..	67
	4.3.2 Water/Binder Ratio Versus 56-Day Compressive Strength..	73
4.4	Cement Content Requirement	80
4.5	Water Content	94
4.6	Coarse Aggregate Proportions	116
V	CONCLUSIONS	134
	BIBLIOGRAPHY	138

CHAPTER I

INTRODUCTION

1.1 Definition of High-Strength Concrete

High-strength concrete is not fundamentally different from normal strength concrete; it is different only in its level of strength and associated properties. Being usually rich and/or of very low workability this concrete exhibits behavior which is not clearly defined in normal regions of cement content and workability.

In this report, high-strength concrete refers to concrete obtained through using ordinary or rapid hardening Portland cements and conventional aggregates cured at normal temperatures. In the United States there is a general consensus that high-strength concrete can be arbitrarily defined as concrete having a 28-day cylinder compressive strength of over 6000 psi. This limit of 6000 psi was chosen because concrete in construction has been traditionally proportioned for a maximum compressive strength of 6000 psi at 28 days. Besides, most of the research work involving high-strength concrete has been primarily targeted at developing concrete compressive strengths exceeding 6000 psi. A complete annotated bibliography on high-strength concrete has been compiled by Carrasquillo, Nilson and Slate¹ while a review of high-strength concrete's past, present and future developments has been presented by Saucier⁶⁴.