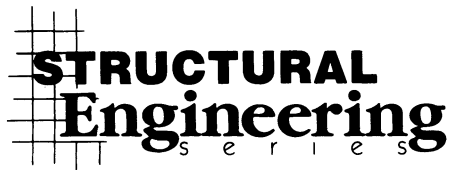


CONCRETE ADMIXTURES

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Vance H. Dodson, Ph.D.



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To
My wife, three children, and three grandsons

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PREFACE AND ACKNOWLEDGMENTS

This book is written for an audience which includes, among others (1) concrete producers who use (or do not use) admixtures to describe what can be expected by the use of the fifth ingredient in their day-to-day batching of concrete, (2) concrete contractors who look for certain placing and finishing characteristics of concrete, in spite of the environmental temperature and humidity, and (3) engineers and architects who are concerned about the properties of the finished and hardened concrete. The underlying theme throughout the book is one that says that admixtures cannot make bad concrete good concrete, but can, when properly used, make good concrete better concrete.

This treatise often cites my own research and field experiences of 28 years in the cement and concrete industries and my observations and conclusions may conflict with those of others in these fields of endeavor. In addition, I have ignored a vast number of articles published in the literature, especially those whose results are either too complicated or clouded with controversy. I basically like to generalize and try to look at the practical side of things and make complicated issues as simple as possible so that the man on the street can understand them. Having raised three children and participated in the upbringing of three grandchildren, my two philosophies of life are (1) avoid complications and (2) don't fix it if it ain't broke.

I would like to acknowledge Mr. J. David Dunham who struggled with my poor penmanship in putting the hand-written word into a typed, readable form, the Construction Products Division of W. R. Grace for giving me access to its extensive library facilities and the many technicians, chemists and group leaders that I often drove "to the edge" in collecting data in experiments that seemed to be almost as crazy as their supervisor.