

## Contributions on the research of the superplasticisers additives influence upon some concrete durability characteristics

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### Summary

The thesis has 146 pages and contains 6 chapters as follows:

Chapter 1: The action/influence of the environmental factors on the concrete durability characteristics

Chapter 2: Concrete degradation mechanisms under some environmental factors influence

Chapter 3: The specific details of the additives which are used in concrete preparation/fabrication

Chapter 4: The experimental research regarding the influence of the superplasticisers addition in concrete.

Chapter 5: Personal contributions and final conclusions

Chapter 6: Bibliography



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The first two chapters contain the theoretical part from technical, specialized literature and include the environmental factors which can affect the concrete durability. In chapter 3 are described the technical characteristics and particularities of some types of additives used in concrete preparation, the influences and precautions when additives are used.

Chapter 4 presents the results obtained after 150 preliminaries were done with three different kinds of additives, obtaining two concrete classes: C12/15 and C25/30. The results obtained on fresh concrete and solid / hardened concrete are described in graphics also the technical comments and the conclusions taken from making these preliminaries.

Chapter 5 refers to the personal contributions and final conclusions that are summarized below:

- realization of a profound research regarding the influence of the climatic factors on concrete.
- achieving of an analysis on the important types of additives as well as on the ways of how additives affect concrete.
- effectuation of experimental studies which can clear up the influence of the additive dosage upon the concrete physical and mechanical performances, tests being made on soft and hardened concrete.
- making experimental research which shows the influence of the additive's type on concrete by analyzing simultaneously five physical-mechanical characteristics; in this case the most common additives in our country have been used.
- qualitative and quantitative quantification of the impact of the concrete quality (as shown by the concrete class) upon the additive action mechanisms.
- analyzing how additives influence concrete samples exposed to the climatic factors and the comparison with the results obtained on samples kept on laboratories.
- elaboration of a methodology of taking into consideration the effects of additives in the projection phase.

Chapter 6 – bibliography – contains the normative list and technical standards, the specialized literature that I studied for six years in order to make the research.

*Keywords:* concrete, permeability, dynamic action

