IN-LB	Inch-Pound Units
SI	International System of Units

Guide to the Selection and Use of Hydraulic Cements

Reported by ACI Committee 225

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The update to this guide includes a statement on life-cycle analysis (LCA), environmental product delcarations (EPDs), and a new section on carbonation (10.6). This guide covers the influence of cement on the properties of concrete, summarizing the composition and availability of commercial hydraulic cements and the factors affecting their performance in concrete. Cement is the most active component of concrete and usually has the greatest unit cost; therefore, its selection and proper use is imperative to attaining the desired balance of properties and cost for a particular concrete mixture. Selection should include consideration of the cement properties in relation to the required performance of the concrete. It includes a discussion of cement types, a brief review of cement chemistry, the influences of chemical admixtures and supplementary cementitious materials, as well as the effects of the environment on cement performance and reviews of the sustainability aspects for the use and manufacture of portland cement. Cement storage, delivery, sampling, and testing of hydraulic cements for conformance to specifications are addressed. Users will learn to recognize when a readily available, general-purpose cement will perform satisfactorily or when conditions require selection of a cement that meets additional requirements.

Keywords: admixture; blended cement; calcium-aluminate cement; cement storage; cement types; chemical analysis; hydraulic cement; physical properties; portland cement; pozzolan; slag cement; supplementary cementitious materials; sustainability.

CONTENTS

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