

Introduction

The methods in this volume were submitted by their authors or organizations in response to a request for rapid and instrumental methods which were being used for analysis of hydraulic cements. This call for methods has been repeated almost annually since the mid-1970s. The result is the collection of methods contained herein that were submitted for publication. No claim is made as to completeness of coverage of rapid or instrumental methods, nor has any search of the literature been done. This is simply a compilation of the methods submitted.

The first three sections on Atomic Absorption, X-Ray, and Spectrophotometric Methods present procedures for typical "complete" analyses of cement. The last three sections contain methods for individual determinations. These methods are claimed by their authors or submitters to provide data in conformance with the requirements of ASTM Methods for Chemical Analysis of Hydraulic Cement (C 114) for Rapid Methods of Analysis (Appendix II). Some of the methods contain, or are followed by, data indicating such conformance. Except as contained herein, no attempt has been made to independently verify the precision, accuracy, or suitability of any method for its intended purpose.

Neither ASTM, Committee C-1 on Cement, Subcommittee C1.23 on Compositional Analysis, nor the Editor make any warranty, either express or implied, as to the suitability of any method contained herein for any purpose whatsoever. The material is presented only for information.

Caution: The methods contained herein indicate use of materials, operations, and equipment that are hazardous or potentially hazardous. This publication does not purport to address all, or even, necessarily, any of the aspects relating to safety. It is the responsibility of any user of the material contained herein to consult and establish appropriate safety and health precautions and practices and to determine the applicability of any regulatory limitations before use.

It is the intent of Subcommittee C01.23 on Compositional Analysis of Cement to be aware of advances in methods and techniques for analysis of hydraulic cements under the jurisdiction of ASTM Committee C-1 and for related material. The Subcommittee recognizes the desirability of dissemination of such information to the concerned analytical community. A publication such as this, a virtual handbook of analytical methods for cement, would seem to be a good medium for that purpose. The Subcommittee is contemplating future editions of this publication when warranted by sufficient new information. Consequently, since reliance must be placed on the practitioners, submission of material for future publication is solicited. Material need not be restricted to chemical analysis of cement. Methods for mineralogical analysis, identification of additions, and determination of constituents of blended cements will also be considered.

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