INTERNATIONAL STANDARD

ISO 29581-1

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Cement — Test methods —

Part 1: Analysis by wet chemistry

Ciments — Méthodes d'essai —

Partie 1: Analyse chimique par voie humide

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 29581-1 was prepared by Technical Committee ISO/TC 74, *Cement and lime*.

This first edition of ISO 29581 cancels and replaces ISO 680:1990, which has been technically revised as follows, based on comments received by the secretariat.

a) The scope of the analyses has been extended to include determination of chloride, carbon dioxide and alkali.

b) Calibration against internationally accepted reference materials is permitted.

c) The number of tests carried out when the analysis is part of a series subject to statistical control has been reduced to one.

d) A requirement for blank determinations has been included.

e) Limiting ranges have been set for masses, volumes and temperatures wherever these are significant.

f) The required accuracy of the balance is consistent with that of equipment traditionally used.

g) A specification for a laboratory oven has been included.

h) The calibration procedure for the standard silica solution has been simplified.

i) Additional indicators have been included for the visual determination of EDTA titrations.

j) An ignition temperature of (950 ± 25) °C has been set for the determination of loss on ignition and the ignition of barium sulfate and insoluble residues.

k) Determination of sulfate before and after ignition in the determination of loss on ignition becomes the reference method when correcting for sulfide.

l) Determination of silica by the double evaporation method becomes the reference method.

m) Alternative ignition temperatures during the analysis for silica are permitted, where validated by the laboratory.

n) An alternative method for the determination of chloride by potentiometric titration is included.

o) An alternative method for the determination of acid-soluble alkali by atomic absorption spectroscopy is included.

p) XRF and other instrumental methods, such as differential thermal analysis for determination of carbon dioxide, atomic absorption spectroscopy, etc. may be used as alternative methods provided they are calibrated against the reference methods, or against internationally accepted reference materials.

NOTE Analytical methods utilizing x-ray fluorescence (XRF) were considered during this revision but no published standardized method was considered sufficiently comprehensive to be included. A new Part 2 to ISO 29581 is under development in order to prepare a method based on XRF.

ISO 29581 consists of the following parts, under the general title *Cement — Test methods*:

— *Part 1: Analysis by wet chemistry*

— *Part 2: Analysis by x-ray fluorescence*