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Optical emission analysis of low alloy steels (routine method) - Guidelines for the preparation of standard routine method for optical emission spectrometry

Analyse des aciers faiblement alliés par spectrométrie d'émission optique (méthode de routine) - Lignes directrices relatives à la préparation d'une méthode normalisée de routine pour la spectrométrie d'émission optique

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This CEN Report has been prepared by Technical Committee ECISS/TC 20 "Methods of chemical analysis of ferrous products", the secretariat of which is held by SIS.

1   Scope and field of application

The purpose of this document is to describe concepts and procedures for calibration and analysis of the equipment based on spark source optical emission spectrometry. Optical emission spectrometers are equipments that provide a quality and quantity characterization of electromagnetic radiation which is emitted by a test sample when excited by a suitable source.

2   Terms and definitions

For the purposes of this CEN Report, the following definitions apply:

2.1
absolute error
the difference between the measured and the true value

2.2
accuracy
the closeness of agreement between an observed value and an accepted true value

2.3
analyte line
the spectral line of an element which is used to establish the element concentration

2.4
background equivalent concentration
the quantity of analyte which, when subjected to excitation, provides a net intensity equal to the spectral background

2.5
calibration
the series of operations which, under specified conditions, establishes the relationship between the instrument output and the known values of the element being determined

2.6
calibration curve
the mathematical or graphical relationship between instrument output and known values of an element, under given conditions

2.7
certified reference material
a reference material whose properties are certified by a technically valuable procedure and which is provided with a certificate, either attached or referenced, issued by a certification body

2.8
drift
a slow change over time in instrument response

2.9
instrumental drift correction
the correction of instrumental drift with time, in order to keep calibration constant