

ISO/TR 18231:2016-05 (E)

Iron ores - Wavelength dispersive X-ray fluorescence spectrometers - Determination of precision

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Frequency of testing	1
3	Counter tests	2
3.1	Counter resolution	2
3.1.1	General	2
3.1.2	Procedure	4
3.1.3	Assessment of results	6
3.2	Conductivity of the gas flow proportional counter window	6
3.2.1	General	6
3.2.2	Procedure	7
3.2.3	Assessment of results	7
3.3	Pulse shift corrector	7
3.3.1	General	7
3.3.2	Procedure	8
4	Spectrometer tests	8
4.1	General	8
4.2	Precision	9
4.2.1	General	9
4.2.2	Calculation of counting statistical error	10
4.3	Test specimen	11
4.3.1	General	11
4.3.2	Sequential spectrometers	11
4.3.3	Simultaneous spectrometers	11
4.4	Instrumental conditions	11
4.4.1	General	11
4.4.2	Sequential spectrometers	12
4.4.3	Simultaneous spectrometers	12
4.5	Stability test	12
4.6	Specimen rotation test	13
4.7	Carousel reproducibility test	13
4.8	Mounting and loading reproducibility test	13
4.9	Comparison of sample holders	13
4.10	Comparison of carousel positions	14
4.11	Angular reproducibility	14
4.12	Collimator reproducibility (for sequential spectrometers fitted with an interchangeable collimator)	14
4.13	Detector changing reproducibility (for sequential spectrometers fitted with more than one detector)	14
4.14	Crystal changing reproducibility	14
4.15	Other tests	15
4.16	Note on glass bead curvature	15
5	Determination of the dead time and the maximum usable count rate of the equipment	15
5.1	General	15

5.2	Methods of determination of dead time	16
5.2.1	General	16
5.2.2	Recommended method for determining dead time	17
	Annex A (informative) Calculation of the coefficient of variation of duplicates	24
	Bibliography	26