
**Soil quality — Screening soils
for selected elements by energy-
dispersive X-ray fluorescence
spectrometry using a handheld or
portable instrument**

*Qualité du sol — Analyse rapide d'une sélection d'éléments dans
les sols à l'aide d'un spectromètre de fluorescence X à dispersion
d'énergie portable ou portatif*





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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.

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Introduction

X-ray fluorescence spectrometry (XRF) is a quick method for determination of total elemental compositions of soil samples. Unlike analyses by atomic absorption spectroscopy and inductively coupled plasma spectroscopy, XRF needs no digestion step to prepare a test solution to be analysed. Factory pre-set calibrations can be used. Consequently XRF is suitable for the rapid on-site determination of selected elements, mainly heavy metals in screening processes. Typical elements that can be analysed are Cr, As, Se, Cd, Hg and Pb, depending on the instrument. For *in situ* or abbreviated preparation analyses at a site, a battery-powered handheld or portable XRF equipment is required.

When performing analyses at a site, it might be important to have information on the presence of an element and also obtain semiquantitative results. It is often impracticable to carry out calibration using reference materials at the site to be investigated. In these situations, factory pre-set calibrations should be used.

This International Standard describes rapid methods for the on-site analysis of selected elements, including heavy metals, using battery-powered handheld or portable energy-dispersive XRF (ED-XRF).

