

BS EN ISO 11267:2014



BSI Standards Publication

Soil quality — Inhibition of reproduction of Collembola (*Folsomia candida*) by soil contaminants (ISO 11267:2014)

National foreword

This British Standard is the UK implementation of EN ISO 11267:2014. It supersedes BS 7755-4.2.4:1999 (dual numbered as ISO 11267:1999), which is withdrawn.

This revised version of ISO 11267:1999 primarily relates to the inclusion of a methodology for the testing of field or “contaminated” soil. In the opinion of the committee, the standard appears to have been prepared without satisfactory validation trials. During the drafting of this revision, the UK committee raised three primary concerns relating to this standard, as follows:

- Field soils from potentially contaminated sites may be clayey or contain stones, plant roots and other matter. It may be difficult to achieve the 30 g representative soil sample using a 4 mm sieve (as stated in subclause 5.2.1 of the standard). Hand sorting and larger mesh sizes may be more practical.
- Field-collected soils may contain high fungal loading. Under the optimal growth conditions used in the incubation phase of the Collembola test, fungal hyphae can undergo considerable growth such that they may form a mat covering the surface of the soil. This can prevent movement of the Collembola at the soil–air interface, thereby reducing survival and reproduction. It can also hinder successful measurement of the survival and reproduction endpoints. If the growth of fungal mats occurs, further guidance can be found in the Environment Agency’s Standard Operating Procedures for Bioassays, published in the series ‘An ecological risk assessment framework for contaminants in soil’ (Science report SC070009/SR3).
- When applying the validation criteria, particularly concerning field-collected soil past experience has suggested these performance criteria may be difficult to achieve even during tests conducted in OECD standardised soil. This means that for tests using field soils it is very likely that one of the validation criteria will not be met¹.

The UK’s ecological risk assessment (ERA) framework for land contamination (Environment Agency, 2008)², recommends accepting the results of Collembola bioassays used in contaminated land assessment that do not meet all the required criteria. Professional judgement and the experience of the testing laboratory should be used when applying this standard in relation to UK regulations, for example by considering data with results obtained in other Collembola tests undertaken by the laboratory. As experience is gained it may be possible to refine the acceptance criteria.

The UK participation in its preparation was entrusted to Technical Committee EH/4, Soil quality.

A list of organizations represented on this committee can be obtained on request to its secretary.

1 Weeks J M, Spurgeon D J, Svendsen C, Hankard P K, Kammenga J E, Dallinger R, Köhler H R, Simonsen V, Scott-Fordsmand J (2004). Critical Analysis of Soil Invertebrate Biomarkers: A Field Case Study in Avonmouth, UK. *Ecotoxicology*, Volume 13, Issue 8, pp 817-822

2 Environment Agency (2008). An ecological risk assessment framework for contaminants in soil. Science report SC070009/SR1, SR2a, SR2b, SR2c, SR2d, SR2e and SR3.