



SLOVENSKI STANDARD
oSIST prEN ISO 11074:2023
01-april-2023

Kakovost tal - Slovar (ISO/DIS 11074:2023)

Soil quality - Vocabulary (ISO/DIS 11074:2023)

Bodenbeschaffenheit - Wörterbuch (ISO/DIS 11074:2023)

Qualité du sol - Vocabulaire (ISO/DIS 11074:2023)

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Soil quality — Vocabulary

Qualité du sol — Vocabulaire

ICS: 01.040.13; 13.080.01

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Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Terms and definitions.....	1
Annex A (informative) Relationships between sampling operations.....	64
Bibliography.....	66

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[oSIST prEN ISO 11074:2023](https://standards.iteh.ai/catalog/standards/sist/56b4cbb4-4baf-4a17-9e4e-6374cfc3b7f9/osist-pren-iso-11074-2023)

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ISO/DIS 11074:2022(E)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 190, *Soil quality*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This vocabulary gives soil quality terms and their definitions. The previous versions of the vocabulary (ISO 11074:2015 and ISO 11074/Amd.1:2020) presented terms and definitions in separate clauses to differentiate the terms about e.g., sampling, remediation, etc. This became more and more artificial, since soil quality experts with different expertise need to work closely together and there is a greater need for one term list instead of multiple ones, where experts first must find out in which sublist of the International Standard the specific term could be found. In this new version of the International Standard the terms are presented in one alphanumeric list.

For some terms, there are different definitions, depending on the context. These terms are presented after each other, with the differentiating scopes between brackets: <context>. Often this will be a general and a specific scope, resulting in different definitions.

Though the terms apply for all other ISO/TC 190 Soil quality standards and most terms and definitions from other ISO/TC 190 Soil quality standards are present in ISO 11074, not all terms and definitions are taken onboard.

New and revised standards are published continuously through time. The revision periods of soil quality standards defer. That means that, even if working groups work closely together, definitions of the same terms can be different in specific soil quality standard and this vocabulary standard.

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Soil quality — Vocabulary

1 Scope

This International Standard defines a list of terms used in the preparation of the standards in the field of soil quality.

Some terms can have different definitions depending on the context. If so, the context of the term is given as <context>.

NOTE 1 See also the ISO online browsing platform (OBP): www.iso.org/obp/ui/

NOTE 2 For general terms relating to quality, see ISO 8402.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

2.1

abandoned hazardous site

hazardous site left by the owner or other responsible party in unmanaged condition

2.2

abandoned industrial site

industrial site left by the owner or other responsible party in unmanaged condition

2.3

abandoned potentially hazardous site

abandoned site whose history leads to a suspicion that it can be hazardous

2.4

abandoned waste disposal site

waste disposal site left by the owner or other responsible party in unmanaged condition

2.5

abiotic decomposition

decomposition by physical and/or chemical processes (e.g. photolysis, hydrolysis, oxidation, and reduction)

2.6

abiotic degradation

degradation by physical and/or chemical processes

2.7

above-ground sampling

process of taking samples from material that has been deposited on the ground surface

EXAMPLE Samples are taken from a stockpile (including bulk volumes of excavated soils), deposit of waste or embankment.

[SOURCE: ISO 18400-104:2018, 3.1]

ISO/DIS 11074:2022(E)**2.8****accumulation**

increase of the concentration of a substance in soil due to the fact that the substance input is larger than the substance output

Note 1 to entry: Substance output includes material which is degraded substances.

2.9**active protective measure**

process designed, for example, to control groundwater or gas migrations

EXAMPLE Pumped water extraction or gas extraction system.

2.10**active soil-gas sampling**

sampling by extracting a certain volume of soil gas

2.11**actual increment size**

amount of material that is present in an increment

Note 1 to entry: See *increment* ([2.217](#))

2.12**actual sample size**

amount of material that is present in the sample

2.13**aerobic**

descriptive of a condition with molecular oxygen available

2.14**aerobic biological treatment**

biological treatment in the presence of oxygen

2.15**aerobic**

descriptive of a condition with molecular oxygen available

2.16**aftercare management**

measures applied on completion of remedial works or as an integral part of a containment strategy to ensure continued effectiveness over the long-term

2.17**aggressive soil conditions**

soil conditions potentially damaging to buildings and construction materials

2.18**air-sparging**

introduction of air under pressure into the groundwater

2.19**aliphatic hydrocarbon**

acyclic or cyclic, saturated or unsaturated carbon compound, excluding aromatic compounds

[SOURCE: ISO 11504:2012]

2.20**aliquot**

known amount of a homogeneous material, assumed to be taken with negligible sampling error

Note 1 to entry: The term is usually applied to fluids.

2.21**ammonification**

microbial degradation of organic nitrogen to ammonia

2.22**amplicon**

PCR product obtained by PCR from a template

Note 1 to entry: DNA fragment or RNA fragment amplified by PCR (Polymerase Chain Reaction)

[SOURCE: ISO 17601:2016]

2.23**anaerobic**

descriptive of a condition in which molecular oxygen is not available

[SOURCE: ISO 17601:2016]

2.24**anaerobic biological treatment**

biological treatment in the absence of gaseous or soluble oxygen

2.25**anaerobic transformation**

reactions occurring under exclusion of oxygen (reducing conditions)

Note 1 to entry: These generally occur when the redox potential (Eh) is less than 200 mV.

2.26**analytical and testing strategy**

plan comprising the samples to be analysed or tested, the parameters to be measured, sample preparation methods, and the analytical or testing methods to be employed

Note 1 to entry: There should be associated quality assurance methods.

2.27**analytical sample**

portion of material, resulting from the original sample or composite sample by means of an appropriate method of sample pretreatment and having the size (volume/mass) necessary for the desired testing or analysis

2.28**anisotropy**

property of a soil or other volume of material to have different spatial variation structures depending on direction and distance

Note 1 to entry: Usually illustrated in a variogram.

2.29**anthropogenic change**

influence on soil properties caused by human activities

ISO/DIS 11074:2022(E)

2.30

anthropogenic concentration

concentration of a substance in a soil resulting from anthropogenic origin

[SOURCE: ISO 19258:2018]

2.31

anthropogenic ground

deposits which have accumulated through human activity

Note 1 to entry: These could consist of natural materials placed/replaced by man, e.g. clay, or man-made materials, e.g. refuse.

[SOURCE: ISO 18400-104:2018, 3.2]

2.32

aromatic hydrocarbon

hydrocarbon of which the molecular structure incorporates one or more planar sets of six carbon atoms that are connected by delocalized electrons, numbering the same as if they consisted of alternating single and double covalent bonds

[SOURCE: ISO 11504:2012]

2.33

assessment criteria

criteria set up to help decide if a site requires further investigation or other action (e.g. remediation)

Note 1 to entry: The assessment criteria aid in interpreting the results of a quantitative risk or other assessment.

Note 2 to entry: For risk assessments, assessment criteria are often threshold values for doses or media concentrations, such as e.g. tolerable daily intake, tolerable air, water, and soil concentrations set by international, national, or local authorities.

2.34

available water capacity

soil water content usable by plants based on the effective root penetration depth

Note 1 to entry: The usable field capacity in the effective root zone is expressed in mm water column.

Note 2 to entry: The available water capacity (AWC) is generally taken to be the water content between field capacity (FC) and the permanent wilting point (PWP) or 10 kilopascals to 1 500 kilopascals. See readily available water capacity.

2.35

avoidance behaviour

tendency (of an organism) to avoid the test soil while preferring the control soil

2.36

background concentration

concentration of an element or a substance characteristic of a soil type in an area or region arising from both natural sources and anthropogenic diffuse sources such as atmospheric deposition

[SOURCE: ISO 19258:2018]

2.37

background value

statistical characteristics of the total (natural pedo-geochemical and anthropogenic) content of substances in soil

2.38

basal respiration

microbial soil respiration without addition of substrate

2.39**basal respiration rate** R_B

constant mass of CO₂ released or mass of O₂ consumed per unit mass of soil per unit time without substrate addition

2.40**bedrock**

in situ naturally consolidated rock either underlying drift deposits such as glacial till or exposed by past or current erosion processes

[SOURCE: EN 16039]

2.41**bioaccessibility**

fraction of a substance in soil or soil material that is liberated in (human) gastrointestinal juices and thus available for absorption

[SOURCE: ISO/CD 8259]

2.42**bioavailability**

<general>

degree to which chemicals present in the soil can be absorbed or metabolised by a human or ecological receptor or are available for interaction with biological systems

2.43**bioavailability**

<human health>

fraction of a substance present in ingested soil that reaches the systemic circulation (blood stream)

[SOURCE: ISO 17924:2018]

2.44**bioconcentration factor BCF**

ratio of the concentration of a substance in an organism to that in the soil

2.45**biodegradation**

the molecular degradation of an organic substance resulting from the complex actions of living organisms

[SOURCE: ISO 11266:1994]

2.46**biodiversity**

<fauna>

variability among living organisms on the earth, including the variability within and between species, and within and between ecosystems

Note 1 to entry: This is also often used as the number and variety of organisms found within a specified geographic region.

2.47**biological treatment**

methods using the natural activities of plants or micro-organisms, such as bacteria and fungi, to transform, destroy, fix, or immobilise contaminants

ISO/DIS 11074:2022(E)

2.48**biomass**

<general>

total mass of living organisms or parts of them expressed as fresh or dry mass of test organism or fresh or dry mass per test unit

2.49**biomass**

<fauna>

total mass of test organisms or parts of them expressed as dry mass or fresh mass of test organism or dry mass or fresh mass per test unit

2.50**biomass**

<plants>

total mass of shoots, flowers and seed pods

Note 1 to entry: Biomass is expressed as dry mass per plant or, if needed, as dry mass per pot. During the test period, some of the test plants can reach different growth stages and their water content can differ when the plants are harvested. Thus the dry mass better represents the biomass produced during the growth period.

[SOURCE: ISO 22030:2005]

2.51**bioreactor**

equipment in which biotreatment is applied to a solid, liquid, or slurry

2.52**bioremediation**

use of biological treatment methods to decontaminate soil or groundwater

2.53**biosolid**

organic product applied to soil including for example, sewage sludge, compost, manure, and industrial products

2.54**(bio) treatment bed**

above-ground bed of soil designed to enhance biodegradation processes, usually incorporating means of collecting leachate and often means of maintaining oxygen (in aerobic processes) and nutrient levels

Note 1 to entry: It can also include means of capturing released volatiles, or means of maintaining anaerobic conditions.

2.55**bioventing**

in situ process in which vapour extraction/air infiltration rates are adjusted to optimize biodegradation reactions

2.56**boiling point**

BP
point at which the vapour pressure of a liquid equals the external pressure acting on the surface of liquid

Note 1 to entry: It is expressed in degrees Celsius.

[SOURCE: ISO 11504:2012]

2.57**boring**
borehole
bore

hole of any predetermined diameter and length formed in any soil, geological formation, or man-made material by drilling

2.58**bottom barrier system**

in-ground (largely) horizontal barrier used to isolate/contain site

2.59**bound residues****non-extractable residues**

chemical species in plants and soils, originating from, for example, organic molecules that are not extracted by methods which do not significantly change the chemical nature of these residues

Note 1 to entry: These non-extractable residues are considered to exclude fragments recycled through metabolic pathways leading to natural products.

2.60**break layer**

stratum of high permeability granular material within a cover system

Note 1 to entry: Its purpose is to stop upward capillary movement of soluble contaminants.

2.61**brownfield****<general>**

land affected by former uses

[SOURCE: ISO 18504:2017, 3.1]

2.62**brownfield****<sustainable remediation>**

sites which:

- have been affected by former uses of the site or surrounding land;
- are derelict or underused;
- are mainly in fully or partly developed urban areas;
- require intervention to bring them back to beneficial use; and/or
- may have real or perceived contamination problems

[SOURCE: ISO 18504:2017, 3.1]

2.63**bulk density**

ratio of the mass of a quantity of material (or one phase) and the total volume occupied by this material (including other phases)

Note 1 to entry: This is typically a volumetric mass but it is commonly named as "density". The numerical values are identical or divided by the volumetric mass of water ($1 \text{ t}\cdot\text{m}^{-3}$) at 4 °C.

2.64**bulk sample**

sample resulting from the planned aggregation or the combination of sample units

[SOURCE: IUPAC Compendium of Chemical Terminology, 1997]