BS EN ISO 11074:2025

BSI Standards Publication

Soil quality — Vocabulary

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National foreword

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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 committee manager.

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EUROPÄISCHE NORM

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English Version

Soil quality - Vocabulary (ISO 11074:2025)

Qualité du sol - Vocabulaire (ISO 11074:2025)

Bodenbeschaffenheit - Wörterbuch (ISO 11074:2025)

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European foreword

This document (EN ISO 11074:2025) has been prepared by Technical Committee ISO/TC 190 "Soil quality" in collaboration with Technical Committee CEN/TC 444 “Environmental characterization of solid matrices” the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2025, and conflicting national standards shall be withdrawn at the latest by September 2025.

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Foreword

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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 document 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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This document was prepared by Technical Committee ISO/TC 190, *Soil quality,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 444, *Environmental characterization of solid matrices,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 11074:2015), which has been technically revised. It also incorporates the Amendment ISO 11074:2015/Amd 1:2020.

The main changes are as follows:

— terminological entries have been reorganised with all the terms and definitions placed in Clause 3 in alphabetical order;

— terms that have different definitions depending on the context have been grouped, and the domain has been added in angle brackets to differentiate them.

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Introduction

This document defines soil quality terms. The previous editions (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. 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 need to find out in which clause a specific term is located. In this edition, all the terms are included in Clause 3.

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

Though the terms apply to all other ISO/TC 190 soil quality standards, this document does not cover all the terms used in ISO/TC 190 soil quality standards.

New and revised standards are published continuously though time. The revision periods of soil quality standards differ. That means that definitions of the same terms can be different in specific soil quality standard and in this document.

NOTE For general terms relating to quality, see ISO 9000.

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Soil quality — Vocabulary

1 Scope

This document defines terms used in the field of soil quality.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology 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/

3.1
abandoned hazardous site
hazardous site (3.201) left by the owner or other responsible party in unmanaged condition

3.2
abandoned industrial site
industrial *site* (3.443) left by the owner or other responsible party in unmanaged condition

3.3
abandoned potentially hazardous site
site (3.443), left by the owner or other responsible party in unmanaged condition, whose history leads to a suspicion that it can be hazardous

3.4
abandoned waste disposal site
waste disposal *site* (3.443) left by the owner or other responsible party in unmanaged condition

3.5
abiotic decomposition
decomposition (3.113) by physical and/or chemical processes (e.g. photolysis, *hydrolysis* (3.211), *oxidation* (3.305), and *reduction* (3.373))

3.6
abiotic degradation
degradation (3.116) by physical and/or chemical processes

3.7
above-ground sampling
process of taking *samples* (3.398) from material that has been deposited on the ground surface

EXAMPLE Samples are taken from a *stockpile* (3.496) (including *bulk volumes* (3.64) of *excavated soils* (3.154)), deposit of waste or embankment (see ISO 18400-104:2018).

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3.8
accumulation
increase of the *concentration* (3.86) of a substance in soil due to the fact that the *substance input* (3.508) is larger than the *substance output* (3.509)

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

3.9
active protective measure
process designed, for example, to control *groundwater* (3.191) migration or *gas migration* (3.178)

EXAMPLE Pumped water extraction or gas extraction system.

3.10
active soil gas sampling
sampling (3.410) by extracting a certain volume of *soil gas* (3.454)

3.11
actual increment size
amount of material that is present in an *increment* (3.218)

3.12
actual sample size
amount of material that is present in the *sample* (3.398)

3.13
aerobic
descriptive of a condition with molecular oxygen available

3.14
aerobic biological treatment
biological treatment (3.46) in the presence of oxygen

3.15
aftercare management
measures applied on completion of remedial works or as an integral part of a *containment* (3.90) strategy to ensure continued *effectiveness* (3.142) over the long term

3.16
aggressive soil conditions
soil conditions potentially damaging to buildings and construction materials

3.17
air-sparging
introduction of air under pressure into the *groundwater* (3.191)

3.18
aliphatic hydrocarbon
acyclic or cyclic, saturated or unsaturated carbon compound, excluding aromatic compounds

3.19
aliquot
known amount of a *homogeneous* (3.204) material, assumed to be taken with negligible *sampling error* (3.413)

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

3.20
ammonification
microbial *degradation* (3.116) of organic nitrogen to ammonia

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3.21
amplicon
DNA or RNA fragment obtained by *polymerase chain reaction (PCR)* (3.330) from a template

3.22
anaerobic
descriptive of a condition in which molecular oxygen is not available

3.23
anaerobic biological treatment
biological treatment (3.46) in the absence of gaseous or soluble oxygen

3.24
anaerobic transformation
reaction occurring under exclusion of oxygen (*reducing* (3.372) condition)

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

3.25
analytical and testing strategy
plan comprising the *samples* (3.398) 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.

3.26
analytical sample
portion of material, resulting from the original *sample* (3.398) or *composite sample* (3.83) (3.84) by means of an appropriate method of *sample pretreatment* (3.402) and having the size (volume/mass) necessary for the desired testing or analysis

3.27
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* (3.566).

3.28
anthropogenic change
influence on soil properties caused by human activities

3.29
anthropogenic concentration
concentration (3.86) of a substance in a soil resulting from anthropogenic origin

Note 1 to entry: See ISO 19204:2017.

3.30
anthropogenic ground
deposits which have accumulated through human activity

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

Note 2 to entry: See ISO 18400-104:2018.

3.31
aromatic hydrocarbon
hydrocarbon (3.210) 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

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3.32
assessment criteria
criteria set up to help decide if a *site* (3.443) requires further investigation or other action (e.g. *remediation* (3.380))

Note 1 to entry: The assessment criteria aid in interpreting the results of a quantitative *risk* (3.393) or other assessment.

Note 2 to entry: For *risk assessments* (3.395), assessment criteria are often *threshold* (3.534) values for *doses* (3.131) or media *concentrations* (3.86), such as tolerable daily intake, tolerable air, water, and soil concentrations set by international, national, or local authorities.

3.33
available water capacity
soil water (3.479) content usable by plants based on the effective root penetration depth

Note 1 to entry: The usable *field capacity* (3.166) in the effective root zone is expressed in millimetres of 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* (3.572) (PWP) or 10 kPa to 1 500 kPa.

3.34
avoidance behaviour
tendency (of an organism) to avoid the test soil while preferring the *control soil* (3.95)

3.35
background concentration
concentration (3.86) of an element or a substance *characteristic* (3.70) of a soil type in an area or region arising from both natural sources and anthropogenic diffuse sources such as atmospheric deposition

3.36
background value
statistical characteristics (3.495) of the total (natural pedo-geochemical and anthropogenic) content of substances in soil

3.37
basal respiration
microbial soil respiration without addition of substrate

3.38
basal respiration rate
R_B
constant mass of CO_2 released or mass of O_2 consumed per unit mass of soil per unit time without substrate addition

3.39
bedrock
in situ naturally consolidated rock either underlying drift deposits such as glacial till or exposed by past or current erosion processes

3.40
bioaccessibility
fraction of a substance in soil or *soil material* (3.459) that is liberated in (human) gastrointestinal juices and thus available for absorption

3.41
bioavailability
<general> degree to which chemicals present in the soil can be absorbed or metabolised by a human or ecological *receptor* (3.370) or are available for interaction with biological systems

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3.42
bioavailability
<human health> fraction of a substance present in ingested soil that reaches the systemic circulation (blood stream)

3.43
bioconcentration factor
BCF
ratio of the *concentration* (3.86) of a substance in an organism to that in the soil

3.44
biodegradation
molecular *degradation* (3.116) of an organic substance resulting from the complex actions of living organisms

3.45
biodiversity
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 to refer to the number and variety of organisms found within a specified geographic region.

[SOURCE: ISO 14050:2020, 3.8.22, modified —Note 1 to entry has been added.]

3.46
biological treatment
methods using the natural activities of plants or *microorganisms* (3.266), such as bacteria and fungi, to transform, destroy, fix or immobilise *contaminants* (3.91)

3.47
biomass
<general> total mass of living organisms or parts of them

Note 1 to entry: Biomass is expressed as fresh or dry mass of test organism or fresh or dry mass per test unit.

3.48
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

3.49
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* (3.194) 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.

3.50
bioreactor
equipment in which biotreatment is applied to a solid, liquid, or slurry

3.51
bioremediation
use of *biological treatment* (3.46) methods to decontaminate soil or *groundwater* (3.191)

3.52
biosolid
organic product applied to soil

EXAMPLE Sewage sludge, compost, manure, industrial products.

Note 1 to entry: Without giving a specific context, biosolid is often regarded as a component of sewage sludge.

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3.53
biotreatment bed
treatment bed
above-ground bed of soil designed to enhance *biodegradation* (3.44) 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* (3.22) conditions.

3.54
bioventing
in situ process in which vapour extraction or air infiltration rates, or both, are adjusted to optimize *biodegradation* (3.44) reactions

3.55
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.

3.56
boring
borehole
bore
hole of any predetermined diameter and length formed in any soil, geological formation, or man-made material by *drilling* (3.134)

3.57
bottom barrier system
in-ground (largely) horizontal barrier used to isolate or contain a *site* (3.443), or both

3.58
bound residues
non-extractable residues
chemical species in plants and soils, that cannot be extracted without significantly changing the chemical nature of these residues

EXAMPLE Chemical species originating from organic molecules.

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

3.59
break layer
stratum of high permeability granular material within a *cover system* (3.102)

Note 1 to entry: Its purpose is to stop upward capillary movement of soluble *contaminants* (3.91).

3.60
brownfield
<general> land affected by former uses

3.61
brownfield
<sustainable remediation> *site* (3.443) which:

— has been affected by former uses of the site or surrounding land;

— is derelict or underused;

— is mainly in fully developed or partly developed urban areas;

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— requires intervention to bring it back to beneficial use; and/or

— can have real or perceived *contamination* (3.93) problems

3.62
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 ($1\ t \cdot m^{-3}$) at 4 °C.

3.63
bulk sample
sample (3.398) resulting from the planned aggregation or the combination of sample units

Note 1 to entry: See also *composite sample* (3.83)(3.84).

[SOURCE: Reference [27]]

3.64
bulk volume
volume, including the solids and pores, of an arbitrary soil mass

3.65
capillary water
water held on soil particles due to unbalanced inter-molecular attraction at the liquid boundary

EXAMPLE The rise or depression of liquids in narrow tubes, the formation of films, drops, bubbles, etc.

3.66
carcinogen
substance that causes the development of malignant cells in animals or humans

3.67
certified reference material
CRM
reference material (3.374), one or more of whose property values are certified by a technically valid procedure accompanied by a certificate or any document allowing the identification of the origin of the certificate

3.68
chain-of-custody procedure
procedure to ensure *sample* (3.398) integrity (e.g. when transferred between the field and laboratory and within a laboratory) and to ensure that the sample will provide legally and technically defensible data

Note 1 to entry: See ISO 5667-3:2024, 3.2 for a definition of integrity.

3.69
channel sample
sample (3.398) obtained by removal of material in a channel-like shape from the soil using suitable equipment

3.70
characteristic
property or attribute of a material that is measured, compared, or observed

3.71
chemical treatment
treatment of contaminated soil, *sediment* (3.433), water, or other material in which the principal mechanism for *degradation* (3.116) or conversion to a less environmentally harmful form is a chemical reaction or combination of reactions

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3.72
chemico-physical treatment
process-based treatment relying on combination of physical and chemical processes

3.73
classification system
ranking system
formalized system to perform a *preliminary assessment* (3.341)

Note 1 to entry: Formalized procedures can also aid in interpreting results of the *preliminary investigation* (3.342).

3.74
clay content
proportion of soil particles with a particle size < 2 µm

3.75
cloning vector
a small piece of DNA that can be stably maintained in an organism, and into which a foreign DNA fragment can be inserted for cloning purposes

3.76
cluster sample
composite sample (3.83) (3.84) for which the *increments* (3.218) are taken over a small area around a predefined *sampling point* (3.418)

Note 1 to entry: Sampled area is typically about 0,5 m^2 to 1,0 m^2.

Note 2 to entry: Material sampled is taken from within the same stratum or from material with the same *characteristics* (3.70).

3.77
community relations
processes involved in informing and consulting the local community affected by a *hazardous site* (3.201) and activities to investigate or remediate it

3.78
community relations plan
formal statement of measures to be taken to inform and consult the local community

3.79
competent authority
<contaminated sites> authority that assesses investigation results and takes decisions about the severity and urgency of the soil *contamination* (3.93) found, and that also assesses proposals for *remediation* (3.380) or *protective measures* (3.354)

Note 1 to entry: Depending on the *site* (3.443) and the country, the competent authority can be very different.

3.80
compliance control
performance control
investigation or programme of ongoing inspection, testing, or *monitoring* (3.276) to confirm that a *remediation strategy* (3.383) has been properly implemented (e.g. all contaminated materials have been removed) and/or when a *containment* (3.90) approach has been adopted, that this continues to perform to the specified level

3.81
compliance point
location (e.g. soil or *groundwater* (3.191)) where the *assessment criteria* (3.32) is measured to check if the criteria are met

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3.82
composite extract
extract obtained by *mixing* (3.272) two or more extracts from different *test samples* (3.528) in an equivalent manner

Note 1 to entry: Composite extracts are used instead of *composite samples* (3.83) (3.84) if mixing influences the composition of a composite sample, as is to be expected for e.g. volatile components.

3.83
composite sample
average sample
aggregated sample
<general> two or more *increments* (3.218) or *subsamples* (3.503) mixed together in appropriate proportions, either discretely or continuously, from which the average result of a desired *characteristic* (3.70) can be obtained

3.84
composite sample
<field> *sample* (3.398) made of a number of *increments* (3.218)

Note 1 to entry: See *cluster sample* (3.76).

3.85
composting
biological treatment (3.46) of contaminated soil usually (but not always) in *treatment bed* (3.53) where organic substances are submitted to *aerobic* (3.13) transformation

3.86
concentration
mass of *test substance* (3.530) per unit mass of material

Note 1 to entry: Concentration is expressed as a mass fraction, in milligrams per kilogram (mg/kg) of dry soil.

3.87
concentration method
adsorption method
method in which substances to be determined are concentrated adsorptively on an adsorbent, subsequently desorbed and analysed

EXAMPLE Adsorbent can be activated charcoal or XAD 4 resin.

3.88
conceptual site model
synthesis of all information about a potentially *contaminated site* (3.92) relevant to the task in hand with interpretation as necessary and recognition of *uncertainties* (3.555)

3.89
construction works
applications where *soil materials* (3.459) are not required to have a direct productive use although they can support other layers intended to have a productive use

EXAMPLE *Earthworks* (3.138) (e.g. embankments), landscape engineering, road construction, construction of waste disposal *sites* (3.443), and back filling of excavated sites or mines.

3.90
containment
isolation
control of migration of gaseous, liquid, or solid contaminated media from a *site* (3.443) by use of measures such as covering systems, vertical in-ground barriers, and in-ground horizontal barriers

Note 1 to entry: Depending on site-specific factors, measures can be used alone or in combination.

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3.91
contaminant
substance or agent present in an *environmental medium* (3.147) as a result of human activity

Note 1 to entry: There is no assumption in this definition that *harm* (3.198) results from the presence of the contaminant. See also *pollutant* (3.328).

3.92
contaminated site
site (3.443) where *contamination* (3.93) is present

Note 1 to entry: There is no assumption in this definition that *harm* (3.198) results from the presence of contamination.

3.93
contamination
substance(s) or agent(s) present in the soil as a result of human activity

3.94
contaminant release assessment
assessment of the possibility and rate of *contaminant* (3.91) release based on the contaminant *characteristic* (3.70) and the *site* (3.443) characteristics

3.95
control soil
uncontaminated substrate or natural soil, used as a control and as *medium* (3.262) for preparing dilution series with test soils or chemicals, that allows the *growth* (3.194) of healthy plants

Note 1 to entry: Either artificial or natural standard or *reference soils* (3.376) can be used, if unhindered growth of the test plants in these soils can be expected. In any case, differences in nutrient levels between a test soil and a control soil can affect the *dose* (3.131) (response pattern). For example, a control soil much richer in nutrients than a test soil can result in a false-positive result (i.e. the test soil appears to have a "toxic" effect on the growth of the test plants). If a control soil is poorer in nutrients than a test soil, *hormesis* (3.206) can be expected at low soil-mixture ratios, or even an inverse *dose-response relationship* (3.132), if nutrient supply becomes the main effect.

3.96
control substrate
inert substrate which does not affect spore germination, used as a control or diluent

3.97
convenience sample
sample (3.398) chosen on the basis of accessibility, expediency, cost, efficiency, or other reason not directly concerned with sampling parameters

Note 1 to entry: The term "ad hoc sample" is sometimes applied to this type of sample.

3.98
convenience sampling
process of taking *samples* (3.398) based on accessibility, expediency, cost, efficiency, or other reason not directly concerned with sampling parameters

Note 1 to entry: The samples can be taken to a predetermined plan (locations, depths etc.) or taken from locations and/or depths decided on *site* (3.443) (the term "ad hoc sampling" is sometimes applied to this type of sampling).

3.99
core
more or less cylindrical section of soil or rock, usually 40 mm to 150 mm in diameter and sometimes up to several metres in length, obtained from a *borehole* (3.56) or drillhole

Note 1 to entry: The complete core can also be the *sample* (3.398).

3.100
core sample
sample (3.398) obtained from a *core* (3.99)

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3.101
correlatory sample
sample (3.398) collected to describe correspondence in character and/or stratigraphic position of two or more separated areas

3.102
cover system
one or more layers of materials, such as soils, suitable mineral wastes, and *geosynthetics* (3.188) (e.g. membranes, *geotextiles* (3.189)) superimposed on the surface of a *site* (3.443) (sometimes following partial *excavation* (3.155)) designed to control migration of *contaminants* (3.91) upwards and infiltration of rainfall, etc. downwards, and often to perform other functions such as to sustain vegetation or to provide a platform on which construction can take place

3.103
critical concentration
quantitative estimate of a *concentration* (3.86) of one or more *pollutants* (3.328) below which significant harmful effects on specified sensitive elements of the (soil) environment do not occur, according to existing knowledge

3.104
critical load
quantitative estimate of the input of one or more *pollutants* (3.328) below which significant harmful effects on specified sensitive elements of the (soil) environment do not occur, according to existing knowledge

3.105
cross contamination
undesired result due to:

— collection of a *sample* (3.398) with uncontrolled *mixing* (3.272) of *soil material* (3.459) from different soil horizons/layers;

— addition of chemical substances to a soil sample from *sampling devices* (3.412), containers, reagents of preservation, by transport conditions, means of preparation, and during analytical processing

3.106
cumulative CO_2 evolution
cumulative O_2 consumption
C_R
total area bounded by the line of the *soil respiration rate* (3.470) curve to the time axis from time of the addition of substrate to the time of peak maximum ($t_{peakmax}$)

3.107
cutting cylinder
cylindrical device with removable top and base forced into the surface of the ground/exposed soil to obtain an *undisturbed sample* (3.557)

3.108
cycle threshold
number of *qPCR* (3.360) cycles required for the fluorescent signal to cross the *threshold* (3.534) (i.e. to exceed background level)

3.109
degraded land
land which, due to natural processes or human activity, is no longer able to properly sustain an economic function and/or the natural or near natural ecological function

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3.110
data quality objectives
statement of the required detection limits, accuracy, reproducibility, and repeatability of the required analytical data and other data

Note 1 to entry: Generic data quality objectives can sometimes be set at national level. Data quality objectives can also embrace amount of data required for an area of land (or part of a *site* (3.443)) to enable a sound comparison with generic guidelines or standards or for a site-specific or material-specific estimation of *risk* (3.393).

3.111
dead volume
volume which is present between the suction opening of the *soil gas probe* (3.456) and the sampling vial, including the volume of the sampling vial or the absorption tube

3.112
dechlorination
chemical process designed to remove chlorine from organic chemicals, such as polychlorinated biphenyls (PCB)

3.113
decomposition
breakdown of complex organic substances into simpler molecules or ions by physical, chemical, and/or biological processes

3.114
decontamination
removal or partial removal of *hazardous substances* (3.202) from the soil, with the aim of restoring *soil functions* (3.453) and reclaiming the soil for intended usage

Note 1 to entry: "Decontamination" is different from "removal of contamination", since *contamination* (3.93) is not necessarily harmful.

3.115
deep soil
<biological/human exposure> soil in which plants can achieve a rooting depth of 50 cm or more

3.116
degradation
physical and chemical breakdown of the substances

3.117
degraded soil
soil whose natural properties and *soil functions* (3.453) have been damaged by physical, chemical and/or biological processes

Note 1 to entry: A soil can be degraded as a result of *contamination* (3.93).

3.118
dehydrogenase activity
activity of hydrogen-abstracting *enzymes* (3.149) which are involved in many energy and biosynthesis metabolic processes (e.g. the respiratory chain) and which require cell integrity to be produced

3.119
dense non-aqueous phase liquid
DNAPL
non-aqueous phase liquid (NAPL) (3.291) denser than water

EXAMPLE Trichloroethene.

Note 1 to entry: For light non-aqueous phase liquid (LNAPL), see 3.245.

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3.120
depth related sample
metric sample
sample (3.398) collected at a predefined depth independent of the present soil conditions and *characteristics* (3.70)

3.121
derelict site
site (3.443) so damaged by human activity as to be incapable of beneficial use without treatment

Note 1 to entry: Damage can be to the aesthetic, physical, engineering, environmental, or *contamination* (3.93) aspects of the site.

3.122
dermal exposure
rate or *concentration* (3.86) of substances capable of penetrating through the skin

3.123
diapause
interruption of metabolism during egg, larva, pupa, or imago development

EXAMPLE Resting phase or period of quiescence of some earthworm species to resist drought.

3.124
diffuse source input
input of a substance emitted from moving sources, from sources with a large area or from many sources

Note 1 to entry: In practice, two situations are commonly recognized: rural areas with diffuse *source* (3.484) inputs typically from land spreading and aerial deposition; and urban areas where the diffuse source inputs come typically from traffic and industrial activities.

Note 2 to entry: Diffuse source input usually leads to *sites* (3.443) that are relatively uniformly contaminated. At some sites, the input conditions can nevertheless cause a higher local input, such as near the source or where atmospheric deposition/rain is increased.

3.125
direct method
direct measuring method
method of analysis where the *soil gas* (3.454) *sample* (3.398) (*aliquot* (3.19)) is directly introduced into a suitable equipment without first being concentrated and subjected to analysis

3.126
direct-reading detecting tube
tube filled with reagents which, after drawing through certain gaseous compounds, show concentration-dependent chromophoric reactions, and which is thus used for qualitative and semi-quantitative analyses as well

Note 1 to entry: Attention should be paid to cross-sensitivities.

Note 2 to entry: The tube can be made of glass.

3.127
displacement barrier
in-ground barrier installed without *excavation* (3.155)

EXAMPLE Sheet steel piling.

3.128
dissolved organic carbon
DOC
concentration (3.86) of *organic carbon* (3.300) remaining in solution after filtration and/or centrifugation under defined conditions

Note 1 to entry: It is expressed in mg/l, g/m^3.

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3.129
disturbed sample
sample (3.398) obtained from the ground without preservation of the *soil structure* (3.475)

EXAMPLE Sample obtained by using an auger.

3.130
donor site
site (3.443) from which *soil material* (3.459) is removed for use on a *target site* (3.522)

3.131
dose
amount of a substance reaching a *receptor* (3.370)

Note 1 to entry: For a human or other animal receptor, this is commonly expressed in terms of the amount of substance per unit of body weight per unit of time (e.g. mg/kg/day). Analogous concepts can be applied to other potential receptors.

3.132
dose-response relationship
effect a given *dose* (3.131) (or equivalent quantity for non-animal *receptors* (3.370)) has on the receptor

3.133
dredged material
solid material excavated or otherwise removed from waters, e.g. during maintenance, construction, reconstruction and harbour or channel extension operation

Note 1 to entry: Dredged material may consist of *sediments* (3.433) and soil taken from below the water surface.

3.134
drilling
process by which a *borehole* (3.56) is produced in any soil, geological formation, or man-made deposit by rotary, rotary percussive, percussive, or thrust methods and in any predetermined direction in relation to the drill rig

Note 1 to entry: Two types of *sample* (3.398) can be obtained by drilling: sludge/*mud sample* (3.279) and *core sample* (3.100).

3.135
drying
process of removing the *soil water* (3.479) from a *sample* (3.398)

Note 1 to entry: In soil analysis, the following four kinds of drying may be applied:

— air drying;

— oven drying;

— chemical drying;

— freeze drying.

3.136
DT-50
time taken for the *concentration* (3.86) of a given compound to be reduced by 50 % of its original value

3.137
DT-90
time taken for the *concentration* (3.86) of a given compound to be reduced by 90 % of its original value

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3.138
earthwork
reuse of soil material (3.391) for civil engineering and construction purposes

Note 1 to entry: The same word can also refer to the material accumulated during an operation of earthwork.

3.139
ecological effect
change to an aspect of the ecosystem caused by anthropogenic stress factors

Note 1 to entry: Changes (see also *assessment criteria* (3.32)) to an ecosystem as a result of the presence of *contaminants* (3.91) are regarded as negative changes regardless of the direction. In addition, the variation in space, time and parameters is important (see ISO 18504:2017).

3.140
ecosystem service
service that is (directly or indirectly) provided by an ecosystem to benefit people

3.141
effect concentration for *x* % effect
EC*x*
concentration (3.86) (mass fraction) of a *test material* (3.524) or *test substance* (3.530) that causes *x* % of an effect on a given end point within a given *exposure* (3.159) (3.160) period, when compared with a control

Note 1 to entry: The EC*x* is expressed as a percentage of soil or test material per dry mass of soil mixture. When chemicals are tested, the EC*x* is expressed as mass of the test substance per dry mass of soil, in milligrams per kilogram.

3.142
effectiveness
<remediation method> measure of the ability of a *remediation* (3.380) method to achieve required performance

Note 1 to entry: In the case of a process-based method, effectiveness can be expressed in terms of the achievable *residual contamination* (3.388) *concentrations* (3.86).

3.143
electrokinetic remediation
application of electrokinetic processes, such as electro-osmosis, to remove *contaminants* (3.91) from soil or other solids

3.144
engineering-based method
civil engineering technique (e.g. *excavation* (3.155), *containment* (3.90), hydraulic control) used to remove the *contaminant* (3.91) *source* (3.484) or *soil material* (3.459) or to modify pathways without necessarily removing, destroying, or modifying the source

EXAMPLE By removing targets (*receptors* (3.370)) from the *site* (3.443) or vicinity of the site or changing the intended use of site.

3.145
environmental fate analysis
analysis of the fate of the *contaminant* (3.91) once it is released into the environment

Note 1 to entry: This includes a pathway analysis and other environmental fate considerations, e.g. transport processes due to physical and chemical properties, *degradation* (3.116), dilution or *accumulation* (3.8) in biota.

3.146
environmental justice
combination of environmental rights and environmental responsibilities that asserts that everyone has:

— a right to healthy places to live, work, play, learn and enjoy oneself;

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— a right to a fair share of nature's benefits and *ecosystem services* (3.140), such as food and water;

— a responsibility to look after the planet for others and for future generations

3.147
environmental medium
<contaminated sites> soil, underlying material, *sediments* (3.433), surface water, *groundwater* (3.191), *soil gas* (3.454), and air that can contain *contaminants* (3.91)

3.148
environmental protection plan
plan providing an assessment of the environmental *risks* (3.393) associated with *remediation* (3.380), the measures to be taken to minimize risks, the point when corrective action will be taken, the type of action to be taken, and identifying those responsible for *monitoring* (3.276) and for taking action

3.149
enzyme
biologically produced protein catalyst that accelerates the conversion of one compound (or compounds) to another (or others)

3.150
equivalent carbon number
empirically determined parameter related to the *boiling point* (3.55) of a chemical normalized to the boiling point of the *n*-alkanes or its retention time in a boiling-point gas chromatographic (GC) column

3.151
essential trace element
element essential in low *concentrations* (3.86) for plant or animal (including human) metabolism

Note 1 to entry: An element can be essential at low concentrations but become harmful at higher concentrations.

3.152
ex situ treatment method
treatment method applied to *medium* (3.262) to be treated (e.g. soil, *groundwater* (3.191)) after extraction from the ground

3.153
excavated barrier
barrier formed in an *excavation* (3.155)

EXAMPLE Slurry wall.

3.154
excavated soil
soil material (3.459) extracted from the ground

EXAMPLE *Topsoil* (3.536), *subsoil* (3.506) (3.507), altered parent rock, typically arising during *construction works* (3.89).

3.155
excavation
removal of soil, *anthropogenic ground* (3.30) (e.g. *fill* (3.169), *made ground* (3.254)), *sediment* (3.433), etc., from the ground for treatment or disposal

3.156
exploratory investigation
phase 2
collection of *samples* (3.398) for analysis to confirm the hypothesis concerning *soil quality* (3.466) from *phase 1* (3.342) investigation and to provide information to enable the design of the *main investigation* (*phase 3)* (3.255)

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