MALAYSIAN STANDARD

MS 1880: PART 1:2006

SOIL QUALITY - VOCABULARY PART 1: TERMS AND DEFINITIONS RELATING TO THE PROTECTION AND POLLUTION OF THE SOIL (ISO 11074-1:1996, MOD)

ICS: 13.080.01

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Committee representation

The Chemical and Materials Industry Standards Committee (ISC B) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Mineral and Geoscience
Department of Standards Malaysia
Malaysian Ceramic Industry Group
Malaysian Institute of Chemistry
Malaysian Paint Manufacturers Association
Malaysian Pulp and Paper Manufacturers Association
Ministry of Agriculture and Agro-based Industries
Ministry of Defence (Science and Technology Research Institute for Defence)
Ministry of International Trade and Industry
Ministry of Science, Technology and Innovation
Universiti Malaya
Universiti Sains Malaysia

The Technical Committee on Soil Quality which developed this Malaysian Standard consists of representatives from the following organisations:

Ministry of Agriculture and Agro-based Industries
Department of Chemistry, Malaysia
Department of Environment, Malaysia
Department of Mineral and Geoscience
The Institution of Engineers, Malaysia
Malaysian Society of Soil Science
SIRIM Berhad (Secretariat)
Universiti Putra Malaysia

FOREWORD

This Malaysian Standard was developed by the Technical Committee on Soil Quality under the authority of the Chemical and Materials Industry Standards Committee.

This standard corresponds to ISO 11074-1: 1996, *Soil Quality – Vocabulary – Part* 1: *Terms and definitions relating to the protection and pollution of the soil*, published by the International Organisation for Standardisation with the following modifications:

Clause/Subclause	Modifications
3.1 distribution/partition coefficient	Insert the word 'distribution' as an alternate term and reword the definition to read: 'Ratio between the concentrations of a substance in two different phases'.

Explanation:

The term' distribution' was added since it is commonly in used. The original wording 'two environmental compartment' was removed because of its ambiguity. The phrase 'two different phases' better describes the terminology.

3.1.1 soil-water distribution/partition coefficient, K_d	Insert the word 'distribution' as an alternate term.

Explanation:

The term' distribution' was added since it is being commonly used.

3.1.2 soil organic matter-water partition coefficient, K_{OC} or K_{OW}	Insert the symbol**,** *'*K_{OC} or K_{OW}' after the term. Delete the Note in the sub-clause.

Explanation:

The symbol K_{OW} was added since it is commonly in used. The original note was redundant.

3.2 Soil-plant partition coefficient/soil plant transfer coefficient	Reword the definition to read: 'Ratio between the concentration of a substance in plant material to that in soil'.

Explanation:

The word 'and' in the original definition is not reflective of a ratio and replaced by 'to that'.

3.3 Filter characteristics	Reword the definition to read: 'Ability of a soil to physically or chemically retain substances either in solid, dissolved or gaseous form'.

Explanation:

The term 'physically or chemically retain' was used in place of 'retain or binding' to be more concise in explaining filter characteristic.

3.4 Sorption — Insert the word 'irreversible' and include the following additional note.

'Irreversible' or reversible binding of a substance by soil constituents.

NOTE. Mechanisms of sorption include, for example, ion exchange, surface adsorption, dissolution of organic chemicals in the soil organic matter. (KIV)

Explanation:

The process can occur either way, reversible or irreversible.

3.6 Decomposition — Delete the word 'physical 'in the second line.

Explanation:

The word decomposition is a non-physical activity.

3.7 Abiotic decomposition/ abiotic degradation — Delete the word 'physical' and insert 'in the absence of organisms' after chemical processes.

Explanation:

The word decomposition/degradation is a non-physical activity. The phrase 'in the absence of organisms' better reflects the term 'abiotic'.

3.6.3 Mineralisation — Reword the definition to read:

The release of mineral salts, and in the process carbon dioxide, water and the hydrides and oxides are released

Explanation:

The original definition, 'decomposition of organic matter or organic substances' does not explain the term in a precise manner.

3.6.4 Humification — Reword the definition to read:

'The release of humic substances in the decomposition of organic matter'.

Explanation:

The original definition, 'decomposition of organisms or parts thereof, followed by synthesis' is not specific.

3.6.5 Primary degradation — Insert the phrase 'from its original form' after 'substance' in line 2.

Explanation:

The phrase was added to reflect a more concise definition.

3.6.7 Corrosive soil conditions Change the term ‘aggressive to ‘corrosive’ soil conditions.

Explanation:

The word ‘aggressive’ is not the right term to use.

4.2 Mobilisation Reword the definition to read:

‘Movement of substances or soil particles’.

Explanation:

The word mobilisation implies ‘movement’ rather than 'conversion'.

4.3 Immobilisation Reword the definition to read:

‘Stoppage of movement of substances or soil particles’.

Explanation:

The term ‘stoppage’ better explains immobilisation.

4.6 Substance input Reword the definition to read:

‘Introduction of a substance from another environmental compartment’.

Explanation:

The term ’introduction’ is synonymous with input.

4.8 Non-point source input Input of a substance emitted from non-discrete sources, from sources with a large area or from many sources.

NOTES:

1. The sources can be application of substances through agricultural, emissions from town or region, deposition of sediment through flooding of a river.
2. Diffuse source input usually leads to sites that are relatively uniformly contaminated. At some sites, the input conditions may nevertheless cause a higher local input near the source or where atmospheric deposition/rain is increased.

Explanation:

The change from ’moving sources’ to ‘non discreet sources’ was to remove any ambiguity.

5.1 Soil quality Reword the definition to read:

All properties with regard to soil utilisation and soil functions.

Explanation:

The original term ’current positive and negative properties' were judgmental, removing the term makes it more objective and precise.

5.2 Soil fertility

Remove the word ‘current’ in front of status to read:

‘Status of a soil with respect to sustain plant growth’.

Explanation:

The word ‘current’ before status is redundant.

5.7 Sensitive site

Omit the word ‘whose’ and replace by ‘where’

Explanation:

Grammatically wrong to use the word ‘whose’.

5.8 Background concentrates

Also known as background baseline.

Reword the definition to read:

‘Inherent average concentration of a substance in soil’.

Explanation:

The term ‘background’ implies ‘inherent’.

5.11 Hasardous substances

Rename the nomenclature as ‘hasardous substances’.

Explanation:

The original term ‘substances hasardous to the soil’ was replaced by ‘hasardous substances’ for clarity.

5.13 Plant availability

Also known as phytoavailability.

Reword the definition to read:

’Substances in the form that is readily available to the plant’.

Explanation:

Plant availability refers to the substances that are in the form readily taken up by the plant.

6.1 Soil protection

Insert the word ‘conservation’ after ‘maintenance’ to read:

‘Measures for long-term maintenance, conservation or restoration of soils and soil functions’.

Explanation:

Conservation is one of the measures of soil protection.

6.3 Legally binding value

Change the word ’binding’ to ‘mandated’ in the definition to read:

‘Value mandated through legislation’.

Explanation:

The word ‘legally binding value’ is usually derived after the due process of legislation, hence 'mandated' is a more appropriate word to use.

6.4 Suspect site

Insert 'soil' before the word 'environment' and delete 'especially' and replace with 'and human health'. The sentence shall read as follows:

'Site suspected to be hasardous to the soil environment and human health'.

Explanation:

The word 'soil' was inserted to be more specific and to put emphasis on the dangers to human health.

6.5 Problem site

Insert 'soil' before the word 'environment' and delete 'especially' and replace by 'and human health'.

'Site shown to be probably hasardous to the soil environment and human health'.

Explanation:

The word 'soil' was inserted to be more specific and to put emphasis on the dangers to human health.

6.6 Localised contaminated site

Change the term 'locally' to 'localised' and replace the word 'to soil' by 'substances'.

'Site with discrete areas of high concentrations of hasardous substances'.

NOTE. The extent of the contamination is usually confined and the gradient of concentration within the site is steep.

Change the word 'small' to 'confined' in note.

Explanation:

The word localised implies site specific and the word 'confined' is more precise.

6.7 Uniformly contaminated site

Change the word' large ' to 'dispersed' in note.

NOTE. The extent of the contamination is usually dispersed and the gradient of concentration within the site is rather shallow.

Explanation:

The word 'dispersed' is more precise.

6.8 Risk assessment

Change the word 'man' to 'human health'.

Assessment of damaging effects of a polluted site on human health and the environment with respect to their nature, extent and probability of occurrence.

Explanation:

The word 'human health' is more relevant in this context.

7.1 Indicator substance

Reword the definition to read:

'Representative substance indicating the presence or association of a group or a mixture of other substances'.

Explanation:

The new definition better explains the term ‘indicator’.

7.2 Soil specimen bank

Change the second listing to read:

‘-the selection of suitable analytical methods’.

Explanation:

The original word ‘control’ is not appropriate, and was replaced by 'selection' to better explain the situation.

7.4 Soil

Insert note after the definition as in MS 1880: 2005 to read as follows:

NOTE. The term soil is used frequently in the definitions listed below. It has the meaning ascribed to it through general use in civil engineering and includes topsoil and subsoil; deposits such as clays, silt, sand, gravel, cobbles, boulders and organic deposits such as peat and materials of natural or human origin (e.g. fills and deposited wastes). The term embraces all components of the soil, including mineral matter, organic matter, soil gas and moisture and living organisms.

Explanation:

The note was included to be consistent with the definition of soil adopted from MS 1880: 2005