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DRAFT EAST AFRICAN STANDARD

Solid waste — Environmental management of compost processing facilities — Requirements

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 031, *Waste management.*

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Introduction

Composting is an important method for the environmentally sound management of biodegradable solid waste and provides an opportunity to recover organic matter and nutrients while reducing the quantity of waste requiring disposal. Properly managed composting can contribute to resource recovery, soil improvement and the promotion of circular economy principles.

However, compost processing facilities, if inadequately planned, designed, operated or maintained, may result in adverse environmental and public health impacts. These may include odour, dust, noise, litter, bioaerosols, leachate generation, surface and groundwater contamination, greenhouse gas emissions, and the attraction of vectors and pests. Contamination of incoming organic waste with plastics, hazardous substances and other unwanted materials may further affect the quality and safe use of the resulting compost.

Effective environmental management of compost processing facilities is therefore important to minimize adverse impacts, promote efficient resource recovery and ensure the production of safe and quality compost. This Standard provides a framework for the environmental

management of compost processing facilities, including considerations for site selection, waste reception and handling, processing operations, environmental controls, monitoring and management of residual materials

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Solid waste — Environmental management of compost processing facilities — Requirements

1 Scope

This Committee Draft East African Standard provides environmental and safety requirements for siting, design, operation and closure of a compost facility.

This standard applies to facilities receiving and processing organic waste for the production of compost, subject to applicable national legislation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies

ISO 24161:2022 Waste collection and transportation management—Vocabulary.

ISO 14021:2026 *Environmental statements and programmes for products — Self-declared environmental claims*

3.Terms and definitions

For the purposes of this document, terms and definitions found in ISO 24161:2022 Waste collection and transportation management—Vocabulary and the following terms and definitions apply.

3.1 anaerobic digestion
process of controlled decomposition of biodegradable materials under managed conditions where free oxygen is absent, at temperatures suitable for naturally occurring mesophilic or thermophilic anaerobic and facultative bacteria species, that convert the inputs to a methane rich biogas and whole digestate

3.2 aerobic digestion

composting taking place in the presence of ample oxygen

3.4 biodegradable

capable of being broken down by the action of microorganisms in the environment through biological decomposition.

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3.5 competent authority
the regulatory authority or any local, or national agency, department, inspectorate, minister, official, court, tribunal or public or statutory person.

3.6 compost
product resulting from the controlled biological decomposition of organic materials from biodegradable sources such as crop residues, animal droppings/manure and market/kitchen waste, it is valued for its organic matter content, it is typically used as a soil amendment to enhance the chemical, physical and biological properties of soil as well as providing diverse nutrition for plants, and also as a growing medium

3.7 composter
business enterprise, organization, community initiative or person(s) responsible for the production of compost

3.8 composting
process of controlled biological decomposition of biodegradable materials under managed conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat

3.9 feedstocks
any raw material that is supplied to a machine or processing plant

3.10 storm water
rain or melted precipitation that runs off land or structures on land

4 Requirements

4.1 Requirements for a compost facility

4.1.1 Site selection

The composting facility shall

a) not be located on wetlands and its buffer zone, steep slopes and areas prone to flooding and where the seasonal high ground water table is less than 1 m from the soil surface. (Regional flood plain maps shall be referred to prior to siting of the compost facility).

b) be provided with a buffer zone (see Figure 1) from the composting site to the nearby facilities or points of potential impacts to minimize odour and noise related problems, to protect surface and underground waters and any other environmental and health impacts. Minimum composting facility buffer zone distances are provided in Table 1

c) approved by competent authority

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Table 1 — Minimum composting facility buffer zones distances

S/No.	Distances from the composting site to:	Minimum buffer zones distances (meters)*
1	Property line	15-30
2	Residential area	400
3	Hospitals	800
4	Tourist areas	400
5	Commercial or industrial areas	100
6	Private wells or other potable water source	1000
7	Wetlands, ponds, lakes, streams	150
8	Subsurface drainage pipe or drainage ditch discharging to a natural water course	50
9	Water table (seasonal high)	1
10	Bedrock	0.6

*Buffer zone is the distance from the perimeter of the composting site to points of potential impacts

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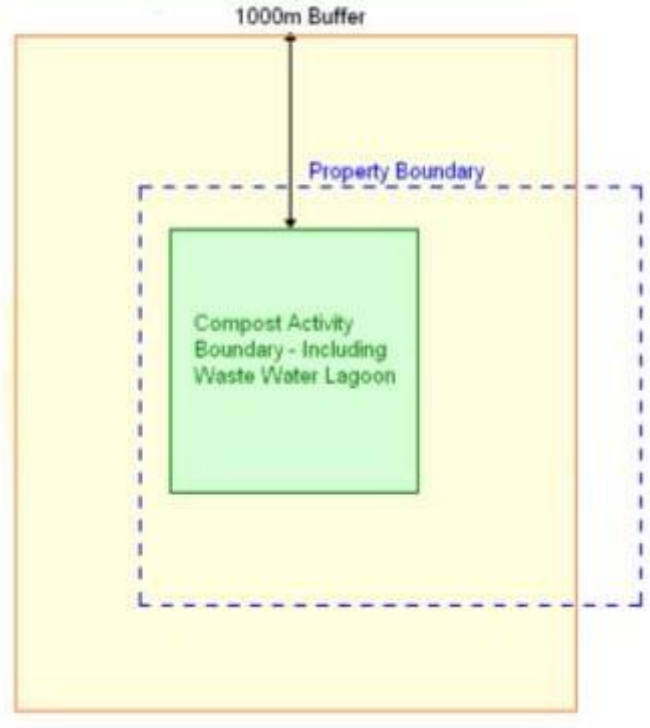

Figure 1 — Composting facility buffer zone

4.2 General design requirements for composting facilities

The design of composting facilities shall comply with the following requirements:

a) Technical specifications including design drawings, a construction quality assurance plan and construction management plan shall be submitted for assessment and approval by the authority prior to commencing construction works.

b) The receiving, storage, processing and curing area of incoming feedstocks shall have a roof, or cover, containment and also a prepared surface designed to prevent feed stocks and compost from storm water and surface collection of water around the base.

c) The receiving, storage, processing and curing area of incoming feedstocks shall be undertaken on a low permeability material (liner) such as compacted clay, asphalt or concrete or any other similar impermeable surface that is capable of withstanding wear and tear from normal operations that will prevent the release of leachate into the environment.

d) The receiving, storage, processing and curing area of incoming feedstock's shall have a leachate collection system designed, constructed, maintained and operated to reuse or to remove leachate from the receiving, storage processing and curing area.

e) The receiving, storage, processing and curing area of incoming feedstocks shall have a

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minimum 2 % drainage gradient to ensure the free drainage of leachate to a designated wastewater collection system.

f) The design of the compost facility shall ensure access to all areas of the site irrespective of weather conditions.

g) Composting facilities shall have a perimeter fence that is suitable for containing debris and dust on site.

h) Composting facilities shall have a separate storm water and wastewater (including leachate) management systems.

i) Composting facilities shall be designed to divert clean storm water from pooling or draining towards areas where feed stocks and finished compost product are received, sorted, stored or processed.

j) All storm water which comes into contact with incoming feed stocks and compost windrows shall be handled and treated as wastewater.

Design criteria for the storm water management system shall consider:

i) the 1–in–25-year recurrence interval; and
ii)24-hour duration storm event for design of drainage feature

4.3 Operation requirements

a. Stockpiles shall not be located within 2 m of the site boundary fence. Where stockpiles are located within 5 m of the boundary fence, they shall be maintained below the top of the fence.

b. The composter shall prevent and avoid any infestation, harborage or attraction of vectors within the facility.

c. Composting facilities shall prevent unsightly conditions onsite and the migration of litter beyond the premises boundaries.

d. Residual waste and/or incoming feedstock that are unsuitable for use in the composting process shall be categorized in accordance with the criteria for the classification of waste prior to being removed offsite and transported to a suitably licensed facility to receive and/or dispose of that waste.

4.4 Requirements for decommissioning of compost facility

Upon cessation of the composting activity and prior to surrender of a licence, the site shall be appropriately decommissioned under supervision or guidance from relevant authority to prevent any hazard to the environment, local amenity and/or health and safety of the people.

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Bibliography

[1]. **TZS 3154:2023** Solid waste — Environmental management of compost processing facilities

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