

Translation from Finnish

Legally binding only in Finnish and Swedish

Ministry of the Environment, Finland

Government Decree on Landfills

(331/2013; amendments up to 1030/2021 included)

By decision of the Government, the following is enacted under the Waste Act (646/2011) and under sections 11, 12 and 16 of the Environmental Protection Act (86/2000), as section 12 of the Environmental Protection Act appears in Acts 253/2010 and 647/2011 and as section 16 of the Environmental Protection Act appears in Act 252/2005:

Chapter 1

General provisions

Section 1 (1030/2021)

Objectives

The objectives of this Decree are, in order to support the transition to a circular economy, to ensure reductions in the landfilling in particular of waste that is suitable for recycling and other recovery as well as, in order to prevent the pollution of surface water, groundwater, soil and air and in order to combat the impacts of climate change and other comparable large-scale adverse environmental impacts, to guide the planning, setting up, construction, use, management, closure and after-care of landfills as well as the depositing of wastes in landfills in such a way that they will not endanger or harm health or the environment during the whole lifecycle of the landfill.

Section 2

Scope of application

This Decree applies to landfills and the deposit of wastes in them.

This Decree does not apply to sites where only unpolluted soil waste or waste falling under the scope of application of the Government Decree on Extractive Waste (190/2013) is deposited. Nor does the Decree apply to the deposit of dredging spoil classified as non-hazardous waste in an

inland surface water body or the sea or its bed or subsoil or to the deposit of unpolluted dredging spoil onto or into land alongside the waterway from which it has been dredged out. (1030/2021)

Section 3

For the purposes of this Decree:

1) *landfill* means a waste disposal site for the deposit of the waste onto or into land, including:

- a) internal waste disposal sites at the place of production where a producer of waste is carrying out its own waste disposal;
- b) mines or other facilities in a deep cavity in the bedrock where waste is deposited (*underground disposal site*); and
- c) sites used for at least one year for temporary storage of waste;

but excluding:

- a) sites where waste is unloaded as well as sorted, combined or in other ways prepared for further transport for pretreatment, disposal or recovery elsewhere;
- b) storage of waste prior to recovery or pretreatment for a period less than three years; or
- c) storage of waste prior to disposal for a period less than one year;

Paragraph 2 was repealed by Act 1030/2021.

3) *inert waste* means waste:

- a) that will not dissolve, burn or otherwise physically or chemically react, biodegrade or react with other matter in a way that endangers health or the environment;
- b) that does not even over a long period of time undergo other significant physical, chemical or biological transformations;
- c) the total leachability and pollutant content of which as well as the ecotoxicity of the landfill leachate from which are insignificant; and
- d) that does not endanger the quality of surface water or groundwater;

4) *biodegradable waste* means food, garden, paper, fibreboard and wood waste as well as waste from plant and animal production, forestry and municipal and food industry waste water

treatment plants as well as any other waste that is capable of undergoing anaerobic or aerobic decomposition;

- 5) *liquid waste* means waste water and any other waste in liquid form but excluding sludge;
- 6) *regularly generated waste* means specified wastes the essential characteristics of which remain consistent and which are generated regularly in the same process where:
 - a) the installation and the process are generally known;
 - b) the input materials to the process and the process itself are well defined;
 - c) all necessary information on the installation has been provided and the landfill operator is informed of other changes to the input materials and to the process;
 - d) the waste originates from a single installation or from similar processes in different installations if the waste can be identified as a single specified waste stream with common characteristics within known boundaries; and
 - e) there are no substantial changes to the process where the waste is generated;
- 7) *stable, non-reactive hazardous waste* means hazardous waste the leaching behaviour of which will not change adversely in the long term under landfill design conditions or foreseeable accidents:
 - a) by biodegradation or other cause in the waste alone;
 - b) under the impact of water, air, temperature or mechanical constraint or other long-term ambient conditions; or
 - c) by the impact of other wastes or landfill leachate or gas;
- 8) *landfill leachate* means any liquid percolating through the waste deposited in a landfill or any other contaminated liquid that forms in a landfill;
- 9) *landfill gas* means all the gases generated from the landfilled waste;
- 10) *pretreatment* means sorting as well as other physical, chemical, biological or thermal processes that change the characteristics of the waste in order to reduce its quantity or harmfulness or to facilitate its disposal or enhance its recovery;
- 11) *landfill operator* means the natural or legal person responsible for a landfill at any given time;
- 12) *landfill after-care* means measures taken to monitor or prevent the environmental effects of a landfill that has been or is to be closed; (781/2018)

13) *mercury waste* means metallic mercury that qualifies as waste under Regulation (EU) 2017/852 of the European Parliament and of the Council on mercury, and repealing Regulation (EC) No 1102/2008, hereinafter the *Mercury Regulation*. (781/2018)

Chapter 2

General requirements for landfills and their location

Section 4

Location of a landfill

A landfill shall not be located:

- 1) in a groundwater area which is important or otherwise suitable for water supply or in such a way that the adverse effects of the landfill may extend to such a groundwater area, unless it can be ascertained that the quality of groundwater in such areas will not be compromised;
- 2) in an inland surface water body or the sea or in the immediate vicinity of a water area designated for water supply or intended for recreational use or requiring special protection;
- 3) in or in the immediate vicinity of an area designated as a nature reserve, a landscape protection area or a recreation area, or an area protected in order to preserve natural heritage or national cultural heritage;
- 4) in a mire or drainage divide or on land at risk of flooding, landslides or avalanches or in a fractured zone of bedrock if the collection and management of landfill leachate is technically difficult to implement during landfill operation or after-care;
- 5) in an area of soft soil if the landfill may cause harmful settlement or settlement may damage landfill structures.

When selecting the landfill site, it shall be ensured that:

- 1) the location of the landfill does not cause adverse landscape effects;
- 2) the site is easily accessible;
- 3) the site used for landfill operations is located at a sufficient distance from residential, agricultural or urban areas and public roads; and

4) the geological and hydrogeological features of the site have been taken into account.

Provisions on taking account of the principle of self-sufficiency and the proximity principle in the setting up and location of landfills are laid down in section 19 of the Waste Act (646/2011). (103/2015)

Environmental Protection Act 86/2000 was repealed by Environmental Protection Act 527/2014 from 1 September 2014.

Section 5

Management of landfill leachate at landfills

A landfill shall be operated so as to minimise the quantity of landfill leachate discharged from the site and any resulting loading.

Landfill leachate shall be collected by means of coordinated subsurface drainage, pumping or another suitable technical solution. The collected landfill leachate shall be purified efficiently at the landfill site or conducted elsewhere for purification. If landfill leachate is conducted elsewhere for purification, it must be ensured that the leachate does not impede the functioning of the waste water treatment plant or reduce the quality of the sludge generated in it.

Clean surface waters within the landfill and external runoff shall be kept separate from the waste and landfill leachate. Similarly, contact of landfilled waste with groundwater shall be prevented.

The requirements for the management and treatment of waters and leachate referred to in subsections 1–3 above do not apply to landfills for inert waste.

Section 6

Structural components of the base of a landfill

The ground underlying a landfill shall have a sufficient load-bearing capacity and fulfil the permeability requirements in accordance with Annex 1, paragraph 1.

If the permeability of the ground underlying the landfill does not naturally fulfil the requirements laid down in subsection 1, it shall be reinforced by means of an artificial impermeable layer giving

equivalent protection. An artificially established impermeable layer shall be at least 0.5 metres thick in landfills for non-hazardous waste and inert waste and at least 1.0 metre thick in landfills for hazardous waste. (1030/2021)

For the purpose of landfill leachate collection, in landfills for hazardous waste and non-hazardous waste, an artificial sealing liner shall, in addition, be installed on the ground underlying the landfill or on top of the impermeable layer and, on top of this, a drainage layer shall be installed, which shall be at least 0.5 metres thick. (1030/2021)

Section 7 (1030/2021)

Structural components of the surface cover of a landfill

When the waste deposit area has reached final capacity, at landfills for hazardous waste and landfills for non-hazardous waste the landfill shall be capped with a surface cover consisting of the layers specified in Annex 1, paragraph 2.

Section 8

Control of landfill gas

Landfill gas shall be collected and, if possible, recovered. If the gas collected cannot be recovered, it shall be flared.

The accumulation and migration of landfill gas shall be monitored and controlled in accordance with chapter 7.

Section 9

Exemptions from requirements for structural components of the base and of the surface cover of a landfill and for the collection of landfill leachate and gas

The permit authority may issue a decision reducing the requirements referred to in sections 5–8 concerning the collection and management of landfill leachate, the structural components of the base and the surface cover of a landfill or the control of landfill gas if the landfill operator, on the basis of an overall assessment of the health and environmental impacts of the landfill, reliably demonstrates that the landfill and the deposit of waste in the landfill will not, even over a long period of time, cause a hazard or harm to health or the environment referred to in the Waste Act

or the Environmental Protection Act (527/2014) or breach the soil contamination prohibition referred to in section 16 or the groundwater pollution prohibition referred to in section 17 of the Environmental Protection Act. The technology used in the landfill and the method to protect against harm to health and the environment shall nevertheless be in accordance with the provisions of section 13, subsection 3 of the Waste Act. (103/2015)

The requirements laid down in sections 6–8 above do not apply to the deposit of waste in an underground disposal site.

Section 10 (781/2018)

Temporary storage site of mercury waste

Any temporary storage of mercury waste for more than one year in an above-ground facility shall comply with the following requirements:

- 1) mercury waste shall be stored separately from other waste;
- 2) containers shall be stored in collecting basins suitably coated so as to be free of cracks and gaps and impervious to metallic mercury with a containment volume adequate for the quantity of mercury stored;
- 3) the storage site shall be provided with sufficient engineered or natural barriers that are adequate to protect the environment against mercury emissions, and its containment volume shall be adequate for the total quantity of mercury stored;
- 4) the storage site floors shall be covered with mercury-resistant sealants, and a slope with a collection sump shall be provided;
- 5) the storage site shall be equipped with a fire protection system;
- 6) storage shall be organised so as to ensure easy access to the containers.

The requirements referred to in subsection 1, paragraphs 3 and 5 shall also be complied with in the disposal of mercury waste in underground and above-ground facilities.

Section 11

Prevention of nuisances and hazards

Planned measures shall be taken at the landfill to prevent and abate the following nuisances and hazards:

- 1) slippage and settlement damaging structures as well as insufficient stability of the mass of waste;
- 2) littering of the environment;
- 3) dispersal of dirt onto public roads;
- 4) noise and traffic nuisance;
- 5) nuisance caused by animals;
- 6) nuisance caused by odour, dust and aerosols;
- 7) fires;
- 8) damage to structural components of the landfill caused by frost heaving;
- 9) other equivalent nuisances and hazards.

Unauthorised access and unlawful depositing of waste in a landfill shall be prevented by a control system or a fence around the site or by other structural and technical means. The landfill gates shall be locked outside operating hours.

Section 12

Other general requirements for landfills

Waste shall be weighed before being deposited in a landfill.

Section 28 of the Government Decree on Waste (978/2021) shall be complied with when recovering waste for the structures of a landfill. (1030/2021)

Provisions on responsible persons for waste treatment sites are laid down in section 141 of the Waste Act. The responsible person shall be notified to the supervisory authority.

Chapter 3

General restrictions on the acceptance of waste at landfills

Section 13 (1030/2021)

Landfill classes and waste accepted at different landfills

Each landfill is classified as a landfill for hazardous waste, non-hazardous waste or inert waste.

Only wastes in accordance with the landfill class of the landfill are accepted at a landfill. However, this does not apply to:

- 1) the use of suitable inert non-hazardous waste for construction purposes at a landfill;
- 2) the use of suitable non-hazardous waste other than that referred to in paragraph 1 in the structural components of the surface cover of a landfill for inert waste or in the impermeable layer of the surface cover of a landfill for hazardous waste or in structures on top of that; or
- 3) cases referred to in sections 30 or 31.

Section 14

Waste not acceptable at landfills

The following are not acceptable at landfills:

- 1) liquid waste;
- 2) waste which, in the conditions of a landfill, is explosive, oxidising, flammable or corrosive as defined in Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives, as the Annex appears in Commission Regulation (EU) No 1357/2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives, and by Council Regulation (EU) 2017/997 amending Annex III to Directive 2008/98/EC of the European Parliament and of the Council as regards the hazardous property HP 14 'Ecotoxic'; (1030/2021)
- 3) waste arising from medical and veterinary establishments or from comparable activities that is infectious as defined in the Annex referred to in paragraph 2; (1030/2021)
- 4) discarded chemical substances arising from research, development or teaching activities which cannot be identified or the effects of which are not known;

5) discarded tyres of cars, machinery or other motor vehicles, whole or shredded; this ban does not, however, apply to the use of shredded tyres in structures above the impermeable layer of the surface cover of a landfill;

6) waste which does not fulfil the acceptance criteria laid down in chapter 5.

The provisions of subsection 1, paragraph 1 do not, however, apply to such mercury waste the temporary storage of which is permitted under Article 13 of the Mercury Regulation or under provisions laid down under it. (761/2018)

Waste may not be diluted or mixed with other waste or another substance solely in order to meet the acceptance criteria for landfill waste.

Provisions on the prohibition of landfilling of waste collected separately for preparing for re-use or recycling are laid down in section 15a of the Waste Act. (1030/2021)

Section 14a (1030/2021)

Restriction on the landfilling of waste suitable for recycling or other recovery

The landfilling of waste suitable for recycling or other recovery shall be avoided where possible, excluding waste the landfilling of which delivers the best environmental outcome in accordance with the order of priority referred to in section 8 of the Waste Act.

Section 15 (1030/2021)

Waste pretreatment obligation

Only waste that has been subject to pretreatment in accordance with the order or priority is accepted at landfills. This requirement does not apply to such inert waste for which pre treatment is not technically feasible or to any other waste for which pretreatment does not contribute to the objectives laid down in section 1 by reducing the quantity or harmfulness of the waste or the hazard or harm caused by waste management to health or the environment.

Chapter 4

Procedure for assessing acceptability of waste at landfills

Section 16

General assessment requirements

The following three-level hierarchy shall be applied in the assessment of the acceptability of waste at landfills:

- 1) the basic characterisation of waste, which constitutes a sufficiently detailed determination using standardised methods to analyse the properties of the waste to establish that the waste meets the acceptance criteria specified for waste deposited in the class of landfill concerned and that depositing the waste in the landfill is safe, even over the long term;
- 2) waste compliance testing, which constitutes standardised short-term methods to regularly measure the characteristic properties of the waste identified in the basic characterisation in order to ensure that the waste complies with permit conditions;
- 3) on-site verification of waste to ensure that the waste complies with the documents presented.

The assessment of the acceptability of waste at landfills shall be based on reliable information on the origin and properties of the waste. Property-based assessment criteria include:

- 1) composition of the waste;
- 2) quantity and biodegradability of organic matter in the waste;
- 3) quantity and leaching behaviour of harmful substances in the waste;
- 4) ecotoxicological properties of the waste and the landfill leachate formed from the waste.

In addition, the assessment shall be based on the following information concerning the landfill:

- 1) the characteristics and quality of the landfill and the protection of its environment;
- 2) the quality of environmental protection measures and their safeguarding;
- 3) the stability of the waste body and its securing;
- 4) protection against human-health hazards.

Section 17

Procedure for basic characterisation

Basic characterisation shall be carried out for waste to be accepted at a landfill. The characterisation shall be carried out for each batch of waste. Basic characterisation shall also be carried out for regularly generated waste before accepting the first batch of the waste at the landfill but, after this, compliance testing based on the basic characterisation will be sufficient.

Basic characterisation shall constitute:

- 1) obtaining and compiling the relevant information on the waste and its behaviour in landfill;
- 2) analysing the need, conditions and alternatives for the pretreatment of the waste;
- 3) evaluating the waste on the basis of the acceptance criteria laid down in chapter 5;
- 4) detecting the characteristic properties of the waste.

The producer or other holder of the waste shall ensure the accuracy of the information used in the basic characterisation.

The landfill operator shall keep the relevant documents related to the basic characterisation for a minimum of three years after having received them.

Section 18

Information required for basic characterisation

The following information on the waste shall be available for the basic characterisation:

- 1) the name of the producer or other holder of the waste and the location and address of its place of activity;
- 2) a description of the process in which the waste was generated;
- 3) an account of the pretreatment of the waste carried out in accordance with section 15 or of why pretreatment is not considered feasible or necessary;
- 4) the composition and, where necessary, leaching behaviour of the waste;
- 5) the odour, colour, physical state and other similar properties of the waste;

- 6) the waste entry in accordance with the list of waste referred to in section 4 of the Government Decree on Waste, hereinafter the *list of waste*;
- 7) for hazardous waste, the primary hazardous properties in accordance with the Annex specified in section 14, subsection 1, paragraph 2; (1030/2021)
- 8) information to establish that the depositing of the waste is not contrary to sections 14 and 15 or prohibited in any other way;
- 9) the landfill class at which the waste may be accepted;
- 10) the behaviour of the waste in landfill and, if necessary, any additional related precautionary measures;
- 11) potential for the waste to be recycled or recovered.

The following additional information shall be available for the basic characterisation of regularly generated waste:

- 1) compositional range and variability for the waste;
- 2) range and variability of the characteristic properties of the waste;
- 3) if required, the leachability of the waste determined by percolation tests, batch leaching tests, pH dependence tests or their combinations;
- 4) key variables for compliance testing and the information needed for determining the scope and frequency of the tests;
- 5) such information concerning the compliance assessment that is based on a sufficient number of specifications of the characteristic properties of the waste that allows for their variability to be determined in cases of wastes produced in the same process but in different installations.

Section 19

Testing included in basic characterisation

Waste shall be tested to obtain the information required for basic characterisation on the composition and leaching behaviour of the waste, unless otherwise provided in section 25, subsection 1 or section 27, subsection 3.

Upon the permit authority's decision, the basic characterisation may be carried out without testing if:

- 1) all the information on the waste needed for the basic characterisation is available and has been appropriately verified; or
- 2) it is demonstrated by means of justified documentation that the testing of the waste is impractical or in practice impossible or that appropriate testing methods or acceptance criteria are unavailable for the waste and, at the same time, sufficient other information and reasons are provided for why the waste is deemed acceptable at that landfill class.

Testing as part of basic characterisation is not required for each batch of regularly generated waste. Instead, batches of waste may be tested in accordance with section 20.

Section 20

Compliance testing

Regularly generated waste shall be subject to compliance testing. However, compliance testing is not required if the waste is excluded from the tests required for basic characterisation under section 19, subsection 2, paragraph 2, section 25, subsection 1 or section 27, subsection 3 and if it has been sufficiently verified that the waste complies with the other information provided in the basic characterisation.

Compliance testing shall be carried out in the scope specified in the basic characterisation and repeated at least once a year. The test methods specified in the basic characterisation shall be used for the testing.

The testing shall include:

- 1) testing of the key variables identified in the basic characterisation in order to demonstrate that the waste meets the limit values set for the variables;
- 2) one or more batch leaching tests;
- 3) if necessary, other tests to demonstrate that the waste complies with the information provided in the basic characterisation and the acceptance criteria laid down in chapter 5.

The landfill operator shall keep the relevant documents related to compliance testing for a minimum of three years after having received them.

Section 21

On-site verification

Each batch of waste delivered to a landfill shall be inspected in conjunction with acceptance at the landfill. Wastes and waste loads shall be inspected with appropriate rapid determination methods based on samples taken for the inspection or at least by using organoleptic checks based on the odour, colour and physical state of the waste.

Section 22

Sampling and testing

Sampling and testing relating to basic characterisation and compliance testing shall be carried out by independent and qualified persons or institutions. Laboratories undertaking the tasks shall have proven experience in waste testing and analysing waste as well as an efficient and functional quality assurance system.

Sampling and testing may be undertaken by producers or other holders of waste or landfill operators if:

- 1) sufficient supervision of independent and qualified persons or institutions ensures the appropriateness of the assessment of acceptability at landfills;
- 2) there is in use an appropriate sampling and testing quality assurance system including periodic independent checking.

Section 23

Sampling and testing methods

Standards and technical specifications that have been adopted and published by a European standardisation body and referred to in annex 2 shall be used for the sampling and testing of waste.

Chapter 5

Acceptance criteria for waste acceptable at landfills

Section 24

Application of the acceptance criteria for waste

Waste accepted at a landfill shall meet the acceptance criteria laid down in this chapter for a landfill of the class concerned. If no limit values or other acceptance criteria have been defined or if there is a need to specify the criteria further, decisions on these shall be made case-specifically on the basis of the assessment laid down in chapter 4.

Section 25

Waste acceptable at landfills for inert waste without testing

The wastes listed in Annex 3, Table 1 may be accepted without testing at landfills for inert waste. The waste shall be a single stream of a single waste type and derived from a single source. Different wastes listed in the table may also be accepted together, provided they are from the same source.

However, the waste shall be tested in accordance with chapter 4 in the event of suspicion of contamination or if there is a doubt that the waste fulfils the definition of inert waste and the acceptance criteria laid down in section 26. Waste may not be accepted at a landfill for inert waste if testing indicates that the waste is contaminated or contains metals, asbestos, plastic, chemicals or other materials or substances to an extent that, due to the associated increase in risk, justifies depositing the waste in a landfill of a different class.

Section 26

Acceptance criteria for waste acceptable at landfills for inert waste

The leaching limit values in accordance with Annex 3, Table 2 and the limit values for content of organic substances in accordance with Table 3 apply to waste acceptable at landfills for inert waste other than waste referred to in section 25, subsection 1.

Section 27

Waste acceptable at landfills for non-hazardous waste on the basis of limited testing or without testing (1030/2021)

The municipal wastes classified as non-hazardous waste in chapter 20 of the list of waste may be accepted at a landfill for non-hazardous waste based on limited testing if: (1030/2021)

- 1) the waste has undergone pretreatment in accordance with section 15;
- 2) the waste is not contaminated to an extent that justifies its treatment in other ways due to an increased environmental risk; and
- 3) the waste is not deposited in a landfill cell where gypsum-based waste or stable, non-reactive hazardous waste is deposited.

The limited testing shall determine the content of biodegradable and other organic material in the waste in order to show that depositing the waste in the landfill is not prohibited under section 28.

Construction and demolition waste containing asbestos and other suitable asbestos waste may be accepted at a landfill for non-hazardous waste without testing if the specific requirements on asbestos waste laid down in section 31 are complied with in depositing the waste. (1030/2021)

Section 28

General acceptance criteria for non-hazardous waste accepted at landfills for non-hazardous waste (1030/2021)

Only such non-hazardous waste the content of biodegradable and other organic material of which does not exceed 10 per cent, determined as total organic carbon or loss on ignition, may be used for the waste body or in structural components located below the impermeable layer of the surface cover of a landfill for non-hazardous waste. This does not apply to the following waste:

(1030/2021)

- 1) fly or bottom ash generated from energy production or the incineration of waste if its content of dissolved organic carbon is less than 800 milligrams per kilogram, determined at a liquid to solid ratio of 10 litres per kilogram of dry substance, either at the waste's own pH or at a pH value between 7.5 and 8;

- 2) contaminated soil waste, contaminated dredging waste or asbestos waste if deposited separately from other waste;
- 3) animal by-products referred to in the Animal By-Products Regulation referred to in section 3, subsection 1, paragraph 6 of the Waste Act if the Regulation or its implementing rules authorise their burial in the ground, or other wastes, too, under special circumstances if their landfilling is indispensable for the prevention of animal disease;
- 4) green liquor sludge from forest industry pulp manufacture or sludge from the deinking of recovered paper;
- 5) waste referred to in sections 29–31.

Section 29 (1030/2021)

Acceptance criteria for non-hazardous waste acceptable together with gypsum-based waste at landfills for non-hazardous waste

Gypsum-based wastes classified as non-hazardous waste are accepted only in a cell of a landfill for non-hazardous waste where no biodegradable waste is deposited.

The limit values in accordance with Annex 3, Table 4 apply to non-hazardous waste deposited in a landfill together with gypsum-based wastes.

Section 30

Acceptance criteria for non-hazardous waste and stable, non-reactive hazardous waste acceptable together at landfills for non-hazardous waste (1030/2021)

Stable, non-reactive hazardous waste is accepted only in a cell of a landfill for non-hazardous waste where no biodegradable waste is deposited. (1030/2021)

The leaching limit values in accordance with Annex 3, Table 5 and other requirements in accordance with Table 6 apply to non-hazardous waste and stable, non-reactive hazardous waste deposited together in a landfill. (1030/2021)

The potential crushing of waste caused by compaction or other similar operations and any resulting effects shall be taken into account in the assessment of the physical stability of the waste.

Section 31

Requirements on acceptance of certain asbestos wastes at landfills for non-hazardous waste (1030/2021)

The acceptance criteria laid down in section 30, subsection 2 above do not apply to the deposit of construction and demolition waste containing asbestos and classified as stable, non-reactive hazardous waste or other suitable asbestos waste in a landfill for non-hazardous waste or its separate, self-contained cell if the following procedures and requirements are complied with: (1030/2021)

- 1) the waste may not contain any other hazardous substances than bound asbestos, including asbestos fibres bound by a binding agent or packed in plastic;
- 2) the landfill or its separate cell may only accept construction and demolition waste containing asbestos as well as other suitable asbestos waste;
- 3) the zone where asbestos waste is deposited shall be covered daily and before each compacting operation with appropriate material;
- 4) if the asbestos waste is not packed, it shall be regularly sprinkled with water during depositing;
- 5) the landfill or its separate cell shall be permanently capped with a top cover to avoid the dispersion of asbestos fibres;
- 6) no drilling of holes or other works that could lead to a release of fibres shall be carried out in the zone;
- 7) the cell for which asbestos waste is accepted shall be recorded in accordance with section 39, subsection 1, paragraph 6;
- 8) appropriate measures shall be taken to limit the use of the land after the closure of the landfill in order to avoid human contact with the waste.

Section 32

Acceptance criteria for waste acceptable at landfills for hazardous waste

The leaching limit values in accordance with Annex 3, Table 7 and other requirements in accordance with Table 8 apply to waste acceptable at landfills for hazardous waste.

The potential crushing of waste caused by compaction or other similar operations and any resulting effects shall be taken into account in the assessment of the physical stability of the waste.

Section 33

Acceptance criteria for waste acceptable at underground disposal sites

Waste may only be accepted at an underground disposal site on the basis of a safety assessment carried out at the point of deposit. The assessment shall comply with the requirements on underground storage sites laid down in Annex A to the Council Decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC, hereinafter *Council Decision 2003/33/EC*. An assessment in accordance with chapter 4 shall also be carried out on the waste.

Only waste that meets the requirements laid down in sections 25 and 26 may be accepted at an underground disposal site for inert waste and only waste that meets the requirements laid down in sections 27–31 may be accepted at an underground disposal site for non-hazardous waste.
(1030/2021)

The acceptance criteria laid down in section 32 do not apply to waste deposited in an underground disposal site for hazardous waste.

Section 34

Increasing certain limit values

The permit authority may, taking account of the characteristics of the landfill and its environment, decide on a case-by-case basis concerning specified waste that the limit values laid down in sections 26, 29, 30 and 32 may, subject to the exemptions provided in Annex 3, paragraph 4, be at a maximum tripled if the landfill operator reliably demonstrates on the basis of an overall assessment of the impact of the landfill on health and the environment that the higher limit values do not increase the hazard or harm to health or the environment from landfill leachate or other emissions.

Section 35 (1030/2021)

Granting exemptions in certain cases

The permit authority may decide that a restriction on the deposit of waste containing biodegradable or other organic matter in accordance with section 28 does not apply to waste that has undergone pretreatment in accordance with section 15 if it is reliably demonstrated that:

- 1) owing to its characteristics, the waste is unsuitable for treatment in any other way than landfilling; or
- 2) replacing treatment capacity will be made available within a specified period of time.

An authorisation referred to in subsection 1, paragraph 1 above may be granted for a specified maximum period of five years at a time and an authorisation referred to in paragraph 2 for a specified maximum period of three years at a time.

Section 36 (1030/2021)

Specific requirements for the acceptance of waste that contains persistent organic pollutants

Provisions on the right of the permit authority in exceptional cases to authorise the deposit of waste containing or contaminated by persistent organic pollutants in a landfill for hazardous waste or in an underground disposal site are laid down in Article 7(4)(b) of Regulation (EC) No 2019/1021 of the European Parliament and of the Council.

Section 37 (781/2018)

Specific requirements on acceptance of mercury waste for temporary storage and for disposal

Provisions on exemptions from the application of acceptance criteria in accordance with section 32 to mercury waste stored and disposed of in above-ground facilities and on exemptions from the application of acceptance criteria in accordance with section 33 to mercury waste disposed of in underground disposal sites are laid down in Article 13 of the Mercury Regulation.

In addition, the requirements laid down in Annex 4 shall be complied with in the acceptance of mercury waste for temporary storage and for disposal.

Chapter 6

Delivery of waste to a landfill

Section 38

Information to be provided on waste

When delivering waste for landfilling, the waste holder or other party delivering the waste shall provide the landfill operator with:

- 1) information on the origin of the waste;
- 2) classification of the waste in accordance with the list of waste;
- 3) the transfer document for waste referred to in section 121 of the Waste Act;
- 4) for waste shipped from another country, the documents required under Regulation (EC) No 1013/2006 of the European Parliament and of the Council on shipments of waste;
- 5) a copy of the relevant documents concerning the basic characterisation of waste in accordance with sections 17–19.

For regularly generated waste, it is sufficient that the information and documents referred to in subsection 1, paragraph 5 are provided before the first batch of waste is delivered to the landfill.

The waste holder shall monitor the quality of the waste by means of compliance testing referred to in section 20 and shall provide the landfill operator with the information at least once a year.

The landfill operator shall have the relevant information and documents referred to in this section even if all the waste deposited in the landfill originates from the operator's own activities.

Section 39

Reception of waste at a landfill

When waste is received at a landfill, the landfill operator shall ensure:

- 1) that the information and documents on the waste referred to in section 38, subsection 1 are checked and that the waste is approved in the permit decision for depositing in the landfill;

- 2) that the waste is checked in accordance with section 21 when the waste load is received and unloaded to ensure that the waste conforms with the information and documents provided for it and that samples of the waste necessary for any inspection tests are taken and kept for at least one month;
- 3) that the deliverer of the waste is provided with a written acknowledgement of receipt of the waste accepted at the landfill;
- 4) that the supervisory authority is notified without delay of waste not accepted;
- 5) records of waste accepted and deposited in the landfill are kept in accordance with the provisions of section 36, subsection 2 of the Government Decree on Waste; (1030/2021)

Chapter 7

Monitoring and control of landfills

Section 40

General requirements for monitoring and control

The landfill operator shall monitor and control the landfill and its environment during the operation and after-care phases in order to check that:

- 1) the waste has been accepted for landfilling in accordance with the acceptance criteria for that specific class of landfill;
- 2) the processes within the landfill proceed as desired;
- 3) the environmental protection systems of the landfill are functioning fully as intended;
- 4) the permit conditions for the landfill are fulfilled;
- 5) the permit and supervisory authorities can be provided with the information and reports required in the environmental permit.

Monitoring and control shall be carried out in a planned way. The samples required shall be representative.

Any significant adverse health or environmental effects detected shall be notified without delay to the supervisory authority.

Section 41

Baseline study

Before commencing landfill operations or the monitoring and control referred to in this Decree or before the closure of a landfill, a baseline study covering the surface water and groundwater of the area and the state of decomposition of and gas formation in a waste body in operation shall be conducted.

For this baseline study, surface water samples shall be taken twice during the high-flow period at an interval of at least one month and at least once during the low-flow period. Groundwater samples shall be taken from at least three locations.

Section 42

Monitoring of the waste body

The waste body and its settlement shall be monitored regularly during landfilling as well as during the landfill after-care phase.

The following information shall be obtained for the monitoring of the waste body:

- 1) area, volume, composition and settlement of the waste body;
- 2) the water level and temperature as well as other internal properties of the waste body;
- 3) the method of waste deposition;
- 4) the deposit area in use at any time;
- 5) a calculation of the remaining volume of the landfill.

Section 43

Monitoring of landfill gas

The accumulation and migration of landfill gas shall be monitored in a way that provides reliable information on the generation of gas in all sections of the landfill.

The quantity, pressure and methane, carbon dioxide and oxygen components of landfill gas shall be determined every month during the operational phase and every six months during the after-care phase. If it is demonstrated that measurements taken at longer intervals provide sufficiently reliable information, the measurements may be adjusted. Analysis of other landfill gases is prescribed in the environmental permit as necessary in accordance with the nature of the waste deposited in the landfill.

The condition of the landfill gas collection system shall be inspected regularly.

Section 44

Monitoring of landfill leachate

The quantity and quality of landfill leachate shall be monitored separately at each point where landfill leachate is discharged from the landfill site. In addition, the treatment of landfill leachate and leachate discharged from treatment shall be monitored in such a way that the effectiveness of the treatment and the load caused by the landfill can be assessed reliably.

During the operational phase, landfill leachate quantity and conductivity shall be monitored by means of weekly measurements and, in addition, also during high-flow periods by means of measurements taken every operating day. During the after-care phase, landfill leachate quantity and conductivity shall be monitored at six-month intervals. The quality of landfill leachate shall be analysed by means of samples taken at three-month intervals during the operational phase and at six-month intervals during the after-care phase. If it is demonstrated that measurements taken at longer intervals provide sufficiently reliable information, all the measurements referred to above may be adjusted.

The substances or properties of landfill leachate samples to be analysed are prescribed in the environmental permit on the basis of the nature of the waste deposited in the landfill.

Section 45

Monitoring of surface water

The quality and quantity of surface water shall be monitored by means of samples taken from at least two observation points. One of these shall be upstream from the landfill relative to the

direction of surface water flow. The other point shall demonstrate the effect of the landfill on surface water.

The measurements shall be made at three-month intervals during the landfill's operational phase and at six-month intervals during the after-care phase. The measurements may be adjusted on the basis of individual landfill characteristics.

Section 46

Monitoring of groundwater

Groundwater shall be monitored by means of samples and measurements taken from at least two observation points in the groundwater outflow region down-gradient of the landfill and at least one point in the groundwater inflow region up-gradient of the landfill. In the area potentially affected by the landfill, water quality in domestic water wells shall also be monitored.

The level of groundwater and water within the landfill shall be monitored every six months. If the groundwater level varies on the site, monitoring shall be increased.

Provisions on sampling for the analysis of groundwater composition and the substances and properties to be analysed are prescribed in the environmental permit in accordance with the estimated quality of the landfill leachate generated by the waste and quality of the groundwater in the landfill area. The groundwater flow rate in the area shall also be taken into account. The measurements shall enable rapid detection of changes in water quality.

If deterioration in groundwater quality is observed or if the threshold level of harmful substances set for it in the permit decision is exceeded, the supervisory authority shall be notified of the matter without delay. In such a case, the plan for incident preparedness and emergency response approved in the environmental permit or provided in the permit conditions shall be followed.

Records shall be kept of observations regarding groundwater quality and the data shall be compiled in a table which indicates clearly any changes in quality.

Section 47

Monitoring and control plan

Besides the provisions of section 120 of the Waste Act and section 41 of the Government Decree on Waste, the monitoring and control plan drawn up by the landfill operator shall contain information on measures to: (1030/2021)

- 1) implement the general restrictions laid down in chapter 3 on acceptance of waste at landfills as well as to monitor and control the acceptability of waste accepted at the landfill in other respects;
- 2) organise the monitoring of the waste body and landfill gas as well as landfill leachate, surface water and groundwater.

Section 48 (781/2018)

Specific monitoring and control requirements for temporary storage of mercury waste

The following specific monitoring and control requirements shall, in addition, be complied with in the temporary storage of mercury waste in an above-ground facility for a period exceeding one year:

- 1) a continuous mercury vapour monitoring system shall be installed in the storage site:
 - a) with a sensitivity of at least 0.02 milligrams of mercury per cubic metre of air;
 - b) with sensors positioned at ground level and head level;
 - c) with a visual and acoustic alert system;
 - d) which shall be maintained annually;
- 2) the storage site and containers shall be visually inspected by an authorised person of the storage site at least once a month;
- 3) if leaks are detected, all necessary action shall be taken without delay to avoid any emission of mercury to the environment and to restore the safety of the storage of the mercury;
- 4) any leaks shall be notified to the supervisory authority without delay;
- 5) emergency plans and adequate protective equipment suitable for handling mercury waste shall be available on site.

The storage site operator shall keep the documents containing the information referred to in subsection 1 and in Annex 4 for at least three years after the termination of the temporary storage. Records relating to the destocking of the mercury waste and the dispatch of the mercury

waste after its temporary storage as well as the destination and intended treatment shall also be kept in the same way.

Section 49 (1030/2021)

Information to be provided on monitoring and control

The landfill operator shall submit the following information on monitoring and control for the previous year to the supervisory authority by the end of February of each year or by the date specified in the environmental permit:

- 1) the quantity of landfilled waste, specified by waste type as follows;
 - a) organic municipal waste;
 - b) municipal waste other than that referred to in paragraph a;
 - c) organic waste other than that referred to in paragraph a;
 - d) waste other than that referred to in paragraphs a–c;
- 2) the quantity of waste delivered from the landfill for other treatment by waste type;
- 3) a summary of the basic characterisation and compliance testing carried out in accordance with chapter 4;
- 4) information on the waste body and the remaining volume of the landfill;
- 5) information on the organisation of the monitoring of the waste body, landfill gas, landfill leachate, surface water and groundwater as well as a summary of the monitoring results;
- 6) an account of the environmental load of the landfill and the measures taken to prevent environmental harm;
- 7) an account of any exceptional situations.

In addition, the information on waste referred to in subsection 1, paragraphs 1 and 2 submitted to the supervisory authority shall be accompanied with the information laid down in section 36, subsection 2 of the Government Decree on Waste.

The information referred to in subsection 1 above shall be submitted to the supervisory authority's information system or as separately agreed with the supervisory authority.

Chapter 8

Monitoring of implementation

Section 50 (103/2015)

Storing of information in the environmental protection database

Provisions on the obligation of the central government permit and supervisory authorities and local environmental protection authorities to store the information concerning the environmental permit for the landfill, including the decisions referred to in sections 9 and 34–36, the monitoring and control data referred to in section 49 and other equivalent information concerning the landfill, in the environmental protection database are laid down in section 223 of the Environmental Protection Act.

The permit authority shall also submit the information concerning the decisions referred to in sections 9 and 34–36 to the Finnish Environment Institute without delay.

Section 51 (1030/2021)

Compilation of monitoring data and reporting it to the Commission

The Finnish Environment Institute shall compile the data concerning the monitoring of the implementation of Article 5 of Council Directive 1999/31/EC on the landfill of waste in cooperation with Statistics Finland and ensure the annual reporting of the data to the European Commission in accordance with Article 15 of the Directive. In addition, the Finnish Environment Institute shall ensure the submission of data on exceptional cases referred to in section 36 to the European Commission and the other Member States of the European Union.

Chapter 9

Miscellaneous provisions

Section 52

Environmental permits for landfills

Provisions on applications for environmental permits for landfills and on the processing of permit matters are laid down in the Environmental Protection Act and in the Government Decree on Environmental Protection (713/2014). (1030/2021)

The supervisory authority shall check that a landfill corresponds to what is stated in the permit application and the permit regulations before the landfill is taken into use or closed.

Section 53

Transitional provisions and entry into force

This Decree enters into force on 1 June 2013.

This Decree repeals the Government Decision on Landfills (861/1997). However, section 4, subsection 1, paragraph 2 of the decision remains in force until 31 December 2015.

The provisions of sections 27 and 28 of the Decree on the determination and restriction of biodegradable and other organic matter apply from 1 January 2016, with the exception of waste generated from the sorting and other mechanical treatment of construction and demolition waste, to which the Decree applies from 1 January 2020. However, the concentration of biodegradable and other organic matter in the latter waste referred to above, determined as total organic carbon or loss on ignition, may not exceed 15 per cent from 1 January 2016.

The obligation of the permit authority to record relevant information on the environmental permit for the landfill in the environmental protection database referred to in section 50, subsection 1 of this Decree applies to permits granted on or after 1 January 2014.

Section 4 of this Decree does not apply to landfills that were operational before 1 October 1997.

This Decree does not apply to landfills that were closed in accordance with law before 1 October 1997.

Annex 1

Structural components of the base and the surface cover of landfills

1. Permeability requirements for the structural components of the base (1030/2021)

The ground underlying the landfill (mineral soil or rock) shall fulfil such water-saturated permeability (K) and thickness requirements that have a combined effect at least equivalent to the one resulting from the following requirements:

- 1) landfill for hazardous waste: $K \leq 1.0 \times 10^{-9}$ m/s and thickness ≥ 5 m;
- 2) landfill for non-hazardous waste: $K \leq 1.0 \times 10^{-9}$ m/s and thickness ≥ 1 m;
- 3) landfill for inert waste: $K \leq 1,0 \times 10^{-7}$ m/s and thickness ≥ 1 m.

2. Layers in the surface cover (1030/2021)

Layer	Landfill for non-hazardous waste	Landfill for hazardous waste
Top soil cover ≥ 1 m	Required	Required
Drainage layer ≥ 0.5 m	Required	Required
Impermeable layer ≥ 0.5 m	Required	Required
Artificial sealing liner	Not required	Required
Gas drainage layer	Required	As necessary

Annex 2

Sampling and testing methods in the assessment of acceptability at landfills

The standards (EN) and technical specifications (TS) of the European Committee for Standardization (CEN), as amended or revised, shall be applied to the sampling and testing of waste as follows:

- 1) sampling shall take place in accordance with a sampling plan based on the standard SFS-EN 14899;

- 2) the basic characteristics of waste shall be specified in accordance with the standards SFS-EN 13137 (total organic carbon), SFS-EN 14346 (calculation of dry matter), SFS-EN 15169 (loss on ignition), SFS-EN 15308 (PCB congeners) and SFS-EN 15527 (PAHs);
- 3) leaching behaviour shall be tested in accordance with the technical specification CEN/TS 14405 (up-flow percolation test) and the standard SFS-EN 12457/3 (two-stage batch test);
- 4) acid neutralising capacity (ACN) shall be determined in accordance with the technical specification CEN/TS 15364 (or, alternatively, CEN/TS 14429 or CEN/TS 14997);
- 5) dissolved organic carbon (DOC) at a specific pH shall be determined in accordance with the technical specification CEN/TS 14429 or CEN/TS 14997;
- 6) the digestion of raw waste shall take place in accordance with the standards SFS-EN 13656 (microwave assisted digestion with acid mixture) and SFS-EN 13657 (digestion with aqua regia);
- 7) other chemical assays shall be carried out in accordance with standards SFS-EN 16192 (analysis of eluates), SFS-EN 15126 (total dissolved solids) and SFS-EN 14039 (hydrocarbons).

For other testing before the official CEN standard is available, the prEN version shall be used or national standards or other procedures that have been approved by the permit authority shall be used.

Annex 3

Criteria for the acceptance of waste at landfills

The limit values provided in the tables refer to the maximum content which may not be exceeded, unless otherwise provided in section 34.

1. Landfills for inert waste

Table 1. Waste acceptable at landfills for inert waste without testing (1030/2021)

Waste entry code ¹⁾	Description	Restrictions
10 11 03	Waste glass-based fibrous materials	Only without organic binders
15 01 07	Glass packaging	

17 01 01	Concrete	Selected construction and demolition waste only ²⁾
17 02 02	Bricks	Selected construction and demolition waste only ²⁾
17 01 03	Tiles and ceramics	Selected construction and demolition waste only ²⁾
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	Selected construction and demolition waste only ²⁾
17 02 02	Glass	
17 05 04	Soil and stones	Excluding topsoil and peat; excluding soil and stones from contaminated sites
19 12 05	Glass	
20 01 02	Glass	Separately collected glass only
20 02 02	Soil and stones	Only from garden and parks waste; excluding topsoil and peat

¹⁾ Code for the waste entry in the list of waste.

²⁾ Selected construction and demolition waste means waste with low contents of metals, plastic, organics, wood, rubber or other equivalent types of substances or materials and the origin of which is known; it does not mean waste from the construction and demolition of structures that:

- are contaminated by inorganic or organic hazardous substances because of processes in the construction, soil contamination, the storage or use of pesticides or other hazardous substances or another similar reason, unless it can be clearly shown that the demolished structure was not significantly contaminated;
- have been treated, protected or painted with materials containing hazardous substances in significant amounts.

Table 2. Acceptance criteria for waste other than waste referred to in Table 1 acceptable at landfills for inert waste (leaching limit values) (1030/2021)

Substance/variable	Limit value, mg/kg of dry substance (L/S = 10 l/kg)
--------------------	---

Arsenic (As)	0.5
Barium (Ba)	20
Cadmium (Cd)	0.04
Chromium total (Cr _{tot})	0.5
Copper (Cu)	2
Mercury (Hg)	0.01
Molybdenum (Mo)	0.5
Nickel (Ni)	0.4
Lead (Pb)	0.5
Antimony (Sb)	0.06
Selenium (Se)	0.1
Zinc (Zn)	4
Chloride (Cl ⁻)	800
Fluoride (F ⁻)	10
Sulphate (SO ₄ ²⁻)	1,000 ¹⁾
Phenol index	1
Dissolved organic carbon (DOC) ²⁾	500
Total dissolved solids (TDS) ³⁾	4,000

¹⁾ Waste is also considered as meeting the acceptance criteria if the sulphate content does not exceed the following values: 1,500 mg/l (the first eluate of percolation test at L/S = 0.1 l/kg) and 6,000 mg/kg (at L/S = 10 l/kg); a percolation test shall be used to determine the value at L/S = 0.1 l/kg; the value at L/S = 10 l/kg may be determined by either a batch leaching test or by a percolation test.

²⁾ If the limit value for dissolved organic carbon is exceeded at the waste's own pH value, the waste may alternatively be tested at L/S = 10 l/kg and at a pH value between 7.5 and 8.0; if the result does not exceed 500 mg/kg, the waste may be considered as complying with the acceptance criteria for dissolved organic carbon.

³⁾ The limit value for total dissolved solids may be used alternatively to the limit values for sulphate and chloride.

Table 3. Acceptance criteria for waste other than waste referred to in Table 1 acceptable at landfills for inert waste (limit values for content of organic matter) (1030/2021)

Substance/variable	Limit value, mg/kg of dry substance
Total organic carbon (TOC)	30,000 (3%)
Benzene, toluene, ethylbenzene and xylene (BTEX)	6
Polychlorinated biphenyls (PCBs) ¹⁾	1
Mineral oil (C10–C40)	500
Polycyclic aromatic hydrocarbons (PAHs) ²⁾	40

¹⁾ Total amount of congeners 28, 52, 101, 118, 138, 153 and 180.

²⁾ Total amount of compounds (anthracene, acenaphthene, acenaphthylene, benzo[a]anthracene, benzo[a]pyrene, chrysene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, phenanthrene, fluoranthene, fluorene, indeno[1,2,3-cd]pyrene, naphthalene, pyrene).

2. Landfills for non-hazardous waste (1030/2021)

Table 4. Acceptance criteria for non-hazardous waste acceptable together with gypsum-based waste at landfills for non-hazardous waste (1030/2021)

Variable	Limit value, mg/kg of dry substance
Total organic carbon (TOC)	50,000 (5%)
Dissolved organic carbon (DOC)	800 ¹⁾

¹⁾ At L/S = 10 l/kg, either at the waste's own pH or at a pH value between 7.5 and 8.0.

Table 5. Acceptance criteria for non-hazardous waste acceptable together with stable, non-reactive hazardous waste at landfills for non-hazardous waste (leaching limit values) (1030/2021)

Substance/variable	Limit value, mg/kg of dry substance (L/S = 10 l/kg)
Arsenic (As)	2
Barium (Ba)	100
Cadmium (Cd)	1
Chromium total (Cr _{tot})	10

Copper (Cu)	50
Mercury (Hg)	0.2
Molybdenum (Mo)	10
Nickel (Ni)	10
Lead (Pb)	10
Antimony (Sb)	0.7
Selenium (Se)	0.5
Zinc (Zn)	50
Chloride (Cl ⁻)	15,000
Fluoride (F ⁻)	150
Sulphate (SO ₄ ²⁻)	20,000
Dissolved organic carbon (DOC) ¹⁾	800
Total dissolved solids (TDS) ²⁾	60,000

¹⁾ If the limit value for dissolved organic carbon is exceeded at the waste's own pH value, the waste may alternatively be tested at L/S = 10 l/kg and at a pH value between 7.5 and 8.0; if the result does not exceed 800 mg/kg, the waste may be considered as complying with the acceptance criteria for dissolved organic carbon.

²⁾ The limit value for total dissolved solids may be used alternatively to the limit values for sulphate and chloride.

Table 6. Acceptance criteria for non-hazardous waste acceptable together with stable, non-reactive hazardous waste at landfills for non-hazardous waste (other requirements) (1030/2021)

Variable	Limit value/other requirement
Total organic carbon (TOC)	5% ¹⁾
pH	Minimum 6.0
Acid neutralisation capacity (ANC)	Must be examined and evaluated

¹⁾ Calculated per dry substance.

3. Landfills for hazardous waste

Table 7. Acceptance criteria for waste acceptable at landfills for hazardous waste (leaching limit values) (1030/2021)

Substance/variable	Limit value, mg/kg of dry substance (L/S = 10 l/kg)
Arsenic (As)	25
Barium (Ba)	300
Cadmium (Cd)	5
Chromium total (Cr _{tot})	70
Copper (Cu)	100
Mercury (Hg)	2
Molybdenum (Mo)	30
Nickel (Ni)	40
Lead (Pb)	50
Antimony (Sb)	5
Selenium (Se)	7
Zinc (Zn)	200
Chloride (Cl ⁻)	25,000
Fluoride (F ⁻)	500
Sulphate (SO ₄ ²⁻)	50,000
Dissolved organic carbon (DOC) ¹⁾	1,000
Total dissolved solids (TDS) ²⁾	100,000

¹⁾ If the limit value for dissolved organic carbon is exceeded at its the waste's pH value, the waste may alternatively be tested at L/S = 10 l/kg and at a pH value between 7.5 and 8.0; if the result does not exceed 1,000 mg/kg, the waste may be considered as complying with the acceptance criteria for dissolved organic carbon.

²⁾ The limit value for total dissolved solids may be used alternatively to the limit values for sulphate and chloride.

Table 8. Acceptance criteria for waste acceptable at landfills for hazardous waste (other requirements) (1030/2021)

Variable	Limit value/other requirement
----------	-------------------------------

Loss on Ignition (LOI) 1)	10% 2)
Total organic carbon (TOC) 1)	6% 2)
Acid neutralisation capacity (ANC)	Must be evaluated

1) The limit value for either LOI or TOC shall be used.

2) Calculated per dry substance.

4. Exemptions from increasing certain limit values in accordance with section 34

The following apply to the limit values for total organic carbon specified in this Annex:

- 1) the limit value specified in Table 3 may be increased up to twofold; however, a limit value that is three times higher may be accepted for soil waste if the dissolved organic carbon content of the waste does not exceed 500 mg/kg at L/S = 10 l/kg, either at the waste's own pH or at a pH value between 7.5 and 8.0;
- 2) the limit value specified in Tables 4 and 6 may be increased up to twofold only if the dissolved organic carbon content does not exceed 800 mg/kg at L/S = 10 l/kg, either at the waste's own pH or at a pH value between 7.5 and 8.0;
- 3) the limit value specified in Table 8 may be increased up to threefold only if the dissolved organic carbon content of the waste does not exceed 1,000 mg/kg at L/S = 10 l/kg, either at the waste's own pH or at a pH value between 7.5 and 8.0.

Exemptions may not be granted for the following limit values specified in this Annex:

- 1) the limit value for dissolved organic carbon specified in Tables 2, 5 and 7;
- 2) the limit value for benzene, toluene, ethylbenzene and xylene specified in Table 3;
- 3) the limit values for polychlorinated biphenyls, mineral oils and polycyclic aromatic hydrocarbons specified in Table 3;
- 4) the pH limit value specified in Table 6;
- 5) the loss on ignition limit value specified in Table 8.

Specific requirements for acceptance of mercury waste for temporary storage and for disposal

The following specific requirements shall be complied with regarding acceptance of mercury waste for temporary storage for more than one year and for disposal:

1. Composition of mercury waste

The mercury waste shall meet the following requirements:

- the mercury content shall be greater than 99.9 per cent by weight;
- there shall be no impurities capable of corroding carbon steel or stainless steel (e.g. nitric acid solution, chloride salts solutions).

2. Container

Containers used for the temporary storage and disposal of mercury waste shall be corrosion and shock resistant. Welds shall therefore be avoided. The container shall meet the following requirements in particular:

- the container shall be made of carbon steel (ASTM A36 minimum) or stainless steel (AISI 304, 316L);
- the container shall be gas and liquid tight;
- the outer side of the container shall be resistant to storage conditions;
- its design type shall pass the drop test and the leak proofness test as described in chapters 6.1.5.3 and 6.1.5.4 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

The maximum filling ratio of the container shall be 80 per cent by volume to ensure that sufficient ullage is available and neither leakage nor permanent distortion of the container can occur as a result of an expansion of the liquid due to high temperature.

3. Acceptance of temporary storage and disposal

A container containing mercury waste may be accepted for temporary storage or disposal only if it meets the requirements laid down in this paragraph and if it is accompanied with a certificate of compliance referred to in paragraph 4 of this Annex drawn up by the waste producer or a person responsible for waste management for mercury waste.

Acceptance shall comply with the following requirements:

- only mercury waste that complies with the requirements referred to in paragraph 1 of this Annex may be accepted;
- the container shall be visually inspected before storage and disposal; damaged, leaking or corroded containers shall not be accepted;
- the container shall bear a permanent stamp (made by punching) mentioning the identification number of the container, the construction material, its empty weight, the reference of the manufacturer and the date of construction;
- the container shall bear a plate permanently fixed to the container mentioning the identification number of the certificate specified in paragraph 4 of this Annex.

4. Certificate

The certificate shall contain the following information:

- the name and address of the waste producer;
- the name and address of the person responsible for the filling of the container;
- the place and date of filling;
- the quantity of mercury waste;
- the purity of the mercury waste and, if relevant, a description of the impurities, including the analytical report;
- confirmation that the container has been used exclusively for the transport and temporary storage of mercury;
- the identification number of the container;
- any specific comments.

Entry into force and application of transitional provisions:

103/2015:

This Decree enters into force on 20 February 2015. Section 14, subsection 1, paragraphs 2 and 3; and section 18, subsection 1, paragraph 7 shall, however, not enter into force until 1 June 2015.

960/2016:

This Decree enters into force on 1 January 2017.

781/2018:

This Decree enters into force on 15 September 2018.

1030/2021:

This Decree enters into force on 1 December 2021. Sections 39 and 49 shall, however, not enter into force until 1 December 2023.