

ANNEX

CRITERIA AND PROCEDURES FOR THE ACCEPTANCE OF WASTE AT LANDFILLS

2. WASTE ACCEPTANCE CRITERIA

This section sets out the criteria for the acceptance of waste at each landfill class, including criteria for underground storage.

In certain circumstances, up to three times higher limit values for specific parameters listed in this section (other than dissolved organic carbon (DOC) in sections 2.1.2.1, 2.2.2, 2.3.1 and 2.4.1, BTEX, PCBs and mineral oil in section 2.1.2.2, total organic carbon (TOC) and pH in section 2.3.2 and loss on ignition (LOI) and/or TOC in section 2.4.2, and restricting the possible increase of the limit value for TOC in section 2.1.2.2 to only two times the limit value) are acceptable, if

- the competent authority gives a permit for specified wastes on a case-by-case basis for the recipient landfill, taking into account the characteristics of the landfill and its surroundings, and
- emissions (including leachate) from the landfill, taking into account the limits for those specific parameters in this section, will present no additional risk to the environment according to a risk assessment.

Member States shall report to the Commission on the annual number of permits issued under this provision. The reports shall be sent to the Commission at intervals of three years as part of the reporting on the implementation of the Landfill Directive in accordance with the specifications laid down in Article 15 thereof.

Member States shall define criteria for compliance with the limit values set out in this section.

2.1. Criteria for landfills for inert waste

2.1.1. List of wastes acceptable at landfills for inert waste without testing

Wastes on the following short list are assumed to fulfil the criteria as set out in the definition of inert waste in Article 2(e) of the Landfill Directive and the criteria listed in section 2.1.2. The wastes can be admitted without testing at a landfill for inert waste.

The waste must be a single stream (only one source) of a single waste type. Different wastes contained in the list may be accepted together, provided they are from the same source.

In case of suspicion of contamination (either from visual inspection or from knowledge of the origin of the waste) testing should be applied or the waste refused. If the listed wastes are contaminated or contain other material or substances such as metals, asbestos, plastics, chemicals, etc. to an extent which increases the risk associated with the waste sufficiently to justify their disposal in other classes of landfills, they may not be accepted in a landfill for inert waste.

If there is a doubt that the waste fulfils the definition of inert waste according to Article 2(e) of the Landfill Directive and the criteria listed in section 2.1.2 or about the lack of contamination of the waste, testing must be applied. For this purpose the methods listed under section 3 shall be used.

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<i>EWC code</i>	<i>Description</i>	<i>Restrictions</i>
1011 03	Waste glass-based fibrous materials	Only without organic binders
1501 07	Glass packagingGlas	
1701 01	Concrete	Selected C & D waste only *
1701 02	Bricks	Selected C & D waste only *
1701 03	Tiles and ceramics	Selected C & D waste only *
1701 07	Mixtures of concrete,bricks, tiles and ceramics	Selected C & D waste only *
1702 02	Glass	
1705 04	Soil and stones	Excluding topsoil, peat; excluding soil and stones from contaminated sites
1912 05	Glass	
2001 02	Glass	Separately collected glass only
2002 02	Soil and stones	Only from garden and parks waste; Excluding top soil, peat

- * Selected construction and demolition waste (C & D waste): with low contents of other types of materials (like metals, plastic, soil, organics, wood, rubber, etc). The origin of the waste must be known.
- No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted.
 - No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts.

Waste not appearing on this list must be subject to testing as laid down under section 1 to determine if it fulfils the criteria for waste acceptable at landfills for inert waste as set out in section 2.1.2.

2.1.2. Limit values for waste acceptable at landfills for inert waste

2.1.2.1. Leaching limit values

The following leaching limit values apply for waste acceptable at landfills for inert waste, calculated at liquid to solid ratios (L/S) of 2 l/kg and 10 l/kg for total release and directly

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expressed in mg/l for C₀ (the first eluate of percolation test at L/S = 0,1 l/kg). Member States shall determine which of the test methods (see section 3) and corresponding limit values in the table should be used.

<i>Component</i>	<i>L/S = 2 l/kg</i>	<i>L/S = 10 l/kg</i>	<i>C₀ (percolation test)</i>
	<i>mg/kg dry substance</i>	<i>mg/kg dry substance</i>	<i>mg/l</i>
As	0,1	0,5	0,06
Ba	7	20	4
Cd	0,03	0,04	0,02
Cr total	0,2	0,5	0,1
Cu	0,9	2	0,6
Hg	0,003	0,01	0,002
Mo	0,3	0,5	0,2
Ni	0,2	0,4	0,12
Pb	0,2	0,5	0,15
Sb	0,02	0,06	0,1
Se	0,06	0,1	0,04
Zn	2	4	1,2
Chloride	550	800	460
Fluoride	4	10	2,5
Sulphate	560 *	1 000 *	1 500
Phenol index	0,5	1	0,3
DOC **	240	500	160
TDS ***	2 500	4 000	—

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2.1.2.2. Limit values for total content of organic parameters

In addition to the leaching limit values under section 2.1.2.1, inert wastes must meet the following additional limit values:

<i>Parameter</i>	<i>Value mg/kg</i>
TOC (total organic carbon)	30 000 *

* In the case of soils, a higher limit value may be admitted by the competent authority, provided the DOC value of 500mg/kg is achieved at L/S = 10 l/kg, either at the soil's own pH or at a pH value between 7,5 and 8,0.

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<i>Parameter</i>	<i>Value mg/kg</i>
BTEX (benzene, toluene, ethylbenzene and xylenes)	6
PCBs (polychlorinated biphenyls, 7 congeners)	1
Mineral oil (C10 to C40)	500
PAHs (polycyclic aromatic hydrocarbons)	Member States to set limit value
* In the case of soils, a higher limit value may be admitted by the competent authority, provided the DOC value of 500mg/kg is achieved at L/S = 10 l/kg, either at the soil's own pH or at a pH value between 7,5 and 8,0.	

2.2. Criteria for landfills for non-hazardous waste

Member States may create subcategories of landfills for non-hazardous waste.

In this Annex limit values are laid down only for non-hazardous waste, which is landfilled in the same cell with stable, non-reactive hazardous waste.

2.2.1. Wastes acceptable at landfills for non-hazardous waste without testing

Municipal waste as defined in Article 2(b) of the Landfill Directive that is classified as non-hazardous in Chapter 20 of the European waste list, separately collected non-hazardous fractions of household wastes and the same non-hazardous materials from other origins can be admitted without testing at landfills for non-hazardous waste.

The wastes may not be admitted if they have not been subjected to prior treatment according to Article 6(a) of the Landfill Directive, or if they are contaminated to an extent which increases the risk associated with the waste sufficiently to justify their disposal in other facilities.

They may not be accepted in cells, where stable, non-reactive hazardous waste is accepted pursuant to Article 6(c)(iii) of the Landfill Directive.

2.2.2. Limit values for non-hazardous waste

The following limit values apply to granular non-hazardous waste accepted in the same cell as stable, non-reactive hazardous waste, calculated at L/S = 2 and 10 l/kg for total release and directly expressed in mg/l for C₀ (in the first eluate of percolation test at L/S = 0,1 l/kg). Granular wastes include all wastes that are not monolithic. Member States shall determine which of the test methods (see section 3) and corresponding limit values in the table should be used.

<i>Components</i>	<i>L/S = 2 l/kg</i>	<i>L/S = 10 l/kg</i>	<i>C₀ (percolation test)</i>
	<i>mg/kg dry substance</i>	<i>mg/kg dry substance</i>	<i>mg/l</i>
As	0,4	2	0,3
Ba	30	100	20
Cd	0,6	1	0,3
Cr total	4	10	2,5

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<i>Components</i>	<i>L/S = 2 l/kg</i>	<i>L/S = 10 l/kg</i>	<i>C₀ (percolation test)</i>
	<i>mg/kg dry substance</i>	<i>mg/kg dry substance</i>	<i>mg/l</i>
Cu	25	50	30
Hg	0,05	0,2	0,03
Mo	5	10	3,5
Ni	5	10	3
Pb	5	10	3
Sb	0,2	0,7	0,15
Se	0,3	0,5	0,2
Zn	25	50	15
Chloride	10 000	15 000	8 500
Fluoride	60	150	40
Sulphate	10 000	20 000	7 000
DOC *	380	800	250
TDS **	40 000	60 000	—

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Member States shall set criteria for monolithic waste to provide the same level of environmental protection given by the above limit values.

2.2.3. Gypsum waste

Non-hazardous gypsum-based materials should be disposed of only in landfills for non-hazardous waste in cells where no biodegradable waste is accepted. The limit values for TOC and DOC given in sections 2.3.2 and 2.3.1 shall apply to wastes landfilled together with gypsum-based materials.

2.3. Criteria for hazardous waste acceptable at landfills for non-hazardous waste pursuant to Article 6(c)(iii)

Stable, non-reactive means that the leaching behaviour of the waste will not change adversely in the long-term, under landfill design conditions or foreseeable accidents:

- in the waste alone (for example, by biodegradation),
- under the impact of long-term ambient conditions (for example, water, air, temperature, mechanical constraints),
- by the impact of other wastes (including waste products such as leachate and gas).

2.3.1. Leaching limit values

The following leaching limit values apply to granular hazardous waste acceptable at landfills for non-hazardous waste, calculated at L/S = 2 and 10 l/kg for total release and directly expressed in mg/l for C₀ (the first eluate of percolation test at L/S = 0,1 l/kg). Granular wastes include all wastes that are not monolithic. Member States shall determine which of the test methods and corresponding limit values should be used.

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<i>Components</i>	<i>L/S = 2 l/kg</i>	<i>L/S = 10 l/kg</i>	<i>C₀ (percolation test)</i>
	<i>mg/kg dry substance</i>	<i>mg/kg dry substance</i>	<i>mg/l</i>
As	0,4	2	0,3
Ba	30	100	20
Cd	0,6	1	0,3
Cr total	4	10	2,5
Cu	25	50	30
Hg	0,05	0,2	0,03
Mo	5	10	3,5
Ni	5	10	3
Pb	5	10	3
Sb	0,2	0,7	0,15
Se	0,3	0,5	0,2
Zn	25	50	15
Chloride	10 000	15 000	8 500
Fluoride	60	150	40
Sulphate	10 000	20 000	7 000
DOC *	380	800	250
TDS **	40 000	60 000	—

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Member States shall set criteria for monolithic waste to provide the same level of environmental protection given by the above limit values.

2.3.2. Other criteria

In addition to the leaching limit values under section 2.3.1, granular wastes must meet the following additional criteria:

<i>Parameter</i>	<i>Value</i>
TOC (total organic carbon)	5 % *
pH	Minimum 6
ANC (acid neutralisation capacity)	Must be evaluated

*

Member States must set criteria to ensure that the waste will have sufficient physical stability and bearing capacity.

Member States shall set criteria to ensure that hazardous monolithic wastes are stable and non-reactive before acceptance in landfills for non-hazardous waste.

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2.3.3. Asbestos waste

Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for non-hazardous waste in accordance with Article 6(c)(iii) of the Landfill Directive without testing.

For landfills receiving construction materials containing asbestos and other suitable asbestos waste the following requirements must be fulfilled:

- the waste contains no other hazardous substances than bound asbestos, including fibres bound by a binding agent or packed in plastic,
- the landfill accepts only construction material containing asbestos and other suitable asbestos waste. These wastes may also be landfilled in a separate cell of a landfill for non-hazardous waste, if the cell is sufficiently self-contained,
- in order to avoid dispersion of fibres, the zone of deposit is covered daily and before each compacting operation with appropriate material and, if the waste is not packed, it is regularly sprinkled,
- a final top cover is put on the landfill/cell in order to avoid the dispersion of fibres,
- no works are carried out on the landfill/cell that could lead to a release of fibres (e.g. drilling of holes),
- after closure a plan is kept of the location of the landfill/cell indicating that asbestos wastes have been deposited,
- appropriate measures are taken to limit the possible uses of the land after closure of the landfill in order to avoid human contact with the waste.

For landfills receiving only construction material containing asbestos, the requirements set out in Annex I, point 3.2 and 3.3 of the Landfill Directive can be reduced, if the above requirements are fulfilled.

2.4. Criteria for waste acceptable at landfills for hazardous waste

2.4.1. Leaching limit values

The following leaching limit values apply for granular waste acceptable at landfills for hazardous waste, calculated at $L/S = 2$ and 10 l/kg for total release and directly expressed in mg/l for C0 (in the first eluate of percolation test at $L/S = 0,1$ l/kg). Granular wastes include all wastes that are not monolithic. Member States shall determine which of the test methods and corresponding limit values in the table should be used.

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<i>Components</i>	<i>L/S = 2 l/kg</i>	<i>L/S = 10 l/kg</i>	<i>C₀ (percolation test)</i>
	<i>mg/kg dry substance</i>	<i>mg/kg dry substance</i>	<i>mg/l</i>
As	6	25	3
Ba	100	300	60
Cd	3	5	1,7
Cr total	25	70	15
Cu	50	100	60
Hg	0,5	2	0,3
Mo	20	30	10
Ni	20	40	12
Pb	25	50	15
Sb	2	5	1
Se	4	7	3
Zn	90	200	60
Chloride	17 000	25 000	15 000
Fluoride	200	500	120
Sulphate	25 000	50 000	17 000
DOC *	480	1 000	320
TDS **	70 000	100 000	—

* If the waste does not meet these values for DOC at its own pH, it may alternatively be tested at L/S = 10 l/kg and a pH of 7,5-8,0. The waste may be considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 1 000 mg/kg. (A draft method based on prEN 14429 is available.)

** The values for TDS can be used alternatively to the values for sulphate and chloride.

Member States shall set criteria for monolithic waste to provide the same level of environmental protection given by the above limit values.

2.4.2. Other criteria

In addition to the leaching limit values under section 2.4.1, hazardous wastes must meet the following additional criteria:

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<i>Parameter</i>	<i>Value mg/kg</i>
LOI *	10 %
TOC *	6 % **
ANC (acid neutralisation capacity)	Must be evaluated

* Either LOI or TOC must be used.

** If this value is not achieved, a higher limit value may be admitted by the competent authority, provided that the DOC value of 1 000 mg/kg is achieved at L/S = 10 l/kg, either at the material's own pH or at a pH value between 7,5 and 8,0.

2.5. Criteria for underground storage

For the acceptance of waste in underground storage sites, a site-specific safety assessment as defined in Annex A must be carried out. Waste may be accepted only if it is compatible with the site-specific safety assessment.

At underground storage sites for inert waste, only waste that fulfils the criteria set out in section 2.1 may be accepted.

At underground storage sites for non-hazardous waste, only waste that fulfils the criteria set out in section 2.2 or in section 2.3 may be accepted.

At underground storage sites for hazardous waste, waste may be accepted only if it is compatible with the site-specific safety assessment. In this case, the criteria set out in section 2.4 do not apply. However, the waste must be subject to the acceptance procedure as set out in section 1.

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