

**Translation from Finnish**  
**Legally binding only in Finnish and Swedish**  
**Ministry of the Environment, Finland**

**Government Decree on Extractive Waste**  
*(190/2013; amendments up to 102/2015 included)*

Enacted under the Environmental Protection Act (86/2000) and the Waste Act (646/2011):

Section 1  
*Scope of application*

- (1) This Decree applies to the preparation and implementation of waste management plans for extractive waste, the establishment, management, closure and aftercare of a waste facility for extractive waste, the recovery of extractive waste in excavation voids and the monitoring, control and supervision of extractive waste management.
- (2) Section 5, section 6(1), sections 9 to 11 and section 14 do not apply to extractive waste if the waste is inert waste or unpolluted soil or waste arising from peat production, if the waste is deposited in a waste facility for extractive waste other than one posing a risk of major accident.

Section 2  
*Definitions*

- (1) For the purpose of this Decree:
  - 1) *prospecting* means sampling, drilling and trenching and other comparable operations that prepare the bedrock or soil material for recovery;
  - 2) *treatment* means the mechanical, physical, biological, thermal or chemical processes or combination of processes carried out on mineral resources with a view to extracting the mineral, including size change, classification, separation and leaching, and the re-processing of previously discarded waste; but excluding smelting, thermal manufacturing processes (other than the burning of limestone) and metallurgical processes;

- 3) *tailings* means the waste solids or slurries that remain after the treatment of minerals to remove the valuable minerals from the less valuable rock by crushing, grinding, size-sorting, flotation, other physico-chemical treatment or other separation processes;
  - 4) *inert waste* means extractive waste that meets the criteria specified in Annex 1;
  - 5) *unpolluted soil* means organic or inorganic material which is removed from the top layer of the bedrock or the upper layer of the ground and which is in its natural state or which does not contain harmful substances that might cause pollution of the environment or pose a risk of pollution;
  - 6) *leachate* means liquid percolating through the deposited waste and emitted from or contained within a waste facility, including polluted drainage, which may adversely affect the environment if not appropriately treated;
  - 7) *waste facility for extractive waste* means an area connected to a production site, where the solids, slurry or liquid extractive waste arising from the production is deposited;
  - 8) *waste facility for extractive waste posing a risk of major accident* means a waste facility for extractive waste that meets the criteria laid down in Annex 2.
- (2) An area connected to earthworks and hydraulic construction sites where extractive waste arising from stone quarrying and rock crushing as part of the operations is deposited is not a waste facility for extractive waste, referred to in subsection 1(7) above. Excavation voids where extractive waste arising from the operations is placed back for rehabilitation or for construction purposes are also not regarded as waste facilities for extractive waste. With the exception of facilities posing a risk of major accident, an area where the following wastes are deposited is not regarded as a waste facility for extractive waste:
- a) unpolluted soil, inert waste or extractive waste arising from prospecting or peat production that is not hazardous waste, if the period is less than three years;
  - b) other non-hazardous extractive waste not referred to in subparagraph a, if the period is less than one year.

### Section 3

#### *Objectives of the waste management plan for extractive waste*

When drawing up a waste management plan for extractive waste the following shall be taken into account:

- 1) the effects of the operations on waste management are determined when planning the operations and selecting the extraction and treatment methods;
- 2) the physico-chemical changes in the extractive waste during the operations are assessed in different conditions;
- 3) the extractive waste is placed back in the mine, the excavation void or another site from which the material was extracted, as far as this is technically and economically feasible and does not result in other forms of prohibited environmental pollution;
- 4) topsoil is put back in place or recovered elsewhere after the operations have ceased;
- 5) the substances used for the treatment of minerals are, as far as possible, non-hazardous;
- 6) the recovery potential of extractive waste is examined;
- 7) the future requirements for disposal of extractive waste are examined as part of the waste facility design;
- 8) the waste facility for extractive waste is designed and executed so that it will require minimal monitoring, control, supervision and management after its closure;
- 9) the detrimental short- and long-term environmental impacts of the operations are prevented as efficiently as possible;
- 10) the long-term geotechnical stability of any storages, heaps, dams or other waste facilities rising above the natural ground surface is ensured.

#### Section 4

##### *Content of the waste management plan for extractive waste*

- (1) The waste management plan for extractive waste shall include:
  - 1) a description of the extractive waste arising from the operations and its characterisation in accordance with Annex 3;
  - 2) an estimate of the total quantities of extractive waste, a description of the recovery and disposal of the waste and information on the recovery of extractive waste in excavation voids or quarries;
  - 3) a description of the waste facility for extractive waste and its surrounding environment, together with a statement of its classification as a facility posing a risk of major accident or as another waste facility for extractive waste;
  - 4) depending on the classification of the waste facility for extractive waste, a description of the major accident prevention policy, the safety management system and internal emergency plan or another specification of the risk of accident;
  - 5) a survey of the soil, surface water or groundwater at the waste facility for extractive waste and in the surrounding areas that might be subject to loading from the waste;
  - 6) a description of the environmental impacts caused by the extractive waste and the waste facility for extractive waste;
  - 7) a description of the measures taken during and after the operations to prevent the pollution of the soil, surface waters, groundwater and air, and to prevent other impacts;
  - 8) a description of monitoring and control during and after the operations;
  - 9) a description of the cessation of the operations, the closure of the waste facility for extractive waste and the aftercare, and the monitoring and control related to these.

- (2) Besides the provisions laid down in subsection 1, the authority processing the waste management plan for extractive waste may require that the waste management plan shall include other information necessary for determining that the Environmental Protection Act (527/2014), the Waste Act (646/2011) and this Decree are complied with in the reduction of the quantity and hazardousness of extractive waste and in the disposal and recovery of the waste. (102/2015)

## Section 5

### *Prevention of the risk of major accidents and of harmful effects*

- (1) The principles and requirements laid down in Annex 4 shall be complied with in the preparation and implementation of the policy document, safety management system and internal emergency plan and in the provision of information on safety measures at a waste facility for extractive waste posing a risk of major accident. The hazard studies and other studies conducted for the purpose of assessing dam safety at a waste facility, referred to in the Dam Safety Act (494/2009), shall be taken into account in the internal emergency plan. The emergency plan shall be updated, as necessary, so that it corresponds to changing situations and circumstances.
- (2) In the event of a major accident, the operator shall provide the supervisory authority and rescue authority immediately with the information needed to minimise the human health impacts of the accident, and to assess and minimise the extent of the actual or potential environmental damage.
- (3) The environmental permit authority shall request statements on the internal emergency plan from the rescue authority and, where necessary, the dam safety authority. The permit authority shall submit the permit decision and other emergency plan documents that are part of the application to the rescue authority and the dam safety authority, who will take them into account in the preparation of plans in their respective fields. In addition to this, the supervisory authority shall submit any adjustments made to the internal emergency plan to the rescue authority and the dam safety authority.
- (4) The environmental permit shall include provisions on how the internal emergency plan shall be kept up to date and how the amendments to the plan shall be submitted to the supervisory authority.

## Section 6

### *General requirements for the operator of a waste facility for extractive waste*

- (1) The operator shall monitor the technical development related to the establishment and management of waste facilities for extractive waste and ensure, where necessary, that the waste facility staff receive appropriate training and are sufficiently competent.
- (2) Provisions on the person in charge of a waste facility for extractive waste are laid down in section 141 of the Waste Act and section 115, subsection 3, of the Environmental Protection Act. The supervisory authority shall be informed of who the person in charge is. (102/2015)

## Section 7

### *Establishment and management of a waste facility for extractive waste*

The following shall apply to the establishment and management of a waste facility for extractive waste:

- 1) the waste facility shall not cause pollution of the soil, surface water, groundwater or air or other types of environmental pollution or a risk of it, taking into account the location and the geological, hydrological, hydrogeological and geotechnical properties of the site;
- 2) the waste facility shall not cause environmental pollution, even after a long period of time, or a risk of it, taking into account leachate and other waste water generated by the operations, and erosion resulting from the operations;
- 3) the physical stability of the waste facility is ensured and environmental pollution and adverse effects on the landscape are prevented by using appropriate structures and systematic management and maintenance;
- 4) the waste facility is monitored and controlled in a systematic and proficient manner, and the necessary actions are taken if the waste facility is not stable enough or if the facility causes environmental pollution or a risk of it;
- 5) the soil of the waste facility and the surrounding environment is cleaned or rehabilitated, as necessary;
- 6) appropriate actions are taken for closure of the waste facility and in arrangements for its aftercare.

## Section 8

### *Management of the environmental load caused by a waste facility for extractive waste*

- (1) The operator of a waste facility for extractive waste shall:
  - 1) assess the amount and contaminant content of the leachate and other waste water generated from the extractive waste, and determine the water balance of the waste facility during the operations and after closure;
  - 2) prevent the pollution of the soil, surface water and groundwater caused by the extractive waste, the generation of leachate and other waste water, and loading to surface water caused by the waste;
  - 3) ensure effective collection and treatment of the leachate and other waste water generated at the waste facility;
  - 4) prevent the formation of dust and gas emissions into the air from the waste facility.
- (2) The environmental permit or a decision on the notification may provide an exemption from the obligation laid down in subsection 1(3), if the operator can, in view of an overall assessment of the environmental damage, reliably show that the waste facility for extractive waste cannot cause pollution of the soil, surface water or groundwater or cause other environmental pollution or a risk of it.
- (3) Extractive waste in solid, slurry or liquid form may not be disposed of in surface water and leachate or other waste water may not be discharged to surface water if the disposal or discharge causes an exceedance of an environmental quality standard, referred to in the Government Decree on Substances Dangerous and Harmful to the Aquatic Environment (1022/2006). Provisions on the inclusion in the environmental permit of certain factors that prevent the substantial pollution of surface water, as presented in certain plans and programmes, are laid down in section 51, subsection 1, of the Environmental Protection Act. (102/2015)

- (4) The provisions laid down in subsection 1 do not apply to unpolluted soil or to extractive waste generated by peat production, or to extractive waste arising from prospecting, if the waste is not hazardous waste, provided that the waste management plan for extractive waste can reliably demonstrate that the waste facility for extractive waste cannot cause environmental pollution, a risk of it, or accidents, and that the general obligations and principles laid down in Chapter 2 of the Waste Act are complied with in the operations. However, the provisions laid down in subsection 1 apply to extractive waste arising from the prospecting of oil and evaporites other than gypsum and anhydrite.
- (5) The provisions laid down in subsections 1–3 shall also be followed when extractive waste is deposited in an excavation void that will be filled with water after the closure of the operations.

#### Section 9

##### *Special requirements for a waste facility for extractive waste containing cyanide*

- (1) The operator shall ensure that the concentration of weak acid dissociable cyanide in the waste facility for extractive waste is reduced to the lowest possible level by use of the best available techniques.
- (2) The concentration of weak acid dissociable cyanide in the tailings may not exceed 0.001% by weight at the point of deposit and discharge of the waste to the waste facility for extractive waste.
- (3) If the operations may cause environmental pollution or a risk of it, the environmental permit shall contain regulations on the concentration requirements for weak acid dissociable cyanide that are stricter than those laid down in subsection 2. However, such regulations are not necessary if the operator can reliably show, on the basis of an overall assessment of the risk, that the operations will not have these consequences.

#### Section 10 (102/2015)

##### *Financial guarantee for a waste facility for extractive waste*

In addition to the provisions laid down in section 60 of the Environmental Protection Act, the classification of the waste facility, properties of the waste being deposited, the future use of the area and other factors referred to in Annex 5 shall be taken into account when determining the amount of the financial guarantee for a waste facility for extractive waste. Furthermore, it shall be taken into account that the measures to be covered by the guarantee are assessed or taken by a party other than the operator or the authority.

## Section 11

### *Prevention of environmental pollution and accidents*

- (1) The operator shall, without delay and at least within 48 hours, notify the supervisory authority of any factors that are likely to affect the stability of the waste facility for extractive waste, and any other factors observed during the monitoring and control of the operations that might cause environmental pollution, a risk of it, or accidents.
- (2) Where necessary, the operator shall take the measures included in the internal emergency plan to prevent accidents or environmental pollution.

## Section 12

### *Monitoring and control of a waste facility for extractive waste*

- (1) The obligation of the operator to prepare a plan for organising the monitoring and control of waste treatment at the waste facility for extractive waste, to monitor and control the operations and to keep records of the wastes are laid down in sections 118–120 of the Waste Act. Information on monitoring and control shall be kept together with the permit documents.
- (2) The information on monitoring and control of a waste facility for extractive waste shall be submitted to the supervisory authority, as provided in the environmental permit. However, the information shall be submitted at least annually.
- (3) The obligation to notify the authorities of a new operator of a waste facility for extractive waste is laid down in section 81 of the Environmental Protection Act. The operator shall assign the bookkeeping concerning the monitoring and control of the operations to the new operator.

## Section 13

### *Supervision of a waste facility for extractive waste*

- (1) In order to supervise compliance with the permit regulations, the supervisory authority shall inspect the waste facility for extractive waste that has been granted an environmental permit before the start of disposal operations and at regular intervals once the operations have started or after the waste facility has been closed.

- (2) Provisions on regulations to be given in the environmental permit concerning the plan for organising the monitoring and control of a waste facility for extractive waste, compliance with it and the submission of the results of the monitoring and control of the operations to the supervisory authority are laid down in section 62 of the Environmental Protection Act. (102/2015)
- (3) In order to ensure the reliability of the information on monitoring and control, the operator may be required to have an independent expert carry out the measurements and other analyses.

#### Section 14

##### *Closure and aftercare of a waste facility for extractive waste*

- (1) Provisions on the closure of a waste facility for extractive waste and the aftercare following closure are laid down in the environmental permit or the decision issued under section 94, subsection 3, of the Environmental Protection Act. A waste facility is considered to be closed when the supervisory authority has inspected the waste facility and approved the closure, after verifying that the waste facility and the land affected by it have been restored to a satisfactory state and that the permit regulations issued have been complied with. (102/2015)
- (2) The operator shall ensure that the closed waste facility for extractive waste and the structures needed to manage its environmental load are maintained and monitored, that control of them is possible and that, where applicable, overflow channels and spillways are kept operational and clean. The operator shall also notify the supervisory authority of any incident without delay and shall take measures to prevent accidents or environmental pollution, subject to the provisions laid down in sections 11 and 12(2).
- (3) The operator is responsible for the aftercare measures following the closure of a waste facility for extractive waste, and for the monitoring and control related to such measures, for as long as necessary, to ensure that the facility does not cause environmental pollution or a risk of it, that the area is stable and its landscaping is permanent, that the facility does not pose a risk of accident, and that it is no longer necessary to control its environmental load or monitor the status of surface water or groundwater in the area affected.

## Section 15

### *File of closed waste facilities for extractive waste*

The Centre for Economic Development, Transport and the Environment shall enter into the environmental protection database the information on closed or abandoned waste facilities for extractive waste that cause serious environmental pollution or a risk of it. The data file on waste facilities shall be updated on a regular basis. The information shall be published in electronic format, as appropriate.

## Section 16

### *Recovery of extractive waste at excavation voids*

If extractive waste generated by the operations is placed back into the excavation voids for rehabilitation or for construction purposes, the operator shall ensure that:

- 1) the waste is placed in a geotechnically stable manner, in compliance with the provisions laid down in section 7;
- 2) the placement of the waste does not cause pollution of the soil, surface water or groundwater, and that the operations are in compliance with the provisions laid down in section 8(1);
- 3) the operations are monitored and controlled in accordance with the provisions laid down in section 14(2) and (3).

## Section 17

### *Monitoring the implementation*

- (1) Every three years, in accordance with Article 18(1) of Directive 2006/21/EC of the European Parliament and of the Council on the management of waste from extractive industries and amending Directive 2004/35/EC, the Finnish Environment Institute shall draw up a report on the implementation of the Directive in Finland for the Commission. Additionally, the Finnish Environment Institute shall, in accordance with Articles 18(2) and 22(1) of the Directive, transmit information to the Commission on events it has been notified of by the operators in accordance with sections 11 and 14(2).
- (2) The supervisory authority shall submit the information it has been notified of by the operators, referred to in subsection 1, to the Finnish Environment Institute without delay.

Section 18

*Entry into force and transitional provisions*

- (1) This Decree enters into force on 1 May 2013.
- (2) This Decree repeals the Government Decree on Extractive Waste (379/2008).
- (3) This Decree does not apply if the waste facility for extractive waste has been closed in accordance with relevant legislation before 13 June 2008.
- (4) Sections 3 to 6, section 9 and section 10 of this Decree do not apply if the environmental permit or another equivalent permit issued for the waste facility has, before 13 June 2008, required that the waste facility be closed, or if an application for the closure has been filed on or before 1 July 2008, and if the waste facility has not accepted extractive waste after 30 April 2006 and has been effectively closed since 31 December 2010.
- (5) Section 9(2) on the concentration of weak acid dissociable cyanide in tailings applies from 1 May 2018. However, the concentration referred to shall not exceed 0.0025% by weight when this Decree enters into force.
- (6) Section 10 of this Decree applies from 1 May 2014. If an application for an environmental permit for the operations is submitted before this date, this Decree applies to the consideration for the permit.

Helsinki, 14 March 2013

Ville Niinistö, Minister of the Environment

Klaus Pfister, Senior Environmental Adviser

Decree 102/2015 amending this decree enters into force on February 2015.

*Annex 1***Classification of extractive waste as inert waste**

1. This Annex specifies the criteria for classifying extractive waste as inert waste. The classification shall always take place in connection with the characterisation under Annex 3 of this Decree, using the sources of information required for it.

2. Waste shall be considered to be inert waste, referred to in section 2(1)(4), if the following criteria are fulfilled in both the short and the long term:

- a) the waste does not decompose, dissolve or undergo other substantial changes so as to cause hazard or harm to the environment or to human health;
- b) the concentration of sulphide sulphur in the waste is
  - not more than 0.1%, or
  - not more than 1% and the neutralisation potential ratio, defined as the ratio between the neutralisation potential and the acid potential, and determined on the basis of the static test method EN 15875, is greater than 3;
- c) the waste does not pose a risk of self-ignition and it is not combustible;
- d) the concentration of substances with potential adverse effects on the environment or human health contained within the waste and of the fines removed from it (particularly arsenic, cadmium, cobalt, chromium, copper, mercury, molybdenum, nickel, lead, vanadium and zinc) are sufficiently low to be of insignificant risk to the environment and to human health, in both the short and the long term;
  - the concentrations of the substances above are considered to be sufficiently low and the risk to the environment and to human health is insignificant if they do not exceed the threshold values requiring an assessment or the background concentrations referred to in the Government Decree on the Assessment of Soil Contamination and Remediation Needs (214/2007);
- e) the waste contains virtually no substances used in extraction and treatment that could be hazardous or harmful to the environment or to human health.

3. The waste may be considered inert waste without specific testing if it can be reliably demonstrated, on the basis of the information made available to the competent authority or the available procedures and systems, that the criteria referred to in paragraph 2 have been adequately taken into account and that the criteria are fulfilled.

**Classification as a waste facility for extractive waste posing a risk of major accident**

This Annex specifies the methods and limit values that shall be complied with in the classification of a waste facility as a waste facility for extractive waste posing a risk of major accident, on the basis of the following factors:

- causes a risk to the environment or human health relating to the structural stability of the waste facility or to incorrect operation;
- the quantity of hazardous waste deposited in the waste facility; or
- the quantity of chemicals with hazardous effects on the environment or human health deposited in the waste facility.

A description of the waste facility classification regarding the risk of accidents shall be included in the waste management plan for extractive waste. The classification shall be re-examined if substantial changes are made to the operations. The classification shall be re-examined also at the end of each operational phase of the waste facility.

Parts B and C of this Annex do not apply to waste facilities where only inert waste or unpolluted soil is deposited.

For the purposes of this Annex the following definitions shall apply:

- 1) *structural stability of a waste facility* means the ability of the facility to contain the waste within the boundaries of the facility as designed, taking into account the possible failure at the waste facility in question; an evaluation of the consequences of the loss of stability shall include the immediate impact of any material transported away from the facility as a consequence of the failure and the resulting short- and long-term effects;
- 2) *incorrect operation* means any activities which could give rise to a major accident, including the failure of environmental protection measures, or faulty or inadequate design; an assessment of the release of contaminants resulting from incorrect operation shall take into account the effects of short-term pulses and the effects of long-term release of contaminants during the operational and aftercare phases of the waste facility; it shall include an assessment of the risk posed by waste facilities containing reactive waste, regardless of whether the waste is classified as hazardous or non-hazardous.

## **A. Risk relating to the structural stability of the waste facility or to incorrect operation**

1. A waste facility shall be classified as a waste facility for extractive waste posing a risk of major accident if the predicted consequences in the short or long term of failure due to loss of structural stability or incorrect operation, taking into account the entire lifecycle of the waste facility including the aftercare phase, could lead to:

- non-negligible potential for loss of life;
- significant risk to human health;
- significant risk to the environment.

2. The consequences of failure due to loss of structural stability or incorrect operation of the waste facility shall be assessed as follows:

- a) The potential for loss of life or risk to human health shall be considered to be negligible or insignificant if the people that may be affected, other than workers operating the facility, are not expected to be present on a permanent basis or for prolonged periods in the potential area of impact. A personal injury leading to disability or a prolonged state of ill health shall count as a significant risk to human health.
- b) A risk to the environment shall be considered to be insignificant if:
  - a significant decrease in the intensity of the potential contaminant source occurs within a short time;
  - a malfunction or failure at the waste facility does not lead to permanent or long-term hazard or harm to the environment;
  - the affected environment can be restored through minor rehabilitation and restoration efforts.
- c) In establishing the potential for loss of life or risk to human health or to the environment, the specific assessments of the extent of the potential impacts shall be considered in the context of the source-pathway-receptor chain. Where there is no pathway between the source and the receptor, the waste facility shall not be classified as a waste facility for extractive waste posing a risk of major accident on the basis of failure due to loss of structural stability or incorrect operation.

3. The loss of structural stability at a waste facility for tailings shall be considered to pose a risk to human life when water or slurry levels rise at least 70 cm above ground or when water or slurry velocities exceed 0.5 m/s.

An assessment of the loss of life or risk to human health shall include at least the following factors:

- the size and properties of the facility, including its structure;
- the quantity and quality, including physical and chemical properties, of the waste in the facility;
- the topography of the waste facility site, including the structures that prevent the dispersion of water or slurry;
- the travel time of a potential flood wave to areas where people are present;
- the propagation velocity of the flood wave;
- the predicted water or slurry level and the rising rate;
- relevant site-specific factors, such as climate and the annual variation in precipitation, which could affect the potential for loss of life or the extent of the risk to human health.

4. In the case of waste heap slides, any movement in the mass of waste shall be deemed likely to be a risk to human life if people are present within range of the moving mass of waste.

An assessment of the loss of life or risk to human health shall include at least the following factors:

- the size and properties of the waste facility, including its structure;
- the quantity and quality, including physical and chemical properties, of the waste in the facility;
- the slope angle of the heap;
- the potential to build up internal groundwater within the heap;
- the underground stability;
- the topography of the surroundings;
- the proximity to surface water, structures and buildings;
- quarry facilities;
- any other site-specific factors that may significantly contribute to the risk posed by the structure.

## **B. Quantity of hazardous waste at the waste facility**

1. In the classification of the waste facility on the basis of the quantity of hazardous waste deposited in it, an assessment shall be done with a view to its potential to give rise to accidents, in accordance with paragraphs 2 and 3 below. The assessment is based on the ratio of the hazardous waste expected to be deposited in the waste facility during the period of operation to the overall quantity of waste. The quantity of the waste to be deposited is assessed as dry weight.

2. A waste facility shall be classified as a waste facility for extractive waste posing a risk of major accident on the basis of the quantity of hazardous waste deposited in it if the ratio referred to in paragraph 1:

- a) is greater than 50 per cent;
- b) is between 5 per cent and 50 per cent.

However, a waste facility falling under paragraph 2(b) above shall not be classified as a waste facility for extractive waste posing a risk of major accident on the basis of the quantity of hazardous waste deposited in it if the classification is found to be unjustified in a site-specific risk assessment. The risk assessment shall be part of the classification of the waste facility on the basis of the effects of failure due to loss of its structural stability or due to incorrect operation, and special attention shall be paid in the assessment to the effects of hazardous waste.

3. A waste facility shall not be classified as a waste facility for extractive waste posing a risk of major accident on the basis of the quantity of hazardous waste deposited in it if the ratio referred to in paragraph 1 is less than 5 per cent.

## **C. Quantity of chemicals with hazardous effects on the environment or human health deposited in the waste facility (102/2015)**

1. In the classification of the waste facility on the basis of the quantity of chemicals with hazardous effects on the environment or on human health that are used in the operations, an assessment shall be done with a view to its potential to give rise to accidents, in accordance with paragraphs 2–4 below.

A hazardous substance or mixture (*hazardous chemical*) means a substance or mixture classified as hazardous under Regulation (EC) no 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Until 31 May 2015, mixtures classified as dangerous under the Ministry of Social Affairs and Health Decree on Chemical Classification Principles and Labelling (807/2001) shall also be classified as hazardous mixtures.

2. The following procedure shall apply to a waste facility for tailings:

- a) Carry out an inventory of the substances and mixtures that are used in the operations and that are discharged after processing to the waste facility for tailings;
- b) Estimate the quantity of each substance and mixture that is used in the process for each year of the planned duration of operation;
- c) Determine whether the substance or mixture is a hazardous chemical;
- d) Calculate the increase in the volume of water in the waste facility for tailings ( $\Delta Q_i$ ) under steady-state conditions for each year of the planned duration of operation, according to the following formula:

$\Delta Q_i = (\Delta M_i/D)*P$ , where

- $\Delta Q_i$  = yearly increase in the volume of water in the waste facility for tailings ( $m^3/year$ ) during the year 'i',
- $\Delta M_i$  = yearly mass of tailings discharged to the facility (tonnes dry weight/year) during the year 'i',
- $D$  = average dry bulk density of the deposited tailings (tonnes/ $m^3$ ) and
- $P$  = average porosity of the sedimented tailings ( $m^3/m^3$ ), defined as the ratio of the volume of voids to the total volume of sedimented tailings.

If the specific bulk density and porosity are not available, the following default values shall be used:  $D = 1.4 \text{ tonnes}/m^3$  and  $P = 0.5 \text{ m}^3/m^3$ .

e) Estimate the maximum yearly concentration ( $C_{max}$ ) of each hazardous chemical in the aqueous phase of the tailings identified in accordance with paragraph 2(c), according to the following formula:

$C_{max} = \text{the maximum of the value } S_i/\Delta Q_i$ , where

- $S_i$  = the yearly mass of each hazardous chemical identified in accordance with paragraph 2(c) and discharged to the facility during the year 'i'.

A waste facility shall be classified as a waste facility for extractive waste posing a risk of major accident if, on the basis of its maximum yearly concentration ( $C_{max}$ ), the aqueous phase of the tailings is considered to be a hazardous chemical.

3. The classification of a waste facility for tailings that was in operation on 13 June 2008 may also be based on direct chemical analysis of the water and solids contained in the facility. A waste facility shall be classified as a waste facility for extractive waste posing a risk of major accident if the aqueous phase of the tailings and its contents are considered to be a hazardous chemical.

4. For heap leaching facilities, where metals are extracted from ore heaps by percolating leach solutions, a screening shall be done for the presence of hazardous leach chemicals at closure. The screening shall be based on the information on the leach chemicals used and the residual concentrations of these chemicals in the leachate after the leaching process has ceased. A waste facility shall be classified as a waste facility for extractive waste posing a risk of major accident if the leachate is considered to be a hazardous chemical.

**Characterisation of extractive waste**

The characterisation of extractive waste and the collection of information on it shall be done in accordance with this Annex.

The necessary information on the waste shall be included in the waste management plan for extractive waste related to the operations.

**A. Waste characterisation**

1. The characterisation of waste shall be based on the following information:

a) Background information:

- Description of and purpose for the intended extraction.
- General information on the following aspects:
  - ore prospecting, extraction and treatment operations;
  - type and description of the extraction method and treatment process;
  - end products.

b) Geological data on the deposit to be exploited:

- The identification of waste from extraction and treatment by providing the relevant information on the following:
  - properties of the surrounding bedrock, its chemical and mineralogical properties, including the hydrothermal alteration of mineralised rocks and barren rocks;
  - nature of the deposit, including mineralised rocks;
  - mineralisation typology, covering extracted minerals, gangue minerals and hydrothermal newly formed minerals, their chemistry and mineralogy, including physical properties such as density, porosity, particle size distribution and water content;
  - size and geometry of the deposit;
  - weathering and changes in the surface layers concerning the chemical and mineralogical properties.

c) Type of waste and its intended recovery or disposal:

- A description of the wastes generated by each prospecting, extraction and treatment operation, including overburden, waste rock and tailings, by providing information on the following:
  - origin of the waste at the extraction site and the process generating that waste such as prospecting, extraction, milling and treatment;
  - quantity of the waste;
  - description of the waste transport system;
  - description of the chemical substances to be used during treatment;
  - classification of the waste in accordance with the list of waste referred to in section 4 of the Government Decree on Waste (179/2012), including the hazardous properties of waste specified in section 3 of the Decree;
  - type of intended waste facility, final form of exposure of the waste and the method by which the waste is deposited at the facility.

d) Geotechnical behaviour of the waste:

- Identification of the suitable parameters for assessing the intrinsic physical characteristics of the waste, taking into account the type of waste facility.
- Suitable parameters can be: granulometry, plasticity, density and water content, degree of compaction, shear strength and angle of friction, permeability to void ratio, compressibility and consolidation.

e) Geochemical characteristics and behaviour of the waste:

- Specification of the chemical and mineralogical characteristics of the waste, and of any chemicals or chemical residuals remaining in the waste.
- Assessment of the chemical properties of leachate that change over time by type of waste, taking into account the intended waste treatment method, in particular:
  - evaluation of metals, oxyanion and salt leachability over time by testing the effect of pH on leaching, by a percolation test, by testing to estimate time-dependent leaching and/or by other suitable testing;
  - for sulphide-containing waste, static or kinetic tests to determine the formation of acid leachate and metal leaching over time.

2. Only the relevant parts of the geochemical tests referred to in paragraph 1(e) apply to waste classified as inert waste, in accordance with Annex 1 of this Decree.

**B. Collection and assessment of information**

1. Existing investigations and studies, including existing permits, geological surveys, information concerning similar sites, lists of inert waste, appropriate certification schemes, European or national standards for similar material, which satisfy the technical requirements set out in part A, shall be used in the characterisation of the waste.

2. The quality and representativeness of all information shall be assessed and possible missing information shall be identified.

3. Where information necessary for the characterisation of the waste is missing, a sampling plan shall be drawn up in accordance with standard EN 14899 and samples shall be taken in accordance with the sampling plan. The sampling plan shall be based on the information identified as necessary, such as:

- the purpose of data collection;
- the testing programme and sampling requirements;
- sampling sites, including from a drill-core, excavation face, conveyor belt, heap, tailing area, or other relevant sites;
- procedures and recommendations for sample numbers, size, mass, description and handling.

The reliability and quality of the sampling results shall be assessed.

4. The results of the characterisation process shall be evaluated. Where necessary, additional information shall be collected following the same methodology.

*Annex 4***Major-accident prevention policy, content of the internal emergency plan and the provision of information****A. Major-accident prevention policy and safety management system**

The following shall be taken into account in the preparation and implementation of a major-accident prevention policy and safety management system at a waste facility for extractive waste:

1. The major-accident prevention policy shall be presented in writing and it shall include the overall aims and procedures related to the control of major-accident hazards, as confirmed by the operators.
2. The safety management system shall include the part of the general management system which includes the organisational structure, responsibilities, practices, procedures, processes and resources for determining and implementing the major-accident prevention policy. The description shall specify the name of the person in charge of the waste facility for extractive waste, and the names and areas of responsibility of assisting personnel.
3. The safety management system shall cover the following:
  - a) organisation and personnel: the tasks and areas of responsibility of personnel involved in the management of major-accident hazards at all organisational levels, determination of the training needs of personnel and the organisation of the training, and the involvement of employees and, where appropriate, the employees of subcontractors working at the waste facility;
  - b) identification and assessment of major-accident hazards: adoption and implementation of procedures for the systematic identification of potential major-accident hazards arising from normal or exceptional operations, and an assessment of the likelihood and severity of such hazards;
  - c) operational control: adoption and implementation of procedures and instructions for safe operation, including maintenance of the waste facility, processes, equipment and temporary stoppages;
  - d) management of change: adoption and implementation of procedures for modifying existing waste facilities or for designing new waste facilities;
  - e) planning for emergencies: adoption and implementation of procedures to identify foreseeable emergencies by systematic analysis and for the preparation, testing and review of emergency plans to respond to such emergencies;

- f) monitoring performance: adoption and implementation of procedures for the ongoing assessment of compliance with the objectives set by the operator's major-accident prevention policy and safety management system, and of the mechanisms for investigating and taking corrective action in the event of non-compliance; the procedures should cover the operator's system for reporting major accidents or near misses, particularly those involving failure of protective measures, and their investigation and follow-up on the basis of lessons learned;
- g) audit and review: adoption and implementation of procedures for periodic systematic assessment of the major-accident prevention policy and the effectiveness and suitability of the safety management system; the documented review of the performance of the policy and safety management system and their updating by senior management.

## **B. Content of the internal emergency plan**

The internal emergency plan shall include at least the following:

1. Names and tasks of the individuals who are responsible for:
  - a) the internal emergency response at the waste facility for extractive waste, and those who are authorised to initiate the emergency response;
  - b) contacts with authorities in charge of external emergency plans.
2. Description of the major-accident prevention policy and the safety management system.
3. Description of measures that shall be taken to control accidents and limit their effects, and to provide remediation following an accident, in the event of foreseeable accidents.
4. Measures taken to limit hazards to people present in the area, including an alarm system and instructions on how to behave in the event of a warning.
5. Assessment of the effects of accidents in areas outside the waste facility.
6. Procedure for reporting to the emergency services authority in the event of an accident, and a description of the information to be submitted immediately and how more detailed information is to be submitted later as soon as it becomes available.
7. Training provided for personnel and its coordination with external emergency services.
8. Support of the emergency response measures taken outside the waste facility.

### **C. Provision of information (102/2015)**

In the preparations for major accidents, at least the following information shall be provided, free of charge, to persons and associations referred to in section 115, subsection 4, of the Environmental Protection Act:

1. Name of the operator and the location and address of the waste facility for extractive waste.
2. Name and position of the person providing the information.
3. Confirmation that the operations of the waste facility are in compliance with the Environmental Protection Act and this Decree, and the permit regulations issued under them, and that the necessary information on major-accident prevention has been submitted to the appropriate authorities.
4. An explanation in clear and simple terms of the activity or operations undertaken at the site.
5. The common names, generic names or the general hazard classification of the substances and wastes deposited at the waste facility that could pose a risk of major accident, and information on the principal hazardous properties of these substances and wastes.
6. General information on the nature of major-accident hazards, including the potential effects on the surrounding population and the environment.
7. Adequate information on how the population concerned are to be warned and kept informed in the event of a major accident.
8. Adequate information on the actions that the population concerned should take, and on the behaviour they should adopt, in the event of a major accident.
9. Confirmation that the operator is required to make adequate arrangements on site and, in particular, to establish contact with the rescue services, to respond to major accidents and to minimise their effects.
10. A reference to an external emergency plan drawn up for the purpose of managing any off-site impacts of an accident, and advice to follow the instructions or requests of the rescue services in the event of an accident.
11. Details of where further relevant information can be obtained, subject to the requirements of confidentiality laid down in legislation.

**Determining the amount of the financial guarantee for a waste facility for extractive waste**

The determination of the amount of the financial guarantee for a waste facility shall take into account at least the following information or details:

1. The likely impacts of the waste facility on human health and on the environment.
2. The need for rehabilitation of the waste facility, including its future use.
3. The applicable environmental standards and objectives, including the physical stability of the waste facility, the minimum requirements for soil and water quality, and the maximum concentrations of contaminants to be released.
4. The technical measures necessary to achieve the environmental objectives, in particular, measures to ensure the stability of the waste facility and to limit environmental damage.
5. The necessary measures to achieve the objectives during and after the operation of the waste facility, including, as necessary, soil rehabilitation, aftercare and monitoring, and measures taken to restore biological diversity.
6. The estimated duration of the impacts and measures to mitigate them.
7. An independent and qualified assessment of the costs incurred by the measures necessary for soil rehabilitation, for closure of the waste facility closure and for aftercare, including potential monitoring or treatment of contaminants during aftercare; the assessment shall consider the possibility of unplanned or early closure of the waste facility.