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**GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS**

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**DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT**

NO. 3184

24 March 2023

**NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008  
(ACT NO. 59 OF 2008)****PROPOSED AMENDMENTS TO THE NATIONAL NORMS AND STANDARDS FOR DISPOSAL OF  
WASTE TO LANDFILL, 2013**

I, Barbara Dallas Creecy, Minister of Forestry, Fisheries and the Environment, hereby in terms of section 7(1)(c), read together with sections 72 and 73 of the National Environmental Management Waste Act, 2008 (Act No. 59 of 2008), give notice of my intention to amend the National Norms and Standards for Disposal of Waste to Landfill, 2013 published in Government Notice R.636, in Government *Gazette* 36784 of 23 August 2013, as set out in the Schedule hereto.

Members of the public are invited to submit written comments on the proposed amendments, within 30 days of publication of this notice in the Government *Gazette*, or in the newspaper, whichever date is the later, to the following addresses:

By post to:                   The Director General: Department of Forestry, Fisheries and the Environment  
Attention: Ms Sharlin Hemraj  
Director: Chemicals and Waste Policy and Information Management  
Private Bag X447  
**PRETORIA**  
0001

By hand at:                   Ground Floor (Reception), Environment House, 473 Steve Biko Road, Arcadia,  
Pretoria, 0001.

By email:                     [shemraj@dfre.gov.za](mailto:shemraj@dfre.gov.za)

Any enquiries in connection with the notice should be directed to Ms Sharlin Hemraj at (012) 399 9826 or [shemraj@dfre.gov.za](mailto:shemraj@dfre.gov.za)

The Government Notice can be accessed at <http://sawic.environment.gov.za/> under "Draft documents for comment".

**Comments received after the closing date may not be considered.**



**BARBARA DALLAS CREECY**

**MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT**

## SCHEDULE

### Definitions

1. In this Schedule, unless the context requires otherwise “**the Norms and Standards**” means the the National Norms and Standards for Disposal of Waste to Landfill, 2013, published in Government Notice R.636, in *Government Gazette* 36784 of 23 August 2013.

### Amendment of paragraph 1 of the Norms and Standards

2. Paragraph 1 of the Norms and Standards is hereby amended by the insertion of the following definition:

“ **GHS** means the latest version of the Globally Harmonised System of Classification and Labelling of Chemicals published by the United Nations, as may be updated from time to time, and commonly referred to as the UN Purple Book, which can be accessed at <https://unece.org/about-ghs>.”

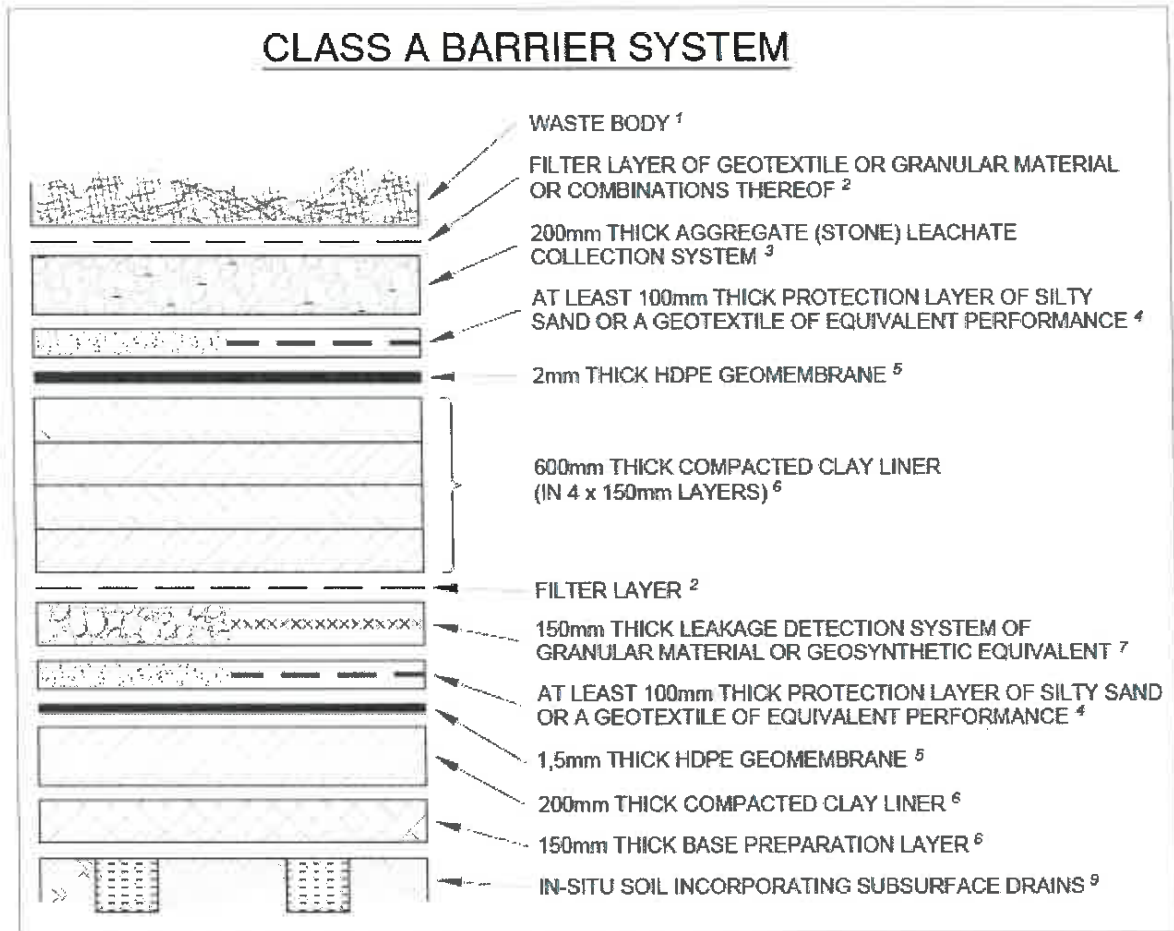
### Amendment of paragraph 3 of the Norms and Standards

3. Paragraph 3 of the Norms and Standards is hereby amended by—

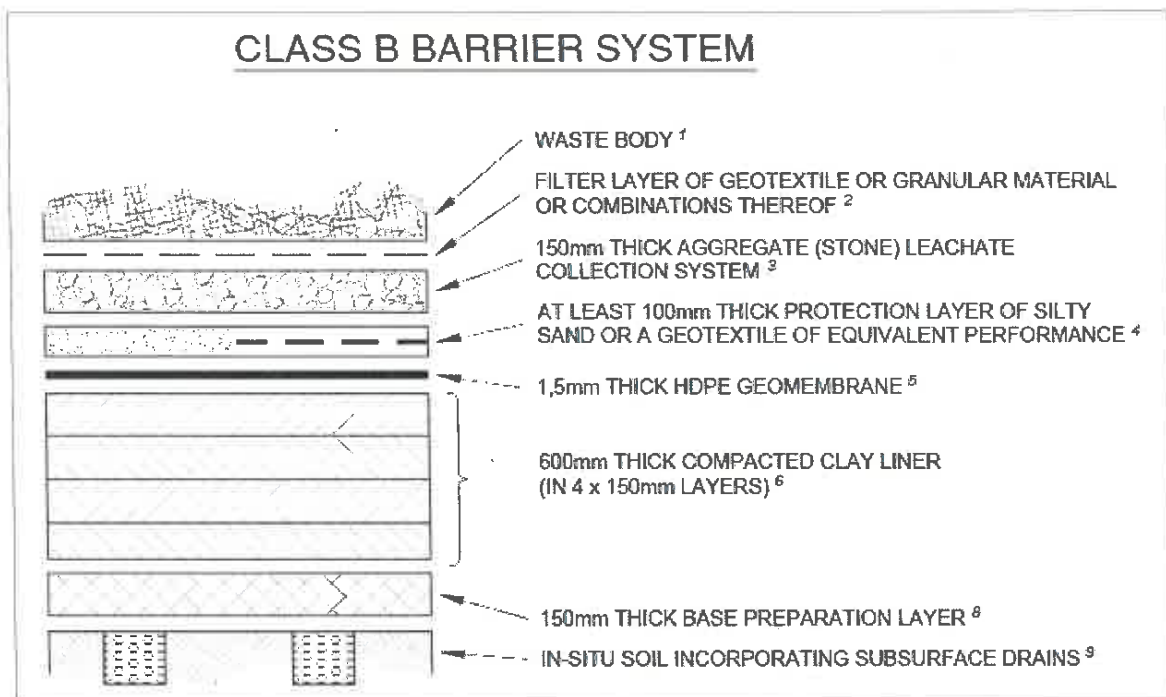
- (a) the substitution for paragraph 3(1) of the following paragraph:

“3(1) The containment barriers of landfills for the disposal of waste in terms of paragraph 4 of these Norms and Standards must comply with the following minimum engineering design requirements—

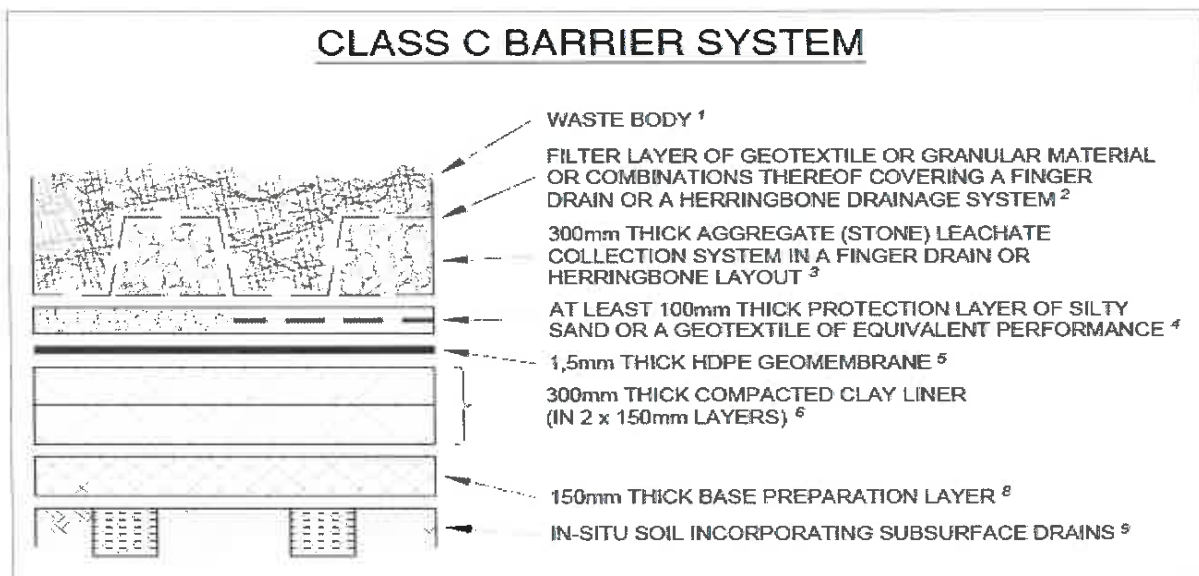
(a) Class A Barrier System



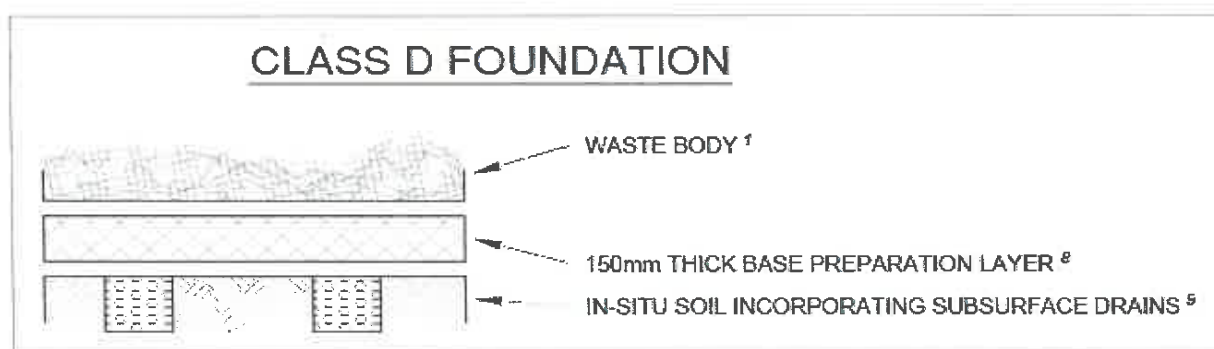
(b) Class B Barrier System



(c) Class C Barrier System



## (d) Class D Foundation

**Notes:**

1. The waste body – represents the Type of waste to be disposed of including a selected layer or pioneering layer and is above the filter layer. It is good practice to provide a selected soil or waste pioneering layer of the order of 300mm thickness or more above the filter layer to protect it and underlying layers from damage post construction and prior to covering with waste.
2. The filter layer – is usually a geotextile filter selected to retain the site-specific waste material while allowing the leachate to pass through it and is to be able to withstand damage from the underlying aggregate of the leachate collection system and overlying waste placement for the site-specific loads to be accommodated. In some designs the filter layer may be a granular material which is compatible with adjacent materials and permeant.
3. The stone or aggregate layer – represents the leachate collection system which typically includes drainage pipes to facilitate maintaining the leachate pressure above the geomembrane to a maximum value used in total solute seepage determination. The aggregate nominal size for municipal solid waste (MSW) is typically 53mm to 38mm well rounded stone to provide for adequate pore spaces to accommodate biological clogging and chemical precipitate while simultaneously providing adequate drainage capacity in the layer thickness for the particular floor slope.
4. The protection layer - is to provide a cushion between the aggregate of the Leachate Collection System or Leakage Detection System and the High-Density Polyethylene geomembrane to:
  - a. limit contributions to the total tensile strain in the geomembrane,
  - b. provide protection against physical and similar damage, or ultraviolet (UV) degradation of the geomembrane in exposed conditions, and
  - c. contribute to the confining stress required for direct contact between the geomembrane and compacted clay liner or geosynthetic clay liner (GCL), of a composite liner system.
5. The nature and thickness of the protection layer required is a function of the short- and long-term stress conditions such as vehicular traffic during construction and operation, as well as the foundation material properties.
6. The geomembrane - shall be of High-Density Polyethylene (HDPE) in accordance with the most recent revision of the SANS1526 standard specification.

7. The compacted clay liner (CCL) - shall be selected material from the geotechnical investigation identification of a suitable borrow pit(s) and shall have a low permeability, plasticity, linear shrinkage and a particle size distribution which is incorporated in the performance assessment of the design and associated construction quality assurance plan. The CCL shall be compacted to a minimum of 98% Standard Proctor Maximum Dry Density (MDD) at optimum moisture content to +2% OMC unless otherwise justified. In some cases, the CCL may be partially or totally replaced by a geosynthetic clay liner (GCL) provided equivalent performance to the CCL for the specific waste stream and barrier system is demonstrated, taking into consideration inter alia chemical compatibility with adjacent materials and permeants, short- and long-term stability, and moisture absorption and retention characteristics.
  8. The leakage detection system (LDS) - is typically a granular material sized to accommodate permeant flow without inducing excess pressure head, including due to precipitate. In the event of a geosynthetic drainage layer being used as an alternative of equivalent performance the design shall demonstrate that the alternative has adequate drainage capacity in the short and long term, adequate compressive strength including compressive creep collapse resistance, adequate service life of the constituent materials, and not induce barrier performance detractors due to undesirable slip planes through internal or interface shear, nor excessive tensile strain in adjacent materials.
  9. The base preparation layer - is the in-situ reworked material devoid of vegetative material such as plants and roots, and similar abnormalities which may affect the containment and drainage performance of the barrier system.
  10. The in-situ soil foundation - shall incorporate a subsurface drainage system to avoid uplift pressures by groundwater vacillation and maintain a 2m unsaturated zone between the base of the liner system and the wet season high groundwater level. The foundation material properties shall be included in the design assessment of stability.”;
- (b) the substitution of subparagraph 3(2)(c) for the following subparagraph:
- “(c) total solute seepage (inorganic and organic) that must be calculated in determining acceptable leakage rates and action leakage rates and action leakage rates (the transport mechanism through geomembranes includes seepage through discontinuities and diffusion through intact areas, the latter not being significant when the volatile organic compound (VOC) content of the leachate is less than 0,03M/l).”;
- (c) the deletion of the “and” at the end of subparagraph 3(2)(h);
- (d) the substitution of the “.” at the end of subparagraph 3(2)(i) with a “,”; and
- (e) the insertion after subparagraph 3(2)(i), of the following subparagraph:
- “(j) The guideline for Pollution Control Barrier System Design can be accessed on <http://sawic@environment.gov.za>”.



**Amendment of paragraph 5 of the Norms and Standards**

4. Paragraph 5 of the Norms and Standards is hereby amended by—

(a) the substitution of subparagraph (1)(a) for the following subparagraph:

<b>Waste Prohibited or Restricted in terms of Disposal</b>	<b>Compliance Timeframe</b>
(a) Waste which, in the conditions of a landfill, is explosive, corrosive, oxidizing (according to GHS)	Immediate

(b) the substitution of subparagraph (1)(e) for the following subparagraph:

<b>Waste Prohibited or Restricted in terms of Disposal</b>	<b>Compliance Timeframe</b>
(e) Waste compressed gases (according to GHS)	Immediate

(c) the substitution of subparagraph (1)(r) for the following subparagraph:

<b>Waste Prohibited or Restricted in terms of Disposal</b>	<b>Compliance Timeframe</b>
(r) Waste with a calorific value of:	
(i) > 25MJ/kg.	Four (4) years
(ii) > 20MJ/kg.	Six (6) years
(iii) > 10 MJ/kg.	Twelve (12) years
(iv) > 6% TOC.	Twenty-Five (25) years

(d) the insertion after subparagraph (1)(u) of paragraph 5, of the following subparagraphs:

<b>Waste Prohibited or Restricted in terms of Disposal</b>	<b>Compliance Timeframe</b>
(v) Mercury and mercury containing waste:	Immediate
(i) must undergo conversion prior to being permanently disposed of	
(ii) where intended to be disposed of in above-ground facilities, must undergo conversion and solidification prior to being permanently disposed of	

<b>Waste Prohibited or Restricted in terms of Disposal</b>	<b>Compliance Timeframe</b>
(w) co-disposal of flue gas desulphurisation waste and dry walling/ gypsum waste	Immediate

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