

No. R. 636

23 August 2013

DEPARTMENT OF ENVIRONMENTAL AFFAIRS**NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008
(ACT NO. 59 OF 2008)****NATIONAL NORMS AND STANDARDS FOR DISPOSAL OF WASTE TO LANDFILL**

I, Bomo Edith Edna Molewa, Minister of Water and Environmental Affairs, hereby set national norms and standard for the assessment of waste for landfill disposal, under section 7(1)(c) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), in the Schedule hereto.

**BOMO EDITH EDNA MOLEWA****MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS**

SCHEDULE

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CHAPTER 1

INTERPRETATION AND PURPOSE

Definitions

1. In these National Norms and Standards, any word or expression to which a meaning has been assigned in the Act has that same meaning, and unless the context requires otherwise—

“**the Act**” means the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008);

“**the Regulations**” means the Waste Classification and Management Regulations, 2013.

Purpose and Application

2. These Norms and Standards determine the requirements for the disposal of waste to landfill as contemplated in regulation 8(1)(b) and (c) of the Regulations.

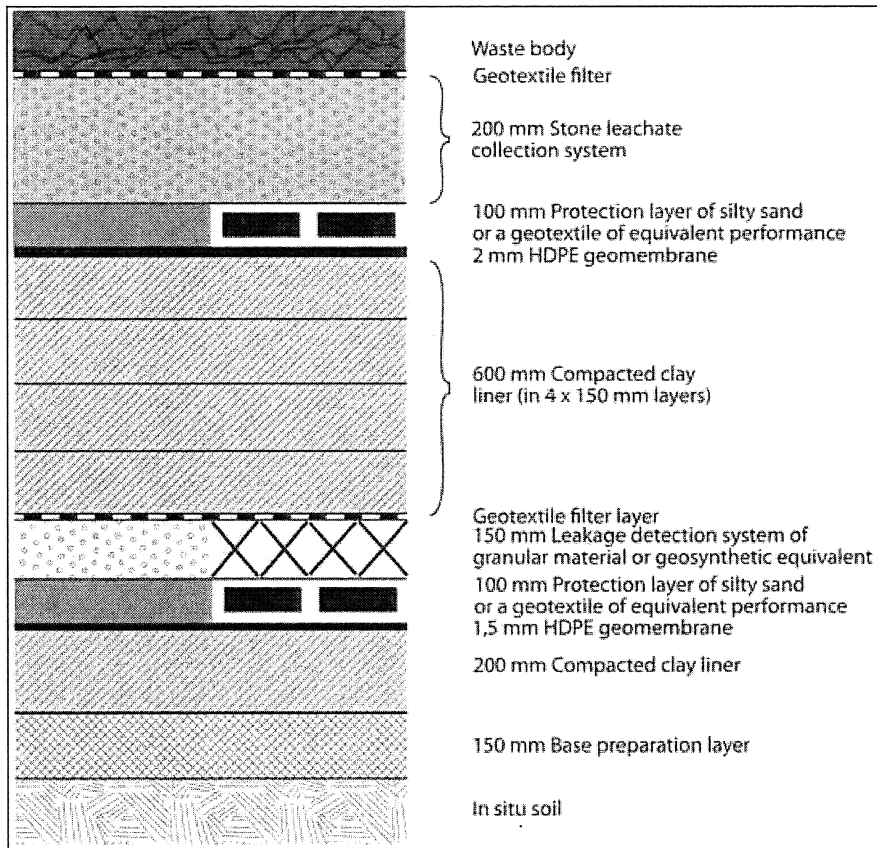
CHAPTER 2

STANDARD CONTAINMENT BARRIER DESIGN, WASTE ACCEPTANCE AND WASTE DISPOSAL REQUIREMENTS

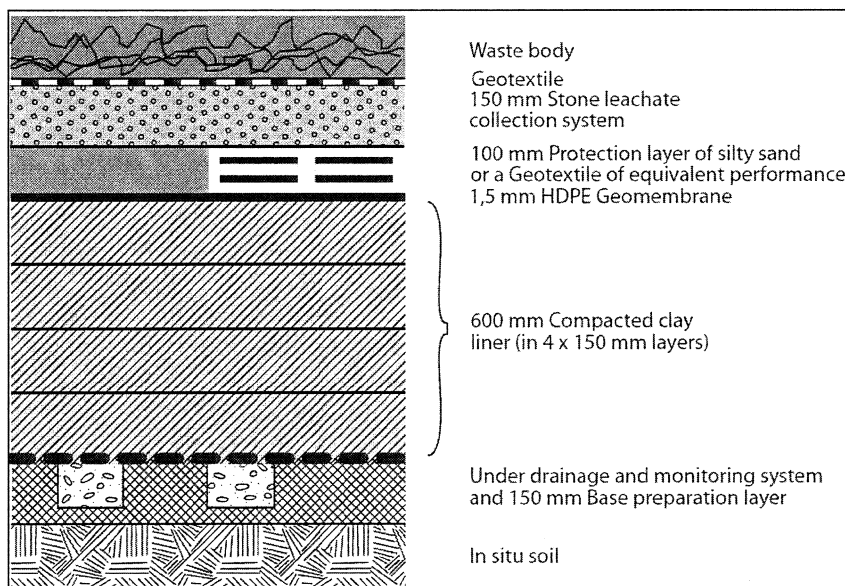
Landfill Classification and Containment Barrier Design

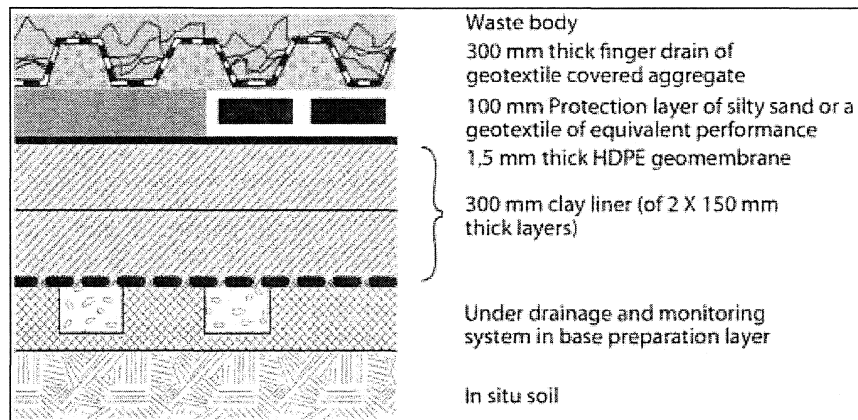
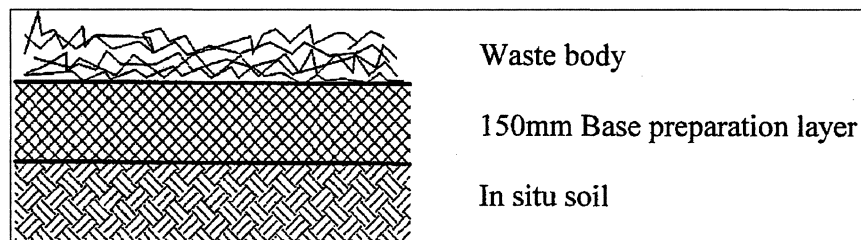
- 3 (1) The containment barriers of landfills for the disposal of waste in terms of section 4 of these Norms and Standards must comply with the following minimum engineering design requirements—

(a) Class A Landfill:



(b) Class B Landfill:



(c) Class C Landfill:(d) Class D Landfill:

(2) The following containment barrier requirements must be included in an application for waste management licence approval of a landfill site or cell —

- (a) design reports and drawings that must be certified by a registered, professional civil engineer prior to submission to the competent authority;
- (b) service life considerations that must be quantified taking into account temperature effects on containment barriers;
- (c) total solute seepage (inorganic and organic) that must be calculated in determining acceptable leakage rates and action leakage rates;
- (d) alternative elements of proven equivalent performance which has been considered, such as the replacement of —
 - (i) granular filters or drains with geosynthetic filters or drains;

- (ii) protective soil layers with geotextiles; or
 - (iii) clay components with geomembranes or geosynthetic clay liners;
- (e) All drainage layers must contain drainage pipes of adequate size, spacing and strength to ensure atmospheric pressure within the drainage application for the service life of the landfill;
- (f) Alternative design layouts for slopes exceeding 1:4 (vertical: horizontal) may be considered provided equivalent performance is demonstrated;
- (g) Construction Quality Assurance during construction;
- (h) Geosynthetic materials must comply with relevant South African National Standard specifications, or any prescribed management practice or standards which ensure equivalent performance; and
- (i) Consideration of the compatibility of liner material with the waste stream, in particular noting the compatibility of natural and modified clay soils exposed to waste containing salts.
- (3) The classification and containment barrier design of all new landfills, as well as new working cells at existing landfills, must be implemented in accordance with section 3(1) and (2) of these Norms and Standards.
- (4) Notwithstanding section 3(3) of these Norms and Standards, waste may be disposed of in terms of section 4(1), (2), (3) and (4) of these Norms and Standards at landfills with the liner design requirements for landfills contained in the Minimum Requirements for Waste Disposal by Landfill (2nd Edition, 1998; Department of Water Affairs and Forestry), or at landfills with an alternative liner design approved by the competent authority for the life-span of the operational cell, subject to the following conditions—
- (a) the current working cell at the landfill was operating lawfully in terms of the Act prior to the Regulations coming into operation;
 - (b) the next working cell at the landfill was legally approved prior to the Regulations coming into operation; or

- (c) an application for approval of a new landfill or working cell was submitted to the competent authority, and a decision has not been taken or is still under consideration prior to the Regulations coming into operation.

Waste Acceptance Criteria for Disposal to Landfill

4. (1) Waste assessed in terms of the *Norms and Standards for Assessment of Waste for Landfill Disposal* set in terms of section 7(1) of the Act must be disposed to a licensed landfill as follows:

Waste Type	Landfill Disposal Requirements
Type 0 Waste	The disposal of Type 0 waste to landfill is not allowed . The waste must be treated and re-assessed in terms of the <i>Norms and Standards for Assessment of Waste for Landfill Disposal</i> .
Type 1 Waste	Type 1 waste may only be disposed of at a Class A landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, may be disposed of at a landfill site designed in accordance with the requirements for a Hh / HH landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., Department of Water Affairs and Forestry, 1998).
Type 2 Waste	Type 2 waste may only be disposed of at a Class B landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, may be disposed of at a landfill site designed in accordance with the requirements for a GLB+ landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAf, 1998).
Type 3 Waste	Type 3 waste may only be disposed of at a Class C landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, may be disposed of at a landfill site designed in accordance with the requirements for a GLB+ landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAf, 1998).
Type 4 Waste	Type 4 waste may only be disposed of at a Class D landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, may be disposed of at a landfill site designed in accordance with the requirements for a GLB- landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAf, 1998).

(2) Waste listed in section 2(a) of Annexure 1 to the Regulations and destined for disposal to landfill must be disposed of as follows—

Listed Waste	Landfill Disposal Requirements
(i) Domestic waste. (ii) Business waste not containing hazardous waste or hazardous chemicals. (iii) Non-infectious animal carcasses. (iv) Garden waste.	Disposal only allowed at a Class B landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, at a landfill site designed in accordance with the requirements for a GLB+ landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAF, 1998).
(v) Post-consumer packaging. (vi) Waste tyres.	Disposal only allowed at a Class C landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, at a landfill site designed in accordance with the requirements for a GLB+ landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAF, 1998).
(vii) Building and demolition waste not containing hazardous waste or hazardous chemicals. (viii) Excavated earth material not containing hazardous waste or hazardous chemicals.	Disposal allowed at a Class D landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, at a landfill site designed in accordance with the requirements for a GLB- landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAF, 1998).

(3) Unless assessed in terms of the *Norms and Standards for Assessment of Waste for Landfill Disposal* set in terms of section 7(1) of the Act and disposed of in terms of section 4(1) of these Norms and Standards, the following wastes included in section 2(b) of Annexure 1 to the Regulations and destined for disposal to landfill must be disposed of as follows—

Listed Waste	Landfill Disposal Requirements
(i) Asbestos Waste. (ii) Expired, spoilt or unusable hazardous products.	Disposal only allowed at a Class A landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and

<p>(iii) PCBs (or rather PCB containing waste (>50ppm))</p> <p>(iv) General waste, excluding domestic waste, which contains hazardous waste or hazardous chemicals.</p> <p>(v) Mixed, hazardous chemical wastes from analytical laboratories and laboratories from academic institutions in containers less than 100 litres.</p>	<p>Standards, at a landfill site designed in accordance with the requirements for a Hh / HH landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2nd Ed., DWAF, 1998).</p>
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(4) Waste that has been classified in terms of the Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste (2nd Edition, 1998; Department of Water Affairs and Forestry) prior to the Regulations coming into operation, may be accepted and disposed of as set out below for a period not exceeding three (3) years after the date of coming into operation of the Regulations—

Waste	Landfill Disposal Requirements
<p>Hazardous Waste – Hazard Rating 1 or 2</p>	<p>Disposal only allowed at a Class A landfill designed in accordance with Section 3(1) and 3(2) of these Norms and Standards, or, subject to Section 3(4) of these Norms and Standards, at a landfill site designed in accordance with the requirements for a HH landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2nd Ed., DWAF, 1998).</p>
<p>Hazardous Waste – Hazard Rating 3 or 4</p>	<p>Disposal only allowed at a Class A landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of these Norms and Standards, at a landfill site designed in accordance with the requirements for a Hh landfill as specified in the Minimum Requirements for Waste Disposal by Landfill (2nd Ed., DWAF, 1998).</p>
<p>Hazardous Waste – Delisted</p>	<p>Disposal only allowed at a Class B landfill designed in accordance with section 3(1) and (2) of these Norms and Standards, or, subject to section 3(4) of this Norms and Standards, at a landfill site designed in accordance with the requirements for a GLB+ landfill as specified in the Minimum Requirements for Waste</p>

	Disposal by Landfill (2 nd Ed., DWAF, 1998).
General Waste	Disposal only allowed at a Class B landfill designed in accordance with Section 3(1) and (2) of these Norms and Standards, or, subject to Section 3(4) of these Norms and Standards, at a landfill site designed in accordance with the requirements for a general waste site, G S/M/L B-/B+ as specified in the Minimum Requirements for Waste Disposal by Landfill (2 nd Ed., DWAF, 1998).

(5) Notwithstanding the requirements of section 4(1), (2) and (3) of these Norms and Standards, waste may be disposed of at landfills with a higher level of containment design than specified, subject to the restriction in section 5(2)(a)(ii) of these Norms and Standards.

Waste Disposal Restrictions

5. (1) The following prohibitions and restrictions on the disposal of waste to landfill comes into effect after the timeframes indicated for each waste from the date of the Regulations coming into operation—

Waste Prohibited or Restricted in terms of Disposal	Compliance Timeframe
(a) Waste which, in the conditions of a landfill, is explosive, corrosive, oxidizing (according to SANS 10234 or SANS10228).	Immediate
(b) Waste with a pH value of <6 or >12.	Immediate
(c) Flammable waste with a closed cup flashpoint lower than 61° Celsius.	Immediate
(d) Reactive waste that may react with water, air, acids or components of the waste, or that could generate unacceptable amounts of toxic gases within the landfill.	Immediate
(e) Waste compressed gases (according to SANS 10234 or SANS 10228).	Immediate
(f) Untreated Healthcare Risk Waste (HCRW).	Immediate
(g) (i) POPs pesticides listed under the Stockholm Convention. (ii) Other waste pesticides.	Eight (8) years Four (4) years
(h) Lead acid batteries.	Immediate
(i) Other batteries.	Eight (8) years
(j) Re-usable, recoverable or recyclable used lubricating mineral oils, as well as oil filters, but excluding other oil containing wastes.	Four (4) years

Waste Prohibited or Restricted in terms of Disposal	Compliance Timeframe
(k) Re-usable, recoverable or recyclable used or spent solvents.	Five (5) years
(l) PCB containing wastes (>50 mg/kg or 50 ppm).	Five (5) years
(m) Hazardous Waste Electric and Electronic Equipment (WEEE) – Lamps.	Three (3) years
(n) Hazardous Waste Electric and Electronic Equipment (WEEE) – Other.	Eight (8) years
(o) Waste tyres: Whole.	Immediate
(p) Waste tyres: Quartered.	Five (5) years
(q) Liquid waste– (i) Waste which has an angle of repose of less than 5 degrees, or becomes free-flowing at or below 60 °C or when it is transported, or is not generally capable of being picked up by a spade or shovel; or (ii) Waste with a moisture content of >40% or that liberates moisture under pressure in landfill conditions, and which has not been stabilised by treatment.	Six (6) years
(r) Hazardous waste with a calorific value of: (i) > 25 MJ/kg. (ii) > 20 MJ/kg. (iii) > 10 MJ/kg. (iv) > 6% TOC.	Four (4) years Six (6) years Twelve (12) years Fifteen (15) years
(s) Brine or waste with a high salt content (TDS > 5%), and a leachable concentration for TDS of more than 100 000 mg/l.	Eight (8) years
(t) Disposal of garden waste: (i) 25% diversion from the baseline at a particular landfill of separated garden waste. (ii) 50% diversion from the baseline at a particular landfill of separated garden waste	Five (5) years Ten (10) years
(u) Infectious animal carcasses and animal waste.	Immediate

(2) The following prohibitions and restrictions on activities related to the disposal of waste to landfill comes into effect after the timeframes indicated for each activity from the date of the Regulations taking effect—

Prohibited or Restricted Waste Disposal Activities	Timeframe
(a) Disposal of– (i) Type 1 Waste that has been treated, with waste listed in	Five (5) years

<p>paragraph (2)(a) of Annexure 1 to the Regulations;</p> <p>(ii) Waste classified as hazardous in terms of regulation 4(1), or waste listed in paragraph (2)(b) of Annexure 1 to the Regulations, with waste listed in paragraph (2)(a) of Annexure 1 to the Regulations; and</p> <p>(iii) Type 4 Waste with any waste other than Type 4, unless part of treatment.</p>	<p>Five (5) years</p> <p>Five (5) years</p>
<p>(b) Macro-encapsulation of waste, meaning the isolation (or long-term storage) of waste through containment in containers within a sealed or reinforced cell in a specifically prepared and engineered area within a permitted hazardous waste landfill.</p>	<p>Eight (8) years</p>