

# Waste derived fill (blast furnace slag) specification 2015

Updated March 2017

EPA 1079/17: This specification is approved by the Environment Protection Authority under clause 4(a) of the Environment Protection (Waste to Resources) Policy 2010 and applies to blast furnace slag.

## Title

This specification is to be known as the *Waste Derived Fill (Blast Furnace Slag) Specification*.

## Commencement

This specification came into operation on **21 December 2015** and applies to the use of waste derived fill (blast furnace slag) as a product.

## Legislation

Clause 4 of the *Environment Protection (Waste to Resources) Policy 2010* states that:

For the purposes of the definition of **waste** in section 3(1) of the *Environment Protection Act 1993*, waste or material resulting from the treatment of waste continues to be waste except insofar as—

- a it constitutes a product that meets specifications or standards published from time to time or approved in writing by the Authority; or
- b if no specification or standard published or approved in writing by the Authority applies to such waste or treatment of waste – it constitutes a product that is ready and intended for imminent use without the need for further treatment to prevent any environmental harm that might result from such use.

## Chemical characteristics and use of waste derived fill (blast furnace slag)

Waste derived fill (blast furnace slag) continues to be waste according to the *Environment Protection Act 1993* except in so far as:

- 1 it does not exceed the chemical criteria listed in Table 1
- 2 it is only used in the following applications:
  - a in cementitious mixes such as concrete, and
  - b non-cementitious applications such as engineered fill for earthworks or road making activities in the following:
    - i granular road building material in sealed pavement to construct base, subbase or working platforms in pavements

- ii engineered subgrade
  - iii structural fill
  - iv subsoil drains
  - v quarry rehabilitation.
- 3 It is not used on sensitive land applications nor applied to specially protected areas other than in cementitious mixes.

**Table 1 Chemical criteria**

Waste derived fill (blast furnace slag) chemical criteria		
Chemical substance	Maximum dry weight concentration (mg/kg)	Maximum leachate concentrations in mg/L Method of analysis AS4439.2–1997
Arsenic	20	NA
Barium	300	NA
Beryllium	20	NA
Cadmium	3	NA
Chromium (III)	400	NA
Chromium (VI)	1	NA
Cobalt	170	NA
Copper	60	NA
Lead	300	NA
Manganese	6000	0.1
Mercury	1	NA
Nickel	60	NA
Zinc	200	NA
pH between 7–12		

## Sampling method for the chemical criteria

- 1 Sampling of blast furnace slag must be undertaken in accordance with the method set out in *Australian Standard AS1141: Methods for sampling and testing aggregates: Method 3.1: Sampling—Aggregates*, and
- 2 A minimum of 10 samples must be tested per 10,000-tonne batch by a suitably qualified consultant.

## Test method for the chemical criteria

- 1 Testing of the blast furnace slag must be undertaken by a National Association of Testing Authorities (NATA) accredited laboratory.
- 2 Statistical evaluation using 95% Upper Confidence Limit (UCL) calculations can be used on test results from representative sampling using ProUCL Software where any individual sample exceeds the maximum dry weight concentration as defined in Table 1.

- 3 Leachable concentrations of chemical substances should be measures in accordance with *Australian Standard 4439.2–1997 Wastes, sediments and contaminated soils – Preparation of leachates – Bottle leaching procedures for semi or non-volatile analytes*.

## Records

Generators of blast furnace slag must:

- 1 Record the quantity and destination of all blast furnace slag supplied to its customers and keep those records for 12 months.
- 2 Provide its customers with a written statement of compliance certifying that blast furnace slag complies with the chemical criteria of this specification.

## Definitions

<b>Blast furnace slag</b>	means waste formed when iron ore, a mixture of oxides of iron, silica and alumina, a fuel consisting of coke, natural gas, oxygen and pulverised coal and limestone are fed into a blast furnace during the manufacture of iron for steel production
<b>Cementitious mixes</b>	means blast furnace slag that has been mixed with general purpose cement, lime and other activators for use in bound applications, where the materials must be chemically bound together
<b>Generator</b>	means a person who generates blast furnace slag.
<b>Structural fill</b>	any fill that will be (or maybe), requested to support structures or associated pavements, or for which engineering properties are to be controlled. Sometimes referred to as controlled or engineered fill.
<b>Subgrade</b>	the earth material on which it is proposed to construct a pavement. This is often taken as being to a depth of 300 mm below the level from which the formal pavement is constructed.
<b>Sensitive use</b>	as defined in clause 3 of the Environment Protection Act 1993 and means: <ol style="list-style-type: none"> <li>a use for residential purposes; or</li> <li>b use for a pre-school within the meaning of the Development Regulations 1993; or</li> <li>c use for a primary school; or</li> <li>d use of a kind prescribed by regulation.</li> </ol>
<b>Specially Protected Areas</b>	as defined under section 10A of the Environment Protection Act 1993.

## Disclaimer

This publication is a guide only and does not necessarily provide adequate information in relation to every situation. This publication seeks to explain your possible obligations in a helpful and accessible way. In doing so, however, some detail may not be captured. It is important, therefore, that you seek information from the EPA itself regarding your possible obligations and, where appropriate, that you seek your own legal advice.

## Further information

### Legislation

[Online legislation](#) is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet  
Adelaide Service SA Centre  
108 North Terrace  
Adelaide SA 5000

Telephone: 13 23 24  
Facsimile: (08) 8204 1909  
Website: <[shop.service.sa.gov.au](http://shop.service.sa.gov.au)>  
Email: <[ServiceSAcustomerservice@sa.gov.au](mailto:ServiceSAcustomerservice@sa.gov.au)>

### General information

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