



# **Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014**

## **The processed electric arc welding slag order 2014**

### **Introduction**

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of processed electric arc welding slag to which 'the processed electric arc welding slag exemption 2014' applies. The requirements in this order apply in relation to the supply of processed electric arc welding slag for application to land in line with the uses described in 'the processed electric arc welding slag exemption 2014'.

### **1. Waste to which this order applies**

- 1.1. This order applies to processed electric arc welding slag which is electric arc welding slag that has been blended with recovered aggregate. In this order, electric arc welding slag means material recovered from the electric arc welding of iron and steel. Electric arc welding slag is generally glassy in nature but can include the unused material that was to be incorporated around the electrode during manufacture.

### **2. Persons to whom this order applies**

- 2.1. The requirements in this order apply, as relevant, to any person who supplies electric arc welding slag and processed electric arc welding slag that has been generated, processed or recovered by the person.
- 2.2. This order does not apply to the supply of processed electric arc welding slag to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

### **3. Duration**

- 3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

### **4. Generator requirements**

The EPA imposes the following requirements on any generator who supplies electric arc welding slag to a processor.

- 4.1. The generator must ensure that the electric arc welding slag complies with the following chemical and physical criteria:
  - 4.1.1. a pH range of 9 to 11,
  - 4.1.2. is insoluble (Electrical Conductivity of 1:5 solid:water mixture <2 dS/m),
  - 4.1.3. total Cadmium concentrations < 1 mg/Kg 'dry weight',
  - 4.1.4. total Mercury concentrations < 1 mg/Kg 'dry weight', and
  - 4.1.5. total Manganese concentrations < 10%.

### **Sampling requirements**

- 4.2. On or before supplying electric arc welding slag to a processor, the generator must:
  - 4.2.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the electric arc welding slag.
  - 4.2.2. Undertake sampling and testing of the electric arc welding slag as required under clauses 4.2 and 4.3 below. The sampling must be carried out in accordance with the written sampling plan and Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent).
- 4.3. Where the electric arc welding slag is generated as part of a continuous process, the generator must undertake routine sampling of the electric arc welding slag by collecting 5 composite samples from every 20 tonnes (or part thereof) processed; and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of routine sampling.
- 4.4. Where the electric arc welding slag is not generated as part of a continuous process, the generator must undertake one-off sampling of a batch, truckload or stockpile of the electric arc welding slag, by collecting 10 composite samples from every batch generated and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1.

### **Chemical and other material requirements**

- 4.5. The generator must not supply electric arc welding slag to a processor if, in relation to any of the chemical and other attributes of the electric arc welding slag:
  - 4.5.1. The concentration or other value of that attribute of any sample collected and tested as part of the routine or one-off sampling, of the electric arc welding slag exceeds the absolute maximum concentration or other value listed in Column 3 of Table 1, or
  - 4.5.2. The average concentration or other value of that attribute from the routine or one-off sampling of the electric arc welding slag (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1.
- 4.6. The absolute maximum concentration or other value of that attribute in any electric arc welding slag supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 1.

**Table 1**

| <b>Column 1</b>                       | <b>Column 2</b>   | <b>Column 3</b>  |
|---------------------------------------|---|--|
| <b>Chemicals and other attributes</b> | <b>Maximum average concentration for routine testing</b><br>(mg/kg 'dry weight' unless otherwise specified) | <b>Absolute maximum concentration</b><br>(mg/kg 'dry weight' unless otherwise specified) |
| 1. Lead                               | 40  | 80   |
| 2. Barium                             | 1500  | 3000   |
| 3. Chromium (total)                   | 150   | 300  |
| 4. Cobalt                             | 30  | 60   |
| 5. Copper                             | 100   | 200  |
| 6. Nickel                             | 200   | 400  |
| 7. Silver                             | 100   | 200  |
| 8. Zinc                               | 80  | 160  |
| 9. TCLP Manganese                     | 300 mg/L  | 600 mg/L   |
| 10. TCLP Nickel                       | 0.5 mg/L  | 1 mg/L   |

### Test methods

- 4.7. The generator must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.
- 4.8. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the electric arc welding slag it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.
- 4.8.1. Test methods for measuring chemicals 1 - 8:
- 4.8.1.1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils.
- 4.8.1.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of stated maximum average concentration in Table 1, Column 2 (i.e. 4 mg/kg dry weight for lead).
- 4.8.1.3. Report as mg/kg dry weight.
- 4.8.2. Test method for measuring attributes 9 and 10:
- 4.8.2.1. USEPA SW-846 Method 1311 Toxicity characteristic leaching procedure (or an equivalent analytical method).
- 4.8.2.2. Report as mg/L.

### Notification

- 4.9. On or before each transaction, the generator must provide the following to each processor to whom the generator supplies the electric arc welding slag:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
  - a copy of the processed electric arc welding slag exemption, or a link to

- the EPA website where the processed electric arc welding slag exemption can be found; and
- a copy of the processed electric arc welding slag order, or a link to the EPA website where the processed electric arc welding slag order can be found.

### **Record keeping and reporting**

- 4.10. The generator must keep a written record of the following for a period of six years:
- the sampling plan required to be prepared under clause 4.1.1;
  - all routine and/or one-off sampling results in relation to the electric arc welding slag supplied;
  - the quantity of any electric arc welding slag supplied; and
  - the name and address of each person to whom the generator supplied the electric arc welding slag.
- 4.11. The generator must provide, on request, the most recent sampling (whether routine or one-off or both) results for the electric arc welding slag supplied to any processor of the electric arc welding slag.
- 4.12. The generator must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clause 4.1 to 4.8.

## **5. Processor requirements**

The EPA imposes the following requirements on any processor who supplies processed electric arc welding slag.

- 5.1. The processor must mix, blend or otherwise incorporate the electric arc welding slag received from the generator at a rate less than 5% by weight with recovered aggregate.

### **Notification**

- 5.2. On or before each transaction, the processor must provide the following to each person to whom the processor supplies the processed electric arc welding slag:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
  - a copy of the processed electric arc welding slag exemption, or a link to the EPA website where the processed electric arc welding slag exemption can be found; and
  - a copy of the processed electric arc welding slag order, or a link to the EPA website where the processed electric arc welding slag order can be found.

### **Record keeping and reporting**

- 5.3. The processor must keep a written record of the following for a period of six years:
- the quantity of any electric arc welding slag received from the generator and the generator's name and address;
  - the quantity of any processed electric arc welding slag supplied; and
  - the name and address of each person to whom the processor supplied the processed electric arc welding slag.

- 5.4. The processor must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for electric arc welding slag supplied to any consumer of the electric arc welding slag.

## 6. Definitions

In this order:

**application or apply to land** means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

**composite sample** means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

**consumer** means a person who applies, or intends to apply, processed electric arc welding slag to land.

**continuous process** means a process that produces electric arc welding slag on an ongoing basis.

**generator** means a person who generates, supplies, causes, or permits the supply of electric arc welding slag to a processor.

**processor** means a person who processes, mixes, blends, or otherwise incorporates electric arc welding slag and recovered aggregate to produce processed electric arc welding slag for supply to a consumer.

**recovered aggregate** means material that meets the chemical and other material requirements for recovered aggregate which are required on or before supply of recovered aggregate under 'The recovered aggregate order 2014'

**transaction** means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of electric arc welding slag that is not repeated,
- In the case where the supplier has an arrangement with the recipient for more than one supply of electric arc welding slag the first supply of electric arc welding slag as required under the arrangement.

**Manager Waste Strategy and Innovation**

**Environment Protection Authority**

**(by delegation)**

## Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor and to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au)

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies electric arc welding slag should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of electric arc welding slag remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet. Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.