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

The James Hardie cement fibre board waste order 2021

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 James Hardie cement fibre board waste to which 'the James Hardie cement fibre board waste exemption 2021' applies. The requirements in this order apply in relation to the supply of James Hardie cement fibre board waste for application to land as a road making material, or for use in connection with a process of thermal treatment as an alternative input into the manufacture of building products.

1. Waste to which this order applies

1.1. This order applies to James Hardie cement fibre board waste. In this order, James Hardie cement fibre board waste means either dust or larger pieces of material comprising of sand, cement and cellulose derived from the manufacture of cement fibre board by James Hardie Australia Pty Ltd.

James Hardie cement fibre board waste is blended with potable water and/or wash water for the purpose of dust suppression. In this order, wash water means residual sealer wash generated during cement fibre board production that cannot be recirculated through the closed loop water treatment system at James Hardie Australia, 10 Colquhoun Street Rosehill, NSW 2142 (Environment Protection Licence No. 602).

James Hardie cement fibre board waste may be blended with virgin quarried materials, and/or with other resource recovery wastes permitted for land application as a road making material ('blended James Hardie cement fibre board waste').

2. Persons to whom this order applies

2.1. The requirements in this order apply as relevant to:

- James Hardie Australia Pty Ltd, 10 Colquhoun Street Rosehill, NSW 2142 (Environment Protection Licence No. 602); and/or
- Boral Recycling Pty Ltd operating from the Prospect Quarry, 38 Widemere Road, Wetherill Park, NSW, 2164 (Environment Protection Licence No. 11815).

2.2. This order does not apply to the supply of James Hardie cement fibre board waste to a consumer for land application purposes or for use in connection with a process of thermal treatment at a premises for which the consumer holds a licence under the *Protection of the Environment Operations Act 1997* (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 17 March 2021 and is valid until 21 March 2022 unless revoked by the EPA at an earlier date.

4. Generator requirements for wash water

The EPA imposes the following requirements regarding wash water on any generator who supplies James Hardie cement fibre board waste to a processor.

Sampling requirements

4.1. On or before blending the wash water with the James Hardie cement fibre board waste, the generator must:

4.1..1. Prepare a written sampling plan that includes a description of sample preparation and storage procedures for the wash water.

4.1..2. Undertake sampling and testing of the wash water as required under clause 4.2 below. Representative sampling must be carried out in accordance with best practice techniques, and in a manner that minimises cross contamination and preserves sample integrity.

4.2. The generator must undertake the following sampling of the wash water:

4.2..1. Characterisation of the wash water by collecting 10 representative samples and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each sample must be taken from a batch that has not been previously sampled for the purposes of characterisation, by collecting samples on different days or at a regular sampling frequency (e.g. monthly), as deemed appropriate. Characterisation must be conducted for wash water generated and processed during each 12-month period following the commencement of the continuous process; and

4.2..2. Routine sampling of the wash water by collecting at least one representative sample per month, and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1, other than those listed as 'not required' in Column 3. Each composite sample must be taken from a batch that has not been previously sampled for the purposes of routine sampling, by undertaking sampling at a monthly frequency. However, if characterisation sampling occurs at the same frequency as routine sampling, any sample collected and tested for the purposes of characterisation under clause 4.2.1 may be treated as a sample collected and tested for the purposes of routine sampling under clause 4.2.2.

Chemical and other material requirements

4.3. The generator must not blend the wash water with the James Hardie cement fibre board waste if, in relation to any of the chemical and other attributes of the wash water:

4.3..1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation or the routine sampling of the wash water exceeds the absolute maximum concentration or other value listed in Column 4 of Table 1, or

4.3..2. The average concentration or other value of that attribute from the characterisation of the wash water (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1, or

4.3..3. The average concentration or other value of that attribute from the routine sampling of the wash water (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 3 of Table 1.

4.4. The absolute maximum concentration or other value of that attribute in any wash water blended and supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

Table 1

Column 1	Column 2	Column 3	Column 4
Chemicals and other attributes	**Maximum average concentration for characterisation** (mg/L unless otherwise specified)	**Maximum average concentration for routine testing** (mg/L unless otherwise specified)	**Absolute maximum concentration** (mg/L unless otherwise specified)
1. Mercury	0.0001	Not required	0.01
2. Cadmium	0.0005	Not required	0.05
3. Lead	0.05	0.05	0.5
4. Arsenic	0.005	Not required	0.5
5. Chromium	0.05	0.05	0.5
6. Copper	0.5	0.5	1
7. Molybdenum	0.05	0.05	0.5
8. Nickel	0.01	Not required	0.05
9. Selenium	0.05	Not required	0.5
10. Zinc	10	10	75
11. Total Chlorine	5	Not required	10
12. Total Fluoride	0.5	Not required	5
13. Electrical Conductivity	0.8 dS/m	0.8 dS/m	1.5 dS/m
14. pH*	7 to 10	7 to 10	7 to 12

*Note: The ranges given for pH are for the minimum and maximum acceptable pH values in the wash water.

Test methods

4.5. 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.

4.6. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) for the wash water sampled are tested in accordance with the test methods specified below or other equivalent analytical methods. Where a test method or an equivalent analytical method is used, the limit of reporting (LOR) must be less than 20% of the stated maximum average concentration in Table 1, Column 2. Adopted methodologies should achieve limited interferences from the sample matrix.

- Test method for measuring the mercury concentration:

  4.6..1. Analyse using USEPA Method 6010C, or an equivalent analytical method.

  4.6..2. Report as mg/L.

- Test methods for measuring chemicals 2 - 10:

4.6..1. Sample preparation by digesting using USEPA SW-846 Method 3015A Microwave assisted acid digestion of aqueous samples and extracts (or an equivalent sample preparation method).
4.6..2. Analyse using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method.
4.6..3. Report as mg/L.

- Test methods for measuring total chlorine:
  4.6..1. Analyse using APHA (2012) section 4500-Cl (or an equivalent analytical method).
  4.6..2. Report as mg/L.
- Test methods for measuring total fluoride:
  4.6..1. Analyse using APHA (2012) section 4500-F^- (or an equivalent analytical method).
  4.6..2. Report as mg/L.
- Test methods for measuring the electrical conductivity:
  4.6..1. Analyse using APHA (2012) section 2510 (or an equivalent analytical method).
  4.6..2. Report electrical conductivity in deciSiemens per metre (dS/m).
- Test method for measuring pH:
  4.6..1. Analyse using APHA (2012) section 4500-H^+ (or an equivalent analytical method).
  4.6..2. Report as pH.

Record keeping and reporting

4.7. 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 characterisation and routine sampling results in relation to any wash water that was blended with cement fibre board and supplied to a processor or consumer;
- the volume of wash water that was blended with cement fibre board.

4.8. 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 4.6.

5. Generator requirements for James Hardie cement fibre board waste

The EPA imposes the following requirements on any generator who supplies James Hardie cement fibre board waste.

Sampling requirements for James Hardie cement fibre board waste

5.1. On or before supplying James Hardie cement fibre board waste, the generator must:

5.1..1. Prepare a written sampling plan that includes a description of sample preparation and storage procedures for the James Hardie cement fibre board waste.

5.1..2. Undertake sampling and testing of the James Hardie cement fibre board waste as required under clauses 5.2 below. The sampling must be carried out in accordance with the written sampling plan required by clause 5.1.1 and Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling –

Aggregates (or equivalent).

5.2. For each site where the James Hardie cement fibre board waste is generated, the generator must undertake the following sampling:

5.2..1. Characterisation of the James Hardie cement fibre board waste by collecting 20 composite samples of the 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 characterisation. Characterisation must be conducted for James Hardie cement fibre board waste generated and processed during each 12-month period following the commencement of the continuous process; and

5.2..2. Routine sampling of the James Hardie cement fibre board waste by collecting either 5 composite samples from every 10,000 tonnes (or part thereof) processed or 5 composite samples every 3 months (whichever is the lesser); 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. However, if characterisation sampling occurs at the same frequency as routine sampling, any sample collected and tested for the purposes of characterisation under clause 5.2.1 may be treated as a sample collected and tested for the purposes of routine sampling under clause 5.2.2.

Chemical and other material requirements

5.3. The generator must not supply James Hardie cement fibre board waste to any person if, in relation to any of the chemical and other attributes of the James Hardie cement fibre board waste:

5.3..1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation or the routine or one-off sampling of the James Hardie cement fibre board waste exceeds the absolute maximum concentration or other value listed in Column 3 of Table 2, or

5.3..2. The average concentration or other value of that attribute from the characterisation or one-off sampling of the James Hardie cement fibre board waste (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 2, or

5.3..3. The average concentration or other value of that attribute from the routine sampling of the James Hardie cement fibre board waste (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 2.

5.4. The absolute maximum concentration or other value of that attribute in any James Hardie cement fibre board waste supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 2.

Table 2

Column 1	Column 2	Column 3
Chemicals and other attributes	**Maximum average concentration** (mg/kg 'dry weight' unless otherwise specified)	**Absolute maximum concentration** (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	1

2. Cadmium	0.5	1
3. Lead	15	25
4. Arsenic	10	20
5. Chromium (total)	50	100
6. Copper	60	150
7. Molybdenum	5	10
8. Nickel	30	60
9. Selenium	5	10
10. Zinc	200	350
11. Total Chlorine	0.05%	0.1%
12. Total Fluorine	200	400
13. Moisture content	40%	50%
14. Total Organic Carbon	5%	10%
15. Electrical Conductivity	1.5 dS/cm	3 dS/cm
16. pH *	8 to 11.5	7 to 12

*Note: The ranges given for pH are for the minimum and maximum acceptable pH values in the James Hardie cement fibre board waste.

Test methods

5.5. 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.

5.6. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 2) in the James Hardie cement fibre board waste 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.

- Test method for measuring the mercury concentration:
  - 5.6..1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 10% of the stated maximum average concentration in Table 2, Column 2 (i.e. < 0.1 mg/kg dry weight).
  - 5.6..2. Report as mg/kg dry weight.

- Test methods for measuring chemicals 2 - 10:
  - 5.6..1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils.
  - 5.6..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 2, Column 2 (i.e. 1.5 mg/kg dry weight for lead).
  - 5.6..3. Report as mg/kg dry weight.

- Test methods for measuring the attributes 11 - 13:
  - 5.6..1. Australian Standard 1038 Coal and coke (or an equivalent analytical method).
  - 5.6..2. Report total chlorine as %.

5.6..3. Report total fluorine as mg/kg dry weight fluorine.
5.6..4. Report moisture content as %.

- Test methods for measuring the total organic carbon content:
  5.6..1. Method 105 (Organic Carbon) and using a 2g sample in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
  5.6..2. Reporting as % total organic carbon.

- Test methods for measuring the electrical conductivity and pH:
  5.6..1. Sample preparation by mixing 1 part James Hardie cement fibre board waste with 5 parts distilled water.
  5.6..2. Analysis using Method 103 (pH) and 104 (Electrical Conductivity) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
  5.6..3. Report electrical conductivity in deciSiemens per metre (dS/m).

Notification

5.7. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the James Hardie cement fibre board waste:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of 'the James Hardie cement fibre board waste exemption 2021' or a link to a company website where the exemption can be found; and
- a copy of 'the James Hardie cement fibre board waste order 2021' or a link to a company website where the order can be found.

Record keeping and reporting

5.8. 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 5.1.1;
- all characterisation, routine and/or one-off sampling results in relation to the James Hardie cement fibre board waste supplied;
- the quantity of the James Hardie cement fibre board waste supplied; and
- the name and address of each person to whom the generator supplied the James Hardie cement fibre board waste.

5.9. The generator must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for James Hardie cement fibre board waste supplied to any processor or consumer of the James Hardie cement fibre board waste.

5.10. The generator must notify the EPA (email to info@epa.nsw.gov.au) within seven days of becoming aware that it has not complied with any requirement in clause 5.1 to 5.6.

6. Processor requirements for blended James Hardie cement fibre board waste

The EPA imposes the following requirements on any processor who supplies blended James Hardie cement fibre board waste to a consumer.

6.1. The processor may only blend James Hardie cement fibre board waste with virgin quarried materials, and/or with materials that are the subject of a Resource Recovery Order and Resource Recovery Exemption, being that the material:

- complies with all the requirements under a Resource Recovery Order; and
- is permitted for use in road making applications under the associated Resource Recovery Exemption.

Notification

6.2. On or before each transaction, the processor must provide the following to the consumer:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of 'the James Hardie cement fibre board waste exemption 2021' or a link to a company website where the exemption can be found; and
- a copy of 'the James Hardie cement fibre board waste order 2021' or a link to a company website where the order can be found.

Record keeping and reporting

6.3. The processor must keep a written record of the quantity of the James Hardie cement fibre board waste supplied for a period of six years:

7. 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, James Hardie cement fibre board waste to land; and
- a person who uses, or intends to use, James Hardie cement fibre board waste in connection with a process involving thermal treatment.

continuous process means a process that produces James Hardie cement fibre board waste on an ongoing basis.

generator means a person who generates James Hardie cement fibre board waste for supply to a processor. The generator in this order in James Hardie Australia Pty Ltd.

potable water means water that meets the requirements of the Australian Drinking Water Guidelines (National Health and Medical Research Council), and that does not meet the definition of waste as it is defined by the POEO Act.

processor means a person who processes, mixes, blends, or otherwise incorporates James Hardie cement fibre board waste with virgin quarried material, and/or with other

resource recovery wastes that are permitted for land application as road making materials, for supply to a consumer. The processor is Boral Recycling Pty Ltd.

resource recovery waste means waste to which a resource recovery exemption applies.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of James Hardie cement fibre board waste or blended James Hardie cement fibre board waste that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of James Hardie cement fibre board waste the first supply of James Hardie cement fibre board waste or blended James Hardie cement fibre board waste as required under the arrangement.

Wash water means residual sealer wash generated during cement fibre board production that cannot be recirculated through the closed loop water treatment system at James Hardie Australia, 10 Colquhoun Street Rosehill, NSW 2142 (Environment Protection Licence No. 602).

17/3/21

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Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order.

In 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 James Hardie cement fibre board waste 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 James Hardie cement fibre board waste 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.