

# **Code of Practice on Sampling and Reporting at Materials Recovery Facilities**

**March 2015**

# Code of Practice on Sampling and Reporting at Materials Recovery Facilities

## Introduction

1. This Code of Practice sets out a number of requirements with regard to the sampling and reporting of materials received by Materials Recovery Facilities. If you are uncertain about what your facility needs to do to comply with the Code, you should contact SEPA.

2. The requirements set out in this statutory Code of Practice apply to anyone holding a Waste Management Licence or Pollution Prevention Control (PPC) Permit for the operation of a Materials Recovery Facility (MRF) (a “MRF licence or permit holder”) where that MRF receives or is likely to receive more than 1000 tonnes of mixed dry recyclable waste in any reporting year (1 April to 31 March the following year). The Waste (Recyclate Quality) (Scotland) Regulations 2015 amend the Waste Management Licensing (Scotland) Regulations 2011 and the Pollution Prevention and Control (Scotland) Regulations 2012 to make compliance with this Code of Practice a condition of any waste management licence or PPC permit (which authorise treatment of such waste) that is granted or varied by SEPA. Accordingly, MRF licence or permit holders must ensure they comply with the requirements of this Code otherwise they may be deemed to be non-compliant with their licence or permit conditions.

3. The Code has been prepared under section 34(7) of the Environmental Protection Act 1990 (as amended). The Code aims to provide guidance to the MRF licence or permit holders on the discharge of certain duties, specifically the duties in section 34(2L) (b) of that Act. All those subject to the conditions of the Code should be aware that section 34(10) of the Environmental Protection Act 1990 makes provision for any Code issued under section 34(7) to be admissible as evidence in any legal proceedings, for example in determining whether MRF licence or permit holders have failed to comply with the terms of the Code.

4. In addition, guidance will be available from Zero Waste Scotland and the Scottish Environment Protection Agency (SEPA) entitled - *‘Materials Recovery Facilities – Testing and Reporting Guidance’*. This is intended to help MRF licence or permit holders to design and carry out their material testing and reporting procedures.

5. We have included a section “*Definitions used in this Code of Practice*”, on pages 10, 11 and 12, which defines the meaning of key terms used throughout this Code. MRF licence or permit holders unsure about the meaning of any terms used should contact SEPA.

## Benefits

6. The benefits of this Code of Practice are:

- Improvement of transparency on material quality in the supply chain, through provision of accurate information on contamination levels, and variances in these levels, to the market and to customers;

- Provision of information to demonstrate compliance with the requirements of the Waste Framework Directive to deliver high quality recycling;
- The creation of conditions to improve the contracting environment, for MRF licence or permit holders and for all businesses involved in the material supply chain;
- The creation of a regime that encourages innovation in the operation of MRFs and supply chain dynamics; and
- Enabling SEPA to ensure consistency of approach and practice in MRF material sampling and quality control, irrespective of the technology available to the MRF licence or permit holder.

7. Regular testing will allow any quality issues linked to specific material suppliers to be identified, and assess the effectiveness, or otherwise, of the sorting process to produce clean, high quality material that can then go for reprocessing. The test data to be reported quarterly will also help to assess whether material arising from co-mingled collections and sorted at MRFs is compliant with the provisions of the Waste (Scotland) Regulations 2012. Those regulations include a derogation whereby if waste is not collected separately, it should be managed in such a manner as will ensure that the amount of material recycled from the waste is not significantly less, and the quality of the material recycled is not significantly lower, than would be the case were there no departure from the duties.

### **Facilities in scope**

8. MRF licence or permit holders receiving, or likely to receive, 1000 tonnes or more of mixed dry recyclable waste (or separately collected dry recyclable waste) in any reporting year are required to notify SEPA immediately that they are in scope. The requirement to sample materials and report test data applies to MRF licence or permit holders that receive more than 1000 tonnes of mixed dry recyclable waste or separately collected dry recyclable waste in any reporting year. SEPA should be advised if circumstances change such that the facility is no longer in scope and SEPA's agreement to the cessation of sampling must be obtained prior to the cessation of sampling

9. Where a MRF has not previously received more than 1000 tonnes of mixed dry recyclable waste or separately collected dry recyclable waste in any reporting year and, during the course of a reporting year, proceeds to receive more than 1000 tonnes of mixed dry recyclable waste or separately collected dry recyclable waste for the first time, the MRF licence or permit holder must notify SEPA immediately that they are in scope. At the time of notification, the MRF licence or permit holder must seek agreement from SEPA on a timescale for commencement of sampling and reporting. However, sampling must commence no later than the second reporting period after the date on which the cumulative total of mixed dry recyclable waste received in that reporting year reaches 1000 tonnes

10. Waste transfer stations (sites used for temporary deposition of waste) are not within the scope of this Code.

### **Reporting periods**

11. MRF licence or permit holders that fall within the scope of the Code must report the results of material sampling to SEPA every 3 months in a format prescribed by SEPA. Under the Code the first reporting period will start on 1<sup>st</sup> October 2015, and testing should commence from this date. In any year, there will be four reporting periods. Reports must be submitted to SEPA electronically within one month of the end of the reporting period as set out below:

- 1<sup>st</sup> April to 30<sup>th</sup> June with reports to SEPA due by 31<sup>st</sup> July.
- 1<sup>st</sup> July to 30<sup>th</sup> September with reports to SEPA due by 31<sup>st</sup> October.
- 1<sup>st</sup> October to 31<sup>st</sup> December with reports to SEPA due by 31<sup>st</sup> January.
- 1<sup>st</sup> January to 31<sup>st</sup> March with reports to SEPA due by 30<sup>th</sup> April.

### **Requirements for sampling input material**

12. Where a MRF licence or permit holder has rejected a load received at the facility, in the case of each rejected load, the reason for rejection must be recorded, along with the weight, the location of where that load was then sent, the identity of the supplier and, where appropriate, the buyer. MRF licence or permit holders are not required to sample rejected loads to establish their composition.

13. The sampling requirements are as follows with regards to input materials. MRF licence or permit holders must:

- a) Measure the total weight in tonnes of mixed dry recyclable waste received at the facility, from each named supplier, during each reporting period.
- b) Take samples of the mixed dry recyclable waste received at the facility, from each named supplier, during each reporting period.
- c) Measure the total weight in tonnes of separately collected dry recyclable waste received at the facility for the purposes of sorting, from each named supplier, during each reporting period.
- d) Take samples of separately collected dry recyclable waste received at the facility for the purposes of sorting, from each named supplier, during each reporting period;
- e) Sort samples into target, non-target and non-recyclable materials, and measure weight and the composition of each sample.

14. Dry recyclable waste received at the facility that is not sorted at the receiving facility and is instead transferred to another MRF for the purpose of separating it

need not be sampled, and the recording requirements set out in paragraph 12 for rejected loads must be applied.

*Frequency:*

15. Prior to 1 October 2016, one sample must be taken for every 160 tonnes of mixed dry recyclable waste or separately collected dry recyclable waste received at the MRF from each supplier. The frequency will change to every 125 tonnes from 1<sup>st</sup> October 2016.

*Weight*

16. The average weight per sample must be 60 kilograms or more. A sample may be collected in several parts, contemporaneously, none of which may weigh less than 20 kg.

*Measurement*

17. The composition of a sample is determined by reference to:

- The types of target material, non-target material and non-recyclable material that is contained in the sample; and
- The weight in kilograms of each type of target material, non-target material and non-recyclable material that is so identified.

18. Target material that is identified in a sample must, *as a minimum*, be separately identified by reference to the following types:

- Glass;
- Paper
- Cardboard
- Metal
- Plastic

19. If the sample contains material fragments, they are deemed to comprise the proportions of target materials, non-target materials and non-recyclable materials already identified as making up the other contents of that sample. Recyclable fragments that are target materials should be recorded as target materials. Recyclable fragments that are non-target materials should be recorded as non-target materials. Non-recyclable fragments should be recorded as non-recyclable materials.

## Requirements for sampling output material

20. The sampling requirements are as follows with regards to output materials. MRF licence or permit holders must:

- a) Take samples of the output material separated at that facility in a reporting period, and measure the composition of those samples, by identifying the materials comprising that sample, by reference to:
  - The type of target material, non-target material and non-recyclable material that is contained in the sample; and
  - The weight in kilograms of each type of target material, non-target material and non-recyclable material that is so identified.
- b) Measure the total weight in tonnes of target, non-target and non-recyclable that leaves the facility in each reporting period.

21. The output material specified above must, *as a minimum*, be identified by reference to the grade of glass, paper, cardboard, metal or plastic material making up each batch of output material. The grade of a material means a description of that kind of material by reference to its particular material specification, as set out in Table 1.

22. Prior to 1 October 2016, the samples must be taken at a minimum frequency of once per the amount in tonnes of target material, as shown below:

- Glass: 50 tonnes
- Paper: 80 tonnes
- Cardboard: 80 tonnes
- Metal: 20 tonnes
- Plastic: 20 tonnes

23. For any sample taken on or after 1<sup>st</sup> October 2016, the samples must be taken at a minimum frequency of once per the amount in tonnes of target material, as shown below:

- Glass: 50 tonnes
- Paper: 60 tonnes
- Cardboard: 60 tonnes
- Metal: 20 tonnes

- Plastic: 15 tonnes

24. The minimum total weight of any sample of target material taken is:

- Glass: 10 kg
- Paper: 50 kg
- Cardboard: 50 kg
- Metal: 10 kg
- Plastic: 20 kg

25. For paper and cardboard, the total sample can be obtained in smaller parts of not less than 20 kg, collected contemporaneously.

26. If the sample taken through these processes contains material fragments, they are deemed to comprise the proportions of target materials, non-target materials and non-recyclable materials already identified as making up the other contents of that sample. Target fragments should be recorded as target material; non-target fragments should be recorded as non-target material; non-recyclable fragments should be recorded as non-recyclable material.

### **Recording and Reporting requirements**

27. Input Material: For each supplier, in any given reporting period, MRF licence or permit holders must record and report:

- a) The total weight in tonnes of input material received at the facility, from each named supplier, during each reporting period.
- b) For rejected loads and materials transferred onwards for sorting at another facility in accordance with paragraph 14, the total weight in tonnes, the identity of the supplier and, where appropriate, the buyer, date material rejected / transferred, reason for rejection / transfer and where the rejected / transferred material is sent.
- c) The weight and composition of each input material sample taken at the MRF from each named supplier during a reporting period, and the total number of samples taken and the total weight in kilograms of all samples taken.
- d) The mean percentage composition levels of target glass, metal, paper, cardboard and plastic in input material received, based on all applicable sample results.
- e) The mean percentage composition levels of target material, non-target material and non-recyclable material received, based on all applicable sample results.

- f) The standard deviation of the mean percentage composition level of target material, based on all applicable sample results.

28. The above requirements are in addition to the next and end destination reporting requirements in paragraphs 32 and 33

29. Output material: In any given reporting period, MRF licence or permit holders must record and report:

- a) The weight and composition of each output material sample taken at the MRF, by reference to the type of target, non-target and non-recyclable material that is contained in the sample, and the total number of samples taken for each output material, and the total weight in kilograms of all samples taken for each output material.
- b) The mean percentage composition levels of all of the samples taken for output material by reference to the grades of glass, metal, paper, cardboard and plastic identified within those samples.
- c) The mean percentage composition levels of target materials, non-target materials and non-recyclable materials in the output materials, based on all of the applicable sample results.
- d) The standard deviation of the target materials for each output material sample tested.
- e) The total weight in tonnes of output material by reference to the type of target, non-target and non-recyclable material that leaves the MRF in each reporting period.
- f) The total weight in tonnes of mixed dry recyclable waste that leaves the MRF for sorting at another MRF during a reporting period and where it is sent.

30. SEPA will supply MRF licence or permit holders with an electronic document to capture and assist with calculation of all relevant information.

31. The above requirements are in addition to the next and end destination reporting requirements in paragraphs 32 and 33

**Next and end destination recording and reporting:**

32. For each type of material leaving the facility in a given reporting period, MRF licence or permit holders must record and report:

- The end destination or, where this is not available, the next destination for the materials leaving the facility (including the relevant authorisation/permit/licence numbers, and where appropriate export destination details).



- The use to which the material will be put and/or the treatment to which the material will be subjected at the end destination or, where this is not available, the next destination.
- The location (country, region, city) to which the materials are to be sent.

33. **All information collected by SEPA pursuant to this reporting requirement will be treated as confidential**, in keeping with its commercially sensitive nature, subject to being shared with Scottish Government and Zero Waste Scotland. Where this information is shared with the Scottish Government and Zero Waste Scotland, it will continue to be treated as commercially confidential.

### Record Keeping

34. All information obtained and recorded under the “Recording and Reporting Requirements” set out in this Code of Practice must be kept for a minimum of four years from the date it was recorded and made available to SEPA upon request.

### Materials to be sampled

35. Detailed advice on material sampling is available in ‘*Materials Recovery Facilities – Testing and Reporting Guidance*’, copies of which can be obtained from Zero Waste Scotland.

36. Table 1 presents typical grades relevant for most MRF output material. The table is not exhaustive, but represents the minimum range of grades of output material against which samples should be recorded.

**Table 1: Typical grades for Output Materials**

<b>Card and Paper Grades</b>
Cardboard
Newspapers and magazines
Mixed paper
<b>Plastic Grades</b>
High Density Polyethylene (HDPE) bottles
Natural HDPE bottles
Coloured HDPE bottles
Polyethylene Terephthalate (PET) bottles
Clear PET bottles
Coloured PET bottles
Polypropylene (PP)
Mixed plastic bottles
Pots, tubs and trays (PTT)

Mixed rigid plastic
Mixed plastic
Plastic film
<b>Metal Grades</b>
Aluminium
Steel
<b>Glass Grades</b>
Mixed coloured glass (container / glass fibre)
Mixed coloured glass (aggregate <sup>1</sup> / glass sand)
Green glass
Clear (flint) glass
Brown (amber) glass

37. For all output material, listed in Table 1 or otherwise, MRF licence or permit holders must define which fractions are target material, non-target material and non-recyclable material based on the purchase specification they have agreed with a reprocessor, or company acting on their behalf. Purchase specifications should be kept on record to support decisions made on the categorisation of the different material fractions. The grade of each material should also be recorded within the relevant forms used for sampling and testing materials. Common examples of the material types that fall within each grade can be found within “*Materials Recovery Facilities – Testing and Reporting Guidance*” which also provides more detailed advice on material sampling.

### **Enforcement**

38. Compliance with the requirements of this Code will be a condition of a relevant Waste Management Licence or PPC permit and will be enforced by SEPA. In enforcing the Code’s sampling and reporting requirements, SEPA will undertake unannounced inspections of MRFs in order to assess the quality and accuracy of testing and reporting procedures SEPA’s on-site inspections will include mapping and understanding MRF processing capabilities relative to inputs and outputs from the MRF, sampling of baled outputs to independently assess bale quality against MRF licence or permit holder reports, and assessment of whether staff are adequately trained and whether appropriate equipment and facilities are available on site to enable testing to be undertaken in line with this Code of Practice.

39. SEPA may undertake additional inspections of MRFs based upon intelligence, outcomes of previous inspections or quarterly data returns. The targeting of site inspections will change once the sampling and reporting regime has become established to focus more on poor performing sites.

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<sup>1</sup> While status as recycle remains

40. Inspections may also check related obligations are being properly implemented, for example, related to Duty of Care and Transfrontier Shipments of wastes.

### **Definitions used in this Code of Practice**

41. The following definitions are used in this Code of Practice. The singular includes the plural and the plural the singular.

**Buyer:** A person or organisation who has arranged to purchase output material from the MRF licence or permit holder. This includes but is not limited to end users and intermediaries.

**Co-mingled:** The collection of two or more target materials in a single receptacle for subsequent sorting into separate streams at a materials recovery facility.

**Input Material:** Mixed dry recyclable waste received at the facility for sorting and separately collected dry recyclable waste received at the facility for sorting (e.g. to remove contamination).

**Material Fragments:** Target, non-target and non-recyclable material that is made up of:

- a) In the largest proportion of glass material, fragments of that material that measure less than 13 millimetres along their longest dimension; and
- b) In relation to all other types of output material and for mixed dry recyclable waste, fragments of material measuring less than 55 millimetres along their longest dimension.

**Materials Recovery Facility:** A facility where dry recyclable waste is treated in order to separate that waste into a dry waste stream or streams.

**Mean (also known as arithmetic mean):** The sum of a group of figures divided by the number of figures in the group.

**Mixed dry recyclable waste:** Waste material that consists of two or more of the following kinds of material mixed together:

1. Glass
2. Metal
3. Paper
4. Cardboard
5. Plastic

**Non-Recyclable Material:** Waste material that is not capable of being recycled

**Non-Target Material:** A material that is capable of being recycled but is not a target material for the MRF.

**Output Material:** A batch of material that is:

(a) Produced from a separating process for mixed dry recyclable waste and separately collected dry recyclable waste at a MRF; and

(b) Is made up of one of the following kinds of target material, in the largest proportion:

1. Glass
2. Paper
3. Cardboard
4. Metal
5. Plastic

**Recycling:** Recycling has the meaning given to it in Article 3(17) of the Waste Framework Directive, and any references to “recycled” or “recyclable” are to be construed accordingly.

**Reporting Year:** 1 April to 31 March the following year.

**SEPA:** Scottish Environment Protection Agency

**Separately collected dry recyclable waste:** Dry recyclable waste that has been separately collected in line with the Waste (Scotland) Regulations 2012, which introduced a statutory requirement for all waste producers (with the exception of householders) to separate the key dry recyclables (glass, metal, plastic, paper and card).

(a) Produced from a separating process for mixed dry recyclable waste and separately collected dry recyclable waste at a MRF; and

(b) Is made up of one of the following kinds of target material, in the largest proportion:

1. Glass
2. Paper
3. Cardboard
4. Metal
5. Plastic

### **Standard Deviation**

The standard deviation is a measure of how widely a set of values are dispersed from the average value (the mean). A low standard deviation indicates that all of the data points in a sample tend to be very close to the mean; a high standard deviation indicates that the data points are spread out over a large range from the mean. The standard deviation of a sample can be calculated in excel using the function “STDEV”

**Supplier:** In relation to a batch of mixed dry recyclable waste received at a MRF:

1. Where that batch comprises material collected pursuant to arrangements made by a waste collection authority under section 45(1)(a) or (b) of the Environmental Protection Act 1990(a), that authority is the supplier;
2. Where that batch has been transferred from another MRF or group of facilities, the MRF licence or permit holder of that MRF or group of facilities from which that material was transferred is the supplier;
3. In any other case, the person or organisation who collected the material or, if that person or organisation is not known, the person or organisation responsible for delivering it to the MRF is the supplier;

Where the batch comprises material from more than one supplier, and the proportion of that batch attributable to a particular supplier cannot accurately be ascertained, a reasonable estimate of the proportion is sufficient.

**Target Material:** A material that is specifically targeted by the MRF licence or permit holder of a materials recovery facility as destined to be separated out from other material to facilitate its recycling.



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