Data and Measurement Standard for Commercial Waste

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This Data and Measurement Standard establishes a robust and comparable method for commercial buildings to analyse and report on their waste performance. It underpins the NABERS Waste method.

The NABERS Waste method has been used across sectors in office buildings, shopping centres and industrial buildings. It aligns to the Better Buildings Partnership's Operational Waste Guidelines. It is rapidly being adopted as an industry standard.

This standard:

- provides a format and vocabulary for waste data for the property sector, facilitating meaningful reporting and comparison.

- allows building owners and managers to compare performance across portfolios by ensuring waste reporting is standardised.

- provides guidance to providers of waste data on the industry standard for waste reporting for commercial buildings.

- enables third party reporting systems to:

  – produce data for clients to use in a NABERS Waste rating.

  – build other reporting tools or

  – generate a "NABERS Standard report" from integrated sustainability reporting tools.

The data standard allows for variability in data quality and sets out how the quality of the provided data is to be assessed. This informs which performance standards should be written into contracts or procedures for optimal waste management.

The standard was developed through seven years of experience of major property portfolios in Australia seeking to understand their waste data, and use it to drive improvements. Visit the NABERS website for more info on NABERS Waste Ratings and data platform.

NABERS Waste Data Standard

Overview

Data must be supplied for each collection, by date, waste type, dock and equipment type.

The collection data variable is either weight of the contents of the bin, or the number of bins collected. The weight of the contents of the bin is the preferred variable as it is a more accurate measure. However, this is not always feasible, so a bin count will be accepted and used to calculate an approximate weight value.

The data standard does not accept weight data that has been calculated by another party. Where weights cannot be provided, the method calculates this component.

NABERS has determined a set of standard contamination and density values for recognised waste streams. These are available from the NABERS Waste – list of waste streams.

Collection data

Field	Description	NABERS Waste platform requirement
Pick- up date	The date when bins for a waste type were collected from the building.	The date must be in the format DD/MM/YYYY and **not** in US format.
Site address	The address of the building where waste is picked up.	Formatted as: Street Number Street Name, Suburb, State and Postcode.
Dock	The dock within the building where the bin was picked up.	This information is only mandatory if a building has multiple docks.
Waste type	The waste type that has been collected.	Refer to the NABERS Waste – list of waste streams for available waste types and associated values. This term must consistently match the term used on the data relationship page on the waste platform for the waste contractor who is doing the pick-up.
Equipment	The bin, or other receptacle used to hold waste collected from the site.	This term must consistently match the term used on the data relationship page on the waste platform for the waste contractor who is doing the pick-up.
Size	The size of the collected equipment. If the size is not known or not a regularly consistent value, then a weight value is mandatory.	The value provided must be in cubic metres (m^3).
Units collected	Number of equipment units of a specific size collected by the waste contractor for a given waste type.	
Weight picked up	The net weight, in kgs, of each waste type collected, by size and equipment type. Weight is	NABERS Waste platform requires weights from some waste types

| | encouraged under the standard but is not a required value. Refer data quality standard for more information. | (refer section 1.3), as the platform does not allow a density value. |

Audit data

A bin service is all the waste containers of a specific equipment type and equipment size for a given waste stream.

Contamination rate

The contamination rate is determined by an on-site audit of all bins for a particular bin service as they are presented for collection to the waste collector on a day that represents the standard operation of the building.

The audit method must be weight-based.

Some waste streams do not require a contamination rate, as they either:

1. Are sufficiently variable in composition that a contamination audit would not be representative of the waste stream and thus too statistically irrelevant.
2. An audit has substantial health and safety risks.

These waste streams are listed in the table at the end of this document.

The NABERS Waste rating requires the contamination audit to be carried out following the audit procedure set out in chapter 5 of the Waste Rules.

Density value

The density is determined by an on-site audit of all bins for a particular bin service as they are presented for collection to the waste collector on a day that represents the standard operation of the building.

The density method calculates the density of the bin, not the density of the material in the bin. Thus, the method does not require an estimation of the fullness of the bin.

The NABERS Waste rating requires the density audit to be carried out following the audit procedure set out in chapter 5 of the Waste Rules.

Some waste streams are not able to use a density calculation, as they are sufficiently variable in composition that a density value would not be representative of the waste stream and thus too statistically irrelevant.

NABERS Waste Measurement Standard

The following calculations are performed by the NABERS Waste Manager platform to determine the recycling rate. They are provided so other systems may generate comparable results.

Determine recycling rate

Step 1. Calculate the raw weight of the waste:

If an actual weight value has not been recorded for a collection, then calculate the value as follows: weight = bin count x size x density

Check whether a site density value is available, as per method described under *Audit Data*, if it is use that value. If not available, use the NABERS standard density values.

For each bin service, sum all weights, actual and calculated to determine the total raw weight for that bin service.

Step 2. Adjust calculated weight for contamination:

For all waste streams that are not landfill:

1. Check whether a site contamination rate is available, as per method described under *Audit Data*, if it is use that value. If not available, use the NABERS standard contamination value.

2. Calculate the adjusted weight:

$$Adjusted\ weight = Raw\ weight - (raw\ weight\ x\ contamination\ rate)$$

- Add the subtracted contamination weight to the total raw weight of the general waste stream.

$$Adjusted\ landfill\ weight = Raw\ weight + \sum(raw\ weight\ x\ contamination\ rate)$$

Step 3. Calculate recycling rate for the building:

- The recycling rate is the total recyclable waste materials divided by the total of all the waste generated, expressed as a percentage.

$$Recycling\ rate = \frac{\sum All\ waste\ that\ is\ not\ landfilled}{\sum All\ waste}$$

Data quality standards

NABERS recognises that not all sites are able to weigh each bin, nor does every waste truck have on-board scales to weigh the bins. To ensure the data and measurement standard is practical, and to encourage increasing data reliability, the following levels of data quality are recognised by NABERS.

The data verification method is set out in chapter 6 of the [NABERS Waste Rules](). When the data is not being used to generate a NABERS rating, then the "assessor audit" requirement can be substituted for any suitably qualified and independent professional who follows the audit methods set out in the NABERS Waste Rules.

Data quality category	Weight measurement determined by	Contamination Rate determined by	Has passed data verification check
Excellent	Actual weight	Site rate from at least one Assessor audit	Yes
Good	Actual weight	Site rate from at least one Assessor audit	No
	Actual weight	Default rate / Site rate only from non-Assessor audit(s)	Yes
	Site density from at least two audits. One must be an Assessor audit	Site rate from Assessor audit	Yes
Acceptable	Actual weight	Default rate / Site rate only from non-Assessor audit(s)	No
	Site density from at least two audits. One must be an Assessor audit	Site rate from Assessor audit	No
	Site density from at least two audits. One must be an Assessor audit	Site rate from non-Assessor audit	N/A
	Site density from one audit only, which must be an Assessor audit	Site rate from Assessor audit	N/A
	Site density from one audit only, which must be an Assessor audit	Default Rate / Site rate only from non-Assessor audit(s)	N/A
Basic	Default density / Site density only from non-Assessor audit(s)	Default rate / Site rate only from non-Assessor audit(s)	N/A
	Default density / Site density from non-Assessor audit	Site rate from at least one Assessor audit	N/A

Supply chain outcomes

The NABERS Waste Rating also contains a measure of the quality of supply chian outcome for a specific bin service. This is known as the Material Recovery Score. The score is determined by an accredited NABERS assessor based on qualitative evidence and thus is outside the scope of this standard.

For more information on the Material Recovery Score refer to Chapter 7 of the NABERS Waste Rules, and the NABERS Waste – Calculation spreadsheet, available from the NABERS Website.

Contact us

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