



Circularity

STANDARD

FOR PROJECTS
COMMERCIAL INTERIORS
AND
CORE & SHELL

Disclaimer

We are currently in our **intent stage** of our standard development process.

All of our standards go through the following phases during development:

1. **Intent**

Share our intent and initial considerations with the wider community and receive feedback.

2. **Review**

Peer review of specific concepts and numbers.

3. **Finalize**

Final edits and polish before the standard is official.

The final standard might be different from what you see right now.

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5.2.0 The Intent of RESET Circularity

RESET **Circularity** standardizes the continuous monitoring requirements of the waste generated and collected in built environments and helps projects track and understand the lifecycle input and output of waste, including when, where, and how much is generated.

The intent of the RESET **Circularity** Standard is to:

- Promote the continuous monitoring of waste generation in the built environment.
- Standardize how waste generation is measured in order to facilitate the benchmarking of projects.
- Advocate awareness and transparency around waste lifecycles by reporting the data to project occupants to foster education and understanding of where waste is generated for opportunities to improve upon baseline metrics.
- Raise public awareness of waste generation and the impact it has on the environment.
- Gamify the data to create incentives for lowering waste generation.

Ultimately, RESET **Circularity** strives to make waste generation metrics actionable and help projects optimize decision making for sustainability and waste reduction.

5.2.1 What is RESET Circularity

The **RESET Circularity Standard** is a data-driven standard for evaluating the building performance as it pertains to waste and recyclables by standardizing the continuous monitoring requirements of waste generation in built environments.

RESET is first and foremost a standard for data quality. Performance results are only as good as the data being assessed. **RESET** addresses data quality at the source and specifies requirements for the monitors and the deployment methodology in a project. **RESET** also makes sure the data is trusted and relevant by requiring monitors to be installed in the right way and to have plans for long term maintenance. Lastly, **RESET** sets requirements for how the data is reported and connected to guarantee transparency and access via analysis and reporting. The quality of data verifies that the data is true and reflects the actual situation.

Essentially, the **RESET Circularity Standard** takes into consideration aspects including monitor performance, deployment, and installation requirements, as well as data reporting and data platform requirements.

RESET Circularity is performance-based, but does not set any performance targets. Instead, **RESET Circularity** will leverage the **RESET Leaderboard**, where projects will be benchmarked anonymously against each other with the goal of highlighting projects that excel so other projects can learn more about the solutions and services they leverage.

5.2.2 How RESET Circularity Works

RESET **Circularity** consists of three levels: Components, Indicators, and Data Parameters.

Components

Components are stand-alone sections within a standard that can be implemented and scored independently. In **RESET Circularity**, components include **Total** and **Subsets**.

Indicators

Within each Component, there are Indicators, a specific waste indicator that requires continuous monitoring within a Component. In the case of **RESET Circularity**, there is only one indicator per component. For example, the indicator in the **Total** Component is **Total Waste Generation**.

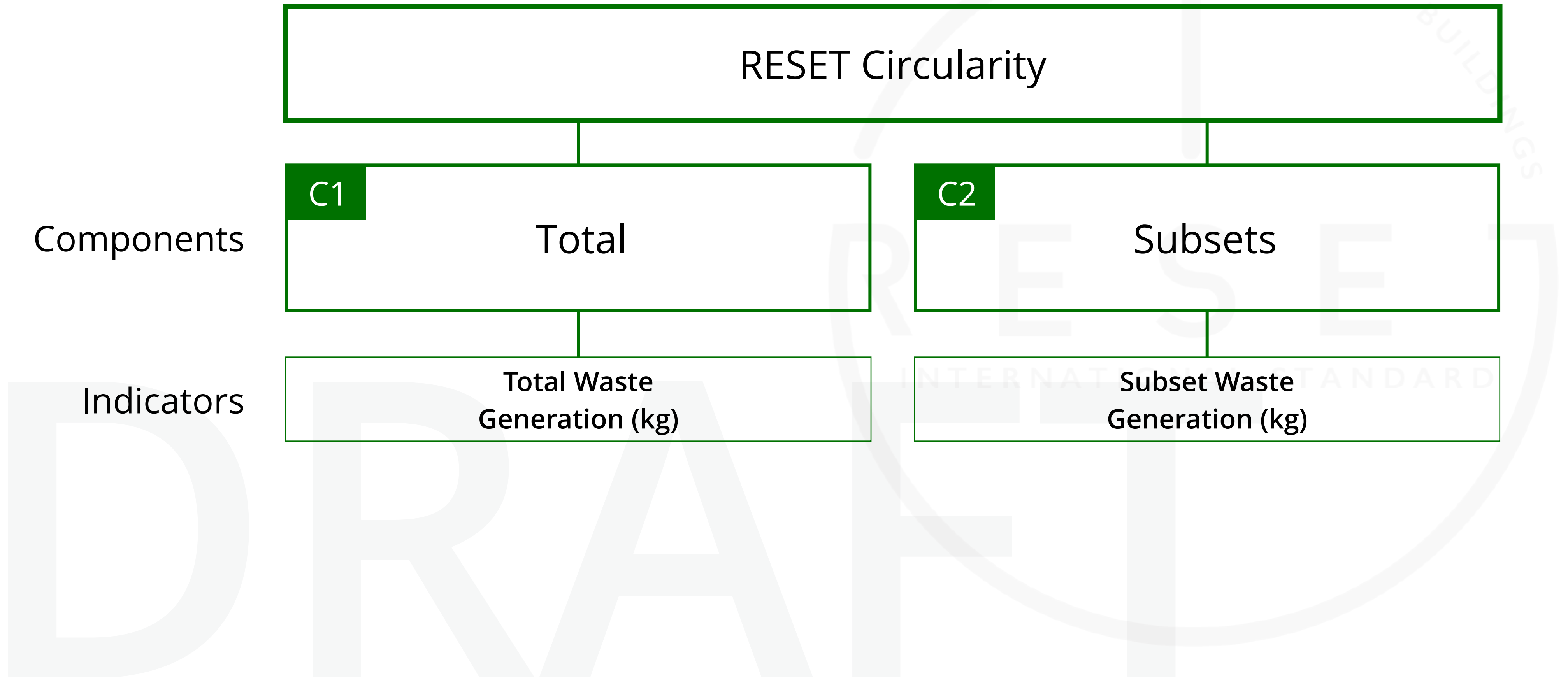
Data Parameters

The **RESET Standards** are built on a foundational core comprised of three key data criteria: **Completeness**, **Quality**, and **Performance**. These three criteria all have their own unique requirements depending on the standard.

For **RESET Circularity**, each Data Parameter will have requirements and targets for the data collected via continuous monitoring.

5.2.3 Components and Indicators

RESET **Circularity** consists of two Components, targeting different aspects of a built environment. Each Component collects data via Indicators.



5.2.3.1 Components and Indicators

C1 Total

Total represents the total waste generation by the project within the project boundary. Continuous monitoring of total waste allows project teams to see how much waste is being generated, as well as when it is being generated. The data collected is an essential step towards sustainability and waste reduction.

Total is a compulsory component for **RESET Circularity Project** accreditation and requires that project teams monitor the total waste generated in the project. Alternatively, **Total** can be replaced with multiple **Subsets** if the **Subsets** include all waste generation within the project.

Indicators include:

- Total Waste Generation (kg)

5.2.3.2 Components and Indicators

C2 Subsets

Subsets represents the waste generation for waste subsets within the project boundary. **Subsets** specifies the different categories of waste generation in a project. Continuous monitoring of waste subsets allows project teams to see how much waste is being generated, when it is being generated, and where it is being generated. The data collected is an important step towards sustainability and waste reduction.

Subsets is an optional component for **RESET Circularity Project** accreditation. It requires that project teams monitor the waste generation within the defined waste subset. Examples of subsets include “recyclables”, “burnables”, “compostable”, “digital waste”, etc.

The **Total** component can be replaced with multiple **Subsets** if the **Subsets** include all waste generation within the project.

Indicators include:

- Subset Waste Generation (kg)

5.2.4 Data Parameters and Requirements

RESET **Circularity** is, at its core, a data standard.

To maintain high quality, continuous monitoring data, there will be requirements and targets for each Indicator using three distinct data parameters:

1. **Completeness**
2. **Data Quality**
3. **Performance**

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5.2.4.1 Completeness

Completeness represents the amount of data. Requirements and targets relate to how much data is collected and how much is lost. For example, if there is a large amount of data missing, it will not be reflective of the actual scenario.

Completeness for RESET **Circularity** defines the following:

1. Data Interval
2. Data Loss

5.2.4.1.1 Completeness Data Interval

RESET **Circularity** requires data to be tracked through continuous monitoring.

Raw data from the monitors should be reported at an interval of no more than 30 minutes. Data is expected to be updated at least once every 24 hours.

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5.2.4.1.2 Completeness Data Loss

During continuous monitoring, it is possible for data loss to occur due to connectivity issues. **RESET Circularity** limits the amount of data that can be lost due to connectivity issues. There should be no more than 20% of data loss per month, based on operating days. A day is considered with the data loss if there are less than 4 data points for that day.

Refer to **RESET Data Analysis Methodology** (under development) for more information.

5.2.4.2 Data Quality

RESET is first and foremost a standard for data quality. Performance results are only as good as the data being assessed.

RESET addresses data quality at the source and specifies requirements for the monitors and the deployment methodology in a project. RESET also makes sure the data is trusted and relevant by requiring monitors to be installed in the right way and to have plans for long term maintenance. Lastly, RESET sets requirements for how the data is reported and connected to guarantee transparency and access via analysis and reporting. The quality of data verifies that the data is true and reflects the actual situation.

Data Quality represents the reliability and trustworthiness of the data provided for an Indicator. This involves confirming the monitoring hardware, data collection/provider software, and the way the monitors are installed.

Data Quality for RESET **Circularity** defines the following:

- 1. Data Provider Requirements**
- 2. Monitor Requirements**
- 3. Monitor Installation Requirements**
- 4. Monitoring Deployment Requirements**

These sections are available in the following pages.

5.2.4.2.1 Data Quality

Data Provider Requirements

Data Providers are responsible for collecting and aggregating data from monitoring hardware, into the cloud, according to RESET requirements.

Waste data must be accessible to project occupants:

- a. **RESET Circularity Projects** must provide project occupants access to daily waste data. Project occupants include tenants, employees (full and part-time as well as maintenance and cleaning staff), guests and visitors who at any time occupy the project for more than one hour per day.
- b. Acceptable methods of data access include, visual display screens in public, community or shared work areas, phone apps, web apps, graphic signage with http address or QR code that directly connects users to the app or website where the data can be viewed.

For the purposes of project certification, waste data must report to the **RESET Cloud**:

- c. Projects must use a **RESET Circularity Accredited Data Provider** that reports to the **RESET Cloud**. The data is to be collected and transferred to the **RESET Cloud** for assessment purposes.

For more information, please refer to the **RESET Circularity Accredited Data Provider Requirements** (under development).

5.2.4.2.2 Data Quality

Monitor Requirements

RESET **Circularity** requires continuous monitoring of waste generation. This is done using a monitor in the form of an IoT scale that tracks the weight of the waste bin on top of it. Every time the waste bin is emptied, the weight difference between the full bin and the empty bin will be recorded.

For the IoT scales, they must fulfill the following requirements:

1. All continuous monitoring IoT scales for waste bins will need to demonstrate the ability to stream data into the cloud to a data provider.
2. The data collected by the IoT scales for consumption and generation need to be cumulative over time instead of recording the amount of waste generated between a certain period of time. This prevents data loss in the case of unstable connectivity.

Monitor Testing and Accreditation

RESET **Circularity** does not currently test or certify IoT scales for waste bins. Prior to project deployment, IoT scales must be submitted, reviewed, and accepted by the RESET team for use on a case-by-case basis.

5.2.4.2.3 Data Quality

Monitor Installation Requirements

The only requirement is for an individual IoT scale to be allocated per waste bin. Each IoT scale is expected to sit under the waste bin it is measuring.

The expectation is that monitors installed will be stable for long term usage.

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5.2.4.2.4 Data Quality

Monitor Deployment Requirements

IoT scale deployment for RESET **Circularity** is determined after defining an initial project boundary. The project boundary is defined as the space or region within the built environment that will be within the scope of monitoring.

Once the project boundary is defined, monitor deployment requirements include the following:

1. Monitoring must collect data that encompass all waste generated within the project boundary. This means that there needs to be at least one IoT scale per waste bin. This applies to all components and indicators.
2. For the **Subsets** component, monitoring must collect only data that applies to that category within the project boundary.

For RESET **Circularity Projects**, monitor deployment requirements will be verified via the **Documentation Audit** and **Site Audit**.

5.2.4.3 Performance

Performance is the data provided for an Indicator in terms of its performance metrics. For **RESET Circularity**, there are no specific performance targets for a project to hit, but there will be analytics done to compare how the project performs over time, as well as a benchmarking leaderboard to compare projects against others in the RESET ecosystem.

Performance for **RESET Circularity** defines the following:

- 1. Performance Targets**
- 2. Performance Analysis**

5.2.4.3.1 Performance

Performance Targets

RESET **Circularity** currently does not have Performance Targets. Instead, projects will be compared against itself over time and via anonymous benchmarking with other projects in the **RESET Leaderboard**.

Benchmarking on the **RESET Leaderboard** will optimize for localized targets based on the best performing projects in the region.

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5.2.4.3.2 Performance

Performance Analysis

RESET **Circularity** performance analysis compiles the data from continuous monitoring into daily and monthly averages. The averages are used to create monthly baselines that can be used to compare the project against itself over time and against other projects via benchmarking in the **RESET Leaderboard**.

Additional analysis to better understand how a project is performing can be done by collecting meta data, including the size of the project, occupancy, and operating hours.

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5.2.5 Project Typologies

The RESET **Circularity** Standard for Projects can be applied to both **Commercial Interiors** and **Core & Shell** typologies and can be applied to both new construction and existing projects.



Commercial Interiors

The RESET **Circularity** Standard for **Commercial Interiors Projects** targets an interior space. This typology focuses on the evaluation of waste generation within a set project boundary of the built environment.



Core & Shell

The RESET **Circularity** Standard for **Core & Shell Projects** targets the building and the public spaces managed by the building operator. This typology focuses on the evaluation of waste generation for building systems and public spaces.

5.2.6 Implementation

When implementing according to the RESET **Circularity** Standard, use the following steps:

1. Establish a Project Boundary

The project should be defined by a clear boundary such that the project is physically distinct from other spaces of the built environment.

2. Choose Components and Indicators

Choose the components and indicators that you want to monitor. For components, a project can pursue **Total** only, **Subsets** only (where the **Subsets** add up to a **Total**), or **Total + Subsets**.

3. Installation and Deployment

Install an IoT scale for each relevant waste bin, in addition to consideration on how the data will get streamed to a cloud connected data provider.

4. Leverage the Data

Leverage the continuous monitoring data to better understand how the project is performing and explore opportunities on optimization.

5.2.7 Project Accreditation Process

A RESET **Circularity** Project can be accredited by RESET when they go through the auditing process.

The auditing process includes 3 parts:

1. **Documentation Audit**

The Documentation Audit verifies that all the basic data for a project is complete and fulfills requirements. A project will submit documentation that includes the address, project size, floor plans, the defined project boundary, and the location of all the relevant waste bins where the IoT scales will be installed. Additionally, there will be metadata required for better analysis, including expected occupancy and expected hours of occupancy or operation.

2. **Site Audit**

The Site Audit verifies that all the information in the Documentation Audit is correct and that the scales are installed correctly. There will be a walk through of the actual project and a quick review of where each scale was installed in the project space.

3. **Data Audit**

The Data Audit is a continuous audit to confirm the continued monitoring of a space where the data provider for the project streams the data to the **RESET Cloud**. The data will be included in the **RESET Leaderboard** for benchmarking.

Once the Documentation Audit is completed, the project will be a **RESET Circularity Pre-Accredited Project**. Once the Site Audit is completed and the Data Audit is in process, the project will be a **RESET Circularity Accredited Project**.

5.2.8 Next Steps

This is a special slide highlighting some of the next steps for the **RESET Circularity Standard**. This slide will likely not exist in the final draft.

In the second half of 2021, we will be:

1. Taking feedback and improving the standard.
2. Running pilots of the standard.
3. Compiling the list of categories in the Subsets component.
4. Reviewing IoT scales that fulfill requirements.
5. Development of the the **RESET Cloud** to support **RESET Circularity**.
6. Development of the the **RESET Leaderboard** to support benchmarking for **RESET Circularity**.
7. Setting up the project accreditation process.
8. Preparing content for the **RESET AP** program.

If there are any questions, feedback, or concern, please don't hesitate to reach out to us at info@reset.build.

End of RESET **Circularity** STANDARD - DRAFT V1

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