

Reduction of Construction and Demolition Waste

Aim of the Credit

To reward projects that reduce construction waste going to landfill by reuse or recycling building materials

Credit Criteria

Project teams may target criterion 1 or criteria 2 and 3.

1	Reduction of Construction and Demolition Waste sent to Landfill (Fixed Benchmark)	<p>Up to 2 points are available where the construction waste going to landfill is reduced to a fixed benchmark or below. The benchmark is defined in kg of waste per square meter of gross floor area. (GFA)</p> <table><tr><th>Waste kg/m²</th><th>Points</th></tr><tr><td>17.5</td><td>0.5</td></tr><tr><td>15</td><td>1</td></tr><tr><td>12.5</td><td>1.5</td></tr><tr><td>10</td><td>2</td></tr></table>	Waste kg/m ²	Points	17.5	0.5	15	1	12.5	1.5	10	2
Waste kg/m ²	Points											
17.5	0.5											
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12.5	1.5											
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2	Reduction of Construction & Demolition Waste sent to landfill (Percentage Benchmark)	<p>1 point is awarded where the project reduces the amount of construction and demolition waste going to landfill to less than 90% of the total construction waste. Waste shall be reported in kg/m²</p>										
3	Reuse of Building Fabric	<p>1 point is awarded where at least 50% (by area) of the building façade is retained or at least 30% (by mass) of the existing major structure is retained.</p>										

Criterion 3 is not applicable where there is no existing building on the site at time of purchase.

Compliance Requirements

1 and 2. Reduction of Construction & Demolition Waste Sent to Landfill

Waste to Landfill Reduction

The project can use any number of initiatives to the reduce construction and demolition waste. Examples of waste reduction initiatives include:

- Reuse of materials

- Recycling materials
- Prefabrication
- Recycling packaging
- Reduced packaging
- Retaining parts of the existing structure or installations.

Requirements for Waste Contractors and Waste Processing Facilities

All waste contractors and waste processing facilities must hold a 'Compliance Verification Summary', confirming compliance with the Green Star Construction and Demolition Waste Operational and Reporting Criteria.

The Compliance Verification Summary shall be issued by a Suitably Qualified Auditor.

The waste contractor must issue monthly waste reports to the building owner or their representative for the entire duration of construction works. The figures in the report must be supported by copies of waste disposal dockets stating the amount of waste removed from the building site and where it was disposed.

Waste reports must include:

- Total amount of construction and demolition waste removed from a construction site reported by weight;
- Breakdown by estimated weight (using volume to weight conversion factors) of most common material types removed from site (e.g. timber, plasterboard, concrete, carpet);
- Breakdown by location of where the waste was taken for recovery;
- Total amount of waste from the site diverted from landfill, reported by weight;
- Total amount of waste residual from the site that was sent to landfill, reported by weight; and
- The fate of recovered materials, by material types, detailing what the recycled product outputs from the processing facilities engaged by the waste contractor to receive C&D waste from site are.

For full details and definitions of the terms 'Criteria', 'Compliance Verification Summary' and 'Suitably Qualified Auditor' please refer to the Green Star Construction and Demolition Waste Management Operational and Reporting Criteria and Auditor Verification document available at <http://www.gbca.org.au/green-star/materials-category/new-reporting-criteria-for-construction-demolition-waste-credit/>

Measurement by Volume

All waste figures reported in the cumulative waste report documentation must be in weight and be supported by weigh bridge disposal dockets.

Volume to Weight Conversion

Waste contractors are often required to determine the weight of particular waste material streams from visual inspections of a load's volume for the purpose of reporting the estimated weights of material types removed from site (e.g. timber, steel, plasterboard, concrete, carpet).

The conversion factors in table 2 should be used to convert measurement of waste types from volume to weight.

Material (1 cubic metre = Tonne)	Density kg/m ²
Aluminium cans - whole	0.026
Aluminium cans - flattened	0.087
Aluminium cans - baled	0.154
Asphalt / Bitumen	0.8
Bricks	1.2
Car Batteries	0.375
Carpets	0.3
Cement Sheet	0.5
Ceramics	1
Clean Soil	1.6
Cobbles / Boulders	1.4
Commingle containers (plastic, glass, steel and aluminium cans)	0.063
Concrete	1.5
Garbage	0.15
Garden / Vegetation	0.15
Glass bottles - whole	0.174
Glass bottles - semi-crushed	0.347
Hazardous Wastes	0.2
Insulation	0.05
Litter trap	0.75
Metals	0.9
Oil	0.8
Other Textiles	0.15
Others	0.3
Paint	0.8
Paper / Cardboard	0.1
Plasterboard	0.2
Plastic containers - whole	0.01
Plastic containers - whole, some flattened	0.013
Plastic containers - baled	0.139
Rubber	0.3
Soil / Rubble<150mm	1.4
Steel cans - whole	0.052
Steel cans - flattened	0.13
Steel cans - baled	0.226
Wood / Timber	0.3

Table 2: Waste Volume to Weight Conversion Factors

Source – EcoRecycle – Waste Victoria

Waste Reused On Site

Waste reused on site, excluding soil from site works, must be included in the Cumulative Waste Report, and a brief description of the reuse must be provided in the credit submission Short Report.

Excluded Waste

Special waste and excavation waste are to be excluded from consideration in this credit.

Special Waste

Special waste includes asbestos waste and asbestos containing material, or other hazardous waste and restricted solid waste as defined by the NSW Environment

Protection Authority Environmental Guidelines and Policies for Waste.
<http://www.epa.nsw.gov.au/waste/envguidlms/>

Excavation waste

Unwanted material resulting from excavation activities such as a reduced level dig and site preparation and levelling, and the excavation of foundations, basements, tunnels and service trenches typically consisting of soil and stones.

However, soil generated from site clean-up works which incorporates soil leaving the site mixed with general construction and demolition waste, must be included in the waste-to-landfill calculations, as it forms part of the building site's general waste profile.

3 Reuse of Building Fabric

Façade

The proportion of the total façade being reused should be demonstrated by area.

Structure

Major structure is defined as floors, columns, beams, load bearing walls and foundations. The measure of retained building structure is based on gross building volume. Gross building volume is measured as the building as the building footprint (m²) x building height (m).

For a proportion of the existing major structure to be considered re-used, all the major structural elements must be retained in that part of the building. The re-used percentage should be calculated as part of the existing structure volume.

Refurbishment of existing elements

Refurbishment of a re-used façade or structural elements is inconsequential to determining whether the element is re-used. However, where more than 20% of a façade or structural element is replaced as part of the refurbishment, the element may not be counted as re-used. The proportion of the façade refurbishment should be measured by length, volume or mass, whichever is more appropriate and the metric chosen must be justified.

Documentation Requirements

‘Design Review’ Submission (Optional)

Project teams are to submit information/documentation marked with an asterisk* for ‘Design Review’.

As Built Submission

All project teams are to submit the following documentation:

Submission Template

- Description of any structures on the site at time of purchase, or confirmation that the site contained no structures at time of purchase
- Summary of waste management plan for the construction works*
- Details of the Waste Contractor
- weight of waste generated from construction and demolition works,
- weight of waste sent to landfill
- Where waste is reused on site, short description of the way in which it was reprocessed and/or reused onsite.
- Where volume to weight conversion is applicable, provide confirmation that the prescribed conversion factors have been used or details of the calculations
- Description of the façade or major structure that is to be retained*
- Statement of percent of façade or major structure that is to be retained*

Project teams are required to provide documentation supporting credit compliance. The following documents may be used to demonstrate compliance:

- **Demolition or Site Drawings*** Indicating the structures on site at time of purchase, extent of demolition and retained structure and façade.
- **Waste Report** The cumulative waste report must be generated from the monthly waste reports provided by the waste contractor over the entire duration of construction and demolition works. The monthly reports and supporting waste disposal dockets do not need to be included in the credit submission.
- **Compliance Verification Summary** Compliance verification summaries from waste contractor(s) and waste processing facilities as detailed in the Green Star Construction and Demolition Waste Management Operational and Reporting Criteria - Auditor Verification Guidance document.
- **Demolition Volume or Area Calculations*** Indicating the volume of major structure, or area of façade that has been retained.

Please provide your feedback on the technical content of this credit:

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