

Resource Recovery – PLASTERBOARD – Collection and Transportation

This guide provides good-practice advice to improve recovery rates for waste plasterboard from construction and demolition (C&D) sites.

The aim is to assist collection and transportation services to C&D sites to:

- maximise the amount of plasterboard diverted from the landfill and cleanfill
- minimise contamination and damage
- meet the requirements of the construction or demolition client and the recycling operator.



Construction and demolition plasterboard sorted from C&D waste, ready for processing, Crusaders Landscaping, Christchurch.

This guideline covers:

- finding good markets for recycled plasterboard
- collection and transportation services
- health and safety hurdles
- resources and contacts
- other guidelines in this series.

Read the REBRI Resource Recovery – All Material Types – Collection and Transportation guidelines for more detail on methods for separating wastes, developing contracts with clients, meeting the expectations of recycling operators and the building industry, disposing of waste appropriately and transporting materials safely and efficiently.

Finding good markets for recycled plasterboard

Once plasterboard is crushed, the gypsum can be sold as a powder (with or without the paper) or moulded into pellets.

Use as soil and compost conditioner and other agricultural applications

- Gypsum and/or paper can be composted with other green waste.
- Gypsum can be blended with composted product.
- Gypsum (with or without the paper) can be used as a soil conditioner in agricultural applications.
- Gypsum can be added to soil in landscaping applications.
- Gypsum (with or without the paper) can be combined with sawdust and wood shavings for animal bedding because it absorbs moisture.
- While the benefits of virgin gypsum as a soil and compost additive are well understood, the effect of plasterboard additives in recycled gypsum has not been researched comprehensively in New Zealand. Acceptable contaminant levels (including paper, foreign materials and product additives) should be confirmed with the client and/or regional council.

Industrial uses

Many industrial uses are still being researched. Some involve substituting virgin gypsum with recycled gypsum, while others are new technologies.

- Gypsum can be reused in the plasterboard manufacturing process. The manufacturer should determine specifications for gypsum quality.
- Paper can be recycled.
- Gypsum with very low contamination may be used in the cement-making process. Virgin gypsum is currently added to the clinker to control the setting time. The manufacturer should determine specifications for gypsum quality.
- Gypsum has moisture-absorbing characteristics and may be used for drying sludge from municipal and industrial wastewater treatment plants.
- Gypsum could be used to settle dirt and clay materials in turbid water.
- Gypsum could be used to absorb grease spills.

Know your markets

You won't be in business long without securing a sustainable market for your waste plasterboard. The market for waste plasterboard is constantly changing, so it pays to do your homework. Here are a few suggestions for starting your search.

- Use local waste-recycling directories (www.branz.co.nz/REBRI_Recycling_Directory, the Yellow Pages (www.yellowpages.co.nz), the Waste Exchange (www.nothrow.co.nz) and buy recycled directories (www.zerowaste.org.nz) to identify demand for recycled plasterboard product. These change often, so it pays to keep checking.
- Network with businesses and councils with an interest in sustainability. Join organisations such as the Sustainable Business Network (www.sustainable.org.nz) or the Waste Management Institute of New Zealand (www.wasteminz.org.nz).
- Do business with recycling operators and manufacturers that follow the REBRI Guide to C&D Resource Recovery or are accredited to a nationally recognised environmental management programme such as ISO14001 or Enviro-Mark® NZ. This way, you can have greater assurance that they are working to good environmental standards and are doing what they say they do.

Understand the requirements of your clients

Each market will have its own feedstock specifications – it's best to confirm these before you start. Getting it wrong can cost you.

- Clients will have particular specifications for recycled gypsum, depending on their needs. Things to check include:
 - whether demolition board is acceptable
 - minimum and maximum sizes of chip or powder particles
 - contamination tolerances (screws, nails, paint, glues etc.)
 - moisture tolerances
 - minimum and maximum quantities
 - gypsum with or without paper
 - transportation, sorting and handling requirements including transportation to the client.
- Use the REBRI Waste Transfer Form to confirm to clients the source and nature of the recycled plasterboard provided.

Collection and transportation services

Minimise contamination and damage and maximise recovery

- Maximising plasterboard recovery starts with good handling on site. Provide clear instructions to your C&D clients on your requirements.
- Provide suitable containers to separate plasterboard from other wastes for collection and transportation (see below). Keeping plasterboard separate will reduce the contamination from paints, glues, plastic and other materials.
- Avoid or remove as much contamination as possible prior to transportation.

- Use the RONZ recycling symbols for plasterboard to provide clear signage on the containers (downloadable from www.wasteminz.org.nz/pubs/ronz-symbols).
- Include a list of unacceptable materials on the containers (for example, “No demolition plasterboard” or “No screws or nails”).



Transportation services and methods

- Plasterboard must be kept dry for crushing.
- Provide skips or bins with lids or covers to reduce damage from moisture while on site and during transportation. Covered transportation also prevents gypsum dust from escaping and causing a nuisance.
- Consider offering a plasterboard collection round using front-loading bins, particularly to clients who produce less than a skip-volume of waste per site.
- Consider providing skips during the plasterboard installation phase with separate compartments for plasterboard only.
- Consider providing trailers for plasterboard that can easily be moved around the site by contractors' vehicles. This is useful for sites where cranes are not present to lift gantry skips.

Envirowaste provided skips for plasterboard collection at St Martins New World – a Hawkins Construction site.



Health and safety hurdles

Good practice wouldn't be complete without considering the effects of your operation on the health and safety of you and your workers. Read the REBRI Resource Recovery – All Waste Types – Collection and Transportation guide for an overview of the issues.

Resources and contacts

Relevant legislation and regulations

- Health and Safety in Employment Act 1992
- Local Government Act 2002
- Transport Act 1962
- Transport Amendment Act 1997
- Resource Management Act 1991
- Regional and district plans
- District bylaws.

Links, resources and contacts

- Resource Efficiency in the Building and Related Industries (REBRI) www.rebri.org.nz
- Yellow Pages www.yellowpages.co.nz
- The Waste Exchange www.nothrow.co.nz
- Waste Management Institute of New Zealand (WasteMINZ) www.wasteminz.org.nz
- Enviro-Mark® NZ: www.enviro-mark.co.nz
- Sitesafe www.sitesafe.org.nz

Other guidelines in this series

All Waste Types

- Collection and Transportation
- Centralised Sorting and Storage

Timber

- Collection and Transportation
- Processing into Mulch and Chip

Plasterboard

- **Collection and Transportation**
- On-site Sorting, Storage and Processing
- Centralised Sorting, Storage and Processing

Concrete

- Collection and Transportation
- Processing and Storage

Metal

- Collection and Transportation

PLASTERBOARD – Collection and Transportation – Audit Sheet

Use this sheet to check the practice of your service provider against the good practice guidelines in this guide. If you are a waste transporter, you can use this sheet to do your own checks of your performance against the guides. Just consider each point and put a tick for compliance, cross for non-compliance or 'na' for not applicable. Put any comments at the bottom of the sheet, then sign and date it. Keep these for your records and any discussions between you and clients or suppliers.

Collection and transportation

1. A list of specifications is provided to C&D clients, which includes such things as:
 - contamination tolerances
 - minimum and maximum quantities
 - whether demolition board is acceptable
 - moisture tolerances
 - sorting requirements.
2. A detailed list of unacceptable materials is provided (for example, “No demolition plasterboard” or “No nails”).
3. The REBRI Waste Transfer Form is used to trace the source and destination of waste plasterboard.
4. Plasterboard is collected separately to other wastes from the site to minimise contamination.
5. The RONZ recycling symbols for plasterboard or some other type of clear signage have been used on containers. A list of unacceptable materials is included.
6. Containers are provided with covers to reduce moisture damage.
7. Collection staff visually inspect each load prior to removing it from the site. Where possible, any pieces of contamination are removed.

Internal procedures and compliance

In addition to the procedures above, consider whether the following apply to the operation:

8. Documented emergency procedures, including spill responses.
9. Documented health and safety procedures.
10. Documented quality and environmental monitoring.
11. Current resource consents or other approvals for land use and discharges to the environment.

- 12. External accreditation (for example, Enviro-Mark® NZ).

- 13. Prefer clients and suppliers that work to good environmental standards by using the REBRI guides and/or have external accreditation.

- 14. Licensed under district bylaw.

Comments

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Signed

Person, company and responsibility

Date

Signed

Person, company and responsibility

Date