Gypsum Wallboard Waste Management in the Northeast Fact Sheet

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Background

Gypsum wallboard, also commonly known as sheetrock, drywall, gypsum board or wallboard, is generally composed of 85 - 90% gypsum (CaSO4·2H2O) and 7 - 15% paper. Wallboard is the principal interior wall material used in new construction and remodeling in the U.S.

Each year, the U.S. produces 15 million tons of wallboard for new construction and remodeling. According to the Gypsum Association, the North American wallboard industry (Canada, U.S., and Mexico) is made up of ten manufacturers. Three of these companies are the primary suppliers for the Northeast region—U.S. Gypsum, National Gypsum, and Georgia-Pacific. When North American wallboard production runs short, imports from China and Germany are common.

Related Waste Management Issues

Wallboard yields an estimated 14 million tons of waste annually--almost as much as is produced each year--and is the third largest component of the total U.S. construction and demolition debris (C&D) waste stream. Sixty-four percent (64%) of wallboard waste is generated from new construction, 14% from demolition, 12% from manufacturing scrap, and 10% from renovation. A typical 2,000 square foot residential construction project can create up to one ton of scrap wallboard waste.

Waste Management Strategies

• 1. Source Reduction & Reuse

An easy way to reduce wallboard and other building-related debris is by implementing the following source reduction measures.

Waste Management Strategies

Careful Purchasing- By purchasing conservatively and reusing excess materials, contractors and homeowners will save money, increase resource efficiency, and limit solid waste.

Deconstruction- Deconstruction, rather than demolition, allows reusable materials to be salvaged and used again. The use of salvaged wallboard is
considered a “green” building practice, because it eliminates or reduces the need for virgin materials, energy, and other resources. *Donation* - Another source reduction strategy that contractors and homeowners may use is donating excess wallboard for reuse to Habitat for Humanity® or other charitable organizations. Reusable wallboard may also be posted on a Materials Exchange website. Materials Exchanges provide residents and businesses with the opportunity to list and search through unwanted, reusable items online.

- **2. Recycling**

Recycling wallboard into new products is another strategy for reducing the negative environmental impacts associated with the extraction, transportation, and processing of virgin materials. It also conserves valuable landfill space. By recycling used wallboard, contracting companies are able to reduce their disposal fees and enhance their public image.

**Barriers to Recycling Gypsum Wallboard** - The wallboard recycling industry is considered a nascent industry sector. As such, accessibility and proximity to wallboard recyclers is limited. Currently, there are three gypsum wallboard recyclers in the Northeast region—Gypsum Recycling America Ltd. in Holbrook, Massachusetts; G-P Gypsum in Newington, New Hampshire; and Gyp-Pack Container in Tonawanda, New York.

In addition, not all wallboard is equally recyclable. Construction wallboard waste and manufacturing scrap is freer of contaminants than demolition wallboard, which makes it easier to recycle into a variety of products. Demolition wallboard may be contaminated with toxic substances--lead-based paint, and asbestos found in some joint compound produced before 1970. Contaminated wallboard waste may not be recycled into agricultural markets, but can be used in other applications.

**Recycled Wallboard Uses** - When recycled, the paper backing is stripped-off along with any nails and tape. The paper removed from the gypsum may be recycled for making new paper backing, and the recycled gypsum used in:

1. New wallboard,
2. Cement production (if paper content is less than 1%),
3. Stucco additive,
4. Flea powders (gypsum makes up 90% of these products),
5. Soil amendments or plant nutrients (new construction waste only),
6. Composting amendments (new construction waste only),
7. Grease absorbent for mechanic shop floors,
8. Athletic field marker,
9. Animal waste odor reduction by mixing with ammonia,
10. Facilitating the leaching of salt in soil along roads, and
11. Combining with wood shavings for animal bedding.
Note: There have been numerous pilot projects conducted using ground wallboard as alternative daily landfill cover. This application has had limited success due to odor issues, described in the next section.

- 3. Disposal

Disposal of gypsum wallboard is problematic. When landfilled, bacteria can convert the sulfate in the gypsum into hydrogen sulfide, a foul-smelling gas that can cause odor issues and complaints from the community. The sulfur content in wallboard also makes incineration of this material not feasible, because it creates problems for the lime scrubbers in Municipal Solid Waste incinerators.

Available Resources

1. Gypsum Association
2. Gypsum Recycling America Ltd, Holbrook, Massachusetts; Ph: (508) 400-1854
3. G-P Gypsum, Newington, New Hampshire; Ph: 603-433-8000
4. Gyp-Pack Container, Tonawanda, New York; Ph: 716-694-1900
5. Wallboard Recycling Links
6. Building Materials Reuse Association
7. Green Building Design and Construction
8. Green Building Websites
10. U.S. EPA – Asbestos
11. C&D Debris Disposal Requirements in Your State
12. National Lead Clearinghouse (800)424 - LEAD