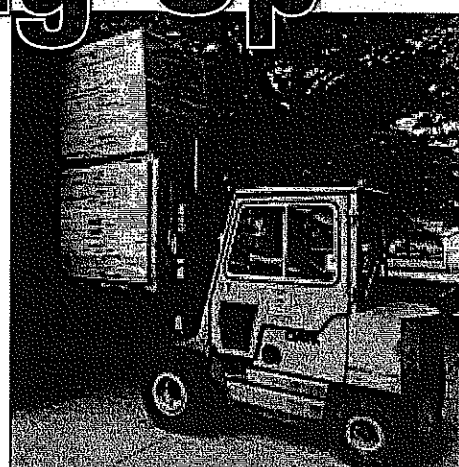


The Armstrong Ceiling Recycling Program has provided a recycling destination for 70 million square feet of end-of-life ceiling tiles.

Looking Up



For most contractors, the usual procedure for removal of a suspended or “drop” ceiling is to take out the old ceiling tiles, throw them into a bin and take them to the landfill. However, that’s not necessarily the case anymore.

In 1999, Armstrong World Industries, one of the country’s largest manufacturers of acoustical ceilings, initiated its Ceiling Recycling Program, designed to allow contractors or building owners to ship old ceilings from renovation or demolition projects to an Armstrong ceiling plant as an alternative to landfill disposal.

The program is designed to help reduce the impact on the environment by redirecting used ceiling tiles from landfills back to Armstrong, thereby creating a closed-loop manufacturing pro-

cess and offering an end market for materials that typically would have been thrown away.

Armstrong even pays freight costs for shipping the old ceilings (30,000 sq. ft. minimum), which it uses as raw materials in the manufacturing of new ceilings.

PROGRAM BASICS

Since it introduced the program, Armstrong, based in Lancaster, Pa., has recycled more than 70 million square feet of discarded ceiling tiles. This represents more than 10,000 30-cubic-foot dumpsters of construction and demolition scrap that would have normally been taken to landfills.

Armstrong has initiated two additional services to boost the program. The first is a network of certified ceiling recycling contractors that have been trained in

implementing the program’s requirements. These firms are also trained in other waste management techniques, and in the contribution of ceiling recycling to LEED (Leadership in Energy and Environmental Design) Construction Waste Management credits.

The second is a recycling consolidation network of contractors and distributors who will pick up smaller, less-than-truckload quantities of tiles and store them at their facilities until there is a full trailer load. An efficient aspect of the network is that Armstrong can deliver shipments of new ceilings to the contractor or distributor and backhaul discarded ceiling tiles to the manufacturing facility.

FOUR-STEP PROCESS

The process for contractors seeking to recycle old ceilings involves

four steps. First, provisions for ceiling recycling should be included in the project specification or construction waste management plan. A guide specification can be

found at www.armstrong.com/environmental.

Second, building owners or contractors need to verify with Armstrong that their old ceiling

A HEALTHY HABIT

Neal Enterprises, a demolition contractor based in Marietta, Pa., recently recycled old ceiling tiles as part of a major construction project at the Columbia Health Center, an affiliate of the Lancaster General Hospital health care system in Columbia, Pa.

As part of the project, the hospital demolished an old two-story wing that once housed an inpatient facility and renovated another wing to house new mammography, ultrasound and CT scan equipment.

Approximately 22,000 square feet of old ceiling tiles were removed from the demolished wing, and 8,000 square feet from the renovated wing. All were reclaimed as part the Armstrong Ceiling Recycling Program. Steel, aluminum, copper and masonry also were separated out as part of the project's overall recycling effort.

Jeremy Elliot, the Neal Enterprises field supervisor on the project, says this was not the first time the firm has recycled ceiling tiles. "We started recycling them about four years ago," he says, "and have probably recycled ceilings on a dozen or more jobs since then." Among those jobs were the renovation of administration buildings at Dickinson College in Carlisle, Pa., and the York County Courthouse in York, Pa.

Elliot believes the recycling of ceilings is increasing, and one of the reasons is the growing number of building owners participating in the Leadership in Energy and Environmental Design (LEED) program. Recycling construction and demolition scrap such as ceilings contributes to points in the program's rating system.



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tiles can be recycled. Old tiles do not have to be Armstrong products to qualify for the program.

Third, following verification, contractors must stack the old ceiling tiles on pallets and shrink wrap or tightly band them for pick-up. More details on packaging and other material handling options are available from the company.

Finally, once there is a full trailer load of old ceilings (30,000 square feet), the owner or contractor simply needs to contact Armstrong, which will then arrange for a truck to pick up the material and transfer it to its nearest manufacturing facility.

In the case of less-than-truck-load quantities, the company's network of local consolidators can pick up the tiles and store them at their facilities until a full trailer load is ready for shipment.

QUALIFYING CEILINGS

While the vast majority of acoustical ceilings are recyclable, Armstrong has established acceptance criteria to prevent any possible contaminants from entering newly manufactured tiles and to protect the safety of those who handle the tiles.

Acceptable ceiling tiles include:

- All brands of pulpable mineral fiber ceiling panels or tiles. (Metal splines must be removed from 12"x 12" tiles, and no glue or adhesive.)
- Armstrong fiberglass panels. (No foil on back, and facing must be able to be removed easily.)

Non-acceptable ceiling tiles include:

- Vinyl-faced mineral fiber or gypsum ceilings
- Fabric-faced ceiling tiles
- Foil-backed ceiling tiles
- Ceiling tiles with visible wood pulp
- Wet, moldy or weathered ceiling tiles
- Gypsum board
- Asbestos-containing tiles

- Ceiling tiles installed below friable asbestos or contaminated with any other hazardous material
- Ceiling tiles with paint not applied by manufacturer
- Ceiling tiles with dark or metallic paints
- Tiles not packaged according to Armstrong specifications

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- Ceiling tiles or pallets/boxes that contain visible debris (garbage, construction waste, etc)

CEILING RECYCLING BENEFITS

Ceiling recycling results in less impact on landfills, preserves natural resources and saves on the use of virgin materials. It also results in reduced greenhouse gas emissions and reduced water and energy output in the manufacturing process.

Recycling ceilings can also contribute to LEED Material & Resources, Construction Waste Management MR Credits 2.1 and 2.2. Additionally, the closed-loop or "cradle-to-cradle" process enables old ceilings to become new again with even higher post-consumer re-

cycled content.

From a construction perspective, removing old ceilings for recycling provides an early view of potential problems, such as structural issues and abatement needs. Orderly ceiling removal also eliminates confusion and space limitations during demolition.

Finally, from an economic viewpoint, the process of recycling old ceilings has proven to be nearly as fast as dumping them, so the program has little or no adverse impact on demolition schedules. It can also be less costly than dumping because it eliminates some container costs, landfill fees, and the cost of transporting the material to the landfill.

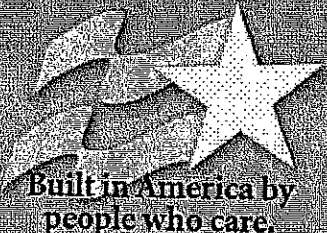
To help determine the difference in costs between dumping and recycling on a particular proj-

ect, Armstrong has an interactive recycling cost calculator on its Web site.

As a result of these benefits, ceiling tile recycling is growing. Between 2000 and 2007, the square footage of ceiling tiles recycled by Armstrong has increased an average of 24 percent per year.

As sustainability becomes an increasingly important consideration in commercial building renovation and demolition, the recycling rate for ceiling tiles will grow even faster. If you haven't done so already, consider looking into this environmental opportunity and grow along with it. **C&DR**

The author, sustainability manager for Armstrong Commercial Ceiling Systems, can be reached at alsnauder@armstrong.com.



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