

# Corrugated Boxes

The recycling rate for OCC has doubled since 1960.

**C**ORRUGATED BOXES are named for the fluted inner layer that is sandwiched between layers of linerboard. The boxes need to be impact, drop and vibration-damage resistant, while still being light enough to ship products in. Corrugated packaging is the largest segment of the packaging industry, with more than 1,600 box plants in North America making corrugated boxes.

Paper recyclers call used corrugated boxes “old corrugated containers” or “OCC.” Consumers often mistakenly call them “cardboard boxes.” Those boxes, however, do not have a fluted inner layer and lack the strength of a corrugated box. The term “double-lined kraft” refers to cuttings generated from manufacturing corrugated containers.

The extensive use of corrugated boxes in the American economy makes them the biggest component of the waste stream by weight. Fortunately, OCC is easy to recycle, which also makes it the most recycled product by weight and greatly diminishes the amount sent to disposal. OCC’s MSW market share increased by more than 50 percent since 1960, its recycling rate doubled and its disposal share decreased by 10 percent in the same period.

While some corrugated boxes are made of plastic, this profile is limited to paper boxes.

*Chaz Miller is state programs director for the National Solid Wastes Management Association, Washington, D.C. E-mail the author at: [cmiller@envasns.org](mailto:cmiller@envasns.org).*

**Sources:**

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  - Corrugated Packaging Council, [www.corrugated.org](http://www.corrugated.org)
  - Fibre Box Association, [www.fibrebox.org](http://www.fibrebox.org)
  - “Measurement Standards and Reporting Guidelines,” National Recycling Coalition, Washington, D.C., [www.nrc-recycle.org](http://www.nrc-recycle.org)
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- \*2003 EPA estimates.

## Corrugated Boxes Municipal Solid Waste Facts:

**Generated:**

- 29.7 million tons or 12.6 percent by weight.\*
- 204.2 pounds (lbs.) per person per year.\*
- 33 million tons in 2004 (industry data).

**Recycled:**

- 21.2 million tons or 71.3 percent.\*
- 24 million tons or percent in 2003 (industry data).

**Recycled Content:**

- Generally less than 40%.
- Corrugated medium usually has more recycled content than linerboard.

**Composted:**

- Compostable if shredded properly.

**Incinerated or Landfilled:**

- 8.5 million tons or 5.2 percent of discarded MSW by weight.\*
- 7,047 Btus per pound (4,500 Btus to 5,000 Btus in 1 lb. of MSW).

**Landfill Volume:**

- 26.3 million cubic yards (cu. yds.) or 6.2 percent of landfilled MSW in 1997.
- By volume, the second largest item in landfills.

**Density**

- Landfilled OCC weighs 750 lbs./cu.yd.
- Loose, unbaled OCC weighs 50-100 lbs./cu. yd.
- Loose, unbaled, stacked OCC weighs 350 lbs./cu. yd.
- Baled OCC weighs 1,000-1,200 lbs./cu. yd.

**Source-Reduction:**

- 10-15 percent weight reduction in last decade due to linerboard lightweighting.
- Compression, stacking strength and burst tests limit the ability to lightweight corrugated boxes. Heavy use of recycled fibers can increase box weight to meet these tests.

**Recycling Markets:**

- 63 percent goes into corrugated medium or linerboard; 17 percent goes into recycled paperboard; 17 percent is exported.

**End-Market Specifications:**

- ISRI guidelines for paperstock include grades 11 (corrugated containers); 12 (double-sorted corrugated); and 13 (new double-lined kraft corrugated cuttings).
- Contaminants include wax coatings, plastics, chipboard and mill wrappers.

