

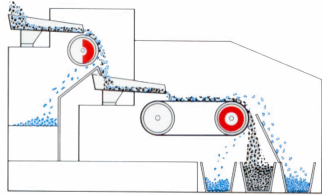
PROCESSING COMMINGLED RECYCLABLES



Have you ever wondered what happens to your recyclables after you take them to one of our 27 recycling drop-off sites? All recycled materials must undergo multiple processes before they can be converted into useful products.

Commingled Containers

* Glass; Plastics 1,2,3,4,5,7; Steel and Aluminum Containers



Commingled containers must be separated before they can be processed into new products. First, all of the materials are dumped onto the tipping floor of a Materials Recovery Facility (MRF) and fed onto an inclined conveyor belt. As the materials proceed, the steel is pulled out by a magnet (shown as the half red circle to the left). Aluminum is not attracted to the magnet. However, aluminum does react to the electrical charge of a spinning magnet called an eddy current (shown as full red circle above), which makes the aluminum literally jump off of the conveyor belt into a collection bin. Plastic and glass do not react and drop onto a separate conveyor for further separation. Some facilities use screens that shake the glass out, dropping it into a collection bin. The glass may be mixed together, or optical sorters might be used to separate by color (amber/brown, clear/flint, or green). Plastic is either separated manually by type (resin) or it is separated by density with an air knife, which uses a blast of air to blow the plastic off of the conveyor and into a catch bin.

Once separated, the materials are baled (or loaded into a rolloff container) and sent on to be reprocessed into new products. Glass is crushed into small pieces called cullet, cleaned and melted to create new glass products. Plastic is shredded, cleaned, and shaped into pellets that can be remelted and formed into a variety of products. Aluminum cans are shredded, cleaned and melted into new aluminum cans. Steel is shredded, cleaned and melted to extract tin and form various steel products.

Commingled Papers

* Junk Mail, Mixed Office Paper, Newspaper and Magazines



At some MRFs, commingled papers are simply baled and shipped to paper mills that can use the papers mixed as is. At other MRFs, commingled papers are sorted as described below. The paper takes a ride on a conveyor belt where it is separated manually into magazines, mixed office paper and newspaper. Each type of paper is then baled and transported to various places for further processing. To become new material, the wastepaper is mixed with water (and sometimes additives) to become a pulp slurry in a giant blender called a pulper. The pulp mix passes through cleaning equipment and screens to remove contaminants. Next the pulp goes through an ink removal process. Finally, the pulp is dried and formed into sheets to be used once again as paper products.



Cardboard

* Corrugated Cardboard, Chipboard, Paperboard and Carrier Stock

The recycling process for commingled cardboard is virtually the same as the paper recycling process discussed above.

City of St. Louis Refuse Division - Recycling Program, 4100 South First Street, St. Louis, Missouri 63118

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