Colorado Glass Recycling Project

Colorado Rocky Mountain SWANA
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Why Recycle Glass?

Energy Savings
- Recycled cullet melts at a much lower temperature than raw materials – sand, limestone, soda ash and feldspar
- For every 10% increase in the use of recycled glass cullet a 3% energy savings is achieved
- Recycling just one glass bottle saves enough energy to light a 100-watt bulb for four hours (or a 23-watt CFL for 16 hours)

Reduced Emissions
- For every 10% increase in the use of recycled glass cullet a 5% reduction of emissions is achieved
- Each ton of recycled glass means over 600 pounds of CO2 is NOT released into the atmosphere

Conservation
- Every ton of recycled glass saves over 2,280 pounds of raw materials or 14% production loss
- Reduces negative environmental impact of mining and associated transport of raw materials
- Saves landfill capacity
- Container glass can be recycled endlessly without loss of volume

Current State of Glass Recycling in Colorado

The Front Range introduces about 10,000 - 20,000 tons of glass into the waste stream each month.

Roughly 1/3 of this is collected in recycling containers (single stream or source separated).

Only the source separated or drop off glass – which maybe 10% - 15% of the total - is clean enough for use in bottle manufacturing. “Bottle to Bottle” Recycling

MRFs try their best to find beneficial uses for the rest, but options are few.

Types and Sources of Glass to be Processed
Waste Glass Processing

- Pre-sorting
  - Screening
  - Crushing
  - Organic removal

- Cullet Sublimation
  - Drying
  - Cleaning & De-labeling
  - De-dusting

- Sensor-based Sorting
  - Ceramics, Stones, Porcelain (CSP)
  - Lead & Heat Resistant Glass
  - Color (Amber, Green, Flint)

- Fines Processing
  - Screening
  - Regrinding
  - Sizing

- Quality Analysis
  - Sampling
  - Testing
  - Reporting

Denver Glass Plant Location

Denver Glass Plant Floor Plan
Sensor-Based Sorting: Binder CLARITY

- automatic separation with sensor based systems
- sorting from 2 – 50 mm (1/8” – 2”)
- color sorting
- separating
  - ceramics, stones, porcelain (CSP)
  - heat resistant glasses (HR)
  - lead glass
- NF separation
- 2- and 3-way-systems
- modular system
- 3 different sorting widths for individual solutions

Sensor-Based Sorting Video
Link: https://vimeo.com/109124335

Example: Complete Plant Video
Link: https://vimeo.com/109122280
Fines Processing

Uses of Recycled Glass in Colorado

End Uses

Questions?

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