Scrap contamination: Challenges and opportunities for copper recycling

Copper combines 100% recyclability with high residual value.

Scrap contamination diminishes scrap value and increases the cost of doing business.

Contamination disrupts production and reduces productivity and profitability.

Semi-fabricators convert recycled content (i.e., scrap) and virgin materials into a wide range of products.

Scrap suppliers and semi-fabricators need to work together to address recycling challenges presented by scrap contamination.

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Scrap contaminants can harm employees, destroy equipment, and damage customer relationships.

Semi-fabricators in North America (N=15) and Europe (N=10) identified 11 adverse production events for semi-fabrication.

In 2017-2019, scrap contamination caused an annual average of 11 adverse production events for semi-fabrication, and resulted in an average of 15 rejected shipments from copper mills.

The amounts and types of scrap used by semi-fabrication are critical to the production process and refining capabilities.

Semi-fabricators need significant cash to deposit scrap for contamination, and to address production issues caused by rejected scrap shipments.

Top 10 ISRI scrap grades used by semi-fabricators (N=34)

Barley, Berry, Birch, Candy, Clove

Top scrap contaminants encountered by semi-fabricators (N=34)

Iron, Aluminum, Lead, Nickel, Tin, Zinc, Bismuth, Silver, Plastic, Oil, Water, Rubber, Sand

For U.S. brass mills, scrap makes up 60% of all copper sources.

Semi-fabricators use copper-containing scrap that comes from several sources.

Data represented above compiled from Copper Development Association Semis Scrap Survey, 2020, unless otherwise specified.

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Inbound inspection

Production issues

$40,063

$45,143

$25,893

$35,769

Business impacts of scrap contamination

Increased processing failures

Reduced product quality

Difficulty separating contaminated scrap

Damaged customer relationships

Diminished productivity

Increased operational costs

Compromised employee safety

Environmental protection problems

Contact CDA to learn more and get involved

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