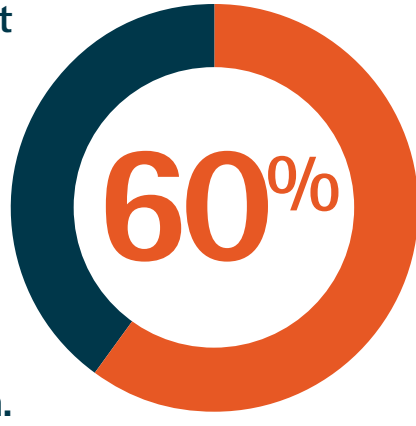


Scrap contamination: Challenges and opportunities for copper recycling

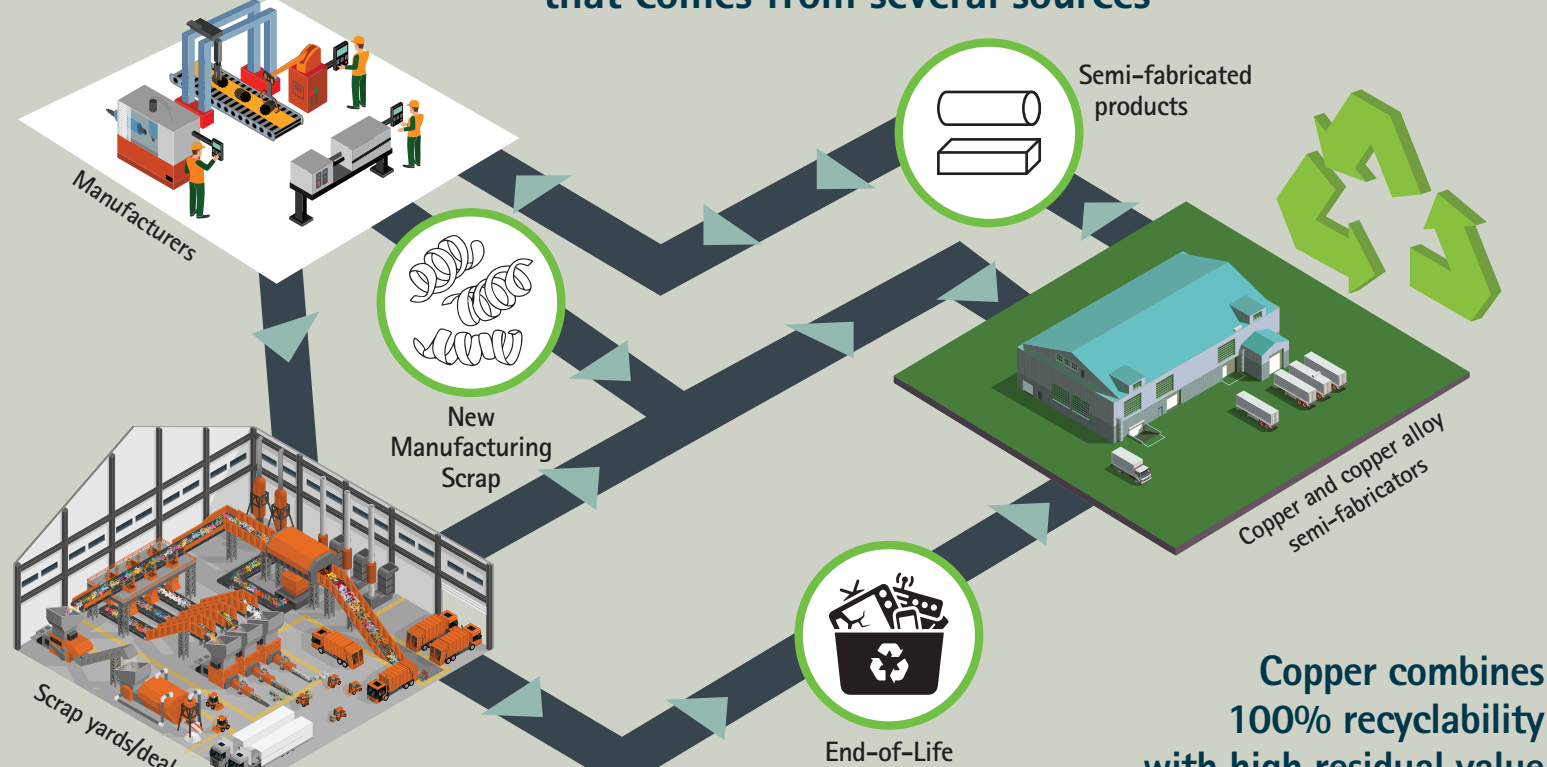
Semi-fabricators convert recycled content (i.e., scrap) and virgin materials into a wide range of products. Scrap suppliers and semi-fabricators need to work together to address recycling challenges presented by scrap contamination.



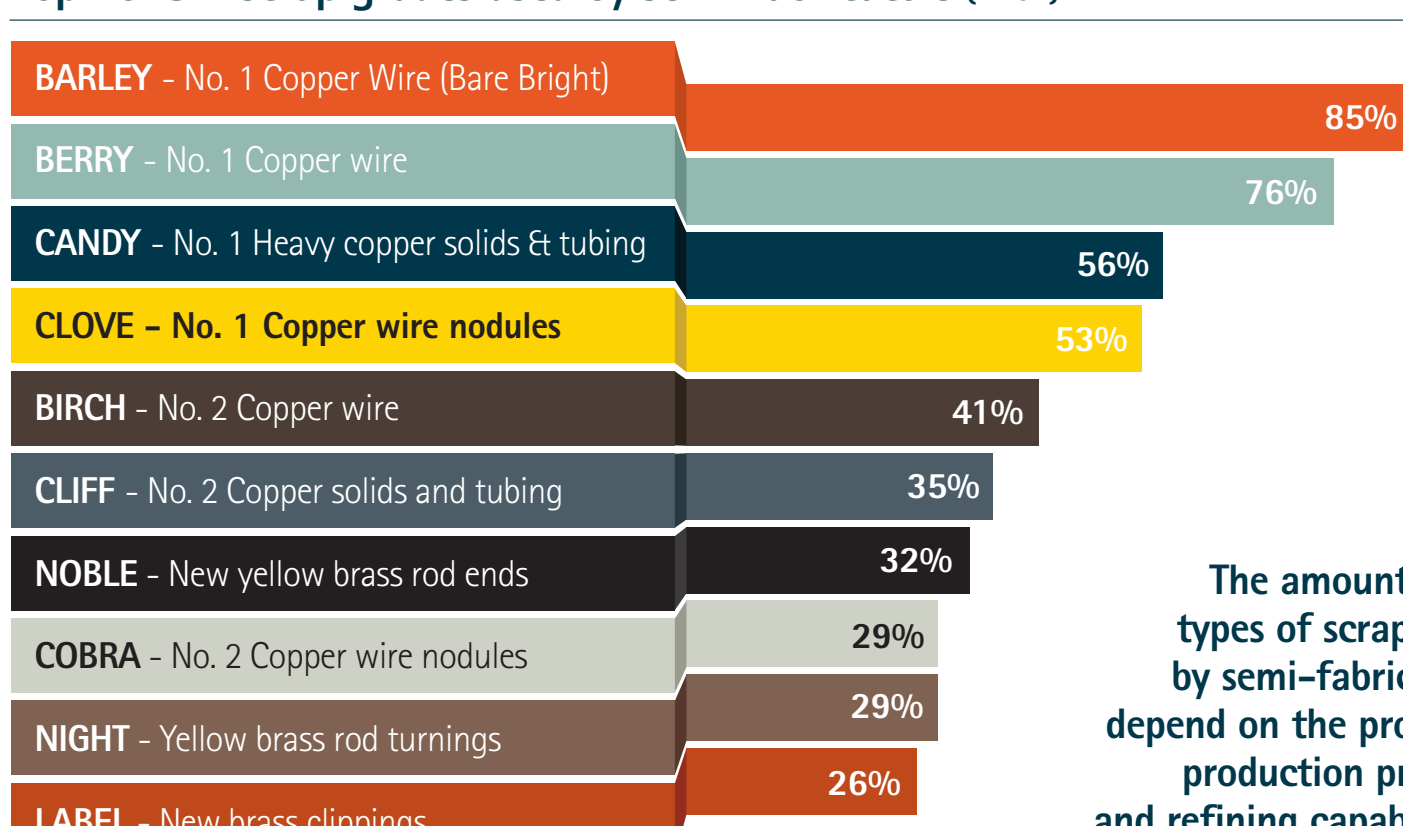
For U.S. brass mills, scrap makes up 60% of all copper sources

(U.S. Department of the Interior, U.S. Geological Survey, 2018. Excludes wire rod)

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



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



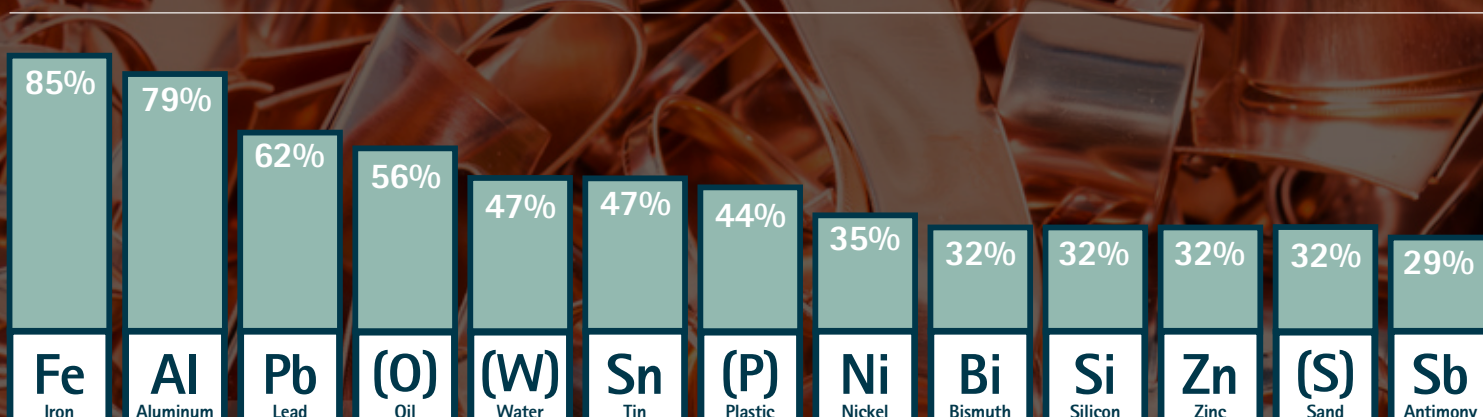
The amounts and types of scrap used by semi-fabricators depend on the product, production process and refining capabilities

Business impacts of scrap contamination



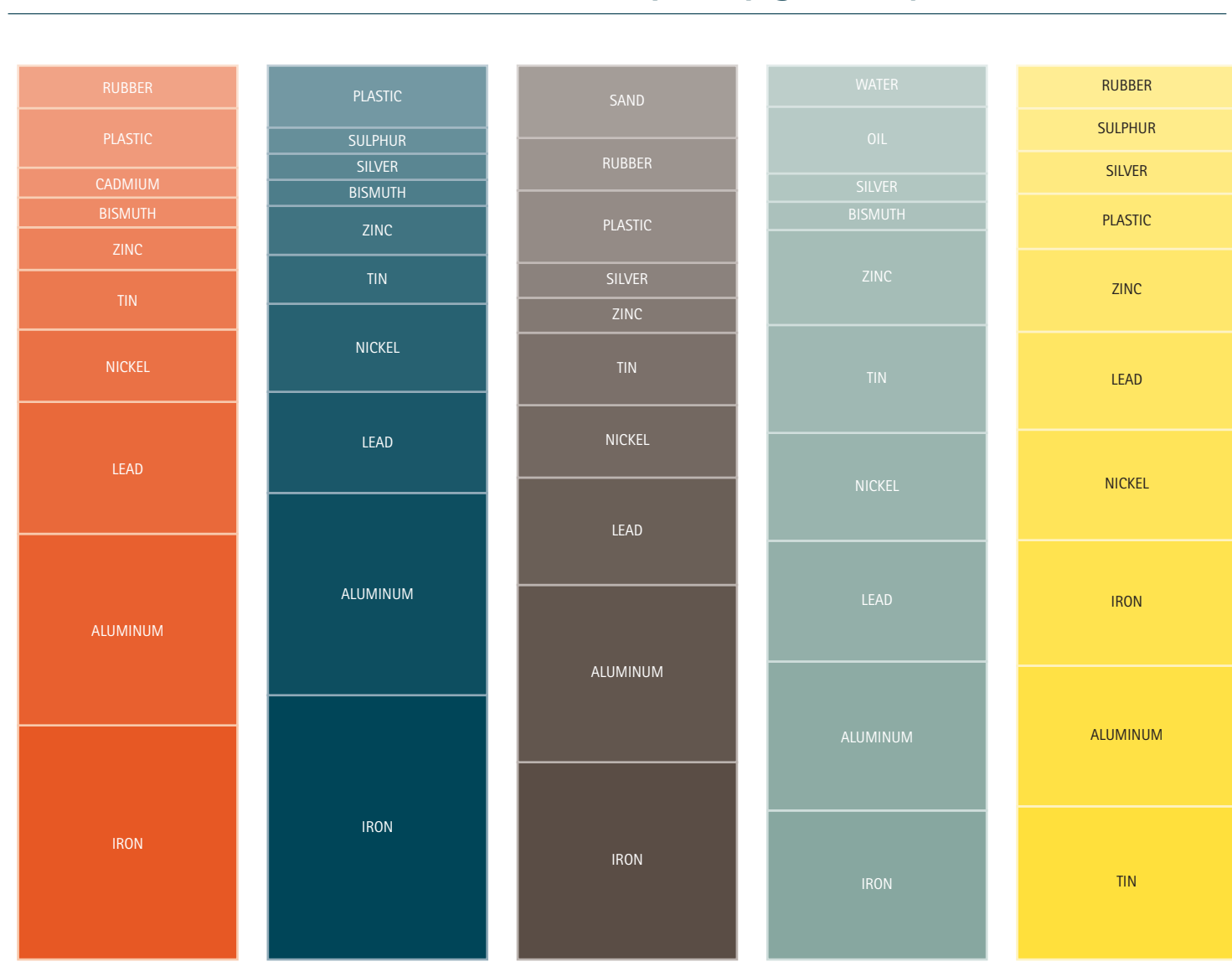
Contamination diminishes scrap value and increases the cost of doing business

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



Some contaminants can have serious impacts even at very low concentrations

Most common contaminants found in top scrap grades by semi-fabricators

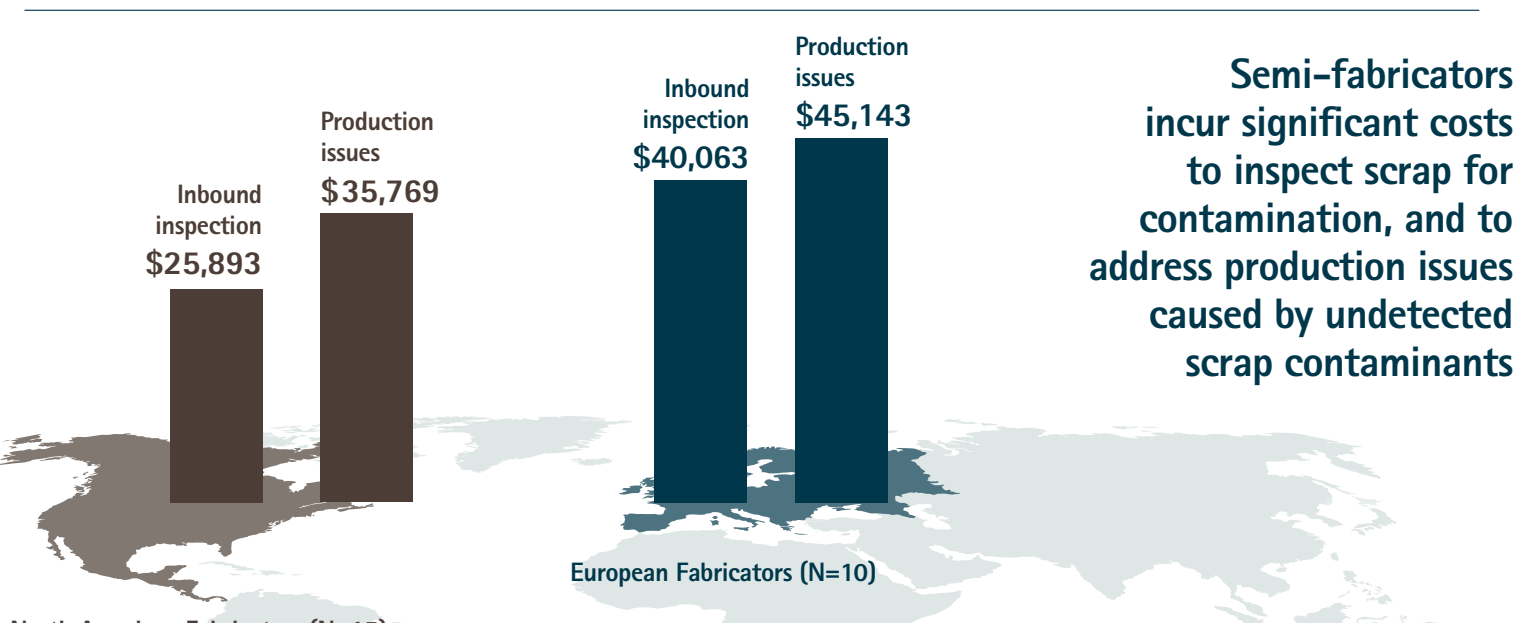


Block sizes reflect the percentages of semi-fabricators (N=34) that routinely encounter each contaminant

In 2017-2019, scrap contamination caused an annual average of **11 adverse production events** for semi-fabricators, and resulted in an annual average of **15 rejected shipments** of purchased scrap

Scrap contamination disrupts production

Average monthly cost impacts of scrap contamination



Semi-fabricators incur significant costs to inspect scrap for contamination, and to address production issues caused by undetected scrap contaminants

Be part of the solution



Participate in the semi-fabricator scrap contamination survey



Join ASTM Committee B05.08 to develop new scrap standards



Explore new technology solutions to copper recycling challenges

Contact CDA to learn more and get involved

www.copper.org

212-251-7200

questions@copperalliance.us

Data represented above compiled from Copper Development Association and International Wrought Copper Council Global Semis Scrap Survey, 2020, unless otherwise specified.