

GREEN FOUNDRY CASE STUDIES

WASTE MANAGEMENT & BENEFICIAL REUSE

Recycling Zinc From Brass Baghouse Dust



Description

Brass baghouse dust associated with brass melting was historically sent to a Subtitle C landfill for disposal as a waste. The dust contains approximately 40-50% zinc (by weight) due to the addition of zinc as an alloying addition. The addition of zinc into the ladle is critical since the boiling point of zinc is much lower than copper and thereby a large quantity of zinc fumes off into the baghouse. A metals recycling company was contacted to evaluate recycling the zinc in the brass furnace baghouse dust to eliminate sending the material to a Subtitle C landfill.

Environmental Benefit

- Sending the brass melt baghouse dust out for beneficial reuse eliminates approximately 6 tons of material being landfilled as waste annually.

Cost & Savings

- Disposal cost for hazardous waste = \$248.30 per ton
- Beneficial reuse reimbursement = \$0.0025 per pound

Typical generation rate is 6 tons brass furnace dust per year:

- 6 tons x \$248.30/ton = \$1,489.80 (cost avoidance)
- 6 tons x \$0.0025 x 2,000 pounds/ton = \$30.00 (profit)

Net Savings = \$1,519.80/yr.

Applicability

Any brass foundry melting alloys ASTM 83600(115) and ASTM 86700(422) can implement. Note that this recycling method is not suitable with ASTM 87850 low-leaded brass (i.e., Eco Brass).

