



Lead > Secondary Lead Smelter eTool

Environmental Controls

Employees may be exposed to lead while servicing and maintaining environmental controls.

- [Waste Water Treatment](#)
- [Dust Collection Systems](#)



Baghouse

[eTool Home](#)

[Raw Materials Processing](#)

[Smelting](#)

[Refining and Casting](#)

[Environmental Controls](#)

[Waste Water Treatment](#)

[Dust Collection Systems](#)

[Maintenance](#)

[Engineering Controls](#)

[OSHA Lead Requirements ...](#)

[eTool Home](#) | [Raw Materials Processing](#) | [Smelting](#) | [Refining and Casting](#) |
[Environmental Controls](#) | [Maintenance](#) | [Engineering Controls](#) | [OSHA Lead Requirements](#) |
[Scope](#) | [Definitions](#) | [Additional References](#) | [User Guide](#) | [Credits](#) |



[Back to Top](#)

www.osha.gov

www.dol.gov

[Contact Us](#) | [Freedom of Information Act](#) | [Information Quality](#) | [Customer Survey](#)
[Privacy and Security Statement](#) | [Disclaimers](#)

Occupational Safety & Health Administration
200 Constitution Avenue, NW
Washington, DC 20210



Lead > Secondary Lead Smelter eTool

Environmental Controls > Waste Water Treatment

Normally, employees are not exposed to hazardous levels of airborne lead contaminants during the service and maintenance of waste water treatment systems. However, during the handling of lead-bearing wastes, sludges, and filters employees may come in contact with lead-containing wastes.



Waste water

Waste Water Treatment

Potential Sources of Exposure:

- Liquid lead waste may splash on equipment and become airborne if it dries and becomes disturbed.
- Employees may contact leaded waste products during removal and transport of recovered lead.

Possible Engineering and Work Practice Controls:

- Ensure that appropriate PPE is provided and used when handling leaded materials.
- Transfer recovered lead in covered or closed containers.
- Clean up spills and water mists, when necessary, to prevent leaded materials from drying.



Fig. 1. Waste water treatment area

[eTool Home](#)

[Raw Materials Processing](#)

[Smelting](#)

[Refining and Casting](#)

[Environmental Controls](#)

[Waste Water Treatment](#)

[Dust Collection Systems](#)

[Maintenance](#)

[Engineering Controls](#)

[OSHA Lead Requirements ...](#)

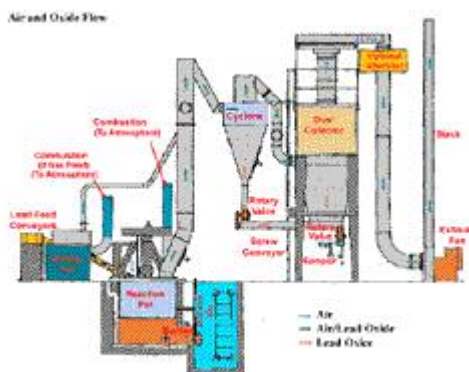


Lead > Secondary Lead Smelter eTool

Environmental Controls > Dust Collection Systems

Flue gases from furnaces and air from ventilation systems are vented to cyclones, scrubbers, baghouses, etc. for particulate removal. Flue dust must be removed from the separator (air pollution control equipment) and transported to storage, recycle streams, or to off-plant receivers. Dust collection systems can be a significant source of lead exposure if not properly operated, cleaned, and maintained.

- [Dust Collection Systems](#)
- [Flue Dust Agglomeration Furnace](#)



Click for larger view of air and oxide flow diagram

Dust Collection Systems

Potential Sources of Exposure:

- Employees have a high potential of overexposure to lead dust during cleaning and maintenance of dust collection systems (cyclones and baghouses) (**Fig. 1**).
- Employees have a high potential of overexposure to lead dust during handling and transporting of materials removed from dust collection systems (cyclones and baghouses).
- Employees have a high potential overexposure to lead dust due to improperly maintained dust collection systems.



Fig. 1. Dust collection system

Possible Engineering & Work Practice Controls:

- Screw or pneumatically convey flue dust back to the process.
▶ [Scrubber Diagram](#)
- Provide vehicles with enclosed cabs that have positive-pressure, HEPA filtered air.
▶ [Tempered Air Cab Diagram](#)
- Enclose or cover containers used to transport lead from dust collection systems.
- When working on or entering ventilation or dust-control equipment for

[eTool Home](#)

[Raw Materials Processing](#)

[Smelting](#)

[Refining and Casting](#)

[Environmental Controls](#)

[Waste Water Treatment](#)

[Dust Collection Systems](#)

[Maintenance](#)

[Engineering Controls](#)

[OSHA Lead Requirements ...](#)

maintenance or cleaning, implement proper permit required confined space entry and energy-control procedures.

- Always provide appropriate personal protection equipment.
- Ensure that dust-control equipment is designed, operated, and maintained properly on a scheduled basis to prevent breakdown and release of lead to the ambient environment.

Flue Dust Agglomeration Furnace

Potential Sources of Exposure:

- Lead dust and fumes may be emitted from agglomeration flue gases that contain lead.
- Lead fumes may be emitted at the slag tap, when pouring slag to the casting machine, during transfer of slag, or from cooling slag.
- Lead dust may be emitted from disturbed settled particulate.

Possible Engineering & Work Practice Controls:

- Provide local exhaust ventilation that controls lead emissions at the slag port, launder, and receiving kettles.
- Enclose and exhaust ventilate the slag casting line and slag dumping station.
- Provide two agglomerating furnaces.
 - ▶ [Agglomeration Furnace Diagram](#)
- Use enclosed screw conveyors to deliver dust to the furnace.
 - ▶ [Screw Conveyor Components](#)
- Provide curtains and baffles, if necessary, to prevent cross-drafts.
- Ensure that access doors to agglomeration furnaces are closed.
- Provide a swing-away section of the furnace flue to facilitate flue cleaning directly above the furnace.
- Provide vehicles with enclosed cabs that have positive-pressure, HEPA filtered air.

▶ [Tempered Air Cab Diagram](#)



Click for larger view of agglomeration furnace