

## TCEQ Mechanical Sources

### Current Best Available Control Technology (BACT) Guidelines

#### Iron and Steel Industry

Source Type	Pollutant	Minimum Acceptable Control	Details
Scrap Handling	Particulate Matter (PM)	70% reduction	Typically achieved when transfer to charge bucket conducted indoors or partial enclosure is enclosed, i.e. three sides
Raw Material Conveying and Storage	PM	99% reduction, outlet grain loading $\leq 0.01$ gr/dscf, 5% opacity at stack	Typically achieved when dry powdery materials are conveyed by pneumatic or enclosed system and stored in silos with emissions exhausted to a fabric filter
Electric Arc Furnaces (NSPS AA and Aa)	PM	Emission capture system meets ACGIH design; canopy hood capture of at least 95%; direct evacuation or fourth hole capture efficiency of at least 99%; an outlet grain loading $\leq 0.0032$ gr/dscf front half PM catch; and $\leq 0.0052$ gr/dscf for total PM catch; 3% opacity at stack; 6% building opacity	Typically achieved by charging and tapping emissions captured by canopy hood and exhausted to a fabric filter, and melting and refining emissions captured using direct evacuation or fourth hole and exhausted to a fabric filter
	NO <sub>x</sub>	0.43 lbs NO <sub>x</sub> /ton steel melted, good combustion and engineering practices	Typically achieved by minimizing air infiltration, and maintaining furnace draft during melting and refining operations
	CO	Good combustion and engineering practices	Typically achieved by maintaining proper air gap/air inlet to exhaust gas stream

Source Type	Pollutant	Minimum Acceptable Control	Details
Electric Arc Furnaces (NSPS AA and Aa) <i>(continued)</i>	SO <sub>2</sub>	0.24 lbs SO <sub>2</sub> /ton steel	
	VOC	0.35 lbs VOC/ton steel	Typically achieved with melted scrap management program
Metallurgy Furnace	PM	98% reduction, outlet grain loading ≤ 0.0052 gr/dscf if EAF filter, and ≤ 0.01 gr/dscf if not EAF filter, 6% building opacity	Typically achieved by capture hood exhausted to a fabric filter
	Products of Combustion (POC)	Pipeline quality sweet natural gas firing and good combustion practices	
Casting	PM	Outlet grain loading of ≤ 0.0052 if EAF fabric filter, ≤ 0.01 gr/dscf if not EAF filter	Typically achieved by hood capture and exhaust to a fabric filter; and no roof vents above the casting deck area
Ladles/Tundish/Preheat/Dryer/Operations	POC	0.1 lb NO <sub>x</sub> /MMBtu	Typically achieved with natural gas/LPG fuel
Ladles/Tundish Prep Area	PM	99% reduction, outlet grain loading ≤ 0.01 gr/dscf, unless routed to EAF filter, 5% opacity on stack	
Billet Reheat Furnace	POC	0.1 lb NO <sub>x</sub> /MMBtu, good combustion practices, 3% opacity at stack	Typically achieved with natural gas/LPG fuel, low NO <sub>x</sub> burners
Rolling Mill	PM	70% reduction	Typically achieved when operation is conducted inside a building, and water sprays used for mill scale cooling and collection

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Mill Scale Processing	PM	70% reduction, outlet grain loading $\leq 0.01$ gr/dscf	Typically achieved by minimizing handling steps, and using water sprays at transfer points, dump pits, stockpiles, and conveyors
Core Sand Handling	PM	100% capture, an outlet grain loading $\leq 0.01$ gr/dscf	Typically achieved by receiving, conveying, and storing in a closed system exhausted to a fabric filter
Green Sand Handling	PM	90% reduction, an outlet grain loading $\leq 0.01$ gr/dscf	Typically achieved by minimizing handling, storing indoors using a bin or partial enclosure, i.e. three-sided enclosure, and using moisture as appropriate
Sand Reclamation	PM	50% reduction	Typically achieved by enclosure/within building
Mold Shakeout	PM	100% capture, an outlet grain loading $\leq 0.01$ gr/dscf	Typically achieved by conducting stackout indoors, capturing emissions and exhausting to a fabric filter, and transferring reclaimed sand using covered or enclosed conveyor system
Plant Roads	PM	Main plant roads, and high traffic areas and parking areas to be paved and cleaned as necessary; low traffic roads, slag storage, and processing areas to be watered and/or treated with dust suppressant as necessary	