



EMISSION FACTORS
PM_{2.5} fractions of PM₁₀

AQ-EF08

Emission Unit	Fuel	Controls	% PM_{2.5} of PM₁₀	Source of % PM_{2.5}
Boiler	Natural gas LPG	None	100	AP-42 Table 1.4-2
Boiler - Utility	#6 oil	None	76 ⁱ	AP-42 Table 1.3-4
Boiler - Utility	#6 oil	ESP	98 ⁱ	AP-42 Table 1.3-4
Boiler - Utility	#6 oil	Scrubber	98 ⁱ	AP-42 Table 1.3-4
Boiler - Industrial	#6 oil	None	68 ⁱ	AP-42 Table 1.3-5
Boiler - Industrial	#6 oil	Multiclone	44 ⁱ	AP-42 Table 1.3-5
Boiler - Industrial	#2 oil	None	67 ⁱ	AP-42 Table 1.3-6
Boiler - Commercial	#6 oil	None	44 ⁱ	AP-42 Table 1.3-7
Boiler - Commercial	#2 oil	None	89 ⁱ	AP-42 Table 1.3-5
Boiler	Wood ⁱ	None	84	AP-42 Table 1.6-5
Boiler	Wood	Multiclones ⁱⁱ	60	AP-42 Table 1.6-5
Boiler	Wood	Wet scrubber	100	AP-42 Table 1.6-5
Boiler	Wood	ESP	91	AP-42 Table 1.6-1
Boiler	Wood	Fabric filter	90	AP-42 Table 1.6-1
Boiler	Wood	EGB ⁱⁱⁱ	90	AP-42 Table 1.6-1
Boiler	Wood	DEGF ^{iv}	88 ^v	AP-42 Table 1.6-5
Recovery Boiler – w/o dry contact evaporator		ESP	90 ^v	AP-42 Table 10.2-3
Lime kiln		None	63 ^v	AP-42 Table 10.2-4
Lime kiln		Venturi scrubber	98 ^v	AP-42 Table 10.2-4
Lime kiln		ESP	94 ^v	AP-42 Table 10.2-5



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Smelt dissolving tank		None	83 ^v	AP-42 Table 10.2-6
Smelt dissolving tank		Packed tower	89 ^v	AP-42 Table 10.2-6
Smelt dissolving tank		Venturi scrubber	91 ^v	AP-42 Table 10.2-7
Asphalt dryer/hot screens/mixer		None	1 ^v	AP-24
Asphalt dryer/hot screens/mixer		Fabric filter	85 ^v	AP-42 Table 11.1-2
Asphalt drum mixer dryer		None	24 ^v	AP-42 Table 11.1-4
Asphalt drum mixer dryer		Fabric filter	70 ^v	AP-42 Table 11.1-4
Portland Cement Kiln – wet process		None	29 ^v	AP-42 Table 11.6-5
Portland Cement Kiln – dry process		None	43 ^v	AP-42 Table 11.6-5
Portland Cement Kiln – wet process		ESP	75 ^v	AP-42 Table 11.6-5
Portland Cement Kiln – dry process		Fabric filter	54 ^v	AP-42 Table 11.6-5
Portland Cement Clinker Coolers		None	1 ^v	AP-42 Table 11.6-6
Portland Cement Clinker Coolers		Gravel bed filter	53 ^v	AP-42 Table 11.6-6
Concrete Truck Mix Operations		None	18 ^v	AP-42
Concrete Truck Mix Operations		Controlled	See equation	AP-42 Equation 11.12-1
Concrete Central Mix Operations		None	See equation	AP-42 Equation 11.12-1
Concrete Central Mix Operations		Controlled	See equation	AP-42 Equation 11.12-1
Glass Melting Furnace		None	96 ^v	AP-42 Table 11.15-3
Glass Melting Furnace		ESP	71 ^v	AP-42



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				Table 11.15-3
Crushed Stone – tertiary crushing		Controlled	19 ^v	AP-42 Table 11.19.2-2
Crushed Stone – fines crushing		Controlled	6 ^v	AP-42 Table 11.19.2-2
Crushed Stone - screening		Controlled	7 ^v	AP-42 Table 11.19.2-2
Crushed Stone – conveyor transfer point		Controlled	28 ^v	AP-42 Table 11.19.2-2
Plywood Press	---	None	50	DEQ estimate
Particleboard Press Fugitives	---	None	50	DEQ estimate
Particleboard Board Cooler	---	None	50	DEQ estimate
Dry Kiln	---	None	100	DEQ estimate
Truck Loadout	---	None	50	DEQ estimate
Debarking	---	None	50	DEQ estimate
Sawing	---	None	50	DEQ estimate
Any	---	Cyclone	50	DEQ estimate
Any	---	Baghouse	100	DEQ estimate
Any	---	RTO	100	DEQ estimate
Any	---	RCO	100	DEQ estimate
Any	---	Biofilter	100	DEQ estimate
Storage Piles	---	None	15	AP-42 ^{vi}
Paved Roads	---	None	25	AP-42 Table 13.2.1-1
Unpaved Roads	---	None	10	AP-42 ^{vi}

ⁱ The PM_{2.5} percentage for oil fired boilers is based on both filterable and condensable PM_{2.5}.

ⁱⁱ Mechanical collector

ⁱⁱⁱ EGB = electrolyzed gravel bed

^{iv} DEGF = dry electrostatic granular filter

^v The PM_{2.5} percentage is based on filterable PM_{2.5} only.

^{vi} Background Document for **Revisions to Fine Fraction Ratios** Used for AP-42 Fugitive Dust Emission Factors (November 2006)