Emission Factors

Process Equipment	Description	Throughput Units	Pounds of Pollutant per Throughput Unit[1]				
			PM[2]	SO_2	NO_X	CO	VOC
Wood-Fired Boilers	Dutch Oven	1000 lb steam	0.4[3]	0.014	0.31[4]	3.0[4]	0.13
	Spreader-Stoker	1000 lb steam	0.4[3]	0.014	0.31[4]	2.0[4, 5]	0.13
	Fuel Cell	1000 lb steam	0.4[3]	0.014	0.31[4]	1.0[4, 6]	0.13
Veneer Dryer – Gas Heat	Doug Fir (uncontrolled)	1000 ft^2 (3/8" basis)	0.52	NA[7]	0.12	0.02	0.22
	Doug Fir (Burley or 45% control)	1000 ft^2 (3/8" basis)	0.29	NA	0.12	0.02	0.22
	Hemlock, White Fir (uncontrolled)	1000 ft^2 (3/8" basis)	0.15	NA	0.12	0.02	0.22
	Hemlock, White Fir (Burley or 45% control)	1000 ft^2 (3/8" basis)	0.10	NA	0.12	0.02	0.22
Veneer Dryer – Steam Heat	Doug Fir (uncontrolled)	1000 ft^2 (3/8" basis)	1.01	NA	NA	NA	0.04
	Doug Fir (Burley or 45% control)	1000 ft^2 (3/8" basis)	0.56	NA	NA	NA	0.04
	Hemlock, White Fir (uncontrolled)	1000 ft^2 (3/8" basis)	0.25	NA	NA	NA	0.04
	Hemlock, White Fir (Burley or 45% control)	1000 ft^2 (3/8" basis)	0.15	NA	NA	NA	0.04
Veneer Dryer – Wood Fired	All species (<20% moisture in fuel)	1000 ft^2 (3/8" basis)	0.75[8]	NA	0.4	1.4	0.2
	All species (20% moisture in fuel)	1000 ft^2 (3/8" basis)	1.50	NA	0.4	1.4	0.2
Cyclone- Dry and Green chips, Shavings, Hogged Fuel/Bark, Green Sawdust	Medium Efficiency	Bone dry tons	0.5	NA	NA	NA	NA
	High Efficiency	Bone dry tons	0.2	NA	NA	NA	NA
	Baghouse control	Bone dry tons	0.001	NA	NA	NA	NA
Cyclone - Sanderdust	High Efficiency	Bone dry tons	2.0	NA	NA	NA	NA
	Baghouse control	Bone dry tons	0.04	NA	NA	NA	NA
Target Box		Bone dry tons	0.1	NA	NA	NA	NA
Lumber Dry Kilns	Douglas Fir	1000 board feet	0.02[9]	NA	NA	NA	See AQ-EF09
	Hemlock	1000 board feet	0.05[9]	NA	NA	NA	
	Ponderosa Pine	1000 board feet	ND[10]	NA	NA	NA	
Press Vents-uncontrolled	Particleboard	1000 ft^2 (3/4" basis)	SS[11]	NA	NA	NA	SS
	Hardboard	1000 ft^2 (1/8" basis)	SS	NA	NA	NA	SS

[1] The emissions factors listed in this table should only be used when better information (i.e., source test data) is not available.

[2] The PM10 and PM2.5 fractions are dependent upon the type of control equipment. See AQ-EF03 for estimated PM10 and PM2.5 fractions.

[3] The PM factors are equivalent to 0.1 gr/dscf at 65% boiler efficiency. For other allowable emissions concentrations, the emission factor may be ratioed (e.g., 0.2/0.1 gr/dscf x 0.40 = 0.80 lb/10^3 steam).

[4] These factors are based on collective source tests as of 1992.
[5] Spreader-Stokers with small combustion chambers may exhibit higher CO levels.
[6] Recent tests have shown CO levels in the range of 0.1 to 0.5.
[7] There is no applicable emission factor because the pollutant is either not emitted or emitted at negligible levels.
[8] Based on statewide rule limit.
[9] Based on OSU study (2000)
[10] No data available, but expected to be less than Douglas fir factor.
[11] Use source specific data because most plants have performed source testing.