

planning
transport
design
environment
infrastructure

Document 3.1 - ES Volume 2

Appendix 7.4 - WKN Proposed Development Operational Noise Model

Wheelabrator Kemsley (K3 Generating Station) and Wheelabrator Kemsley North
(WKN) Waste to Energy Facility DCO

September 2019 -Submission Version

PINS ref: EN010083



Appendix 7.4: WKN Proposed Development Operational Noise Model Input Data

Spectral Shape for Emissions from Building Facades

		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
<i>Normalised Spectral Shapes from Survey of EFW Facility at Pontenx Les Forges, France</i>	General internal reverberant level near boiler	-7	-6	-7	-7	-10	-14	-20	-28
	Reverberant level in flue gas treatment area	-4	-7	-11	-14	-11	-8	-19	-29
	Reverberant level in unloading hall during RCV unloading	-6	-6	-8	-9	-10	-10	-14	-23
	Internal level in ferrous clinker	-13	-9	-8	-6	-8	-8	-11	-16
	Internal level in small non-ferrous clinker	-12	-9	-8	-8	-8	-7	-9	-14
	Internal level in large non-ferrous clinker	-12	-8	-8	-8	-8	-8	-10	-16
	Adopted Generic Internal Spectrum	-3	-6	-10	-11	-11	-16	-21	-27
	Adopted Spectral Shape of SRI	11	20	29	43	48	56	57	58
	Adopted Generic Emission Spectrum (dB)	0	-12	-25	-40	-45	-58	-64	-71

Source Terms for Building Facades

Building		Internal, Diffuse, Reverberant Sound Pressure Level dB(A)	Radiating Surface	Material	Sound Reduction Index / dB	Sound Power Level of Facade, L _w (dBA/m ²)
1	Structure for storage of solid fuels	85	Outwalls	Exposed Concrete	54	25
			Roof	Exposed Concrete	54	25
			Doors	Steel w/out seal	20	59
2	Structure for unloading solid fuels	85	Outwalls	Steel Panel	19	60
			Roof	Steel Panel	19	60
3	Boiler house	85	Outwalls	Steel panel, twin-trapezoidal cross section	32	47
			Roof	Steel panel, insulated	32	47
			Doors	Steel w/out seal	20	59
4	Structure for flue gas scrubber	85	Outwalls	Steel panel, twin-trapezoidal cross section	32	47
			Roof	Steel panel, insulated	32	47
5	steam turbine building	90	Outwalls	Steel panel, twin-trapezoidal cross section	32	52
			Roof	Steel panel, insulated	32	52
6	Structure for combustion residues handling	90	Outwalls	Steel panel, twin-trapezoidal cross section	32	52
			Roof	Steel panel, insulated	32	52
			Opening	-	-	79
7	Structure for Slag Transport	85	Roof	Steel Panel	19	60

Source Terms for External Sources

Building	Sound Power dB(A)	Sound Power dB(A) per item	Source Height / m	
8	Structure for air-cooled condensers	106	96	8
9	Smoke Stack	92	89	69.6
10	Residue Silo	86	-	-
11	Structure for reagent supply - activated carbon silo	84	-	22.1
12	Structure for reagent supply - calcium hydroxide silo	84	-	22.1
13	Structure for reagent supply - unhydrated lime silo	84	-	22.1

Impulsive sources

95 dB(A) @ 1 m

85 dB LA_{max} @ 10 m

80 dB LA_{max} @ 32 m