



Preliminary Environmental Information Report

Volume III - Appendices

Appendix 11A: Construction Noise Assessment Methodology

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)



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11A. Construction Noise Assessment Methodology

11.1 Introduction

11.1.1 The indicative construction and demolition noise levels were calculated using the procedures for prediction of construction noise set out in BS5228-1:2009+A1:2014.

11.1.2 Free field construction noise levels were predicted at seven receptor locations for the following construction activities:

- construction within the PCC:
 - Preliminary works (demolition, site clearance etc.);
 - piling and foundation works;
 - building and general site activities;
 - fit out; and
 - landscaping.
- CO₂ Gathering Network and Natural Gas Connections construction:
 - pipe stringing, pipe bending, pipeline welding.
- CO₂ Export Pipeline construction:
 - Crossing using trenchless technologies (e.g. horizontal directional drilling or auger bore).
- Water Connections:
 - Cofferdam (sheet piling)
- Electrical Connections:
 - Pylon construction (installation of pylon foundations)
 - Underground connection construction (topsoil strip)
- Decommissioning of the PCC:

11.1.3 A full list of plant associated with each construction phase and associated sound power data from BS5228 and % on time is presented in Tables 11A-1 to 11A-3. The list of plant was sourced from other similar projects.

Table 11A-1: Plant and Equipment Associated with Construction on the PCC

Plant/Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number in operation by stage of work					Fit Out	Landscaping
			Demolition	Site Clearance	Piling and Foundation Works	Building and General Site Activities			
Compressors	108	100	3	3	6	6	6	0	
Hand-held pneumatic breaker	111	100	3	3	0	0	0	0	
Dump truck (tipping fill)	107	100	2	2	2	0	0	0	
Dump truck (pass-by)	115	100	3	3	3	0	0	0	
Wheeled Loader	108	100		0	0	2	0	0	
Lorry (delivery and collection)	108	100	4	4	10	10	10	0	
Water pump (20kW)	93	100		0	0	1	0	0	
Pre-cast concrete piling hydraulic hammer rig	117	100		0	4	0	0	0	
Hand-held welder (welding piles)	101	100		0	1	0	0	0	
Generator for welding	101	100		0	1	0	0	0	
Dumper (idling)	91	100		0	0	1	0	0	
Wheeled backhoe loader	95	100		0	0	2	0	0	
Tracked excavator	99	100	5	5	5	5	0	0	
Concrete mixer truck	108	100	6	6	25	25	0	0	
Truck mounted concrete pump and boom arm	108	100		0	3	3	0	0	
Poker vibrator	106	100		0	0	1	0	0	
Wheeled mobile telescopic crane	106	100	2	2	4	4	4	0	

Plant/Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number in operation by stage of work					
			Demolition	Site Clearance	Piling and Foundation Works	Building and General Site Activities	Fit Out	Landscaping
Tower crane	105	100	1	1	2	2	2	0
Lorry with lifting boom	105	100	1	1	0	0	1	0
Lifting platform	95	100		0	0	0	1	0
Fork lift truck	103	100		0	0	4	1	0
Mini tracked excavator	102	100		0	0	0	1	0
Electric core drill (drilling concrete)	113	100		0	0	1	1	0
Concrete floor cutter	119	100		0	0	1	1	0
Hand-held circular saw (cutting paving slabs)	112	100		0	0	0	1	0
Roller	101	100		0	0	0	0	2
Diesel generator for site cabins	94	100	2	2	4	4	4	1
Diesel generator for site lighting	93	100	1	1	2	2	2	1
Road sweeper	96	100	1	1	1	1	1	1
Angle grinder	108	100	1	1	1	1	1	0
Hand-held cordless bail gun	101	100		0	0	0	1	0
Road planer (road construction)	110	100		0	0	1	0	0
Vibratory compactor (asphalt)	110	100		0	0	1	0	0
Asphalt paver and tipper lorry	105	100		0	0	1	0	0
Electric water pump	96	100	2	2	2	2	2	0

Plant/Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number in operation by stage of work					
			Demolition	Site Clearance	Piling and Foundation Works	Building and General Site Activities	Fit Out	Landscaping
Screen stockpiler	115	100	1	0	0	0	0	0
Concrete breaker mounted on wheeled backhoe	120	100	6	0	0	0	0	0
Tracked crusher	112	100	1	0	0	0	0	0

Table 11A-2: Plant and Equipment Associated with Construction away from PCC (CO₂ Gathering Network, CO₂ Export Pipeline, Gas Connection Electrical Connection and Water Connection)

Plant / Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number in operation by construction activity				
			Pipe Stringing and Welding	trenchless technologies Crossing	Cofferdam Sheet Piling	Topsoil Strip	Installation of Pylon Foundations
Crane 40T	98	33	1	1			
Pipe Carrier D8 Cradle	108	33	8				
Tele - handler	99	33	1				
Sideboom	107	33	10				
20T backhoe	99	33	1				
Weldsets (3 Bedford)	101	67	6				
Dumpers	105	33	4				
25T backhoe	105	33	2				
Cutting equipment (Bedford)	93	67	1				
Welding rigs	108	67	2				
Welding rigs (backend)	108	67	8				
Generator for welding	85	67	1				
Angle grinder	108	67	1				
Concrete pour	103	92		1			
Mixing tank -	104	92		1			
Directional drill	105	92		1			

Plant / Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number in operation by construction activity				
			Pipe Stringing and Welding	trenchless technologies Crossing	Cofferdam Sheet Piling	Topsoil Strip	Installation of Pylon Foundations
Mounting supports for mounting drill	115	92		1			
Diesel generator	104	92		1			
30T Backhoe	113	92				1	
CAT D5	106	92				1	
CAT D6	109	92				1	
CAT D8	120	92				1	
Vibratory Piling Rig	116	100			1		
Piling rig	115	75					1
Lorry	107	25					1
vibratory compactor	110	50					1
compressor	93	10					1
jcb	96	75					1
dumper truck	109	50					1

Table 11A-3: Plant and equipment associated with decommissioning of the PCC

Plant / Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number in operation by construction activity
Compressors	108	60	3
Hand Held Pneumatic Breaker	111	60	3
Dump Truck (tipping fill)	107	60	2
Dump Truck (pass-by)	115	60	3
Lorry (delivery and collection)	108	60	4
Tracked Excavator	99	60	5
Concrete Mixer Truck	108	60	6
Wheeled Mobile Telescopic Crane	106	60	2
Tower Crane	105	60	1
Lorry with Lifting Boom	105	60	1
Diesel Generator for Site Cabins	94	60	2
Diesel Generator for Site Lighting	93	60	1
Road Sweeper	96	60	1
Angle Grinder	108	60	1
Electric Water Pump	96	60	2
screen stockpiler	115	60	1
concrete breaker mounted on wheeled backhoe	120	60	6
tracked crusher	112	60	1

