



Net Zero Teesside – Environmental Statement

Planning Inspectorate Reference: EN010103

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 have been predicted at eight receptor locations for the following construction activities:
- Construction within the PCC Site:
 - demolition (demolition expected to be completed in advance of commencement of the Proposed Development, however, as a worst-case, indicative predictions for demolition have been included);
 - site clearance;
 - piling and foundation works;
 - building and general site activities;
 - fit out; and
 - landscaping.
 - CO₂ Gathering Network and Natural Gas Connection construction:
 - pipe stringing, pipe bending, pipeline welding.
 - crossing using trenchless technologies (e.g. horizontal directional drilling).
 - CO₂ Export Pipeline construction:
 - crossing using trenchless technologies (e.g. horizontal directional drilling); and
 - Electrical Connection:
 - Underground connection construction (topsoil strip)
- 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 Site

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

Plant/Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number of Plant in Operation by Construction Activity									
			Demolition	Site Clearance	Piling and Foundation Works			Building and General Site Activities	Building and General Site Activities (night)	Fit Out	Fit Out (night)	Landscaping
Poker vibrator	106	100			0	0	0	1	0	0	0	0
Wheeled mobile telescopic crane	106	100			2	2	4	4	0	4	0	0
Tower crane	105	100			1	1	2	2	0	2	0	0
Lorry with lifting boom	105	100			1	1	0	0	0	1	0	0
Lifting platform	95	100			0	0	0	0	0	1	0	0
Forklift truck	103	100			0	0	0	4	0	1	0	0
Mini tracked excavator	102	100			0	0	0	0	0	1	0	0
Electric core drill (drilling concrete)	113	100			0	0	0	1	0	1	0	0
Concrete floor cutter	119	100			0	0	0	1	0	1	0	0
Hand-held circular saw (cutting paving slabs)	112	100			0	0	0	0	0	1	0	0
Roller	101	100			0	0	0	0	0	0	0	2
Diesel generator for site cabins	94	100			2	2	4	4	4	4	4	1
Diesel generator for site lighting	93	100			1	1	2	2	2	2	2	1
Road sweeper	96	100			1	1	1	1	0	1	0	1
Angle grinder	108	100			1	1	1	1	0	1	0	0

Plant/Equipment	Sound Power Level (dB) Reference from BS 5228	% on time (based on 12 hr day) used in calculations	Number of Plant in Operation by Construction Activity									
			Demolition	Site Clearance	Piling and Foundation Works			Building and General Site Activities	Building and General Site Activities (night)	Fit Out	Fit Out (night)	Landscaping
Hand-held cordless bail gun	101	100			0	0	0	0	0	1	0	0
Road planer (road construction)	110	100			0	0	0	1	0	0	0	0
Vibratory compactor (asphalt)	110	100			0	0	0	1	0	0	0	0
Asphalt paver and tipper lorry	105	100			0	0	0	1	0	0	0	0
Electric water pump	96	100			2	2	2	2	2	2	2	0
Screen stockpiler	115	100			1	0	0	0	0	0	0	0
Concrete breaker mounted on wheeled backhoe	120	100			6	0	0	0	0	0	0	0
Tracked crusher	112	100			1	0	0	0	0	0	0	0

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

Plant / Equipment	Sound Power Level (dB) Reference from BS 5228	% On Time (Based on 12 hr day) used in Calculations	Number of Plant in Operation by Construction Activity		
			Pipe Stringing and Welding	Trenchless Technologies Crossing	Topsoil Strip
Crane 40T	98	33	1	1	0
Pipe Carrier D8 Cradle	108	33	8	0	0
Tele - handler	99	33	1	0	0
Sideboom	107	33	10	0	0
20T backhoe	99	33	1	0	0
Weldsets (3 Bedford)	101	67	6	0	0
Dumpers	105	33	4	0	0
25T backhoe	105	33	2	0	0
Cutting equipment (Bedford)	93	67	1	0	0
Welding rigs	108	67	2	0	0
Welding rigs (backend)	108	67	8	0	0
Generator for welding	85	67	1	0	0
Angle grinder	108	67	1	0	0
Diesel surface water pump	99	92	0	1	0
Lorry (4 axle)	108	92	0	1	0
Power pack	115*	92	0	1	0
Diesel generator for submersible pump	90	92	0	2	0

Plant / Equipment	Sound Power Level (dB) Reference from BS 5228	% On Time (Based on 12 hr day) used in Calculations	Number of Plant in Operation by Construction Activity		
			Pipe Stringing and Welding	Trenchless Technologies Crossing	Topsoil Strip
Mobile Telescopic crane (100 t)	99	33	0	1	0
30T Backhoe	113	92	0	0	1
CAT D5	106	92	0	0	1
CAT D6	109	92	0	0	1
CAT D8	120	92	0	0	1

*Sound Power Level data for power pack based upon sound level data for HK500T HDD rig power pack