

# A358 Taunton to Southfields Dualling Scheme

Preliminary Environmental Information Report - Appendix 11.3  
Construction Plant List and Assumptions

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# 1 Construction plant list and assumptions

1.1.1 The type and number of construction plant and the intensity and duration of the construction processes in Table 1-1 has been based on data taken from similar highway construction works for the following activities:

- excavation of cuttings (major – including rock breaking)
- excavation of cuttings (minor)
- road construction (sub-base - representing noisiest activity)
- earthworks (major)
- earthworks (minor)
- structures (assumes augered piling methods)

1.1.2 The assumptions are based on key noisy construction plant and activities that would be used across the proposed scheme. These are considered suitable to represent the types and scale of works and associated impacts for the proposed scheme assessment.

1.1.3 For activities 1 to 5 it is assumed that works will be undertaken by three gangs, each with the described plant in Table 1-1, working at 100m centres along the trace of the proposed scheme and with a traverse length (distance travelled up and down the works area per day) of 50m.

1.1.4 The construction predictions have made no allowance for screening; however, propagation has been assumed to be over soft ground (resulting in lower noise levels than over reflective hard ground).

**Table 1-1 Construction stages and assumed plant required per gang (daytime)**

Activity	Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>	
1	Excavation of cuttings (major)	Cutting	Tracked excavator	106	BS5228 Table C 2-3	1	75
		Cutting	Excavator mounted rock breaker	121	BS5228 Table C 9-11	1	75
		Removal of material	Tracked excavator (loading dump truck)	113	BS5228 Table C 1-10	2	50
2	Excavation of cuttings (minor)	Cutting	Tracked excavator	106	BS5228 Table C 2-3	1	75
		Removal of material	Tracked excavator (loading dump truck)	113	BS5228 Table C 1-10	2	50
3	Earthworks (major)	Earthworks	Tracked excavator	106	BS5228 Table C 2-3	1	80
		Earthworks	Dump truck (tipping fill)	110	BS5228 Table D 3-60	2	75

Activity		Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>
		Earthworks	Bulldozer	111	BS5228 Table C 5-15	1	80
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	2	50
4	Earthworks (minor)	Earthworks	Tracked excavator	106	BS5228 Table C 2-3	1	60
		Earthworks	Dump truck (tipping fill)	110	BS5228 Table D 3-60	1	75
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	1	50
		Vibratory compactor	Vibratory roller	102	BS5228 Table C 2-39	1	50
5	Sub-base	Spreading fill	Tracked excavator	106	BS5228 Table C 2-3	1	75
		Transporting material	Wheeled loader	108	BS5228 Table C 2-27	2	75
		Ground compaction	Grader	112	BS5228 Table D 3-75	2	75
6	Structures	Pumping concrete	Concrete pump and concrete mixer truck	110	BS522 Table C 4-25	1	50
		Pumping concrete / assembling / welding / assembling form work / transporting material / lifting beams	Tracked crane	109	BS522 Table D 6-18	1	80
		Grinding steel	Angle grinder	108	BS5228 Table C 4-93	2	25
		Hand tools	Hand tools	107	Estimated	3	25
		Concrete mixing	Large lorry concrete mixer	105	BS5228 Table C 4-21	2	25
		Rock drilling – to represent soil nailing	Hand-held pneumatic rock drill	118	BS5228 Table D 7-68	1	25

Activity	Construction activity	Plant	Sound power (dBA)	Reference	Number of plant items	% On-time <sup>1,2</sup>
	Augured piles	Crane mounted auger	107	BS5228 Table C 3-16	1	25

Note 1: The on-time is an estimate of the percentage per hour that plant would be expected to be operational for over the proposed working day.

Note 2: On-time has been corrected as per BS 5228 Annex F, Section 2.4 in the calculations to account for plant working in a defined area.

## 2 Construction noise impact bands

2.1.1 The calculated impact distance bands for each activity are shown in Table 2-1 below taking into account the assumptions set out in paragraph 1.1.2 to 1.1.4.

**Table 2-1 Construction impact distance bands**

Construction element	Distance (metres) to extent of noise band		
	65dB L <sub>Aeq,12hr</sub>	70dB L <sub>Aeq,12hr</sub>	75dB L <sub>Aeq,12hr</sub>
Major cutting	300	180	100
Minor cutting	150	80	35
Major earthworks	170	90	40
Minor earthworks	110	60	35
Structures	130	80	50
Road construction (subbase)	190	100	50