

APPENDIX 12D: CONSTRUCTION NOISE AND VIBRATION SIGNIFICANCE CRITERIA

Construction Noise Assessment

The significance criteria for the construction noise assessment are based on 'The ABC Method' from BS 5228-1:2009. An extract describing this method is provided below.

Example Method 1 – The ABC Method

Table E.1 shows an example of the threshold of significant effect at dwellings when the total noise level rounded to the nearest decibel, exceeds the listed value. The table can be used as follows: for the appropriate period (night, evening/weekends or day), the ambient noise level is determined and rounded to the nearest 5 dB. This is then compared with the total noise level, including construction. If the total noise level exceeds the appropriate category value, then a significance effect is deemed to occur.

Table E.1 **Example threshold of significant effect at dwellings**

Assessment category and threshold value period (L_{Aeq})	Threshold value, in decibels (dB)		
	Category A ^{A)}	Category B ^{B)}	Category C ^{C)}
Night-time (23.00-07.00)	45	50	55
Evenings and weekends ^{D)}	55	60	65
Daytime (07.00-19.00) and Saturdays (07.00-13.00)	65	70	75

NOTE1 A significance effect has been deemed to occur if the total L_{Aeq} noise level, including construction, exceeds the threshold level for the Category appropriate to the ambient noise level.

NOTE 2 If the ambient noise level exceeds the threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a significant effect is deemed to occur if the total L_{Aeq} noise level for the period increases by more than 3 dB due to construction activity.

NOTE 3 Applied to residential receptors only.

^{A)} Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

^{B)} Category B: threshold values to use when the ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

^{C)} Category C: threshold values to use when the ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

^{D)} 19.00-23.00 weekdays, 13.00-23.00 Saturdays and 07.00-23.00 Sundays.

(Source: BS 5228-1:2009, Page119)

Calculations have been undertaken using the data and procedures of BS 5228 for the noisiest construction phases, to derive indicative noise levels at selected NSRs. The highest noise levels tend to be associated with plant that would be employed during piling, earthmoving, concreting and road pavement:

- Demolition 93 dB(A) at 10m
- Earth moving 85 dB(A) at 10m
- Concreting 86 dB(A) at 10m
- Piling 85 dB(A) at 10m
- Road pavement 80 dB(A) at 10m

NSR	Construction Phase	Total Noise Level* (dB(A))	Threshold Level (dB(A))	Significance
SR 1	Earthmoving	71	75	Negligible
	Piling	74	75	Negligible
	Road pavement	69	75	Negligible
	Concreting	69	75	Negligible
SR 2	Earthmoving	71	75	Negligible
	Piling	74	75	Negligible
	Road pavement	69	75	Negligible
	Concreting	69	75	Negligible
SR 3	Earthmoving	78	75	Moderate Adverse
	Piling	80	75	Moderate Adverse
	Road pavement	75	75	Moderate Adverse
	Concreting	74	75	Negligible
SR 4	Earthmoving	76	75	Moderate Adverse
	Piling	78	75	Moderate Adverse
	Road pavement	69	75	Negligible
	Concreting	69	75	Negligible
SR 5	Earthmoving	75	75	Moderate Adverse
	Piling	78	75	Moderate Adverse
	Road pavement	74	75	Negligible
	Concreting	74	75	Negligible
SR 6	Earthmoving	75	75	Moderate Adverse
	Piling	78	75	Moderate Adverse
	Road pavement	74	75	Negligible
	Concreting	74	75	Negligible
SR 7	Earthmoving	75	75	Moderate Adverse
	Piling	78	75	Moderate Adverse
	Road pavement	74	75	Negligible
	Concreting	74	75	Negligible