

The Great Grid Upgrade

Eastern Green Link 5 (EGL 5)

Preliminary Environmental Information Report

Volume 2

Part 2

Appendix 13.A Construction Plant Assumptions

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nationalgrid

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13.A. Construction Plant Assumptions

Table 13.A-1 Construction plant assumptions - Noise

| Works activity | Plant description | BS 5228-1 13.2) Annex C reference | (Ref Sound pressure level at 10 m time LAeq dB | % on-time |
|--|--|---|--|-----------|
| Enabling works, earthworks, utilities and drainage, decommissioning. | 16t Tracked Excavator | Table C.2, Ref No. 7 | 70 | 75 |
| | 16t Tracked Excavator (idling) | Table C.2, Ref No. 6 | 63 | 25 |
| | 41t Dozer | Table C.2, Ref No. 3 | 78 | 75 |
| | 11t Fuel Tanker Lorry | Table C.4, Ref No. 15 | 76 | 30 |
| | 22t Road Roller | Table C.5, Ref No. 19 | 80 | 40 |
| | 30t Tracked Excavator | Table C.2, Ref No. 16 | 75 | 60 |
| | 26t Lorry | Table C.11, Ref No. 19 | 83 | 25 |
| | Hand-Held Pneumatic Breaker | Table C.5, Ref No. 6 | 95 | 30 |
| | Compressor for Hand-Held Pneumatic Breaker | Table C.5, Ref No. 5 | 65 | 30 |
| | 44t Articulated lorry | Table C.11, Ref No. 4 | 83 | 25 |
| 9t Dumper | Table C.4, Ref No. 4 | 76 | 40 | |
| Concrete Mixer Truck (discharging) & Concrete Pump (pumping) | Table C.4, Ref No. 28 | 75 | 50 | |
| 9t Dumper (idling) | Table C.4, Ref No. 5 | 63 | 10 | |
| Foundation works | 16t Tracked Excavator | Table C.2, Ref No. 6 | 70 | 75 |
| | 16t Tracked Excavator (idling) | Table C.2, Ref No. 6 | 63 | 25 |
| | 9t Dumper | Table C.4, Ref No. 4 | 76 | 40 |
| | 9t Dumper (idling) | Table C.4, Ref No. 5 | 63 | 65 |

| Works activity | Plant description | BS 13.2) Annex reference | 5228-1 C | (Ref Sound level at 10 m LAeq dB) | pressure % on-time |
|--|---------------------------------------|---|-----------------|--|---------------------------|
| | Cement Mixer Truck (discharging) | Table C.4, Ref No. 18 | | 75 | 25 |
| | Cement Mixer Truck (idling) | Table C.4, Ref No. 19 | | 71 | 75 |
| | Hydrovac | No reference within Annex C – Assumed Value | | 83 | 30 |
| | 30t Tracked Excavator | Table C.2, Ref No. 16 | | 75 | 50 |
| | 4t Telescopic Handler | Table C.2, Ref No. 35 | | 71 | 75 |
| Structural construction installing Piles. | 33t Crawler Mounted Piling Rig | Table C.3, Ref No. 22 | | 80 | 50 |
| Structural Construction Buildings. | 400t Wheeled Mobile Telescopic Crane | Table C.4, Ref No. 38 | | 78 | 10 |
| | 100t Mobile Telescopic Crane (idling) | Table C.4, Ref No. 42 | | 64 | 50 |
| | 100t Mobile Telescopic Crane | Table C.4, Ref No. 41 | | 71 | 25 |
| | 50t Mobile Telescopic Crane (idling) | Table C.4, Ref No. 47 | | 61 | 50 |
| | 50t Mobile Telescopic Crane | Table C.4, Ref No. 46 | | 67 | 10 |
| | 25t Articulated Dump Truck | Table C.4, Ref No. 1 | | 81 | 25 |
| Establishment of construction compounds including facilities. | 16t Tracked Excavator | Table C.2, Ref No. 7 | | 70 | 75 |
| site | 16t Tracked Excavator (idling) | Table C.2, Ref No. 6 | | 63 | 25 |
| | 41t Dozer | Table C.2, Ref No. 3 | | 78 | 75 |
| | 26t Lorry | Table C.11, Ref No. 19 | | 83 | 15 |
| | 9t Dumper | Table C.4, Ref No. 4 | | 76 | 40 |

| Works activity | Plant description | BS 5228-1 13.2) Annex reference | C | (Ref Sound table level at 10 m L _{Aeq} dB) | pressure % on- time |
|--------------------------------------|---|---------------------------------------|--|--|---------------------------|
| | 9t Dumper (idling) | Table C.4, Ref No. 5 | | 63 | 10 |
| Haulage installation. | road Dozer | Table C.8. Ref No. 9 | | 74 | 50 |
| | ADT 55 | Table Ref No. 32 | | 74 | 55 |
| | Roller - Static | Table C.2. Ref No. 38 | | 73 | 50 |
| | Grader | Table C.6. Ref No. 31 | | 81 | 10 |
| | Vibrating Roller | Table C.5. Ref No. 20 | | 67 | 50 |
| Ducted trenchless crossings. | and Directional (generator) Drilling | Table C.2, Ref No. 44 | | 77 | 25 |
| Cable installation joint bays. | trench and 14t Excavator | Tracked | Table C.2, Ref No. 25 | 69 | 50 |
| | 20t Tractor | | Table D.10, Ref No. 232 | 90 | 30 |
| | 40t Excavator | Tracked | Table C.2, Ref No. 14 | 79 | 30 |
| | Cable drum delivery vehicle | | No reference Annex C – Assumed Value | within 83 | 15 |
| | Category 3 vehicle and trailer. | | No reference Annex C – Assumed Value | within 83 | 15 |
| | Cable installation side- facing trailer | drum side- | No reference Annex C – Assumed Value | within 83 | 15 |
| | Telescopic Handler | | Table C.4, Ref No. 54 | 79 | 50 |
| | Concrete Truck (discharging) & Concrete Pump (pumping) | Mixer | Table C.4, Ref No. 28 | 75 | 40 |
| | Cable installation facing trailer | drum rear- | No reference Annex C – Assumed Value | within 79 | 15 |
| 44t Articulated lorry | | Table C.11, Ref No. 4 | 83 | 25 | |
| 5t Mini Excavator | Tracked | Table C.4, Ref No. 68 | 65 | 25 | |
| Cable pulling | Pilot Winch Winch Tractor | & Table C.4. Ref No. 75 | | 79 | 25 |

13.A.1 Construction Vibration Assumptions

Percussive Piling

13.A.1.1 Vibration from percussive piling activities have been predicted using empirical formulae contained within BS5228-2 Annex E (Ref 13.A.1) with the following assumptions as detailed below:

- Scaling Factor value of 1.5; and
- Nominal hammer energy of 60 kJ.

Vibratory Compaction

13.A.1.2 Vibration from vibratory compaction activities have been predicted using empirical formulae contained within BS5228-2 Annex E (Ref 13.A.1) with the following assumptions as detailed below:

- Scaling factor – 75;
- Number of vibrating drums – 1;
- Max. Amplitude of drum vibration (mm) – 1.5;
- Distance (m) – 25; and
- Width of vibrating roller drum (m) – 2.

Bibliography

Ref 13.A.1 British Standards Institution (2014). BS 5228-2:2009 (+A1:2014): Code of practice for noise and vibration control on construction and open sites. Vibration. London: British Standards Institution.

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