

## Series 1400: Electrical Work for Road Lighting and Traffic Signs

### Locating Buried Road Lighting and Traffic Signs Cable

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| Units       | <p><b>1</b> The unit of measurement shall be:</p> <p style="margin-left: 20px;">(i) locating buried road lighting and traffic signs cable ..... linear metre.</p>                  |
| Measurement | <p><b>2</b> (05/01) The measurement shall be the length of the buried road lighting or traffic signs cable located (as this Series paragraph 10 for the measurement of cable).</p> |
| Itemisation | <p><b>3</b> Separate items shall be provided for locating buried road lighting and traffic signs cable in accordance with Chapter II paragraphs 3 and 4 and the following:</p>     |

Group	Feature
I	<p>1 Locating buried road lighting, traffic signs cable and paved areas.</p>
II	<p>1 In carriageways, footways, bridge decks and paved areas. 2 In verges and central reserves. 3 In side slopes of cuttings or side slopes of embankments.</p>

### Locating Buried Road Lighting and Traffic Signs Cable

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| Item coverage | <p><b>4</b> The items for locating buried road lighting and traffic signs cable shall in accordance with the Preambles to Bill of Quantities General Directions include for:</p> <p style="margin-left: 20px;">(a) marking the cable runs on the ground;<br/>(b) pegging and removal;<br/>(c) maintaining location system;<br/>(d) proving insulation integrity and supplying results to the Overseeing Organisation;<br/>(e) site records.</p> |
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### Trench for Cable or Duct (05/01)

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| Units | <p><b>5</b> (05/01) The units of measurement shall be:</p> <p style="margin-left: 20px;">(i) trench for cable ..... linear metre.<br/>(ii) trench for duct ..... linear metre.</p> |
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- Measurement**
- 6** (05/01) The measurement of trench for cable or duct shall be the summation of the distance along the centre line of the route between the following points:
- (a) face of foundation to post, road lighting column, lit sign unit, feeder pillar, electricity supply point and the like;
  - (b) the intersection of the centre line at junctions;
  - (c) the position of terminations shown in the Contract;
  - (d) the point of change of stage depth.

The measurement of trench for cable or duct shall be measured once only irrespective of the number of cables or ducts in the trench. The depth of cable or duct trenches shall be the vertical measurement between the underside of the bedding, or if no bedding is specified the underside of the cable or duct, and the Earthworks Outline.

- Itemisation**
- 7** (05/01) Separate items shall be provided for trench for cable or duct in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Trench for cable.
	2 Trench for duct.
II	1 Different widths of trench.
III	1 Trench depth not exceeding 1.5 metres.
	2 Trench depth exceeding 1.5 metres but not exceeding 2.0 metres and so on in steps of 0.5 metres.
IV	1 In carriageways, footways and paved areas.
	2 In verges and central reserves.
	3 In side slopes of cuttings or side slopes of embankments

**Trench for Cable or Duct**

- 8** (05/01) The items for trench for cable or duct shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- Item coverage**
- (a) excavation of acceptable material (as Series 600 paragraphs 17 and 18);
  - (b) excavation of unacceptable material (as Series 600 paragraph 19);
  - (c) excavation in Hard Material (as Series 600 paragraph 23);
  - (d) additional depth of excavation to maintain specified cover at obstructions;
  - (e) additional excavation to accommodate extra lengths of cable;
  - (f) locating, working around and supporting pipes, cables, services, apparatus and the like;
  - (g) trimming, levelling and compacting;
  - (h) cable bedding and covering;
  - (i) duct bedding, haunching and surrounding;
  - (j) formwork (as Series 1700 paragraph 15);



<b>Cable</b>	<b>13</b> (05/01) The items for cable shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage	<ul style="list-style-type: none"><li>(a) retermination loop required for connection into a unit, future retermination and tying in;</li><li>(b) unsealing, clearing and swabbing out ducts, drawing cables through, replacing draw ropes, plugging and sealing duct ends and marking;</li><li>(c) intermediate supports and fixing devices where cables leave trench and prior to entry into equipment;</li><li>(d) supports to vertical and horizontal cables;</li><li>(e) sealing to cable ends;</li><li>(f) cutting, tying together, sealing, coiling and strapping of unused cores;</li><li>(g) unscheduled joints;</li><li>(h) marker blocks, marker tape, identification tags, sleeves and the like;</li><li>(i) twisting and snaking;</li><li>(j) preparation and supply of record drawings;</li><li>(k) service connections and commissioning;</li><li>(l) additional protection and support;</li><li>(m) site records and colour coding.</li></ul>
<b>Cable Supplied by the Overseeing Organisation</b>	<b>14</b> (05/01) The items for cable supplied by the Overseeing Organisation shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage	<ul style="list-style-type: none"><li>(a) loading, transporting from store, unloading and positioning for installation or re-installation;</li><li>(b) replacing items damaged during the foregoing operations;</li><li>(c) cable (as this Series paragraph 13);</li><li>(d) modification and new materials.</li></ul>
<b>Duct</b>	<b>15</b> (05/01) The items for duct shall in accordance with the Preambles to Bill of Quantities General Directions include for:
Item coverage	<ul style="list-style-type: none"><li>(a) cutting, laying, jointing and bedding;</li><li>(b) supports to vertical and horizontal ducts;</li><li>(c) recording, staking and labelling;</li><li>(d) fixing draw ropes, removable stoppers, marker blocks and posts;</li><li>(e) schedules;</li><li>(f) lubricants, packing, grouting and caulking;</li><li>(g) surveys and recordings;</li><li>(h) protective system (as Series 1900 paragraph 4).</li></ul>





- (u) notices, labelling, recording numbering and lettering;
- (v) in the case of equipment supplied by the Overseeing Organisation, loading, transporting from store, unloading and positioning for installation or re-installation and replacing items damaged during the foregoing operations;
- (w) filling, bedding and sealing;
- (x) cleaners, solvents and dessicants;
- (y) preparation and supply of record drawings;
- (z) service connections and commissioning.

**Feeder Pillars Supplied by the Overseeing Organisation**

**23** (05/01) The items for feeder pillars supplied by the Overseeing Organisation shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- Item coverage
- (a) loading, transporting from store, unloading and positioning for installation or re-installation;
  - (b) replacing items damaged during the foregoing operations;
  - (c) modification and new materials;
  - (d) feeder pillars (as this Series paragraph 22).

**Earth Electrodes**

Units **24** (05/01) The unit of measurement shall be:

- (i) earth electrodes ..... number.

Measurement **25** (05/01) The measurement of earth electrodes shall be the complete installation including conduit and cable between the structure, nearest Lit Sign Unit or lighting unit and the earth electrode.

Itemisation **26** (05/01) Separate items shall be provided for earth electrodes in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Different types and sizes of earth electrodes.

**Earth Electrodes**

**27** (05/01) The items for earth electrodes shall in accordance with the Preambles to Bill of Quantities General Directions include for:

- Item coverage
- (a) excavation of acceptable material (as Series 600 paragraphs 17 and 18);
  - (b) excavation of unacceptable material (as Series 600 paragraph 19);
  - (c) excavation in Hard Material (as Series 600 paragraph 23);
  - (d) backfilling and compaction;
  - (e) disposal of material (as Series 600 paragraph 39);
  - (f) in situ concrete (as Series 1700 paragraph 5);
  - (g) formwork (as Series 1700 paragraph 15);
  - (h) driving;

- (i) clamps, cables and making connections;
- (j) reinforcement (as Series 1700 paragraph 26);
- (k) covers, frames, seating and bedding;
- (l) earthing rods including pressure plates, glands and clamps;
- (m) conductor cable including preparing, stripping and cleaning ends and connections;
- (n) conduit including all purpose-made screwed and threaded connections, bends, tees and the like and draw wires;
- (o) threading cable through ducts, sleeves, conduit and the like;
- (p) complying with wiring regulations;
- (q) markers, notices and recording;
- (r) preparation and supply of record drawings.

**Chambers**

- Units **28** (05/01) The unit of measurement shall be:
- (i) chambers ..... number.
- Measurement **29** (05/01) The measurement shall be of the complete chamber.
- 30** (05/01) Depths of chambers shall be the distance between the top surfaces of the cover and the uppermost surface of the base slab. Where no base slab is required the depth shall be taken to the bottom of the excavation.
- Itemisation **31** (05/01) Separate items shall be provided for chambers in accordance with Chapter II paragraphs 3 and 4 and the following:

Group	Feature
I	1 Chambers.
II	1 Specified design groups. 2 Particular designs stated in the contract.
III	1 Depths not exceeding 1 metre. 2 Depths exceeding 1 metre but not exceeding 2 metres and so on in steps of 1 metre.
IV	1 Different types of covers or gratings.

- Chambers** **32** (05/01) The items for chambers shall in accordance with the Preambles to Bill of Quantities General Directions include for:
- Item coverage (a) chambers (as Series 500 paragraph 37).