
**VOLUME 5 CONTRACT DOCUMENTS
FOR SPECIALIST
ACTIVITIES**

**SECTION 8 TRENCHLESS
INSTALLATION OF
HIGHWAY DRAINAGE
AND SERVICE DUCTS**

PART 4

SERIES 8000

METHOD OF MEASUREMENT

INTRODUCTION

This Series of the Method of Measurement applies to the installation by trenchless techniques of highway drainage, service ducts, sleeves and culverts of internal diameters or width 900 mm or less.

INSTRUCTIONS FOR USE

1. Remove Series 8000 for Volume 5, Section 8, Part 4 and archive as appropriate.
2. Insert new Series 8000 into Volume 5, Section 8, Part 4.
3. Archive this sheet as appropriate.

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METHOD OF MEASUREMENT

SERIES 8000: ^(11/06) Method of Measurement

Scope	<p>1 (11/06) This Series applies to the installation by trenchless techniques of highway drains, service ducts, sleeves and culverts of internal diameters 900 mm or less. The method of installation will be selected by the Tenderer to meet the requirements of Appendix 80/1 of the Specification Series.</p> <p>2 (11/06) This series covers the Trenchless or Minimum Dig installation and the associated Temporary Works. All other items of the permanent works shall be measured under Series 500. For the purposes of this measurement the launch and reception pits are considered Temporary Works.</p>						
Definitions	<p>3 Words and expressions to which meanings are assigned in the Specification and Drawings referred to in the Conditions of Contract have the same meanings in the Method of Measurement.</p> <p>4 Where the ground level has been subjected to treatment, under the Contract, in respect of ground improvement, mine workings, swallow holes and the like, for the purposes of this Series, Existing Ground level shall be the level of the ground before any work under the contract has been carried out.</p> <p>5 The Earthworks Outline is defined in Series 600 Earthworks paragraphs 1 to 6 inclusive and shall apply equally to this Series.</p>						
	<p>Establishment and Removal of Plant</p>						
Units	<p>6 The units of measurement for establishment and removal of plant shall be: Establishment and removal of plant item.</p>						
Measurement	<p>7 The establishment and removal of plant shall be measured once only to each pipe run. Any additional establishment and removal to suit the Contractor's method of working shall not be measured.</p>						
Itemisation	<p>8 Separate items shall be provided for plant in accordance with Chapter II paragraphs 3 and 4 and the following:</p>						
	<table> <tr> <th data-bbox="399 1456 510 1523">Group</th><th data-bbox="510 1456 1482 1523">Feature</th></tr> <tr> <td data-bbox="399 1523 510 1612">I</td><td data-bbox="510 1523 1482 1612">1 Pipe run reference</td></tr> <tr> <td data-bbox="399 1612 510 1702">II</td><td data-bbox="510 1612 1482 1702">1 Establishment and removal of plant</td></tr> </table>	Group	Feature	I	1 Pipe run reference	II	1 Establishment and removal of plant
Group	Feature						
I	1 Pipe run reference						
II	1 Establishment and removal of plant						
Establishment and Removal of Plant	<p>9 The items for the establishment of trenchless installation and plant shall in accordance with the Preambles to Bill of Quantities General Directions include for:</p>						
Item Coverage	<ul style="list-style-type: none"> a) bringing plant and equipment to the site of the pipe run; b) setting up plant and equipment at each pipe run; c) dismantling and removing plant and equipment on completion of the pipe run; d) construction of launch and reception pits and all reinstatement; e) thrust and winch blocks and their removal on completion of the pipe run; f) site preparation and access arrangements; g) lead-in trenches and their reinstatement; 						

- h) ground stabilisation treatment;
- i) dealing with existing flows;
- j) construction and reinstatement of launch and reception eyes;
- k) alteration and reinstatement of existing chambers used as launch and reception pits;
- l) protection of existing or completed pipes in chambers;
- m) replacing acceptable material rendered unacceptable;
- n) (11/06) taking precautions to avoid damage to property, structures, drains, services, pavements, instrumentation and the like, including monitoring;
- o) excavation of acceptable material (as Series 600 paragraphs 17 and 18);
- p) excavation of unacceptable material (as Series 600 paragraph 19);
- q) excavation of hard material (as Series 600 paragraph 23);
- r) excavations in contaminated land and disposal of all contaminated materials including clothing, wash water and any other materials to a licensed site;
- s) disposal of material (as Series 600 paragraph 39);
- t) establishment and supply of water.

(11/06) **Drain and service ducts**

- Units** **10** The unit of measurement for pipe runs shall be:
- i) (11/06) pipe run reference linear metre.
- Measurement** **11** The measurement of a pipe run shall be the lengths measured along the centre line of the pipe between any of the following:
- a) the internal faces of permanent chambers;
 - b) the external faces of headwalls;
 - c) the position of termination shown in the Contract.
- 12** The measurement of service ducts shall be for the complete construction irrespective of the number of ducts contained within any one bore. Where more than one duct is laid in a bore then the number of ducts shall be stated in the item description.
- Itemisation** **13** (11/06) Separate items shall be included for each pipe run in accordance with Chapter II paragraphs 3 and 4 and the following:

Group		Feature
I	1	Pipe run reference
II	1	Drain
	2	Service ducts
	3	Lining
III	1	New Installation
	2	On-line Replacement
	3	Minimum Dig
	4	Rehabilitation
IV	1	Internal diameter
V	1	Existing internal diameter (Rehabilitation only)

(11/06) **Drains and service ducts**

14 The items for pipe runs 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 of hard material (as Series 600 paragraph 23);
- d) supply and installation of pipes;
- e) cutting and jointing of pipes and fittings, including packers;
- f) building in pipes to chambers, headwalls and outfall works including reshaping inverts and benching;
- g) disposal of material (as Series 600 paragraph 39);
- h) cleaning, clearing obstructions and testing including all CCTV surveys and inspections;
- i) recording, staking and labelling;
- j) in the case of ducts, fixing draw ropes, removable stoppers, marker blocks and posts;
- k) pipe schedules and records in accordance with Appendix 80/1;
- l) measures for reduction of friction, including lubricants and their disposal;
- m) protective system (as Series 1900 paragraph 4);
- n) sleeves;
- o) support and drilling fluid and disposal;
- p) surveys and monitoring in accordance with Appendix 80/1;
- q) grouting including packers and fixings;
- r) breakout and reinstatement of start and end headings at existing chambers;
- s) ground stabilisation treatment;
- t) dealing with existing flows;
- u) cleaning existing sewers of debris, silt, obstructions and other material including disposal;
- v) standing time waiting for deformed pipes to normalise;
- w) (11/06) taking precautions to avoid damage to property, structures, drains, services, pavements, instrumentation and the like, including monitoring;
- x) excavations in contaminated land and disposal of all contaminated materials including clothing, wash water and any other materials to a licensed site;
- y) photographs;
- z) delivery of samples for testing.

Lateral connections to pipes to be replaced by on-line replacement

Units

15 (11/06) The unit of measurement for lateral connections shall be: Lateral connection reference..... number.

Measurement

16 The depth of lateral connection shall be the vertical measurement between the invert of the lateral pipe and the Existing Ground Level except where the Earthworks Outline is below the Existing Ground Level the measurement shall be taken to the Earthworks Outline.

Itemisation

17 (11/06) Separate items shall be included for lateral connections in accordance with Chapter II paragraphs 3 and 4 and the following:

Method of Measurement

Group		Feature
I	1	Lateral connection reference
II	1	Drain
	2	Service ducts
III	1	Different Internal Diameters of lateral pipes
IV	1	Different Internal Diameters of main pipe run
V	1	Depth to invert not exceeding 2 metres
	2	Depth to invert exceeding 2 metres but not exceeding 3 metres and so on in steps of 1 metre

Lateral connections

18 The items for lateral connections 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 of hard material (as Series 600 paragraph 23);
- d) locating and making entry;
- e) breaking up beds, haunches and surrounds;
- f) disconnection from existing pipe to be replaced;
- g) dealing with existing flows;
- h) backfilling and compaction;
- i) disposal of material (as Series 600 paragraph 39);
- j) pipes, fittings and saddles;
- k) bedding, haunching and surrounding;
- l) relaying or replacing existing pipes disturbed or broken;
- m) excavations in contaminated land and disposal of all contaminated materials including clothing, wash water and any other materials to a licensed site;
- n) sealing off disused ends;
- o) relaying or replacing existing pipes disturbed or broken, including cutting, jointing and fittings;
- p) cleaning, clearing obstructions and testing including all CCTV surveys and inspections;
- q) photographs;
- r) testing.