## **Sample Particular Specification for Soil Nailing Works**

(to be read in conjunction with the General Specification for Civil Engineering Works 2006 Edition)

Add the following clauses to Section 7 of the GS

## **MATERIALS**

*Soil nails* 7.94A1 Add the following after the second sentence of GS Clause 7.94(2):

Conducting wires for length checking shall be insulated solid wires of specified diameter.

7.94A2 Add ", conducting wires" after "grout tube" in lines 5, 6, 8 and 12 of GS Clause 7.94(2).

## **SUBMISSION**

Soil nails 7.104A1 Add "conducting wires" after "grout pipes" in the third line of GS Clause 7.104 (1)(a).

## **SOIL NAILS**

**Drilling of soil nails** 7.136A1 Replace "appropriate" with "approximate" in line 5 of GS Clause 7.136(3).

7.136(3)

7.138A1

Installation and 7.137A1 grouting

Replace "sub-clause (8)" with "sub-clause (7)" in line 4 of GS Clause 7.137(6).

Add the following sub-clause after GS Clause 7.137(11):

(12) A pair of conducting wires shall be installed in each permanent soil nail in accordance with relevant Standard Drawings and Sketches in Appendix A. For the shorter wire, the insulation of the wire at the lower end (25 mm length) shall be removed and the exposed end of the wire shall be in contact with the steel bar and securely tied to the steel bar by adhesive tape. The lower end of the longer wire shall be sealed in such a manner to achieve electrical insulation.

Pull-out tests for soil nails

Replace GS clause 7.138(d) with the following:

The test nail shall be loaded in stages: from the initial load  $(T_a)$  via two intermediate test loads  $(T_{DL1}$  and  $T_{DL2})$  to the maximum test load.  $T_{DL1}$  and  $T_{DL2}$  are the loads that result in the bonded zone tested to the allowable pull-out resistance and the allowable pull-out resistance times the factor of safety against pull-out failure at soil-grout interface respectively.  $T_a$  shall be equal to  $T_{DL1}$  or 5% of  $T_P$ , whichever is smaller. All loadings including  $T_a$ ,  $T_{DL1}$ ,  $T_{DL2}$  and  $T_p$  are specified in the Drawings or as directed by the Engineer.

7.138A2 Add ", on the forms in Appendix B to the Particular Specification" to the end of the first sentence of GS Clause 7.138 (g).

Soil-nail head

7.139A1 Add the following sub-clause (7) after GS Clause 7.139:

(7) For each batch of soil-nail heads cast on any one day at any site, the bearing plates for 3 soil-nail heads shall be removed for inspection prior to the second stage sprayed concrete as referred to in sub-clause (4) of this Clause. If defective workmanship is identified in any one of the soil-nail heads, the whole batch of soil-nail heads cast on the same day at that site shall be deemed to be defective. All the soil-nail heads cast on the same day at that site shall be examined. The soil-nail heads with defective workmanship shall be recast and re-examined to the satisfaction of the Engineer.