

GENERAL SPECIFICATION FOR CIVIL ENGINEERING WORKS

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VOLUME 1

SECTION 6

EARTHWORKS

(a) Clause 6.07

Add the following sub-clause:

(9) Well-graded material shall consist of material which has a coefficient of uniformity exceeding 10.

(10) Uniform-graded material shall consist of material which has a coefficient of uniformity of 10 or less.

(b) Clause 6.33(c)

Replace Royal Observatory **by** Hong Kong Observatory

(c) Clause 6.46(3)

Add 6.49A(1), **after** 6.48(2)

(d) Clause 6.47,
1st sentence

Add and material as stated in Clause 6.49A(1) **after** Fill material other than rock fill material

(e) New Clause 6.49A

Add the following new clause after Clause 6.49:

***Compaction of
general fill material
with a large portion
of coarse material***

6.49A

(1) For general fill material of which less than 90% passing a 20 mm BS test sieve, it will be difficult to permit determination of the moisture content and maximum dry density according to Clauses 6.62(2), 6.62(3), 6.65(2), 6.68(5) and 6.68(6). This type of material shall be compacted to the requirements of Clauses 6.49A(2), 6.49A(3) and 6.49A(4).

(2) Spread and level each horizontal layer of general fill material with a thickness not less than 1.5 times of the maximum size of the general fill material and not exceeding the maximum depth of compacted layer in accordance with Table 6.2A. If this criterion is not met due to the presence of over-sized coarse material in the general fill, the over-sized coarse material shall be removed or broken down to sizes acceptable to the Engineer. Each layer shall be systematically compacted by a vibratory roller with the stipulated minimum number of passes corresponding to the minimum static load per 100 mm width of the roller.

(3) The number of passes of the roller shall only be counted when the roller is travelled on the material to be compacted at a speed of not more than 2 km per hour with full vibration. The plant other than vibratory roller to carry out material spreading or to provide some preliminary compaction only to assist the use of heavier plant shall be disregarded in counting the number of passes.

(4) Variation from the method or the use of plant different from that specified in Clause 6.49A(2) will be permitted only if the Contractor demonstrates at site trials that equivalent compaction is achieved by the alternative method or plant. The procedure to be adopted for these site trials shall be agreed with and approved by the Engineer.

(5) Without prejudice to the provision of the Conditions of Contract and in order that the Engineer may take proper provision for the supervision of compaction in the permanent work, the Contractor shall, not less than 24 hours before he proposes to carry out compaction processes, apply in writing to the Engineer for permission to do so.

(6) When materials of widely divergent grading are used in embankments and fill areas, they shall be spread and compacted in separate clearly defined areas.

(7) If more than one class of material is being used in such a way that in the opinion of the Engineer it is not practicable to define the areas in which each class occurs, compaction plant shall be operated as if only the material which requires the greatest compactive effort is being compacted.

(f) New Table 6.2A **Add the following new table after new Clause 6.49A:**

Table 6.2A : Compaction requirement for general fill material with a large portion of coarse material

Force per 100 mm width	Well-graded material		Uniform-graded material	
(kN)	Maximum depth of compacted layer (mm)	Minimum no. of passes	Maximum depth of compacted layer (mm)	Minimum no. of passes
0.25 – 0.45			150	16
0.46 – 0.70			150	12
0.71 – 1.25	125	12	150	10
1.26 – 1.75	150	8	200	10
1.76 – 2.30	150	4	225	10
2.31 – 2.80	175	4	250	10
2.81 – 3.50	200	4	275	8
3.51 – 4.20	225	4	300	8
4.21 – 4.90	250	4	300	8

- (g) Clause 6.51(2) **Add** or fill material as stated in Clause 6.49A(1) **after** Except in excavations in rock and in areas of fill formed of rock fill material
- (h) Clause 6.54,
2nd sentence **Replace** Fill **by** Except as stated in Clause 6.49A(1), fill
- (i) Clause 6.61(4)(a), **Replace** rock fill material **by** Fill material including rock fill material
- (j) Clause 6.68(1)(a), **Replace** rock fill material **by** Fill material including rock fill material

VOLUME 2

SECTION 15

STEEL REINFORCEMENT

- (k) Clause 15.31(2) **Replace the sub-clause by the following:**
- Each sample of reinforcement connectors for tension joints shall be tested to determine the tensile strength and the permanent elongation in accordance with Clause 15.33.
- (l) Clause 15.33(b) **Replace the sub-clause by the following:**
- When a test is made of a representative gauge length assembly comprising reinforcement of the size, grade and profile to be used and a reinforcement connector for tension joints of the precise type to be used, the permanent elongation after loading to 0.6 times of the specified characteristic strength and unloading shall not exceed 0.1 mm. The gauge length shall span over the reinforcement connector.
- (m) Clause 15.38,
Marginal heading **Replace** *slip* **by** *permanent elongation*
- (n) Clause 15.38(1) **Replace the sub-clause by the following:**
- If the result of any test for permanent elongation of reinforcement connectors for tension joints does not comply with the specified requirements as stated in Clause 15.33(b), additional samples shall be provided from the same batch and additional tests for permanent elongation as stated in Clause 15.33(b) shall be carried out. The number of additional samples shall be as stated in Table 15.1.
- (o) Clause 15.38(4) **Replace the sub-clause by the following:**
- The batch shall be considered as not complying with the specified requirements for permanent elongation if the result of any additional test does not comply with the specified requirements as stated in Clause 15.33(b).