

Cementitious or Polymer Based Grouted Bolts/Dowels/Reinforcing Bars Works

In giving this approval of plans, I hereby impose the following conditions under item 6 in section 17(1) of the Buildings Ordinance:

- (a) Strength tests on a representative number of the grouted bolts/dowels/reinforcing bars should be carried out as directed by the Registered Structural Engineer to verify the performance and workmanship of the grouted bolts/dowels/reinforcing bars. Sampling rate should be at least 1% or 5 numbers, whichever is more, of each type, size and embedment of the grouted bolts/dowels/reinforcing bars installed. The strength tests should be carried out by a recognised laboratory independent of the contractor.
- (b) Each representative grouted bolts/dowel/reinforcing bar should be tested for tensile load by pull out test and/or shear load by shear load test as appropriate to demonstrate that its load carrying capacity is not less than 1.5 times the recommended load as specified by the manufacturer. The tested grouted bolts/dowels/reinforcing bars should not show any signs of separation, plastic deformation or deleterious effect. The reports of the strength tests should be submitted within 21 days upon completion of the tests and appended with a statement signed by the Registered Structural Engineer to confirm the following matters:
 - (i) All bolts/dowels/reinforcing bars used for the construction and the test specimens covered by the test reports are in accordance with the types and grades of bolts/dowels/reinforcing bars shown in the approved plans.
 - (ii) The acceptance criteria appropriate to each type and grade of bolts/dowels/reinforcing bars used have been complied with.
 - (iii) Tests for all bolts/dowels/reinforcing bars have been carried out by a recognised laboratory independent of the contractor.
- (c) A method statement on the tests of grouted bolts/dowels/reinforcing bars mentioned above is required to be submitted at least one week prior to the actual commencement of the grouted bolts/dowels/reinforcing bars works.

2. The following condition in respect of qualified supervision of works is imposed under item 6 in section 17(1) of the Buildings Ordinance:

- (a) Qualified site supervision of the grouted bolts/dowels/reinforcing bars works, by experienced and competent persons as defined in (b) and (c), should be provided to ensure that the works are carried out in accordance with the plans approved and that the required standards are complied with.
- (b) The Registered Structural Engineer should assign a quality control supervisor to supervise the works, determine the necessary frequency of inspection by the quality control supervisor which should not be less than once a week, and devise inspection check lists. The minimum qualifications and experience of the quality

control supervisor is to be the same as the Technically Competent Person of grade T3 under the Registered Structural Engineer's stream, as stipulated in the Code of Practice for Site Supervision 2009.

- (c) The Registered General Building Contractor should assign a quality control co-ordinator to provide full time on site supervision of the works and devise inspection check lists. The minimum qualifications and experience of the quality control co-ordinator is to be the same as the Technically Competent Person of grade T1 under the Registered General Building Contractor's/Registered Specialist Contractor's stream, as stipulated in the Code of Practice for Site Supervision 2009.
- (d) The names and qualifications of the supervisory personnel representing the Registered Structural Engineer and the Registered General Building Contractor respectively should be recorded in an inspection log book. The date, time, items inspected and inspection results should be clearly recorded in the log book. The log book should be kept on site for inspection by representatives of the Buildings Department.

3. Reference may be made to British Standard 5080: Parts 1 & 2 for general testing procedures for grouted bolts/dowels/reinforcing bars including apparatus set-up, load application and results presentation.

4. Under Building (Administration) Regulation 10, a copy of mill certificates of the bolts/dowels/reinforcing bars used, is required to be submitted within 60 days of the delivery of the bolts/dowels/reinforcing bars to the site and appended with a statement signed by the Registered Structural Engineer to confirm that the requirements of chemical composition and mechanical properties appropriate to the type and grade of steel have been complied with.