

g) **Approval of Grouting material :**

Specialist contractor shall submit grouting mix design for approval, the mix should contain: cement, water, along with shrinkage compensating materials (Refer to Trakhees Construction Material Quality Control Guidelines), and elevate admixture in order to achieve minimum 28 days grout strength with maximum accepted tolerance of 12 N/mm2 from concrete characteristic strength.

3.2.2 **REGISTRATION OF PT SPECIALIST:**

The registration of PT specialist could be ensured provided that the below technical staff have been successfully tested and interviewed as per the procedures. Each approved specialist will be registered under identification number called PTC number.

a) **Approval of project manager/s**

Specialist contractor shall submit the C.V of the project manager/s for registration, it may be required to be tested in writing, and/or interviewed by CED relevant committee.

Project manager shall have minimum 10 years experience.

b) **Approval of design engineer/s:**

Specialist contractor shall submit the C.V of the design team for registration. CED approval for the design engineer/s will be subject to passing the written exam and technical interview with satisfactory result. Designer engineer/s may be requested to confirm the specific involvement in the PT design field through a realistic exercise prior to decide the final success.

- 1- Each designer will be permitted to conduct the design for an assigned annual PT quantity, if the work volume is exceeding, the specialist will be asked to submit another designer for approval.

The Quantity of PT work may be permitted for each approved designer, has to be within the following figures:

600,000 m2/ annum and not more than 100,000 m2 / month.

- 2- The designer should have minimum 5 years experience in the structural, and at least three years of them in post tensioning design in recognized P.T Specialist agency.

c) **Approval of site engineer/s:**

Specialist contractor shall submit the C.V of the site engineer/s

for registration.

- 1- CED approval for the site engineer/s will be subject to passing the written exam and technical interview with satisfactory result.

- 2- Each site engineer will be permitted to supervise a predetermined number of projects simultaneously. The following limitations are given for guidance and CED may request to reduce these figures in cases where the quality of works revealed to be unsatisfactory and hence the specialist will be asked to submit another site engineer/s for approval.

The following figures may be permitted for each approved site engineer subject to the periodic performance evaluation.

5 years ----- 2 structures running simultaneously.

6 years----- 3 structures running simultaneously.

Above 6 years ----- 4 structures running simultaneously.

- 3- The site engineers should have at least 5 years total experience includes one year actual experience in PT execution field.

3.2.3 **STORAGE OF MATERIALS**

Specialist contractor has to submit the storage area for approval and shall be suitable to store the PT materials in good condition with minimum covered area of 200 m2. Method statement of materials storage shall be submitted for approval.

3.2.4 **APPROVAL OF METHOD STATEMENT**

Specialist contractor has to submit the method of statement in professional details for approval, from receiving of materials till handover the grouting and shuttering removal; this shall be included in each project submission.

3.2.5 **PERMISSION TO THE FIRST PROJECT**

Specialist contractor shall submit the concept of first project for approval in principle.

- 1- Upon the concept approval, the specialist shall submit the detailed design for approval, CED shall be notified in advance of the date of executing of each slab, CED's engineer has to take the