

Directorate General, Ministry For Transport and Infrastructure, Works and Infrastructure  
Department (MTI-WID)

Measures with regards to quality control of ready mix concrete have been adopted by the PWD in the past, and Works Department in more recent years, as inevitable and essential elements of the MTI-WID technical control systems and responsibilities.

The Department has always resorted to the publication of a DOC period contract for the supply of ready mixed concrete to the various works and projects. In the past, the PWD had its own fully fledged Quality Control Section, which had a fully equipped quality control laboratory which specialised in concrete, construction materials and hot asphalt testing. Around fourteen years ago it was decided that this laboratory should be disbanded and a limited skeleton staff was retained to handle QC requirements at the Works Department. Ever since the Department had to issue regular tenders to secure specific quality control testing, mainly but not limited to concrete from private sources. The WID has never stopped testing the concrete and other building materials (ex: hollow concrete blocks, precast concrete kerbs, steel mesh reinforcement, etc) supplied by various contractors to the various sites of works. The WID insists that service providers are ISO accredited Laboratories, a procedure regulated by MSA.

In close collaboration with the competent officers at DOC, WID has recently revised important and critical conditions for the ready mixed concrete framework agreement currently being vetted by contracts in an attempt to implement stricter quality control measures. The agreement allows for the following notable additions/ improvements among others:

- Testing of ready mix concrete by an independent ISO-accredited test house hired by the Contracting Authority – WID also issues regular period contracts for such testing.
- Clauses with regards to concrete which is deemed to be non-compliant as follows: 'The Architect shall have the power to refuse any concrete which is deemed to be non-compliant with the specifications of this Tender, upon the arrival of the material on site. The Architect in charge shall also have the power to order the Contractor to break up and remove from site any ready mix concrete represented by failed concrete samples. This shall be replaced at the Contractor's expense, by the grade of concrete originally specified, within ten (10) days of being notified to do so by the Contracting Authority. The Contractor shall also not be paid for the concrete supplied which is considered to be non-compliant, and shall be liable for any losses and/or damages which Government may suffer through such default.'
- Penalties for failed concrete mixes and reduction in payment for cases where the Architect in charge feels that the supplied concrete can be accepted even though this results in a lower quality product than the one ordered, as detailed below:

<b>'28 day cube test result (Average of 3 cube samples)</b>	<b>Payment</b>
Less than 13.5N/mm <sup>2</sup> below	See Note 2
13.5 N/mm <sup>2</sup> – 15 N/mm <sup>2</sup> Grade 15	Payment as
Greater than 15 N/mm <sup>2</sup> and less than 18 N/mm <sup>2</sup> 15	Payment as Grade
18 N/mm <sup>2</sup> – 20 N/mm <sup>2</sup> Grade 20	Payment as
Greater than 20 N/mm <sup>2</sup> and less than 22.5 N/mm <sup>2</sup> 20	Payment as Grade
22.5 N/mm <sup>2</sup> – 25 N/mm <sup>2</sup> Grade 25	Payment as
Greater than 25 N/mm <sup>2</sup> and less than 27 N/mm <sup>2</sup> 25	Payment as Grade
27 N/mm <sup>2</sup> – 30 N/mm <sup>2</sup> Grade 30	Payment as

**Note 1:** In all instances, the Contractor shall incur a penalty of Euro 250 for every truckload of ready mix concrete which is deemed a failure according to these specifications.

**Note 2:** In the case of 28 day cube test results which are lower than 13.5, the rates of payment shall be affected as follows:

Less than 5N/mm <sup>2</sup> Grade 15 less 80%	Payment as
5N/mm <sup>2</sup> - 10N/mm <sup>2</sup> Grade 15 less 65%	Payment as
Greater than 10N/mm <sup>2</sup> and less than 13.5N/mm <sup>2</sup> 15 less 45%	Payment as Grade

- The framework agreement includes for call-offs every twelve (12) months but also allows for termination of contract in case of multiple concrete test failures and the subsequent issue of a fresh call-off, as follows: 'once fifteen (15) in number failure tests, conducted by an ISO-accredited test house, have been registered, the contract shall be terminated' and 'the Contracting Authority will then be authorised to issue a fresh call-off'. Furthermore, defaulting contractors shall not be invited to participate in subsequent call-offs.