



ADB

FIDIC Contract Management Workshops

Quality Testing and Defects

Islamabad Day 4 (Part I) – 31 August 2023

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Quality

- Clause 7 (PB and 2017 RB) deals with the requirements for the items of Plant and Materials which the Contractor brings to the Site in order to execute the project.
- It covers the Contractor's obligations concerning the quality of his work and the procedures to be followed for tests and in the event that an item of work fails the test.
- The matter of the time when an item of Plant or Materials becomes the property of the Employer is covered at Sub-Clause 7.7 (PB and 2017 RB)

Quality

FIDIC contracts deal with quality at 6 (sometimes 7) stages:

1. The Contractor is to submit his QA plan;
2. He is to submit samples of specified Materials and relevant information before bringing Materials to site;
3. He is to allow inspection during manufacture off-site;
4. He is to carry out specified tests during construction;
5. He is to allow inspection before covering up;
6. He is to undertake specified Tests on Completion;
7. Under the Yellow & Silver Books, he is to undertake specified Tests after Completion, but not the Gold Book.

Quality

- The Contractor is to submit samples of Materials, and relevant information, to the Engineer for consent prior to using the Materials in or for the Works. (PB and 2017 RB Sub-Clause 7.2)
- Samples are:
 - manufacturer's standard samples of Materials and samples specified in the Contract, all to be provided at the Contractor's cost, and
 - additional samples instructed by the Engineer as a Variation.
- Under Sub-Clause 1.3 (PB and 2017 RB), the Engineer cannot unreasonably withhold his consent to the use of Materials. Any decision by the Engineer to reject certain Materials will thus need to be supported by scientific evidence (e.g., laboratory reports).

Quality

- The Employer's Personnel shall:
 - At all reasonable times have full access to all parts of the Site and to all places from which natural Materials are being obtained, and
 - During production, manufacture and construction (at the Site and elsewhere), be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of manufacture of Plant and production and manufacture of Materials.

Quality

- The Contractor must give notice to the Engineer whenever any work is ready and before it is covered up
- The Engineer shall then either carry out the examination without unreasonable delay, or promptly give notice to the Contractor that he does not require to do so.
- If the Contractor fails to give the notice, he must, if and when required by the Engineer, uncover the work and then reinstate at his own cost.
(PB and 2017 RB Sub-Clause 7.3)

Quality

- The Contractor shall provide everything necessary to carry out the tests specified, unless otherwise stated in the Contract.
- He shall agree with the Engineer, the time and place for the specified testing.
- The Engineer may vary the location or details of specified tests, or instruct the Contractor to carry out additional tests.
- If these varied or additional tests show that the item is not in accordance with the Contract, the additional or varied tests shall be at Contractor's expense.

Quality

- The Engineer must give the Contractor not less than 24 hours' notice of his intention to attend the tests. If he does not attend at the time and place agreed, the Contractor may proceed with the tests unless otherwise instructed by the Engineer and the tests shall be deemed to have been made in the Engineer's presence and to be accurate. (PB and 2017 RB Sub-Clause 7.4)
- If any Plant, Material or workmanship is found to be defective, or not in accordance with the Contract, the Engineer may reject it by notifying the Contractor. However, again Engineer must not unreasonably withhold approval.

Quality

- If the Engineer requires this Plant, Materials or workmanship to be retested, the tests must be repeated under the same terms and conditions.
- If the Employer suffers additional costs due to the retesting, the Contractor shall pay these costs to the Employer. (Sub-Clause 7.5 & Sub-Clause 2.5 PB or Sub-Clause 20.2 2017 RB)
- The Contractor must, within a reasonable time, comply with any Engineer's instruction to:
 - remove and replace any Plant or Materials which do not conform with the Contract; or
 - remove and re-execute any work which does not conform with the Contract.

Quality

- The Engineer should only insist upon removal and replacement when it would be unreasonable to repair.
- If the Contractor fails to comply with the Engineer's instruction, the Employer will be entitled to employ others to carry out the instruction at the Contractor's cost. (PB and 2017 RB Sub-Clause 7.6)

Tests on Completion

- Prior to commencing the Tests on Completion, the Contractor must:
 - submit “As-built” documents and operation and maintenance manuals for parts of the Works designed by him;
 - give at least 21 days notice to the Engineer of the date after which he will be ready to carry out the Tests.
- The Tests on Completion must be carried out within 14 days after the above-stated date, on the day or days chosen by the Engineer.

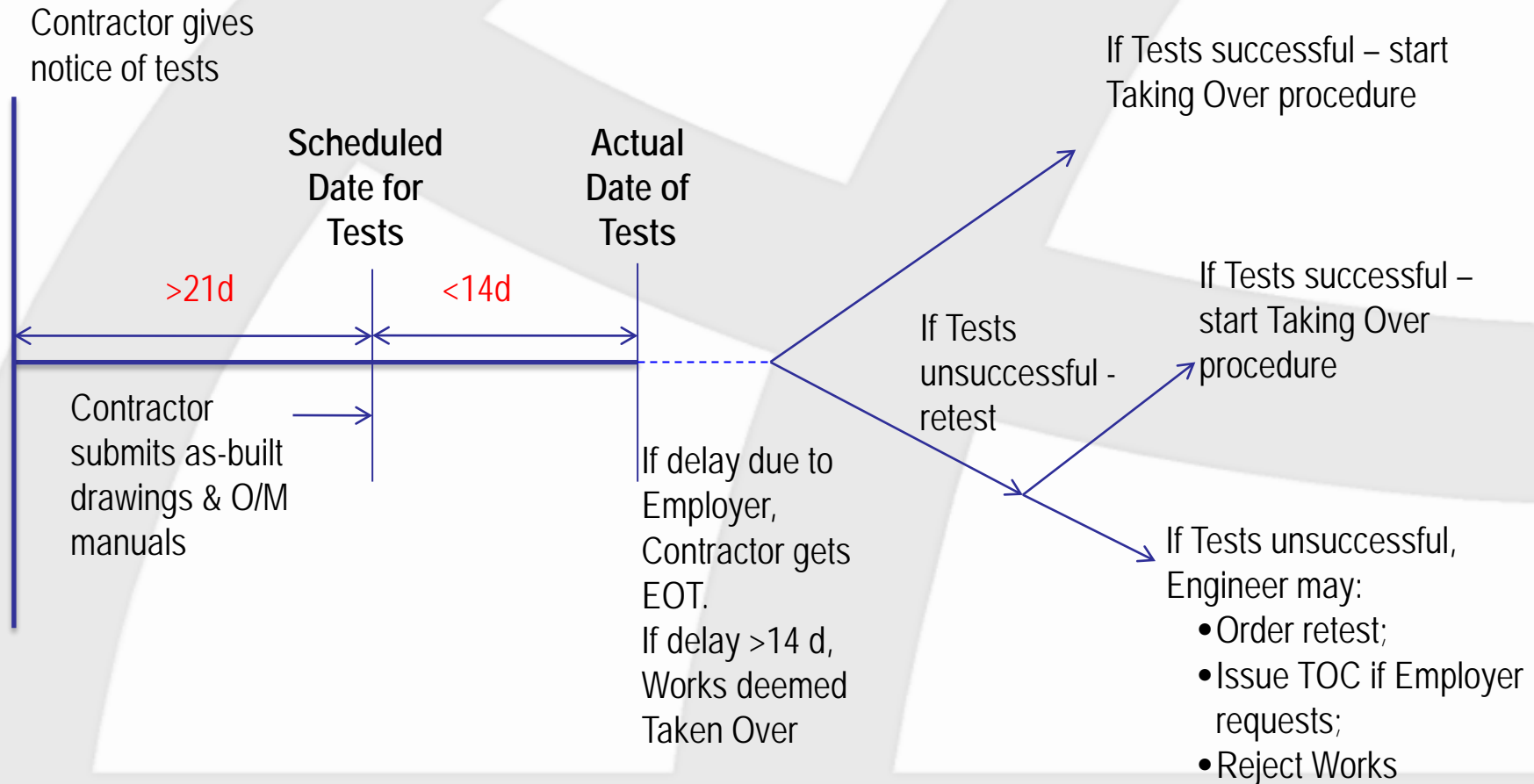
Tests on Completion

- If the Tests on Completion are unduly delayed by the Employer, the Contractor is entitled to an extension of time and/or additional payment.
- If the delay continues for more than 14 days, the Employer is deemed to have Taken Over the Works on the date when the Tests should have been completed (and the Tests are then done during the DNP).
- If the Tests on Completion are unduly delayed by the Contractor, the Engineer may instruct the Contractor to carry out the Tests within 21 days, on dates fixed by the Contractor.

Tests on Completion

- If the Contractor fails to do so, the Employer may proceed with the Tests on Completion at the risk and cost of the Contractor.
- In such a case, the Tests on Completion will be deemed to have been carried out in the presence of the Contractor and the results will be deemed to be accurate. (PB and 2017 RB Sub-Clause 9.2)
- If the Works fail to pass, the Engineer or the Contractor may require the failed Tests and Tests on Completion of related work, to be repeated. (PB and 2017 RB Sub-Clause 9.3)

Sequence of Tests on Completion



Tests on Completion of Design-Build (Gold Book)

- The sequence for testing is as follows (SC 11.1 Gold Book):
 - pre-commissioning tests, including inspections and “dry or “cold” runs” for each item of Plant;
 - commissioning tests to demonstrate that the Works or Section can be operated safely and as specified, under all available operating conditions; and
 - Trial operation.
- During trial operation, when the Works are stable, the Contractor shall give notice that the Works are ready for any other Tests on Completion, including performance tests.
- Any product produced during trial operation belongs to the Employer.
- Note: The examples of DBO contracts show to the trainer used standard PB or ENAA conditions for Tests on Completion.

Taking Over

- When the whole or a part of the Works is completed, Contractor applies by notice to Engineer for a Taking-Over Certificate (TOC).
- Before issuing the TOC, the Engineer must verify that any pre-conditions have been satisfied:
 - statutory requirements affecting Taking Over;
 - Contractor has submitted As-Built Drawings (if required) and Operating/Maintenance Manuals (if any).
 - works have passed Tests on Completion (if any);

Taking Over

- Engineer must within 28 days after receipt of the Contractor's notice applying for a TOC, either:
 - issue a TOC stating the date on which the Works were completed in accordance with the Contract; or
 - issue a TOC with a "Punch List" of items to be completed or rectified after Taking Over; or
 - give written instruction to the Contractor specifying all the work which is required to be done by the Contractor before the issue of the TOC.
- If the Engineer fails to respond within 28 days of receipt of the Contractor's notice, and the Works are substantially in accordance with the Contract, the TOC is deemed to have been issued on the last day of that 28 days' period.

Taking Over

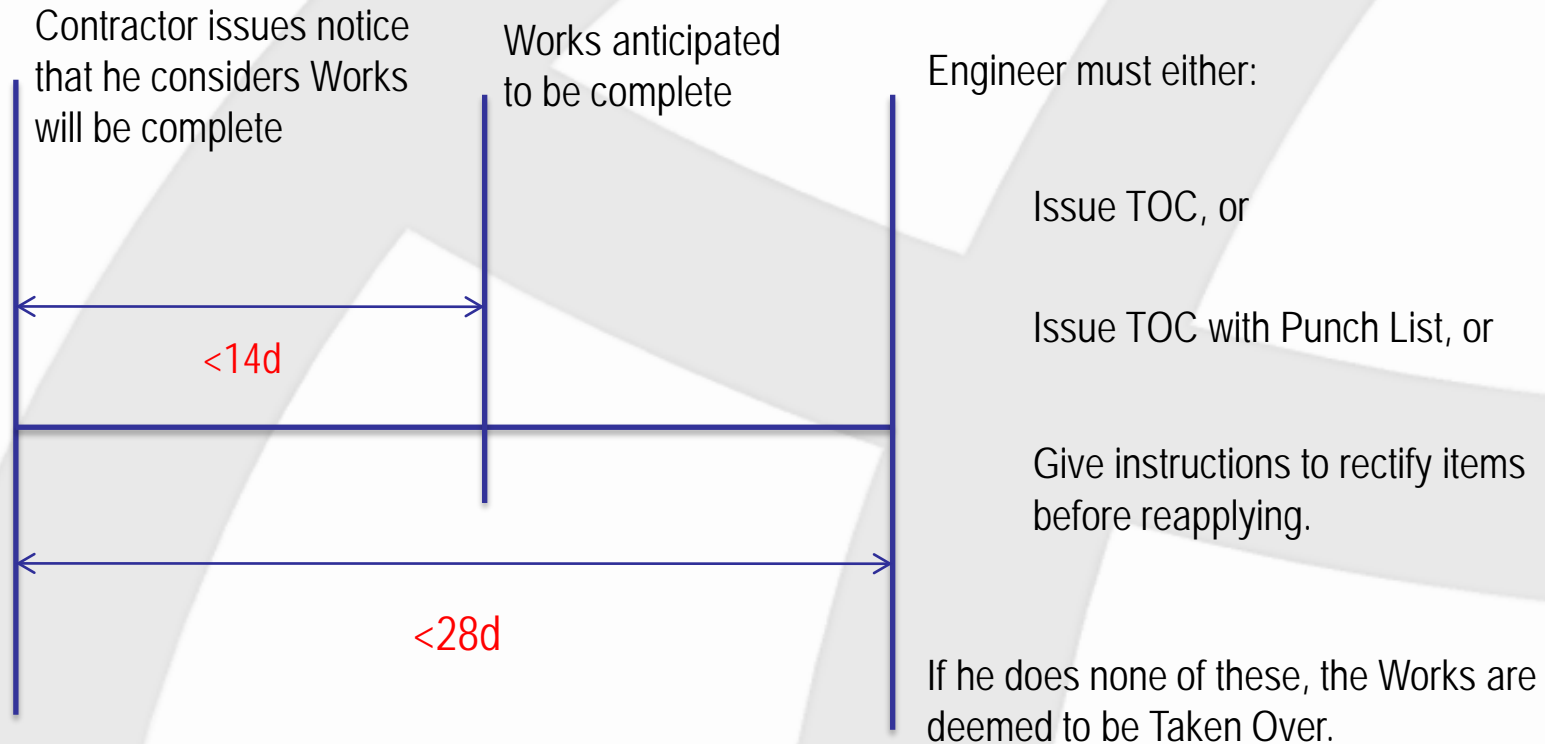
In accordance with the procedures for the whole of the Works, Contractor may request and Engineer shall issue a TOC for:

- any **Section** in respect of which a separate Time for Completion is provided in the Contract (customarily in the Contract Data); or
- any **part** of the Permanent Works - but at the sole discretion of the Employer; or
- any **part** of the Permanent Works which the Employer has decided to use prior to completion (other than as a temporary measure specified in the Contract or agreed by the Contractor).

Taking Over

- The part used is Taken Over **on the date at which it was first used** and from that date:
 - responsibility for care & maintenance of part is with the Employer;
 - the Contractor's obligation to insure part ends;
 - a proportion of the Retention Money, based on the value of the taken-over works relative to the total value of the Permanent Works, is paid to the Contractor;
 - the Employer's entitlement to Delay Damages is reduced in proportion to the value of the part of Works.
- **PB:** But the DNP for the part runs until the end of the DNP for the Works (or the end of the DNP for the Section if the part is in a Section).
- **2017 RB:** The DNP for the "Part" now starts to run from the date of taking over of the Part.

Taking Over



Defects Liability

- Defects Notification Period (DNP) is the period for notifying defects that the Contractor is required to correct. It is 12 months unless stated otherwise in the Contract Data:
 - from the date of completion of the Works certified in the TOC for the whole of the Works;
 - from the date of completion of each Section certified in the TOC for the whole of the Works;
 - See slide 19 regarding parts or "Parts".

Defects Liability

- Contractor is required:
 - if a TOC was issued with a Punch List, to complete items listed within such reasonable time as is instructed by the Engineer during the DNP;
 - to rectify any defects which are notified to him by or on behalf of the Employer on or before the DNP expiry date.
- Notice given by the Engineer should state the time by which the Contractor is to correct notified defects (statement may affect the Employer's remedies in the event of noncompliance).
- In the event of default, Employer is entitled to recover from the Contractor the Employer's full costs, as verified by the Engineer, of the remedial actions/works performed by others.

Defects Liability

- The Contractor is obliged, at his cost, to rectify any defect attributable to:
 - Any design for which the Contractor is responsible;
 - Plant, Materials or workmanship not in accordance with the Contract,
 - Failure by the Contractor to comply with any other obligation.
 - but not :
 - “fair wear and tear”;
 - defects which are attributable to faults of design not performed by the Contractor;
 - damage not caused by/attributed to Contractor in the DNP.
- (PB and 2017 RB Sub-Clause 11.2)

Defects Liability

- Employer may choose to rectify defects or damage that are not attributable to the Contractor by:
 - a request by the Employer (or on his behalf by the Engineer) that the Contractor perform the remedial works, for which the Contractor's agreement and jointly agreed payment terms would be necessary;
 - the Employer executing the remedial works outside the Contract, by himself or by others.

Defects Liability

- If an argument arises as to whether or not a defect is attributable to the Contractor, he shall, upon instruction of the Engineer:
 - search for the cause of the defect;
 - if, as a result of the search, it is determined that the defect is the Contractor's responsibility, then the Contractor shall bear the cost of the search (may include costs of the Employer's and/or Engineer's participation).
- If the cause of the defect is not the responsibility of the Contractor, then the Contractor is entitled to payment. (PB and 2017 RB Sub-Clause 11.8)

Defects Liability

“The Employer shall be entitled.... to an extension of the Defects Notification Period for the Works or a Section or a Part if and to the extent that the Works, Section or a major item of Plant (as the case may be, and after taking over) cannot be used for the purposes for which they are intended by reason of a defect or damage. However a DNP shall not be extended by more than two years”. (PB Sub-Clause 11.3 and 2017 RB changes in red)

- There is a cap of two years after the expiry of the DNP in the Contract Data.
- PB: If any Section, or major item of Plant cannot be used for a certain time period, then the relevant DNP should be extended by that time period.
- 2017 RB: This also applies to a “Part” of the Works.

Performance Certificate

- The Engineer is required to issue the Performance Certificate:
 - within 28 days after expiry of the DNP;
 - or if different DNPs are applicable, within 28 days after expiry of the latest; or
 - as soon thereafter as any works instructed by the Engineer have been satisfactorily completed and tested, and the Contractor has handed over all documents prescribed to be handed over by the Contract.

Performance Certificate

- Under the “Unfulfilled Obligations” clause, after the PC has been issued each Party remains liable for the fulfilment of any obligation unperformed at that time. Obligations include:
 - Contractor’s clearance of Site;
 - Contractor’s submission of a Final Statement;
 - Employer’s Final Payment;
 - Release of the Performance Guarantee.

Thank You!