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Project Construction Control of Material Testing Procedure



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Project Construction Control of Material Testing Procedure

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Project Construction Control of Material Testing Procedure

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1.0 PURPOSE

The purpose of this procedure is to describe the requirements for verification testing of materials and providing materials testing services.

Usually the Contract Specifications, Drawings and the Construction Contractor's approved Quality Control Plan provide all necessary testing requirements. On some specialty contracts, additional testing requirements may be specified in other documents, e.g., Customer or End User requirements

This procedure applies to works performed under all Government construction projects executed throughout the Kingdom of Saudi Arabia.

For the purposes of the Construction Management Procedures the Project Management Company is the EPMO (Entity Project Management Organization) appointed by the Entity and references prefixed with "Site", such as Site Construction Department, Site Engineering Department, represent the Project Management Company at Project level, on construction sites.

2.0 SCOPE

The Construction Contractor is responsible for all testing of their Work and for utilizing an approved Third Party Testing Agency as required by the Specifications. The scope of the Construction Contractor's testing shall be determined by the contract, specification and drawings, and the approved Construction Contractor's Quality Control Plan as defined in EPM-KCQ-PR-000005-Project Construction Quality Management System Procedure.

Within the Site Construction Department's Quality Inspection function, additional or verification testing will be required. This function (Verification Testing Program) is to be supplied by a Material Testing Laboratory through a Material Testing Service Contract.

3.0 DEFINITIONS

Definitions	Description
Verification Testing Program	Further testing over and above that provided by Construction Contractors to provide assurance of the works. Level of verification is on a risk based approach taking consideration of the experience of Construction Contractors undertaking the works.
Material Testing Laboratory (MTL)	Laboratory contracted to undertake site and laboratory testing of materials to provide verification of conformance with specification requirements.
Enterprise Content Management System (ECMS)	An information management and collaboration platform for managing and controlling program documents and records.
EPMO (Entity Project Management Organization)	An Entity Project Management Organization, this is an integrated team that comprises the Entity and its PMC responsible for managing all the Entity's projects.
Construction Contractor	The Construction Contractor is the Main or Principal Contractor responsible for undertaking the Construction Works on the Project.
Site Construction Department	Department within the Project Management Company that is responsible for Construction activities/operations.
Site Engineering Department	Department within the Project Management Company that is responsible for Engineering or design activities/operations.
Site Contracts Department	Department within the Project Management Company that is responsible for administering Contracts.
Architect/Engineer Design Consultant (A/E)	Architectural/Engineer Consultant appointed by the EPMO to undertake the design of the project.
Non-Conformance Reports (NCR)	Report identifying construction non conformities. Can include the approval of remedial works, designer's opinion, inspection of repairs, etc...



4.0 REFERENCES

1. EPM-KCE-PR-000009 - Project Construction Civil Works Procedure
2. EPM-KCQ-PR-000005 - Project Construction Quality Management System Procedure

5.0 RESPONSIBILITIES

5.1 Construction Contractors

The Construction Contractor is responsible for provide all construction testing required by the specifications, drawings and other Contract documents, and the Construction Contractors Quality Control Plan.

5.2 Site Construction Department

The Site Construction Department is responsible for defining the scope of the verification testing requirements under the Material Testing Program and managing the process of scheduling, ensuring tests are undertaken as required and expediting the results of completed tests as necessary.

5.3 Site Contracts Department

The Contracts Department is responsible for the preparation and administering of the contract for the relevant Material Testing Laboratory (MTL).

6.0 PROCESS/INSTRUCTIONS

6.1 Prior to Construction Commencement

The Site Construction Department with the Site Engineering Department shall define the scope of the verification Material Testing Program, the type of testing, likely number of tests and geographical locations, based upon the Construction Contractors initial or contract schedule.

The Site Construction Department shall develop a Service Requisition for the Material Testing Works. The Works would be contracted on the basis of a "as required" order as the construction works progress.

The Material Testing Laboratory services provides:

- A Verification Material Testing Program for construction contracts.
- A means to assist monitoring of the Construction Contractor quality control performance.
- Control testing as required
- A means of assessing the quality of products or materials as brought on site by the Construction Contractors.
- Evaluation of indigenous materials.

6.2 Forecast of Test Requirements

The Site Construction Department will update the original Forecast Work Plan, which will be updated at 3-month intervals to indicate monthly verification testing requirements. The Site Construction Department will review the Construction Contractor's approved schedule and determine the approximate testing requirements for the various commodities (concrete, asphalt, backfill, etc.).

A completed Forecast estimated schedule as shown in the Project Construction Testing Forecast Template (Sample) in Attachment 1 will be forwarded to the Materials Testing Contractor by the Site Contracts Representative for their use.



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Additionally, the Material Testing Forecast can be used to compare projected testing requirements against actual, if required.

6.3 Scheduling Tests

6.3.1 Monthly Work Schedule Notification

At the beginning of each month the Site Construction Department will issue a Work Schedule Notice, as shown in the Project Testing Program Monthly Work Schedule Notification Template (Sample) Attachment 2, to the Material Testing Laboratory (MTL) under contract.

As a guide, the number of verification tests performed by the MTL should be approximately ten percent of the tests the Construction Contractor performs in accordance with the Construction Contractor's contract documents, this percentage can be adjusted up or down depending on the performance of the Construction Contractor as determined by the Site Construction Department.

6.3.2 Daily Work Request

To complete the work items approved on the Work Schedule Notice, the Site Construction Department will schedule the work directly with the Material Testing Laboratory, ensuring a minimum of 24 hours' notice.

The Project Material Testing Program Work Request Template (Sample) as shown in Attachment 3 shall be used to schedule the work items required. The Work Request creates a written record of tests requested.

The MTL will acknowledge receipt of the Work Request and schedule the required technicians for the following day's testing requirements.

6.4 Execution of Tests

Based on all the Work Schedule Requests the MTL schedules their crews to visit the project at the appropriate times for testing.

The MTL technicians perform the requested tasks and determine/calculate if the appropriate tests pass or fail and which tests are required to be performed in the Laboratory.

6.4.1 Unsatisfactory Test Results

If test results do not meet the requirements, the MTL technician will verbally advise the Site Construction Department immediately. The Site Construction Department will determine the immediate action, which may include re-testing, rework by the contractor, stopping the work or other action as deemed appropriate.

Further action may include a Technical Query to the Site Engineering Department, a request for additional testing by the Construction Contractor, a Non-conformance Report (NCR), or other action as deemed appropriate.

6.5 Reporting

After the test results are reviewed by the MTL, the MTL technician will prepare the test report for the next scheduled submittal. The MTL will submit the test results on a weekly basis, or sooner, if required, to the Contracts Department. for review by the Site Construction Department and Document Control for Record Retention

6.6 Additional Testing

Requests for additional/special material testing services may be initiated by any of the project site staff with the agreement of the Site Construction Department and through the Site Contracts Department.

If the work requested is outside the scope of the testing service contract(s), or cannot be approved for any other reason, the requestor will be informed immediately.



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The requestor will submit details of the requested test to the Site Construction Department for approval. The details shall include:

- Material to be tested
- Test required - where possible including International recognized standard for test
- Location of the test
- Reason for test
- Sample size
- Specification Requirement
- Timing and number of test; and
- Date the results are required.

7.0 ATTACHMENTS

1. EPM-KCQ-TP-000001 - Project Construction Testing Program Forecast Template
2. EPM-KCQ-TP-000002 - Project Construction Testing Program Monthly Work Schedule Notification Template
3. EPM-KCQ-TP-000003 - Project Construction Testing Program Work Request Template



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Attachment 1 - EPM-KCQ-TP-000001 - Project Construction Testing Program Forecast Template

Construction Contractor:							Construction Contract No.:												
Test Lab Name:							Contract No.:												
MATERIAL TYPE	ESTIMATED QUANTITY	CONTRACT TESTING FREQUENCY	ESTIMATED CONTRACTOR TESTS	CONTRACT SPECIFICATION REQUIREMENTS	CHECK SPECIFICATION REQUIREMENTS	CHECK TESTING UNIT	ESTIMATED CHECK TESTING UNITS REQUIRED												
							M	J	J	A	S	O	N	D	J	F	M	A	
						COMPACTION REPORT													
						SUB BASE/ROAD BASE REPORT													
						ASPHALT REPORT													
						CONCRETE REPORT													
						OTHER													
COMMENTS:							Construction Site Representative:												
							(Name)												
ASSIGNED TO:							Location:												
							Approved By:												
							(Site Construction Department)												



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Attachment 2 - EPM-KCQ-TP-000002 - Project Construction Testing Program Monthly Work Schedule Notification Template

REPORT SCHEDULED THIS MONTH		
☐ Compaction	☐ Asphalt	☐ Aggregate
☐ Concrete	☐ Sub-Base/Sand	☐ Pavement Cores
☐ Other _____		
These quantities are not to be exceeded.		
CONTRACTION CONTACT		
Name:		
_____	_____	_____
(Print Name)	(Location)	(Telephone)
Approved by:		
_____	_____	_____
(Site Construction Department)	(Signature)	(Date)
Initial reports will be issued to contact within 24-hours of completing particular test.		

FOR ACCOUNTING PURPOSE ONLY					
PAY ITEM NO.	PAY ITEM DESCRIPTION	QUANTITY	PAY ITEM NO.	PAY ITEM DESCRIPTION	QUANTITY

Quantities Agreed by:		
_____	_____	_____
(Lab Representative)	(Signature)	(Date)
Work Approved:		
_____	_____	_____
(Site Construction Department)	(Signature)	(Date)



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Attachment 3 - EPM-KCQ-TP-000003 - Project Construction Testing Program Work Request Template

DAILY CHECK TEST PROGRAM WORK REQUEST	
REFERENCE:	CONTACT NO.
TEST LAB:	
AREA OF WORK:	
TEST REQUIRED:	DATE REQUIRED:
TEST REQUIRED:	DATE REQUIRED:
TEST REQUIRED:	DATE REQUIRED:
TEST REQUIRED:	DATE REQUIRED:
SPECIFIED REQUIREMENTS:	
LOCATION OF TEST:	
SPECIAL INSTRUCTIONS:	
LOCATION PLAN ATTACHED: ☐ YES ☐ NO	
SIGN OFF	
REQUESTOR:	
_____ (Lab Representative) _____ (Signature) _____ (Date Received)	