



National Accreditation Board for Testing and Calibration Laboratories (NABL)

Specific Criteria for Recognition of Temporary Site Laboratories Testing Aggregates and Concrete in Building Projects

ISSUE NO.: 01
ISSUE DATE: 29-Jan-2024

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AMENDMENT SHEET

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INTRODUCTION

Civil engineering projects have temporary site testing facilities for the testing of building materials such as fine aggregates, coarse aggregates, and concrete cubes at construction sites. Testing of all these building materials is normally being done at temporary construction sites which is required across the construction industry in which the project size is more than 50,000 Sq.ft area (Constructed area). Site testing laboratory which is having area of 50,000 sq. ft or more can apply for this recognition program.

To ensure the quality and competency of the temporary site testing laboratories, NABL has launched a recognition scheme for such laboratories. This recognition scheme will give confidence in the test result/report issued by temporary site testing laboratories, which is very much necessary to ensure the quality of materials used for building construction. The scheme is applicable only to temporary site testing facilities. Mobile testing facilities are not included in this scheme at present.

This scheme is voluntary and an independent quality assurance scheme, which is not covered under APAC & ILAC MRA.

The competency of the temporary site testing laboratory will be determined through the results of the onsite assessment (including test witness), participation in proficiency testing program (PT), and records in accordance with this specific criteria.

The temporary site testing laboratory will get recognition for the project duration (however it will be maximum of 5 years). The starting date of the project will be the commencement certificate from the authority and end date will be getting the occupancy certificate from the authority. The onsite surveillance will be conducted in every 10 months & before 12 months. In case of shorter project duration surveillance will be conducted in 6 months. The Unannounced assessment may be conducted during the recognition period.

This recognition scheme is developed for the testing of the following basic building materials at the construction site, with the defined test parameters for the following materials.

1. Fine Aggregates
2. Coarse Aggregates
3. Concrete

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1. SCOPE

This specific criteria document describes the recognition requirements specifically applicable to the laboratories performing all the below mentioned tests at a location temporarily set up at site premises for a defined duration. Site testing laboratory which is having area of 50,000 sq. ft or more can apply for this recognition program.

The temporary laboratory shall apply for all the test parameters under the scope of recognition as given below:

Scope of Recognition

Materials/Product	Test Parameter	Test Method
Fine Aggregates	Sieve Analysis	IS 2386 (Part-I)
	Bulk Density	IS 2386 (Part-III)
	Specific Gravity	IS 2386 (Part-III)
	Water Absorption	IS 2386 (Part-III)
	Material Finer Than 75 µm	IS 2386 (Part-I)

Materials/ Product	Test Parameter	Test Method
Coarse Aggregates	Sieve Analysis	IS 2386 (Part-I)
	Bulk Density	IS 2386 (Part-III)
	Flakiness index	IS 2386 (Part-I)
	Elongation Index	IS 2386 (Part-I)
	Impact Value	IS 2386 (Part-IV)
	Crushing Value	IS 2386 (Part-IV)
	Specific Gravity	IS 2386 (Part-III)
	Water absorption	IS 2386 (Part-III)
	Material Finer Than 75 µm	IS 2386 (Part-I)

Materials/ Product	Test Parameter	Test Method
Hardened Concrete	Compressive Strength	IS 516 (Part-1/Sec-1)
Fresh Concrete	Workability by Slump	IS 1199 (Part-2)

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2. NORMATIVE REFERENCES

ISO/ IEC 17025: 2017 “*General Requirements for the competence of testing and calibration laboratories*”

ISO/ IEC 17000 “*Conformity assessment – Vocabulary and general principles*”

ISO/IEC Guide 99 “*International Vocabulary of metrology — Basic and general concepts and associated terms (VIM)*”

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3. TERMS AND CONDITIONS FOR RECOGNITION

The applicant and recognized laboratories under the scheme shall be required to fulfill the following terms & conditions:

- 3.1 The laboratory shall meet the requirements of regulators (local/regional/state/national regulations).
- 3.2 The laboratory shall offer cooperation to NABL or its representative in undergoing assessments and on the following whenever NABL considers it necessary:
 - a) Access to all laboratory areas of operations.
 - b) Undertaking any assessment to verify the capability of the laboratory for the applied scope.
 - c) Witnessing the activities being performed relevant to this scheme.
 - d) Assessing the competence of the staff during assessment.
 - e) Access to all relevant information, documentation, and records.
 - f) Access to all records pertaining to relevant personnel.
 - g) Providing names of all personnel(s) who are responsible for authenticity for review, evaluation & release of results as applicable.
 - h) Investigating any complaints against the laboratory.
- 3.3 The laboratory shall pay the stipulated fee to NABL.
- 3.4 If performance in two successive PT samples (for the same parameter) is not satisfactory, the laboratory shall be de-recognized.
- 3.5 The laboratory shall not be involved in any kind of activity(ies) which may bring NABL to disrepute.
- 3.6 The recognized laboratories can relinquish recognition through a written notice to NABL by clearing any outstanding payment and surrendering the certificates along with the scope.
- 3.7 The laboratory shall respond promptly to the changes initiated by NABL in this specific criteria. The lab shall inform NABL when such alterations under the agreed time frame have been completed.
- 3.8 NABL absolves itself of any legal or financial liability arising out of activities of any of the labs covered under this scheme involving any accidental or consequential damages to personnel/equipment/products at any time.
- 3.9 The Laboratory shall inform NABL within 15 days of significant changes affecting the Lab's activities and operations relevant to recognition, such as:
 - a) change in the physical location of the laboratory (within the same project site).
 - b) change in name of the laboratory.
 - c) resources (equipment & personnel)
- 3.10 The laboratory shall offer cooperation to the NABL assessment team in carrying out unannounced visit as a part of continuous monitoring activity by NABL for its recognized laboratories.
- 3.11 Any violation of the above terms and conditions shall result in denial of recognition in the case of applicant laboratories or derecognition in the case of recognized laboratories.
- 3.12 All disputes, arising out of NABL decisions that remain unresolved through the mechanism provided by NABL, are subject to the exclusive jurisdiction of the Courts at New Delhi and none other.

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- 3.13 The recognized organization agrees and shall indemnify NABL fully against all losses, damages and expenses suffered by NABL including but not limited to legal costs on a full indemnity basis and all claims by any third parties against NABL, arising directly or indirectly from the recognition of the recognized organization, assessment activities carried out on the recognized organization by NABL, its representatives, employees and/or experts/assessors or NABL's exercise or performance of its rights, powers, duties or obligations under these Terms and Conditions.

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4. TERMINOLOGY/ DEFINITIONS

- 4.1. Temporary Site Laboratory:** A testing laboratory set up in a temporary location for in-house testing requirements for the duration of building construction.
- 4.2. Constructed Area:** Total constructed Floor area of a building.
- 4.3. Proficiency Testing:** Evaluation of participant performance against pre-established criteria by means of Inter laboratory comparisons.
- 4.4. Impartiality:** Presence of Objectivity.
- 4.5. Scope of Recognition:** Specific test to be conducted as per defined test method for which recognition is sought or has been granted.
- 4.6. Metrological Traceability:** Property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty”.
- 4.7. Assessment:** process undertaken by an accreditation body (i.e., NABL) to determine the competence of a laboratory, based on standard(s) and/or other normative documents and for a defined scope.
- 4.8. Assessor:** Person assigned by an accreditation body (i.e., NABL) to perform, alone or as part of an assessment team, an assessment of a laboratory.
- 4.9. Test Witness:** Observation by the accreditation body (i.e., NABL), of a laboratory carrying out testing activities within its scope of recognition.
- 4.10. Subcontracting:** Outsourcing of testing activity to another competent laboratory.
- 4.11. Appeal:** request by a laboratory for reconsideration of any adverse decision related to its desired recognition status.
- 4.12. Sampling:** selection and/or collection of material or data regarding an object of testing.
- 4.13. Testing:** determination of one or more characteristics of an object of testing, according to a procedure.
- 4.14. Surveillance:** systematic iteration of conformity assessment activities as a basis for maintaining the validity of the statement of conformity.

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5. MANPOWER REQUIREMENTS

- 5.1. All personnel of the laboratory shall be competent and work impartially.
- 5.2. The laboratory shall have records for the competency of personnel (education, qualification, training, technical knowledge, skills and experience).
- 5.3. The laboratory shall authorize personnel to perform testing activities in the laboratory.
- 5.4. The laboratory shall ensure the training for newly recruited personnel and records to be maintained.
- 5.5. All Site testing parameters shall be performed by the laboratory staff only. However, assistance/support staff for the operation/functioning of testing activities can be contractual/outsourced.
- 5.6. Adequate testing personnel shall be available (depending upon the project size) to ensure quality control and assurance.
- 5.7. The temporary site testing laboratory shall have personnel with the following qualifications and experience:

Designation	Educational Qualification	Minimum Work Experience
Lab Assistant	12+	Minimum 6 months experience (fresh candidate is considered subject to technical training)
Lab Technician	B.Sc./Diploma in Civil Engineering	Minimum one year, must be involved in building materials testing activities.
Lab In-Charge / Lab Engineer	B.Sc./ Diploma in Civil Engineering	Minimum two years of experience in building materials testing activities.
	B.E./ B.Tech in Civil Engineering	Minimum one year experience in building materials testing activities.

- 5.8. The lab in charge / Lab Engineer shall be authorized to report, review and authorize the test report.
- 5.9. Relevant records shall be retained for 1 Year.

6. REQUIREMENTS FOR FACILITIES AND ENVIRONMENTAL CONDITIONS

- 6.1. Facilities and environmental conditions shall be suitable for laboratory activities.
- 6.2. Temperature controls shall be provided wherever necessary during the testing of samples (i.e., curing of concrete cube specimens which need to be stored in temperature-controlled water curing tanks as per the Standard Requirement).
- 6.3. The temperature of the curing tank shall be monitored and shall be recorded on a daily basis.
- 6.4. The laboratory shall have adequate space to carry out all site testing parameters.
- 6.5. The laboratory shall be free from any external disturbances that may adversely affect the test results (for example testing should not be conducted where vibrations and other activity affect the test performance).
- 6.6. The site laboratory shall be adequately lit, and ventilated with proper water supply arrangements.
- 6.7. The lab In-charge/ Lab Engineer shall ensure good housekeeping of the laboratory.
- 6.8. Relevant records shall be retained for 1 Year.

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7. TEST METHODS REQUIREMENTS

The laboratory shall use relevant and current version of IS test methods. Test method details are given as follows:

Materials/Product	Test Parameter	Test Method
Fine Aggregates	Sieve Analysis	IS 2386 (Part-I)
	Bulk Density	IS 2386 (Part-III)
	Specific Gravity	IS 2386 (Part-III)
	Water Absorption	IS 2386 (Part-III)
	Material Finer Than 75 µm	IS 2386 (Part-I)

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	Impact Value	IS 2386 (Part-IV)
	Crushing Value	IS 2386 (Part-IV)
	Specific Gravity	IS 2386 (Part-III)
	Water absorption	IS 2386 (Part-III)
	Material Finer Than 75 µm	IS 2386 (Part-I)

Materials/Product	Test Parameter	Test Method
Hardened Concrete	Compressive Strength	IS 516 (Part-1/ Sec-1)
Fresh Concrete	Workability by Slump	IS 1199 (Part-2)

The brief test procedure for each test parameter is as follows: