

## QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR CONSTRUCTION INDUSTRY



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### What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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### Introduction

#### Qualifications Pack- Assistant Laboratory & Field Technician

**SECTOR:** CONSTRUCTION

**SUB-SECTOR:** 1. Real Estate (Residential, Factories, Industry, Institutional, Special Economic Zone)  
2. Infrastructure (Roads, Railways, Runways & Urban Utilities)  
3. Power Generation (Hydro, Thermal & Nuclear)

**OCCUPATION:** LABORATORY & FIELD TESTING

**JOB ROLE:** Assistant Laboratory & Field Technician

**REFERENCE ID:** CON/Q 0402

**Aligned To :** NCO-2004 / 3111.25

**Laboratory & Field Testing** in Construction Industry is the specialized sub-sector pertaining to the testing of all construction related materials and activities both at site as well as at permanent laboratory. This incorporates specific requirements of the project like roads, runways, buildings along with the specialized activities related to tunneling & power projects also.

**Brief Job Description of Assistant Laboratory & Field Technician Level-2:** Individual in this position works in permanent, field and site laboratories. He is responsible to organize and arrange the sample collection from field or site and conduct the desired tests in laboratory as and when required either in field or permanent location utilizing the help and services of level-1 technician under him.

**Personal Attributes:** This job requires the individual to work in lab whether it is in field, at site or in permanent location as a **Assistant Laboratory & Field Technician**. The individual needs to be physically fit to withstand working in a construction environment and responding to the needs and requirement of the tasks. He should be able to organize and manage a group of labour and lab technician under him at site to do the required job / tests.



<b>Job Details</b>	<b>Qualifications Pack Code</b>	<b>CON/Q 0402</b>		
	<b>Job Role</b>	<b>Assistant Laboratory &amp; Field Technician Level-2</b>		
	<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
	<b>Sector</b>	Construction	<b>Drafted on</b>	30/07/2013
	<b>Sub-sector</b>	<b>1.Real Estate (Residential, Factories, Industry, Institutional, Special Economic Zone)</b> <b>2.Infrastructure (Roads, Railways, Runways &amp; Urban Utilities)</b> <b>3.Power Generation (Hydro, Thermal &amp; Nuclear)</b>	<b>Last reviewed on</b>	30/07/2013
	<b>Occupation</b>	Laboratory & Field Testing	<b>Next review date</b>	30/07/2014

<b>Job Role</b>	<b>Assistant Laboratory &amp; Field Technician Level-2</b>
<b>Role Description</b>	To work as an Assistant in Laboratory & Field Testing related to construction, materials and activities while attending and responding to the needs and requirement of the tasks under his trade senior level-3 and above.
<b>NSQF level</b>	2
<b>Minimum Educational Qualifications*</b>	Preferably Equivalent to 10 <sup>th</sup> Standard
<b>Maximum Educational Qualifications*</b>	12 <sup>th</sup> Standard
<b>Training</b> (Suggested but not mandatory)	Training to be imparted so as to on completion candidate is capable to qualify for test & certification by authorised agency for Knowledge & Skill as per NOS for Level-2. Training period may vary from 6 to 8 weeks
<b>Experience</b>	Qualified / Possessed the requirements of <b>Helper Laboratory &amp; Field Technician Level-1 (CON/Q 0401)</b>
<b>Applicable National Occupational Standards (NOS)</b>	<u><b>Compulsory</b></u> <b>1. CON/N0018 : Health, Safety &amp; Environment</b> <b>2. CON/N0023 : Testing of Aggregates</b> <b>3. CON/N0024 : Testing of Soil</b> <b>4. CON/N0025 : Testing of Cement &amp; Cement mortar</b> <b>5. CON/N0026 : Testing of Concrete</b>
<b>Performance Criteria</b>	As per Occupation Standard (OS) for Level-2

**Glossary of Key Terms**

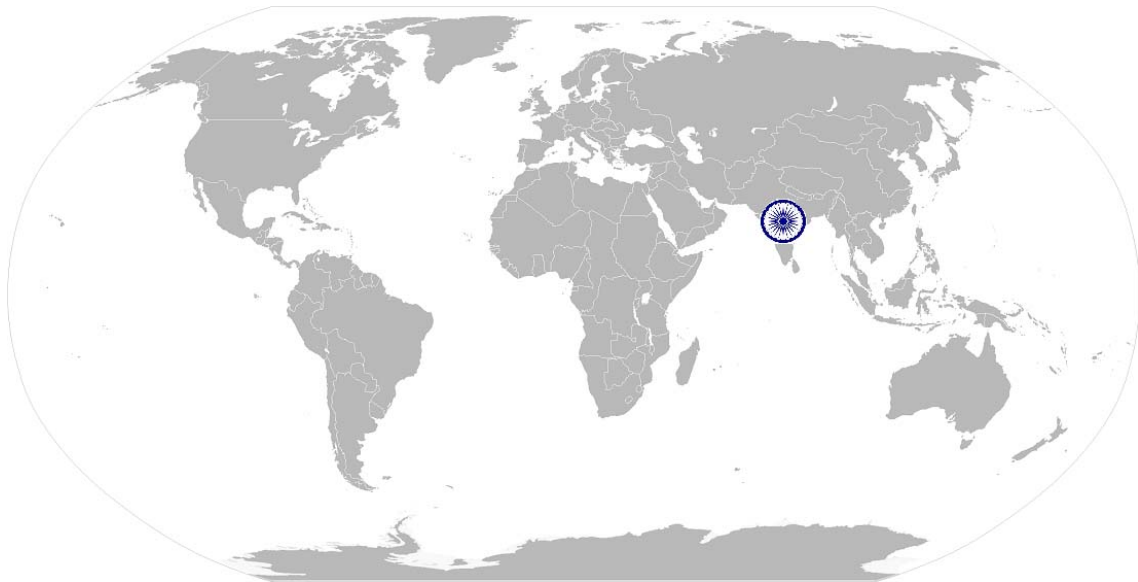
Keywords /Terms	Description
Sector	Sector is conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-Sector	Sub-Sector is derived from a further breakdown based on the characteristics and interests of its components
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet the standard consistently. Occupational Standards are applicable both in the Indian contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack (QP)	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualification Pack is assigned a unique qualification pack code
Qualification Pack Code	Qualification Pack Code is a unique reference code that identifies a qualifications pack.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills / Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Keywords /Terms	Description
CON	Construction
NSQF	National Skill Qualifications Framework
QP	Qualification Pack
OS	Occupational Standards
CSDCI	Construction Skill Development Council of India

**Definitions**

**Acronyms**



# National Occupational Standard



## Overview

This NOS covers the skill and knowledge of an individual to be proficient in Health, Safety & Environment in construction sector.



**CON/ N 0018: Health, Safety & Environment**

National Occupational Standard	<b>Unit Code</b>	CON / N 0018
	<b>Unit Title (Task)</b>	Health, Safety & Environment
	<b>Description</b>	This unit describes the skill and knowledge to make and achieve the requirement of health, safety and environment in construction sector.
	<b>Scope</b>	<b>Health, Safety &amp; Environment</b>
	<b>Performance Criteria(PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Health, Safety and Environment</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Demonstrate and use the Personal Protective Equipments such as Head Protection, Fall Protection, Foot Protection, Face &amp; eye Protection, Ear Protection, Hand &amp; Body Protection and Respiratory Protection.</p> <p>PC2. Follow Do's and Don'ts while working in lab and field</p> <p>PC3. Make out the First Aid with identification and use of basic dressing materials and bandages, resuscitation practices and actions</p> <p>PC4. Ensure the material handling such as shifting, lifting and carrying as per the procedure.</p> <p>PC5. Practice safety towards fire hazards and chemical hazards.</p> <p>The assessments based on viva-voice / interview / quiz test / demonstration technique shall be used to assess PC1 to PC5.</p>
	<b>Knowledge and Understanding (K)</b>	
	<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Organizations expectations, procedures and guidelines related with safety, health and environment</p> <p>KA2. Select and check the PPEs and know the indent and return procedures.</p> <p>KA3. Obey safety procedures at the lab / field</p> <p>KA4. Different type of health and safety hazards that can be found in the workplace</p> <p>KA5. Procedures for reporting against safety violations</p> <p>KA6. Upkeep the lab / field before and after test</p>
	<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Evacuation procedures during rescue operation</p> <p>KB2. Use and importance of health, safety and accident reporting procedures</p> <p>KB3. First Aid Knowledge with identification and use of basic dressing materials</p> <p>KB4. Sound knowledge of safety norms</p> <p>KB5. Differentiate the hazard and non-hazard materials</p>
<b>Skills (S)</b>		
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>	<p>The individual on the job needs to know and understand how to:</p> <p>SA1. Complete written work in details as per requirement</p>
	<b>Reading Skills</b>	<p>The individual needs to know and understand how to:</p> <p>SA2. Read instructions, guidelines, procedures, rules</p>
	<b>Oral Communication (Listening and Speaking skills)</b>	<p>The individual should do the following:</p> <p>SA3. Listen carefully and understand technicalities</p> <p>SA4. Orally communicate to others effectively</p>

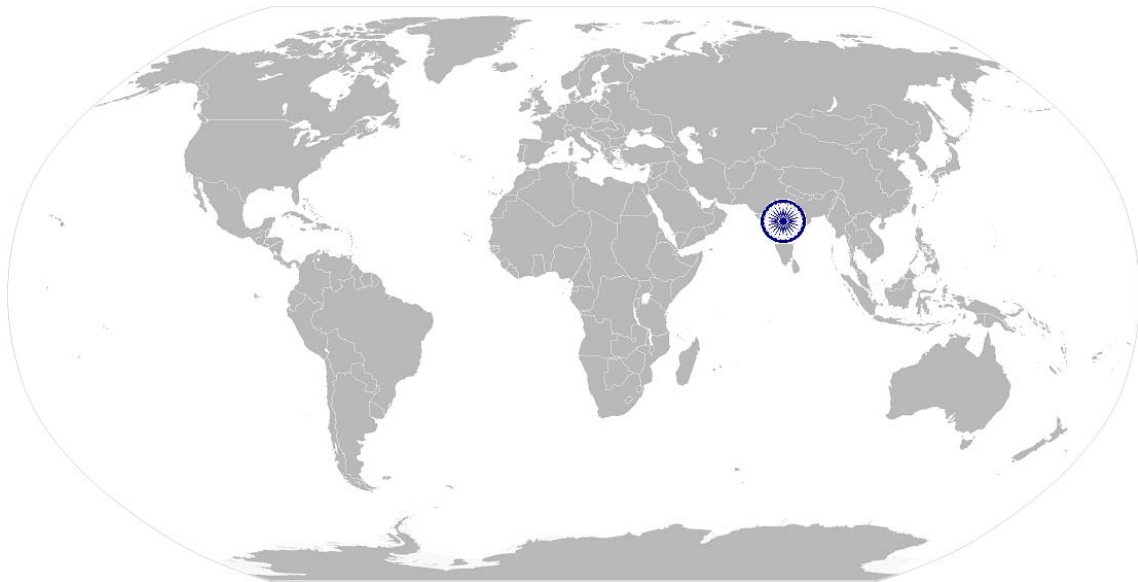


**CON/ N 0018: Health, Safety & Environment**

<b>B. Professional Skills</b>	<b>Decision Making</b>
	The user/ individual on the job needs to know and understand how to: SB1. Use Personal Protective equipment in an area of excessive noise and pollution
	<b>Plan and Organize</b>
	The user/ individual on the job needs to know and understand how to: SB2. Ensure the procedures for do's and don'ts during first aid operation SB3. Carry out the first aid procedure during emergency SB4. Follow the safety procedure for material handling during lifting
	<b>Customer Centricity</b>
	N.A.
	<b>Problem Solving</b>
	N.A.
	<b>Analytical Thinking</b>
	The user/ individual on the job needs to know and understand how to: SB5. Differentiate the hazards during handling of chemicals and hazards
	<b>Critical Thinking</b>
	N.A.
<b>Attention to Detail</b>	
N.A.	
<b>Team Working</b>	
The user/ individual on the job needs to know and understand how to: SB6. Work in coordination with trade senior SB7. Look after the interest other in case of emergency & requirement SB8. Distribute work among colleagues	



# National Occupational Standard



## Overview

This NOS covers the skill and knowledge for an individual to be proficient in conducting the field and laboratory test on Aggregates.



**CON/ N 0023: Testing of Aggregates**

National Occupational Standard

<b>Unit Code</b>	<b>CON / N 0023</b>
<b>Unit Title (Task)</b>	<b>Testing of Aggregates</b>
<b>Description</b>	This unit describes the skill and knowledge required to effectively identify, use and maintain the tools and equipment in concrete lab.
<b>Scope</b>	<p>This unit applies to individuals in a laboratory to conduct testing under the supervision. Requirement of this role would involve the aggregates test:</p> <ul style="list-style-type: none"> <li>Identify the sample, collect and conduct the Sieve Analysis.</li> <li>Identify the sample, collect and conduct the Specific gravity.</li> <li>Identify the sample, collect and conduct the Water absorption.</li> <li>Identify the sample, collect and conduct the Moisture content.</li> <li>Identify the sample, collect and conduct the Dry Loose bulk density.</li> <li>Identify the sample, collect and conduct the Bulkage for Fine aggregates.</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Identify the sample, collect and conduct the Sieve Analysis.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the aggregate as per the size &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Sort &amp; Arrange the sieve as per the IS number in an ascending order bottom to top.            PC5. Start &amp; Complete the sieve test as per the stipulated time.            PC6. Enter the readings in a table based on retained aggregates in each sieve number.            PC7. Conform the test procedure, follow and complete as per the demand.            PC8. Dispose/Reuse the materials based on quantity/quality.            PC9. Clean the working area then &amp; there.            PC10. Compute the result and tabulate in a register for approval from Lab in charge.            PC11. Ensure the safety in each action such as lifting, sieving and disposing the aggregates.</p> <p>PC1 to PC11 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<b>Identify the sample, collect and conduct the Specific gravity.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the aggregate as per the size &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Handle the testing equipment accurately.            PC5. Conform the test procedure, follow and complete as per the demand.            PC6. Dispose/Reuse the materials based on quantity/quality.            PC7. Clean the working area then &amp; there.            PC8. Compute the result and tabulate in a register for approval from Lab in charge.            PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>





### CON/ N 0023: Testing of Aggregates

<b>Identify the sample, collect and conduct the Water absorption.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling. PC2. Distinguish the aggregate as per the size &amp; required test. PC3. Weigh the metal as per the requirements and enter in to the table. PC4. Handle the testing equipment accurately. PC5. Conform the test procedure, follow and complete as per the demand. PC6. Dispose/Reuse the materials based on quantity/quality. PC7. Clean the working area then &amp; there. PC8. Compute the result and tabulate in a register for approval from Lab in charge. PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<b>Identify the sample, collect and conduct the moisture content.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling. PC2. Distinguish the aggregate as per the size &amp; required test. PC3. Weigh the metal as per the requirements and enter in to the table. PC4. Handle the testing equipment accurately. PC5. Conform the test procedure, follow and complete as per the demand. PC6. Dispose/Reuse the materials based on quantity/quality. PC7. Clean the working area then &amp; there. PC8. Compute the result and tabulate in a register for approval from Lab in charge. PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<b>Identify the sample, collect and conduct the Dry Loose bulk density.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling. PC2. Distinguish the aggregate as per the size &amp; required test. PC3. Weigh the metal as per the requirements and enter in to the table. PC4. Handle the testing equipment accurately. PC5. Conform the test procedure, follow and complete as per the demand. PC6. Dispose/Reuse the materials based on quantity/quality. PC7. Clean the working area then &amp; there. PC8. Compute the result and tabulate in a register for approval from Lab in charge. PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>



**CON/ N 0023: Testing of Aggregates**

<p><b>Identify the sample, collect and conduct the Bulkage for Fine aggregates.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.          PC2. Distinguish the aggregate as per the size &amp; required test.          PC3. Weigh the metal as per the requirements and enter in to the table.          PC4. Handle the testing equipment accurately.          PC5. Conform the test procedure, follow and complete as per the demand.          PC6. Dispose/Reuse the materials based on quantity/quality.          PC7. Clean the working area then &amp; there.          PC8. Compute the result and tabulate in a register for approval from Lab in charge.          PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Knowledge and Understanding (K)</b></p>	
<p><b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The safety precautions in handling the tools and equipments in lab and field conditions.          KA2. Select, identify and use of right tools and equipment for appropriate job.          KA3. Receiving and handing over of tools and equipment from the lab store.          KA4. Importance of indent details for in and out of tools &amp; equipment.          KA5. Labeling the tools and equipment.          KA6. Complaining procedures for defected tools and equipment          KA7. Disposal against tested materials damaged tools and rejected materials.          KA8. Follow the approval and report procedure for result.</p>
<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Storing and handling technique of tools and equipment.          KB2. Upkeep repair and maintenance of tools and equipment.          KB3. Name and identification of various parts of the equipment and Tool.          KB4. Acceptance and rejection criteria of tools and equipments          KB5. Safeguarding the equipment from dust and heat.          KB6. About the calibration of machines and equipment for validation.          KB7. Involve the minor repair and adjustment to maintain the equipment for standard result/validation.          KB8. Read &amp; enter the value from gauges and meters based on the least count.</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record the data in the given table / format as per the least count.          SA2. Fill and complete all the documents related to various tests under instructions from Lab in charge.          SA3. Prepare testing report for lab in charge approval.</p> <p><b>Reading Skills</b></p> <p>The user / individual needs to know and understand how to:</p> <p>SA4. Read the instructions, guidelines, procedures in English and Vernacular</p>

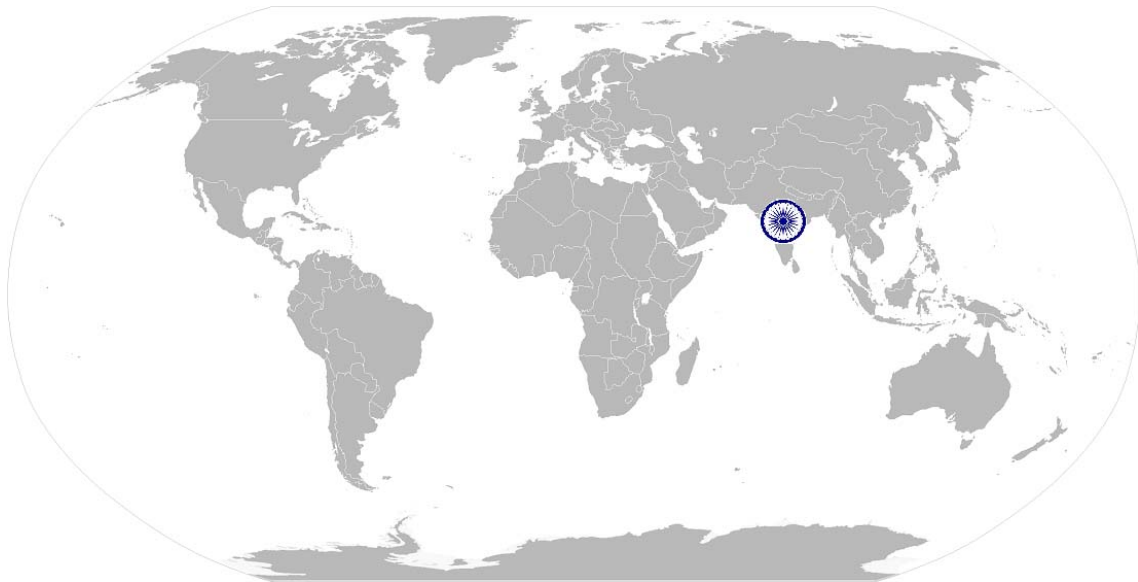


**CON/ N 0023: Testing of Aggregates**

	<p>language for sampling and testing</p> <p>SA5. Segregate the samples by numbering and tag tags.</p> <p>SA6. Understand the different testing procedure for same materials based on demand.</p>
	<b>Oral Communication (Listening and Speaking skills)</b>
	<p>The user / individual should do the following:</p> <p>SA7. Follow instruction accurately</p> <p>SA8. Orally communicate to others effectively</p>
<b>B. Professional Skills</b>	<b>Decision Making</b>
	SB1. Record the readings as per the least count.
	<b>Plan and Organize</b>
	SB2. Ensure the day works and accept the total test / day accordingly.
	<b>Customer Centricity</b>
	NA
	<b>Problem Solving</b>
	SB3. Use analytical skills and compute the results.
	SB4. Compute the results in terms of percentage, coefficient and unit values.
	<b>Analytical Thinking</b>
	NA
	<b>Critical Thinking</b>
	NA
	<b>Attention to Detail</b>
	NA
	<b>Team Working</b>
	<p>The user / individual needs to know and understand how to:</p> <p>SB5. Identify and use the tools &amp; tackles and equipment based on test.</p> <p>SB6. Carry out field testing in adverse climatic conditions.</p> <p>SB7. Maintain, care and handle the tools and equipment.</p> <p>SB8. Involved and complete the housekeeping activities in lab and field.</p> <p>SB9. Read the gauges and meters for filling the testing format.</p> <p>SB10. Compute the test result in a stipulated time.</p> <p>SB11. Follow the safety procedure/norms in and out of the lab and field.</p> <p>SB12. Ensure the safety involvement of helper.</p>



# National Occupational Standard



## Overview

This NOS covers the skill and knowledge for an individual to be proficient in conducting the field and laboratory test on Soil.



**CON/ N 0024: Testing of Soil**

National Occupational Standard

<b>Unit Code</b>	<b>CON / N 0024</b>
<b>Unit Title (Task)</b>	<b>Testing of Soil</b>
<b>Description</b>	This unit describes the skill and knowledge required to effectively identify, use and maintain the tools and equipment in concrete lab.
<b>Scope</b>	<p>This unit applies to individuals in a laboratory to conduct testing under the supervision. Requirement of this role would involve the Soil test:</p> <ul style="list-style-type: none"> <li>• Identify the sample, collect and conduct the Soil Gravity.</li> <li>• Identify the sample, collect and conduct the Liquid, Plastic and shrinkage limit.</li> <li>• Identify the sample, collect and conduct the Compaction test.</li> <li>• Identify the sample, collect and conduct the Direct shear test.</li> <li>• Identify the sample, collect and conduct the Permeability test.</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
Identify the sample, collect and conduct the Soil Gravity.	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the soil as per the nature &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Handle the testing equipment accurately.            PC5. Conform the test procedure, follow and complete as per the demand.            PC6. Dispose the materials based on in nature.            PC7. Clean the working area then &amp; there.            PC8. Compute the result and tabulate in a register for approval from Lab in charge.            PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the soil.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
Identify the sample, collect and conduct the Liquid, Plastic and shrinkage limit.	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the soil as per the nature &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Handle the testing equipment accurately.            PC5. Conform the test procedure, follow and complete as per the demand.            PC6. Dispose the materials based on in nature.            PC7. Clean the working area then &amp; there.            PC8. Compute the result and tabulate in a register for approval from Lab in charge.            PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the soil.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>



**CON/ N 0024: Testing of Soil**

<p>Identify the sample, collect and conduct the Compaction test.</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.          PC2. Distinguish the soil as per the nature &amp; required test.          PC3. Weigh the metal as per the requirements and enter in to the table.          PC4. Handle the testing equipment accurately.          PC5. Conform the test procedure, follow and complete as per the demand.          PC6. Dispose the materials based on in nature.          PC7. Clean the working area then &amp; there.          PC8. Compute the result and tabulate in a register for approval from Lab in charge.          PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the soil.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p>Identify the sample, collect and conduct the Direct shear test.</p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.          PC2. Distinguish the soil as per the nature &amp; required test.          PC3. Weigh the metal as per the requirements and enter in to the table.          PC4. Handle the testing equipment accurately.          PC5. Conform the test procedure, follow and complete as per the demand.          PC6. Dispose the materials based on in nature.          PC7. Clean the working area then &amp; there.          PC8. Compute the result and tabulate in a register for approval from Lab in charge.          PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the soil.</p> <p>PC1 to P9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Identify the sample, collect and conduct the Permeability test.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.          PC2. Distinguish the soil as per the nature &amp; required test.          PC3. Weigh the metal as per the requirements and enter in to the table.          PC4. Handle the testing equipment accurately.          PC5. Conform the test procedure, follow and complete as per the demand..          PC6. Dispose the materials based on in nature.          PC7. Clean the working area then &amp; there.          PC8. Compute the result and tabulate in a register for approval from Lab in charge.          PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the soil.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>



**CON/ N 0024: Testing of Soil**

Knowledge and Understanding (K)	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. The safety precautions in handling the tools and equipments in lab and field conditions. KA2. Select, identify and use of right tools and equipment for appropriate job. KA3. Receiving and handing over of tools and equipment from the lab store. KA4. Importance of indent details for in and out of tools & equipment. KA5. Labeling the tools and equipment. KA6. Complaining procedures for defected tools and equipment KA7. Disposal against tested materials damaged tools and rejected materials. KA8. Follow the approval and report procedure for result.
<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: KB1. Storing and handling technique of tools and equipment. KB2. Upkeep repair and maintenance of tools and equipment. KB3. Name and identification of various parts of the equipment and Tool. KB4. Acceptance and rejection criteria of tools and equipments KB5. Safeguarding the equipment from dust and heat. KB6. About the calibration of machines and equipment for validation. KB7. Involve the minor repair and adjustment to maintain the equipment for standard result/validation. KB8. Read & enter the value from gauges and meters based on the least count.
Skills (S)	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	The user/ individual on the job needs to know and understand how to: SA1. Record the data in the given table / format as per the least count. SA2. Fill and complete all the documents related to various tests under instructions from Lab in charge. SA3. Prepare testing report for lab in charge approval.
	<b>Reading Skills</b>
	The user / individual needs to know and understand how to: SA4. Read the instructions, guidelines, procedures in English and Vernacular language for sampling and testing SA5. Segregate the samples by numbering and tag tags. SA6. Understand the different testing procedure for same materials based on demand.
<b>B. Professional Skills</b>	<b>Oral Communication (Listening and Speaking skills)</b>
	The user / individual should do the following: SA7. Follow instruction accurately SA8. Orally communicate to others effectively
	<b>Decision Making</b>
	SB1. Record the readings as per the least count.
<b>Plan and Organize</b>	<b>Plan and Organize</b>
	SB2. Ensure the day works and accept the total test / day accordingly.



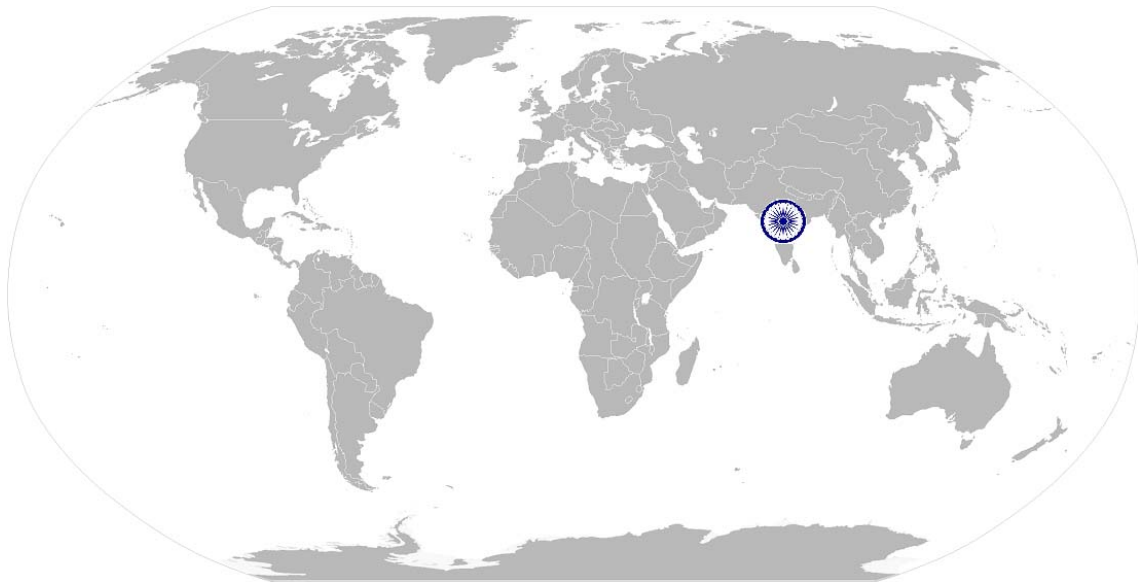
**CON/ N 0024: Testing of Soil**

	<b>Customer Centricity</b>
	NA
	<b>Problem Solving</b>
	SB3. Use analytical skills and compute the results. SB4. Compute the results in terms of percentage, coefficient and unit values.
	<b>Analytical Thinking</b>
	NA
	<b>Critical Thinking</b>
	NA
	<b>Attention to Detail</b>
	NA
	<b>Team Working</b>
	The user / individual needs to know and understand how to: SB5. Identify and use the tools & tackles and equipment based on test. SB6. Carry out field testing in adverse climatic conditions. SB7. Maintain, care and handle the tools and equipment. SB8. Involved and complete the housekeeping activities in lab and field. SB9. Read the gauges and meters for filling the testing format. SB10. Compute the test result in a stipulated time. SB11. Follow the safety procedure/norms in and out of the lab and field. SB12. Ensure the safety involvement of helper.





# National Occupational Standard



## Overview

This NOS covers the skill and knowledge for an individual to be proficient in conducting the field and laboratory test on Cement and Cement mortar.



**CON/N 0025: Testing of Cement & Cement Mortar**

National Occupational Standard

<b>Unit Code</b>	<b>CON / N 0025</b>
<b>Unit Title (Task)</b>	<b>Testing of Cement &amp; Cement Mortar</b>
<b>Description</b>	This unit describes the skill and knowledge required to effectively identify, use and maintain the tools and equipment in concrete lab.
<b>Scope</b>	<p>This unit applies to individuals in a laboratory to conduct testing under the supervision. Requirement of this role would involve the Cement test:</p> <ul style="list-style-type: none"> <li>• Identify the sample, collect and conduct the Normal Consistency test.</li> <li>• Identify the sample, collect and conduct the Initial Setting Time.</li> <li>• Identify the sample, collect and conduct the Final Setting Time.</li> <li>• Prepare Cast, Demould, and Curing the Cement mortar for test.</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Identify the sample, collect and conduct the Normal Consistency test.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the Cement as per the nature &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Handle the testing equipment accurately.            PC5. Conform the test procedure, follow and complete as per the demand.            PC6. Dispose the materials based on in nature.            PC7. Clean the working area then &amp; there.            PC8. Compute the result and tabulate in a register for approval from Lab in charge.            PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the Cement.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<b>Identify the sample, collect and conduct the Initial Setting Time.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the Cement as per the nature &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Handle the testing equipment accurately.            PC5. Conform the test procedure, follow and complete as per the demand.            PC6. Dispose the materials based on in nature.            PC7. Clean the working area then &amp; there.            PC8. Compute the result and tabulate in a register for approval from Lab in charge.            PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the Cement.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>



**CON/N 0025: Testing of Cement & Cement Mortar**

<p><b>Identify the sample, collect and conduct the Final Setting Time.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.          PC2. Distinguish the Cement as per the nature &amp; required test.          PC3. Weigh the metal as per the requirements and enter in to the table.          PC4. Handle the testing equipment accurately.          PC5. Conform the test procedure, follow and complete as per the demand.          PC6. Dispose the materials based on in nature.          PC7. Clean the working area then &amp; there.          PC8. Compute the result and tabulate in a register for approval from Lab in charge.          PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the Cement.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Prepare Cast, Demould, and Curing the Cement mortar for test.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the samples, cement, sand and water as per the standard and quantity.          PC2. Dry mix the ingredients as the recommended ration.          PC3. Pour the water for mixing as per the water cement ratio.          PC4. Mould the cement mortar as per the required numbers of test and size.          PC5. Demould as per the standard timings.          PC6. Take care of curing as per the recommended days.          PC7. Conform the test procedure, follow and complete as per the demand.          PC8. Dispose the materials based on in nature.          PC9. Clean the working area then &amp; there.          PC10. Compute the result and tabulate in a register for approval from Lab in charge.          PC11. Ensure the safety in each action such as lifting, handling of equipment and disposing the Cement.</p> <p>PC1 to PC11 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Knowledge and Understanding (K)</b></p>	
<p><b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The safety precautions in handling the tools and equipments in lab and field conditions.          KA2. Select, identify and use of right tools and equipment for appropriate job.          KA3. Receiving and handing over of tools and equipment from the lab store.          KA4. Importance of indent details for in and out of tools &amp; equipment.          KA5. Labeling the tools and equipment.          KA6. Complaining procedures for defected tools and equipment          KA7. Disposal against tested materials damaged tools and rejected materials.          KA8. Follow the approval and report procedure for result.</p>



**CON/N 0025: Testing of Cement & Cement Mortar**

<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Storing and handling technique of tools and equipment.          KB2. Upkeep repair and maintenance of tools and equipment.          KB3. Name and identification of various parts of the equipment and Tool.          KB4. Acceptance and rejection criteria of tools and equipments          KB5. Safeguarding the equipment from dust and heat.          KB6. About the calibration of machines and equipment for validation.          KB7. Involve the minor repair and adjustment to maintain the equipment for standard result/validation.          KB8. Read &amp; enter the value from gauges and meters based on the least count.</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record the data in the given table / format as per the least count.          SA2. Fill and complete all the documents related to various tests under instructions from Lab in charge.          SA3. Prepare testing report for lab in charge approval.</p> <p><b>Reading Skills</b></p> <p>The user / individual needs to know and understand how to:</p> <p>SA4. Read the instructions, guidelines, procedures in English and Vernacular language for sampling and testing          SA5. Segregate the samples by numbering and tag tags.          SA6. Understand the different testing procedure for same materials based on demand.</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>The user / individual should do the following:</p> <p>SA7. Follow instruction accurately          SA8. Orally communicate to others effectively</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p> <p>SB1. Record the readings as per the least count.</p> <p><b>Plan and Organize</b></p> <p>SB2. Ensure the day works and accept the total test / day accordingly.</p> <p><b>Customer Centricity</b></p> <p>NA</p> <p><b>Problem Solving</b></p> <p>SB3. Use analytical skills and compute the results.          SB4. Compute the results in terms of percentage, coefficient and unit values.</p> <p><b>Analytical Thinking</b></p> <p>NA</p>



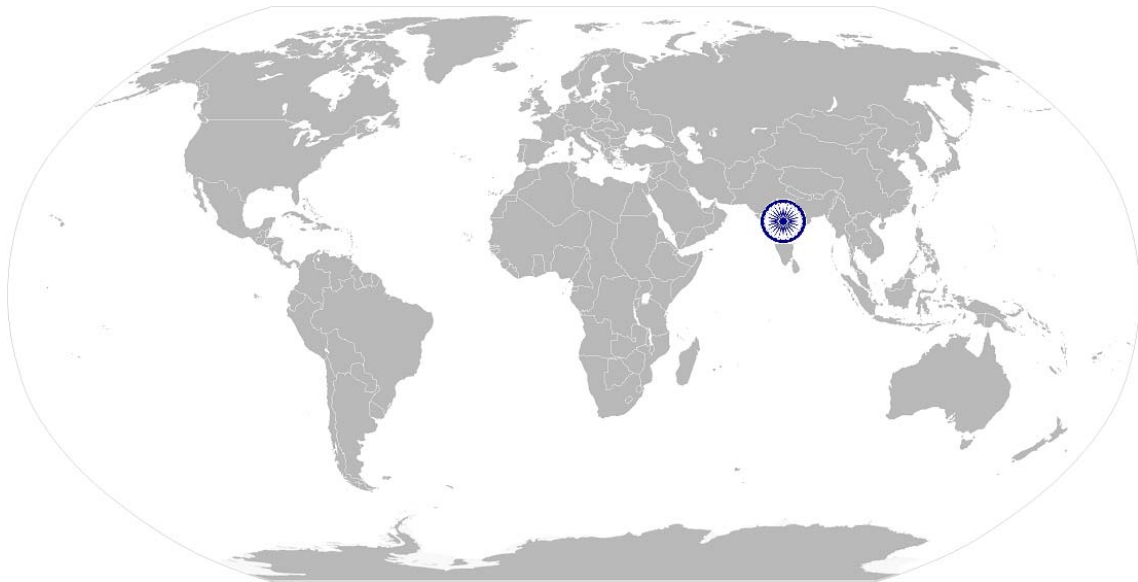
**CON/N 0025: Testing of Cement & Cement Mortar**

	<b>Critical Thinking</b>
	NA
	<b>Attention to Detail</b>
	NA
	<b>Team Working</b>
	The user / individual needs to know and understand how to: SB5. Identify and use the tools & tackles and equipment based on test. SB6. Carry out field testing in adverse climatic conditions. SB7. Maintain, care and handle the tools and equipment. SB8. Involved and complete the housekeeping activities in lab and field. SB9. Read the gauges and meters for filling the testing format. SB10. Compute the test result in a stipulated time. SB11. Follow the safety procedure/norms in and out of the lab and field. SB12. Ensure the safety involvement of helper.





# National Occupational Standard



## Overview

This NOS covers the skill and knowledge for an individual to be proficient in conducting the field and laboratory testing of Concrete.



**CON/ N 0026: Testing of Concrete**

National Occupational Standard

<b>Unit Code</b>	CON / N 0026
<b>Unit Title (Task)</b>	Testing of Concrete
<b>Description</b>	This unit describes the skill and knowledge required to effectively identify, use and maintain the tools and equipment in concrete lab.
<b>Scope</b>	<p>This unit applies to individuals in a laboratory to conduct testing under the supervision. Requirement of this role would involve the Concrete test:</p> <ul style="list-style-type: none"> <li>• Prepare Cast, Demould, and Curing the Concrete for test.</li> <li>• Collect the sample, arrange and test the slump of concrete at filed/Lab.</li> <li>• Test the compressive strength of concrete cubes - 3 days/7 Days/21 Days.</li> <li>• Collect the sample, arrange and the test the compaction of concrete.</li> <li>• Check the flow of concrete for Self compacting concrete.</li> <li>• Perform V funnel test for concrete.</li> <li>• Perform L box test for concrete.</li> </ul>

**Performance Criteria(PC) w.r.t. the Scope**

Element	Performance Criteria
<b>Prepare Cast, Demould, and Curing the Concrete for test.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the samples, cement, fine aggregates, coarse aggregate and water as per the standard and quantity.</p> <p>PC2. Dry mix the ingredients as the recommended ration.</p> <p>PC3. Pour the water for mixing as per the water cement ratio.</p> <p>PC4. Mould the concrete using cube Mould as per the required numbers of test and size.</p> <p>PC5. Demould as per the standard timings.</p> <p>PC6. Take care of curing as per the recommended days.</p> <p>PC7. Conform the test procedure, follow and complete as per the demand.</p> <p>PC8. Dispose the materials based on in nature.</p> <p>PC9. Clean the working area then &amp; there.</p> <p>PC10. Compute the result and tabulate in a register for approval from Lab in charge.</p> <p>PC11. Ensure the safety in each action such as lifting, handling of equipment and disposing the Cement.</p> <p>PC1 to PC11 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<b>Collect the sample, arrange and test the slump of concrete at filed/Lab.</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Collect the sample as per the location and testing norms.</p> <p>PC2. Distinguish the concrete as per the water cement ratio and workability.</p> <p>PC3. Handle the testing equipment accurately.</p> <p>PC4. Conform the test procedure, follow and complete as per the demand.</p> <p>PC5. Dispose/Reuse the materials based on quantity/quality.</p> <p>PC6. Clean the working area then &amp; there.</p> <p>PC7. Compute the result and tabulate in a register for approval from Lab in charge.</p> <p>PC8. Ensure the safety in each action such as lifting, handling of equipment and disposing the</p>



**CON/ N 0026: Testing of Concrete**

	<p>aggregates.</p> <p>PC1 to PC8 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Test the compressive strength of concrete cubes - 3 days/7 Days/21 Days</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Collect the sample as per the location and testing norms.            PC2. Distinguish the concrete as per the water cement ratio and workability.            PC3. Handle the testing equipment accurately.            PC4. Conform the test procedure, follow and complete as per the demand.            PC5. Dispose/Reuse the materials based on quantity/quality.            PC6. Clean the working area then &amp; there.            PC7. Compute the result and tabulate in a register for approval from Lab in charge.            PC8. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC8 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Collect the sample, arrange and the test the compaction of concrete.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Collect the sample as per the location and testing norms.            PC2. Distinguish the concrete as per the water cement ratio and workability.            PC3. Handle the testing equipment accurately.            PC4. Conform the test procedure, follow and complete as per the demand.            PC5. Dispose/Reuse the materials based on quantity/quality.            PC6. Clean the working area then &amp; there.            PC7. Compute the result and tabulate in a register for approval from Lab in charge.            PC8. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC8 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Check the flow of concrete for Self compacting concrete.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Collect the sample as per the location and testing norms.            PC2. Distinguish the concrete as per the water cement ratio and workability.            PC3. Handle the testing equipment accurately.            PC4. Conform the test procedure, follow and complete as per the demand.            PC5. Dispose/Reuse the materials based on quantity/quality.            PC6. Clean the working area then &amp; there.            PC7. Compute the result and tabulate in a register for approval from Lab in charge.            PC8. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC8 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>





**CON/ N 0026: Testing of Concrete**

<p><b>Perform V funnel test for concrete.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Collect the sample as per the location and testing norms.            PC2. Distinguish the concrete as per the water cement ratio and workability.            PC3. Handle the testing equipment accurately.            PC4. Conform the test procedure, follow and complete as per the demand.            PC5. Dispose/Reuse the materials based on quantity/quality.            PC6. Clean the working area then &amp; there.            PC7. Compute the result and tabulate in a register for approval from Lab in charge.            PC8. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC8 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Perform L box test for concrete.</b></p>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Identify the sample as per the numbering/coding/labeling.            PC2. Distinguish the aggregate as per the size &amp; required test.            PC3. Weigh the metal as per the requirements and enter in to the table.            PC4. Handle the testing equipment accurately.            PC5. Conform the test procedure, follow and complete as per the demand.            PC6. Dispose/Reuse the materials based on quantity/quality.            PC7. Clean the working area then &amp; there.            PC8. Compute the result and tabulate in a register for approval from Lab in charge.            PC9. Ensure the safety in each action such as lifting, handling of equipment and disposing the aggregates.</p> <p>PC1 to PC9 Assessment based on handling of equipment, follow and enter the each tabular cell, accuracy on result, maintain the equipment, tools &amp; tackles and tidiness in working area.</p>
<p><b>Knowledge and Understanding (K)</b></p>	
<p><b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The safety precautions in handling the tools and equipments in lab and field conditions.            KA2. Select, identify and use of right tools and equipment for appropriate job.            KA3. Receiving and handing over of tools and equipment from the lab store.            KA4. Importance of indent details for in and out of tools &amp; equipment.            KA5. Labeling the tools and equipment.            KA6. Complaining procedures for defected tools and equipment            KA7. Disposal against tested materials damaged tools and rejected materials.            KA8. Follow the approval and report procedure for result.</p>



**CON/ N 0026: Testing of Concrete**

<p><b>B. Technical Knowledge</b></p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Storing and handling technique of tools and equipment.          KB2. Upkeep repair and maintenance of tools and equipment.          KB3. Name and identification of various parts of the equipment and Tool.          KB4. Acceptance and rejection criteria of tools and equipments          KB5. Safeguarding the equipment from dust and heat.          KB6. About the calibration of machines and equipment for validation.          KB7. Involve the minor repair and adjustment to maintain the equipment for standard result/validation.          KB8. Read &amp; enter the value from gauges and meters based on the least count.</p>
<p><b>Skills (S)</b></p>	
<p><b>A. Core Skills/ Generic Skills</b></p>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Record the data in the given table / format as per the least count.          SA2. Fill and complete all the documents related to various tests under instructions from Lab in charge.          SA3. Prepare testing report for lab in charge approval.</p> <p><b>Reading Skills</b></p> <p>The user / individual needs to know and understand how to:</p> <p>SA4. Read the instructions, guidelines, procedures in English and Vernacular language for sampling and testing          SA5. Segregate the samples by numbering and tag tags.          SA6. Understand the different testing procedure for same materials based on demand.</p> <p><b>Oral Communication (Listening and Speaking skills)</b></p> <p>The user / individual should do the following:</p> <p>SA7. Follow instruction accurately          SA8. Orally communicate to others effectively</p>
<p><b>B. Professional Skills</b></p>	<p><b>Decision Making</b></p> <p>SB1. Record the readings as per the least count.</p> <p><b>Plan and Organize</b></p> <p>SB2. Ensure the day works and accept the total test / day accordingly.</p> <p><b>Customer Centricity</b></p> <p>NA</p> <p><b>Problem Solving</b></p> <p>SB3. Use analytical skills and compute the results.          SB4. Compute the results in terms of percentage, coefficient and unit values.</p> <p><b>Analytical Thinking</b></p> <p>NA</p>



### CON/ N 0026: Testing of Concrete

	<b>Critical Thinking</b>
	NA
	<b>Attention to Detail</b>
	NA
	<b>Team Working</b>
	The user / individual needs to know and understand how to: SB5. Identify and use the tools & tackles and equipment based on test. SB6. Carry out field testing in adverse climatic conditions. SB7. Maintain, care and handle the tools and equipment. SB8. Involved and complete the housekeeping activities in lab and field. SB9. Read the gauges and meters for filling the testing format. SB10. Compute the test result in a stipulated time. SB11. Follow the safety procedure/norms in and out of the lab and field. SB12. Ensure the safety involvement of helper.



## Assessment Criteria for Assistant Laboratory & Field Technician

**Job Role** Assistant Laboratory & Field Technician

**Qualification Pack** CON/Q0402

**Sector Skill Council** Construction

### Guidelines for Assessment

1. Criteria for assessment for Qualification Pack has been created based on the NOSs and performance criteria by CSDCI. Each Performance Criteria (PC) has been assigned marks proportional to its importance within NOS and weightages have also been given among the NOSs accordingly. CSDCI has laid down the proportion of marks for Skills, Theory/Knowledge and Behaviour / Attitudes for each PC.
2. The assessment of the theory/knowledge will be based on written test/viva-voce or both while skill test shall be hands on practical. Behaviour and attitude will be assessed while performing the task.
3. The assessment shall be done as per the assessment sheets devised by CSDCI and accordingly the assessment agencies in consultation with CSDCI will create unique question papers for theory/knowledge and attitude for each candidate at each CSDCI accredited testing centres (as per assessment criteria below).
4. The assessment agencies will conduct the assessment as per the guidelines given by CSDCI giving unique evaluations for skill & knowledge for every student at each CSDCI accredited testing centre.
5. To pass the Qualification Pack, every trainee should score a minimum of **80% in Skill, 50% in Knowledge & Behaviour and 50% in Written test** separately in each attribute. In addition he should pass in each **NOS with minimum 40% marks**.
6. Each student at Level-2 has to pass in Skill, Knowledge and Behaviour as per the percentage given below in totality while individual failing to score **minimum pass marks of 40% in any one of the NOS** then he will have to **re-appear for that one NOS only within 60 days** of his test for final certification. After 60 days he will have to appear in all NOSs.

S. No.	NOS No.	NOS Name	Total Marks	Marks Allocation		
				Skills (Practical)	Knowledge & Behaviour (Viva Voce)	Theory (Written)
1	CON/N0018	Health, Safety & Environment	32	18	11	3
2	CON/N0023	Testing of Aggregates	57	34	15	8
3	CON/N0024	Testing of Soils	61	38	16	7
4	CON/N0025	Testing of Cement & Cement mortar	58	34	19	5
5	CON/N0026	Testing of Concrete	70	49	14	7
<b>Total</b>			<b>278</b>	<b>173</b>	<b>75</b>	<b>30</b>
<b>Percentage weightage</b>				<b>62%</b>	<b>27%</b>	<b>11%</b>
<b>Minimum Pass % to qualify</b>				<b>80%</b>	<b>50%</b>	<b>50%</b>

**Note: Minimum 40% marks mandatory to pass in individual NOSs.**