

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 – Foreman Roads & Runways

SECTOR: CONSTRUCTION

SUB-SECTOR: Real Estate and Infrastructure Construction

OCCUPATION: ROADS & RUNWAYS CONSTRUCTION

REFERENCE ID: CON/Q1003

ALIGNED TO: NCO-2004/7122.50

This job role conducts the laying of flexible and rigid pavements and organizes the necessary resources at a construction site.

Brief Job Description: This job role is responsible for conducting laying of flexible and rigid pavements by organizing/ allocating resources, monitoring construction of pavement layers/ laying of drainage pipelines and carrying out checks to completed/ ongoing works as per applicable drawing/ specification. The individual should possess sound technical knowledge, should be able to monitor and maintain safe and quality working practices.

Personal Attributes: The job role requires the job holder to be well aware of the concepts of different layers of pavements, sequence and methodologies of laying the same, use of vehicles and machineries in construction of pavements. Additionally the workman should know the health, safety and environmental norms, specifications, relevant code of practices and organizational policies applicable for construction of pavements. The individual should be mentally and physically fit to work in harsh environment of construction sites and able to communicate/ instruct clearly to superiors/ subordinates respectively in order to complete task within specified timeline.

Job Details	Qualifications Pack Code	CON/Q1003		
	Job Role	Foreman Roads & Runways		
	Credits (NSQF)	TBD	Version number	1.0
	Sector	Construction	Drafted on	07/08/2015
	Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
	Occupation	Roads & Runways Construction	Next review date	23/08/2017
	NSQC Clearance on	NA		

Job Role	Foreman Roads & Runways
Role Description	This job role performs laying of flexible and rigid pavements as per applicable drawings and specifications at a construction site.
NSQF level	5
Minimum Educational Qualifications	Preferably 12 th standard
Maximum Educational Qualifications	N.A
Training (Suggested but not mandatory)	Recommended training period of 16-20 weeks as per QP of Foreman Roads & Runways Recommended training in basic computer literacy
Minimum Job Entry Age	18 years
Experience	Desirable: <ol style="list-style-type: none"> 1. Non trained worker : 12 years site experience in same occupation 2. Trained worker: 7 years site experience as a certified Pavement Layer
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> 1. CON/N1007: Organise and allocate resources for pavement construction work 2. CON/N1008: Conduct laying of base and sub- base course of pavements 3. CON/N1009: Conduct laying of binding and wearing course of pavements 4. CON/N1010: Conduct laying of pipes for drainage works/ service lines 5. CON/N8001: Work effectively in a team to deliver desired results at the workplace 6. CON/N9002: Manage workplace for safe and healthy work environment <p>Optional: N.A.</p>



Performance Criteria	As described in the relevant OS units
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Definitions

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.

Acronyms

Keywords /Terms	Description
CON	Construction
NSQF	National Skill Qualifications Framework
QP	Qualification Pack
OS	Occupational Standards
TBD	To Be Decided



National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman to be proficient in organising and allocating resources for pavement construction work.

CON/N1007 Organise and allocate resources for pavement construction work

National Occupational Standard

Unit Code	CON/N1007
Unit Title (Task)	Organise and allocate resources for pavement construction work
Description	This unit describes the skills and knowledge required to organise and allocate resources for pavement construction work.
Scope	The scope covers the following: <ul style="list-style-type: none"> Organize resources at site as per work requirement Engage manpower and resources for pavement construction work
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Organize resources at site as per work requirement	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. confirm work targets from superior or concerned authority to be achieved in a day/ week as per applicability</p> <p>PC2. read and interpret drawings and relevant specifications to determine type and quantity of required material</p> <p>PC3. communicate to superior regarding requirement of material for daily construction work such as aggregates, fines, bitumen etc</p> <p>PC4. communicate to superior regarding requirement of vehicle/ equipment relevant to construction work and for resource mobilization</p> <p>PC5. communicate to superior regarding requirement of manpower as per work target</p> <p>PC6. conduct storing and stacking of materials and tools at work locations following standard practice of storing</p> <p>PC7. conduct erection of protective and safety cover/ barrication for material and equipment to prevent wastage or unauthorized access</p> <p>PC8. conduct erection of barrication, dividers, safety signage as per applicable safe work methodology</p>
Engage manpower and resources for pavement construction work	<p>PC9. assign specific tasks to respective workmen groups</p> <p>PC10. brief safe work methods and parameters to be followed by subordinates while handling/ storing materials, carrying out earthwork or laying layers of pavements</p> <p>PC11. ensure required tools are available at worksite prior to commencement of relevant activity</p> <p>PC12. monitor consumption and wastage of construction material</p> <p>PC13. dispose waste to specified location and recycle usable wastes</p> <p>PC14. confirm that the equipments to be used for compaction, material shifting, grading, surfacing are properly functioning</p> <p>PC15. confirm that the material shifting vehicle operators have valid driving license</p>

CON/N1007

Organise and allocate resources for pavement construction work

Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. standard practices for organising and allocating resources for pavement laying works KA2. safety rules and regulations for handling and storing required tools, equipment and materials KA3. personal protection including the use of related safety gears & equipments KA4. service request procedures for tools, materials and equipments KA5. statutory compliance requirement related to working at height KA6. statutory compliance requirement related to workmen engagement
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. daily/ weekly work target to be achieved KB2. concept of reading construction drawings KB3. applicable tolerance limits for each activity involved in pavement laying operation KB4. sequence of different activities in pavement laying works KB5. type of construction equipments/ vehicles required for pavement construction KB6. functions of construction equipments/ vehicles and their sequence of use KB7. concept of reading construction drawings KB8. basic concept of calculating material requirement for pavement laying works on day to day basis KB9. concept on manpower calculation as per nature of work and required time for completion KB10. requirement of tools as per scheduled activities KB11. work methods to minimize material wastage and recycling of the usable wastes KB12. checks to be performed to the vehicle and operators
Skills (S)	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA1. write in at least two language, preferably in the local language of the site and basic English SA2. provide clear and simple instructions, details & sketches to sub-ordinate SA3. record and document daily productivity report, daily labour attendance & details regarding work SA4. prepare basic status updates for the superiors in the prescribed format
	<p>Reading Skills</p>

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Organise and allocate resources for pavement construction work

	<p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA5. read one or more language, preferably in the local language of the site SA6. read drawing, specification and standards related to relevant work SA7. read key documents including quality standards and standard working methods SA8. read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace 	
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA9. speak in one or more language, preferably in one of the local languages of the site SA10. listen and follow instructions clearly given by the superior SA11. provide clear instructions to subordinates for completion of task as per work plan, time schedule and quality SA12. communicate to superiors immediately for requirement of materials and equipments 	
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. estimate required material, tools, vehicles and equipment required for work SB2. determine manpower requirement for roads and runway works SB3. decide alternate course of action in case of hindrance to work SB4. determine appropriate locations for storing and stacking of items SB5. determine suitability of equipment by assessing whether they are functioning properly 	
	<p>Plan and Organise</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB6. plan work & organize required resource in coordination with team members and superior SB7. plan work targets, allocate time schedule to sub-ordinates and organize completion of task within allocated time 	
	<p>Customer centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB8. ensure completion of work as per agreed time schedule and quality 	
	<p>Problem solving</p> <p>The user/individual on the job needs to know and understand how to:</p>	

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Organise and allocate resources for pavement construction work

	SB9. resolve and solve any conflict within the team
	SB10. ensure availability of required tools, equipments and materials for relevant work
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB11. assess quantity of materials for day work SB12. optimize resources SB13. track the consumption rate of materials and minimize wastages
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB14. assess complexity of the tasks and provide guidance for carrying out corrective action as per requirement SB15. identify and assess how violation of any safety norms may lead to accidents

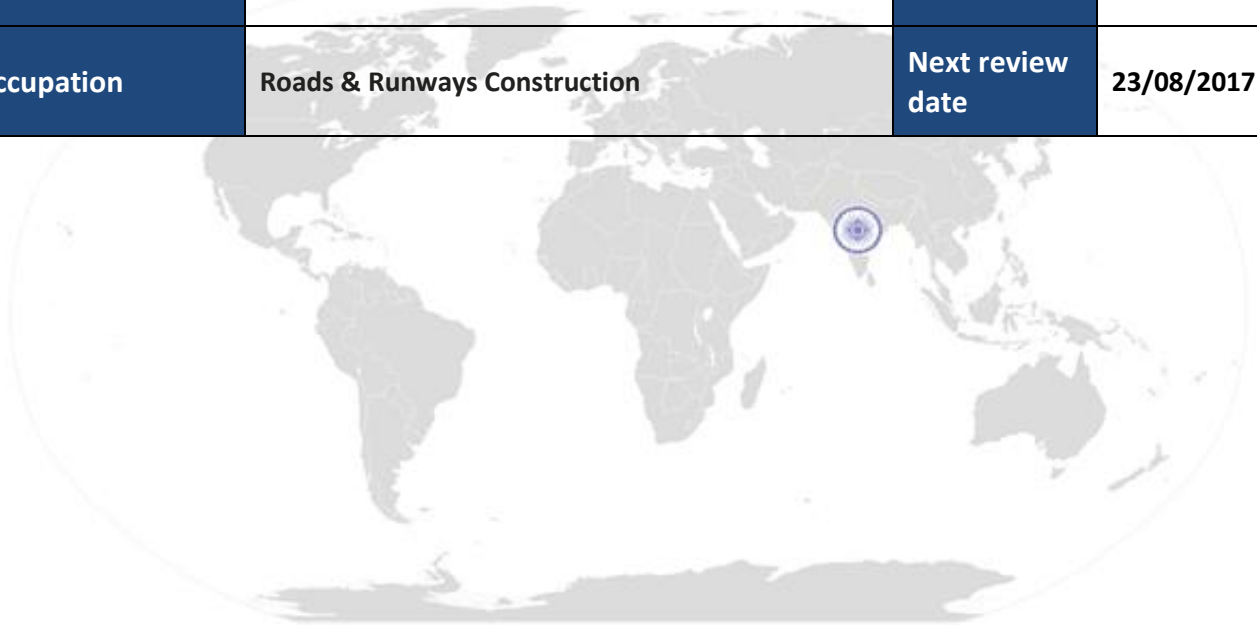


CON/N1007

Organise and allocate resources for pavement construction work

NOS Version Control

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Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
Occupation	Roads & Runways Construction	Next review date	23/08/2017



National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman to be proficient in performing laying of base and sub- base course of pavements.

CON/N1008

Conduct laying of base and sub- base course of pavements

National Occupational Standard

Unit Code	CON/N1008
Unit Title (Task)	Conduct laying of base and sub- base course of pavements
Description	This unit describes the skills and knowledge required to conduct laying of base and sub- base course of pavements.
Scope	The scope covers the following: <ul style="list-style-type: none"> • Ensure completion of survey and preparatory works • Check activities carried out for construction of base course
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Ensure completion of survey and preparatory works	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> PC1. coordinate with surveyor for lay-outs, marking of level and edges prior to preparation of sub-grade for pavement PC2. check level/ slope of earthwork in sub-grade by conducting checks and ensure it is as per drawing/ specification PC3. conduct repair to the potholes, unstable/ loose soil by suitable methods as instructed by superior or quality department PC4. conduct cleaning of surface of every pavement layers as per specification, prior to lay next layer PC5. ensure derbies or wastes are disposed/ dumped to specified location as per work plan PC6. carry out analysis of hazards conditions at work sites due to movement of vehicles or equipments, handling of hot asphalt for pavements, vehicular traffic and report to concerned authority PC7. coordinate with superior or concerned departments to arrange safety measures, electrical connections and quality checks for progression of works PC8. fill up permits, checklists, labour report formats as per organizational procedure and take approval from superior
Check activities carried out for construction of base course	<ul style="list-style-type: none"> PC9. read and interpret drawing, material specification prior to start pavement laying operation and as per requirement thereafter PC10. check construction materials, pipe segments visually for their usability as per material specification PC11. monitor and check filling work to construct sub grade by using suitable material and ensure impurities are cleared and disposed to the specified location PC12. check that aggregates are raked properly, spread along the width and stretch maintaining uniform thickness and edge within the acceptable tolerance limit PC13. monitor and conduct compaction of sub-base/ base course layer using roller of specified weight as per applicable/ standard work methodology

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Conduct laying of base and sub- base course of pavements

	<p>PC14. monitor void filling by finer materials (sand/ morrum/ stone dust), application of water and further rolling</p> <p>PC15. report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the completion of compaction process</p> <p>PC16. conduct application of prime coating using specified compounds by specified application methods</p> <p>PC17. carry out necessary measurements using appropriate measuring instruments</p> <p>PC18. report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the penetration of prime coat compound in to the laid base course layers</p>
Knowledge and Understanding (K)	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. standard practices for pavement laying works</p> <p>KA2. safety rules and regulations for handling and storing required tools, equipment and materials</p> <p>KA3. personal protection including the use of related safety gears & equipments</p> <p>KA4. service request procedures for tools, materials and equipments</p> <p>KA5. statutory compliance requirement related to working at height</p> <p>KA6. statutory compliance requirement related to workmen engagement</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. relevance of survey points, co-ordinates in construction activities</p> <p>KB2. applicable tolerance limits for each activity involved in pavement laying operation</p> <p>KB3. methods of repairing to the potholes, damaged/ weak base of pavements</p> <p>KB4. preparatory works those are to be completed and their required parameters to be checked</p> <p>KB5. hazards involved in material handling and construction of pavements</p> <p>KB6. safety control measures to be adopted while working near vehicle/ construction equipments, near to the vehicular traffic movement, handling hot asphalt mix</p> <p>KB7. documentation to be completed as per quality norms</p> <p>KB8. concept of reading construction drawings and specifications</p> <p>KB9. acceptance criteria of construction materials to be used for pavement laying</p> <p>KB10. standard practices for soil compaction by using roller/ equipments</p> <p>KB11. characteristics of construction materials such as soil, aggregates, asphalt, filler material etc</p> <p>KB12. method and sequence of watering of different layers of pavements for compaction</p> <p>KB13. sequence of different qualitative checks involved in pavement construction and their desired outcomes</p>

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Conduct laying of base and sub- base course of pavements

	<p>KB14. standard methods and sequence of application of tack coat and prime coat KB15. visual checks to be carried out to applied prime/ tack coat KB16. method of liner, areal and volumetric measurements and conversion of units</p>
Skills (S)	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. write in at least two language, preferably in the local language of the site and basic English SA2. provide clear and simple instructions, details & sketches to sub-ordinate SA3. record and document daily productivity report, daily labour attendance & details regarding work SA4. prepare basic status updates for the superiors in the prescribed format</p>
	<p>Reading Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA5. read one or more language, preferably in the local language of the site SA6. read drawing, specification and standards related to relevant work SA7. read key documents including quality standards and standard working methods SA8. read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace</p>
<p>B. Professional Skills</p>	<p>Oral Communication (Listening and Speaking skills)</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA9. speak in one or more language, preferably in one of the local languages of the site SA10. listen and follow instructions clearly given by the superior SA11. provide clear instructions to subordinates for completion of task as per work plan, time schedule and quality SA12. communicate to superiors immediately for requirement of materials and equipments</p>
<p>B. Professional Skills</p>	<p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. estimate required material and resources for work SB2. decide alternate course of action in case of hindrance to work SB3. determine whether all compliance requirements in terms of permits, checklists and labour report formats are complete SB4. determine suitability of construction material and pipe segments</p>

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Conduct laying of base and sub- base course of pavements

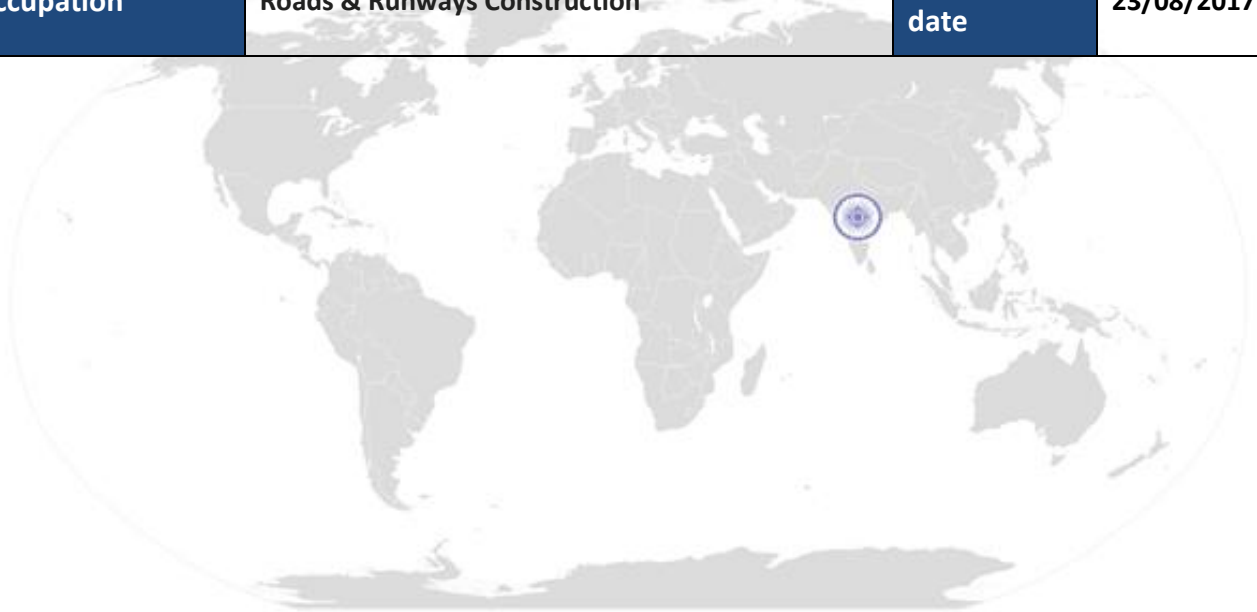
	SB5. determine appropriate compounds for prime coating
	Plan and Organise
	The user/individual on the job needs to know and understand how to:
	SB6. plan work & organize required resource in coordination with team members and superior
	SB7. plan work targets, allocate time schedule to sub-ordinates and organize completion of task within allocated time
	SB8. plan and arrange for safety measures and quality checks to ensure smooth functioning of relevant work
	Customer centricity
	The user/individual on the job needs to know and understand how to:
	SB9. ensure completion of work as per agreed time schedule and quality
	Problem solving
	The user/individual on the job needs to know and understand how to:
	SB10. resolve and solve any conflict within the team
SB11. ensure availability of required tools, equipments and materials for relevant work	
SB12. report to concerned authority for hazardous conditions at workplace	
SB13. ensure that adequate repairs of potholes, loose soil, etc. are carried out	
SB14. ensure that surface has been cleaned and debris has been disposed off	
SB15. carry out necessary checks on completion of the compaction process and report to superiors	
Analytical Thinking	
The user/individual on the job needs to know and understand how to:	
SB16. assess quantity of materials for day work	
SB17. optimize resources	
SB18. minimize wastages	
SB19. analyze and assess slope of earthwork in the sub grade to check whether it meets the specifications	
Critical Thinking	
The user/individual on the job needs to know and understand how to:	
SB20. assess complexity of the tasks and provide guidance for carrying out corrective action as per requirement	
SB21. identify and assess how violation of any safety norms may lead to accidents	
SB22. analyze whether compaction and filling of sub grades is as per requirements	

CON/N1008

Conduct laying of base and sub- base course of pavements

NOS Version Control

NOS Code	CON/N1008		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/08/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
Occupation	Roads & Runways Construction	Next review date	23/08/2017



National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman to be proficient in performing laying of binding and wearing course of pavements.

CON/N1009 Conduct laying of binding and wearing course of pavements

National Occupational Standard	Unit Code	CON/N1009
	Unit Title (Task)	Conduct laying of binding and wearing course of pavements
	Description	This unit describes the skills and knowledge required to conduct laying of binding and wearing course of pavements.
	Scope	The scope covers the following: <ul style="list-style-type: none"> • Check construction of binding and wearing course of flexible pavement as per specification • Check construction of binding and wearing course of rigid pavement as per specification
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Check construction of binding and wearing course of flexible pavement as per specification	To be competent, the user / individual on the job must be able to: <ul style="list-style-type: none"> PC1. monitor preparation of asphalt mix by checking proportion of construction materials and heating arrangement if done manually PC2. supervise and monitor asphalt spreading both by mechanically or manually PC3. ensure that the hot asphalt is handled, placed and spread safely (if spread manually) PC4. ensure uniformity in thickness and area of coverage by binding layer (asphalt mix) PC5. monitor motion of paver and asphalt feeding to the paver at required interval PC6. monitor and conduct compaction of binding course layer using roller of specified weight as per applicable/ standard work methodology PC7. report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the completion of compaction process PC8. monitor application of tack coats to completed binding course surface or existing pavement surface by manual means or by equipments PC9. conduct application and spreading of wearing course asphalt by mechanical means or manually PC10. conduct final rolling till required profile and compactness is achieved by suitable roller PC11. conduct surfacing of pavements as per specification using suitable surface materials PC12. ensure level, slopes, curves are constructed as per drawing by conducting repetitive survey at required interval throughout the pavement laying process PC13. ensure erection of barrication, safety signage and installation of proper illumination systems at workplace

CON/N1009

Conduct laying of binding and wearing course of pavements

Check construction of binding and wearing course of rigid pavement as per specification	<p>PC14. check cleanliness of bed of pavement prior to lay reinforcement bars</p> <p>PC15. check diameter, number, cleanliness and completion of tying of reinforcement bars as per instruction</p> <p>PC16. check location of expansion joints by carrying out suitable measurements and ensure their location is as per relevant drawing</p> <p>PC17. carry out marking and measurements to ensure location of shuttering arrangements, supporting arrangements, expansion joints and utility drainage structures are as per drawing/ schematics</p> <p>PC18. monitor paving activity when paver is used for laying wearing course</p> <p>PC19. monitor concreting work when wearing course is laid manually</p> <p>PC20. ensure poured concrete is finished within the specified time limit as per specification</p> <p>PC21. allocate labour for curing of concrete, organize curing arrangements and ensure curing is as per specification</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. standard practices for pavement laying works</p> <p>KA2. safety rules and regulations for handling and storing required tools, equipment and materials</p> <p>KA3. personal protection including the use of related safety gears & equipments</p> <p>KA4. service request procedures for tools, materials and equipments</p> <p>KA5. statutory compliance requirement related to working at height</p> <p>KA6. statutory compliance requirement related to workmen engagement</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. detailed procedure of preparation of asphalt manually</p> <p>KB2. safe procedure of spreading asphalt using appropriate hand tools</p> <p>KB3. visual inspection and measurements to be carried out to asphalt layers</p> <p>KB4. standard method of rolling and compacting wearing course layers</p> <p>KB5. location of slopes/ curves in a pavement and necessary measurements to be carried out from given reference points</p> <p>KB6. basic checks to be carried out on reinforcement steel bars</p> <p>KB7. linear measurements using measuring instruments</p> <p>KB8. preparatory works to be checked prior to laying reinforcement bars</p> <p>KB9. method of checking dimension, alignment and level of shuttering works using appropriate tools</p> <p>KB10. standard procedure of concreting and finishing</p> <p>KB11. quality parameters to be checked in concrete works</p> <p>KB12. concept of grade, setting time, workability of concrete</p> <p>KB13. functions of retarders or plasticizers and their effects on concrete mix</p> <p>KB14. standard practice of curing of concrete and its importance</p>

CON/N1009

Conduct laying of binding and wearing course of pavements

Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA1. write in at least two language, preferably in the local language of the site and basic English SA2. provide clear and simple instructions, details & sketches to sub-ordinate SA3. record and document daily productivity report, daily labour attendance & details regarding work SA4. prepare basic status updates for the superiors in the prescribed format
	Reading Skills
	The user/ individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA5. read one or more language, preferably in the local language of the site SA6. read drawing, specification and standards related to relevant work SA7. read key documents including quality standards and standard working methods SA8. read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA9. speak in one or more language, preferably in one of the local languages of the site SA10. listen and follow instructions clearly given by the superior SA11. provide clear instructions to subordinates for completion of task as per work plan, time schedule and quality SA12. communicate to superiors immediately for requirement of materials and equipments
	Decision Making
	The user/individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SB1. estimate required material and resources for work SB2. decide alternate course of action in case of hindrance to work SB3. decide whether the correct tools are used for pavement laying works SB4. determine and select appropriate material for surfacing SB5. determine whether level, slopes and curves are as per specifications SB6. determine appropriate location of expansion joints as per specifications
B. Professional Skills	Plan and Organise
	The user/individual on the job needs to know and understand how to:

CON/N1009

Conduct laying of binding and wearing course of pavements

	<p>SB7. plan work & organize required resource in coordination with team members and superior</p> <p>SB8. plan work targets, allocate time schedule to sub-ordinates and organize completion of task within allocated time</p> <p>SB9. plan and arrange for safety measures and quality checks to ensure smooth functioning of relevant work</p>
	<p>Customer centricity</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. ensure completion of work as per agreed time schedule and quality</p>
	<p>Problem solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. resolve and solve any conflict within the team</p> <p>SB12. ensure availability of required tools, equipments and materials for relevant work</p> <p>SB13. report to concerned authority for hazardous conditions at workplace</p> <p>SB14. ensure that concrete is poured within the specific time frame defined, and report to superiors in case of deviation</p>
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB15. assess quantity of materials for day work</p> <p>SB16. optimize resources</p> <p>SB17. minimize wastages</p> <p>SB18. analyze whether an appropriate proportion of material and heating arrangement has been used for asphalt mix preparation</p> <p>SB19. evaluate uniformity of thickness and area of coverage of asphalt mix</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB20. assess complexity of the tasks and provide guidance for carrying out corrective action as per requirement</p> <p>SB21. identify and assess how violation of any safety norms may lead to accidents</p>

CON/N1009

Conduct laying of binding and wearing course of pavements

NOS Version Control

NOS Code	CON/N1009		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/08/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
Occupation	Roads & Runways Construction	Next review date	23/08/2017



National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman to be proficient in performing laying of pipes for drainage works/ service lines.

CON/N1010

Conduct laying of pipes for drainage works/ service lines

National Occupational Standard	Unit Code	CON/N1010
	Unit Title (Task)	Conduct laying of pipes for drainage works/ service lines
	Description	This unit describes the skills and knowledge required to conduct laying of pipes for drainage works/ service lines.
	Scope	The scope covers the following: <ul style="list-style-type: none"> Ensure that the drainage pipes and service lines are laid as per specification
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Ensure that the drainage pipes and service lines are laid as per specification	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. ensure that the pipe segments are handled properly by labours or equipments and stored/stacked as per standard practice</p> <p>PC2. measure pipe dimension and perform visual checks and confirm with relevant drawing</p> <p>PC3. confirm that the level of the base of the pipe trench is in appropriate profile and centre line matches with specification</p> <p>PC4. monitor lowering and placement of pipes in to their specified location by instructing equipment operators</p> <p>PC5. carry out necessary measurements to check orientation and levels of laid pipes</p> <p>PC6. conduct necessary adjustments to pipelines and provide supports to the assembly by using appropriate supporting system</p> <p>PC7. ensure pipe segments are locked properly and joints are provided with specified sealants</p> <p>PC8. ensure proper joining of pipelines with drainage structure like manholes, storm water cat pits etc</p> <p>PC9. offer pipelines for quality tests as per proposed quality plan</p> <p>PC10. carry out remedial/ repairing works as per agreed work method</p>
	Knowledge and Understanding (K)	
	A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. standard practices for handling drainage pipeline segments</p> <p>KA2. safety rules and regulations for handling and storing required tools, equipment and materials</p> <p>KA3. personal protection including the use of related safety gears & equipments</p> <p>KA4. service request procedures for tools, materials and equipments</p> <p>KA5. statutory compliance requirement related to working at height</p> <p>KA6. statutory compliance requirement related to workmen engagement</p>
	B. Technical	The user/individual on the job needs to know and understand:

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Conduct laying of pipes for drainage works/ service lines

Knowledge	<p>KB1. concept of reading construction drawings</p> <p>KB2. applicable tolerance limits for each activity involved in pavement laying operation method of liner, areal and volumetric measurements and conversion of units</p> <p>KB3. method of laying, aligning and joining pipe segments</p> <p>KB4. checks to be carried out to ensure alignment, level and orientation of the pipelines</p> <p>KB5. standard method of joining pipe segments by using appropriate hand tools</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. write in at least two language, preferably in the local language of the site and basic English</p> <p>SA2. provide clear and simple instructions, details & sketches to sub-ordinate</p> <p>SA3. record and document daily productivity report, daily labour attendance & details regarding work</p> <p>SA4. prepare basic status updates for the superiors in the prescribed format</p>
	Reading Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA5. read one or more language, preferably in the local language of the site</p> <p>SA6. read drawing, specification and standards related to relevant work</p> <p>SA7. read key documents including quality standards and standard working methods</p> <p>SA8. read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace</p>
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA9. speak in one or more language, preferably in one of the local languages of the site</p> <p>SA10. listen and follow instructions clearly given by the superior</p> <p>SA11. provide clear instructions to subordinates for completion of task as per work plan, time schedule and quality</p> <p>SA12. communicate to superiors immediately for requirement of materials and equipments</p>
	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. estimate required material and resources for work</p>

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Conduct laying of pipes for drainage works/ service lines

	<p>SB2. decide alternate course of action in case of hindrance to work</p> <p>SB3. decide whether the correct tools are used for pavement laying works</p> <p>SB4. determine appropriate location for lowering of pipes as per specifications</p> <p>SB5. determine whether pipes have been joined appropriately with other drainage structures</p>
	Plan and Organise
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB6. plan work & organize required resource in coordination with team members and superior</p> <p>SB7. plan work targets, allocate time schedule to sub-ordinates and organize completion of task within allocated time</p> <p>SB8. plan and arrange for safety measures and quality checks to ensure smooth functioning of relevant work</p>
	Customer centricity
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB9. ensure completion of work as per agreed time schedule and quality</p>
	Problem solving
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. resolve and solve any conflict within the team</p> <p>SB11. ensure availability of required tools, equipments and materials for relevant work</p> <p>SB12. report to concerned authority for hazardous conditions at workplace</p> <p>SB13. check for any gaps between pipes segment and cases of joints without sealant, and report the same to superiors</p> <p>SB14. ensure that necessary repairs are carried out on pipes</p>
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB15. assess quantity of materials for day work</p> <p>SB16. optimize resources</p> <p>SB17. minimize wastages</p> <p>SB18. visually check and evaluate whether pipe dimensions are as per specifications</p> <p>SB19. evaluate suitability of the level of the base of the pipe trench</p> <p>SB20. evaluate dimensions, level and orientation of the pipes laid</p>
	Critical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB21. assess complexity of the tasks and provide guidance for carrying out</p>

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Conduct laying of pipes for drainage works/ service lines

corrective action as per requirement

SB22. identify and assess how violation of any safety norms may lead to accidents



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Conduct laying of pipes for drainage works/ service lines

NOS Version Control

NOS Code	CON/N1016		
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Industry	Construction	Drafted on	07/08/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
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CON/N8001 Work effectively in a team to deliver desired results at the workplace

National Occupational Standard



Overview

This NOS covers the skill and knowledge required to work effectively within a team to achieve the desired results.

CON/N8001 Work effectively in a team to deliver desired results at the workplace

National Occupational Standard

Unit Code	CON/N8001
Unit Title (Task)	Work effectively in a team to deliver desired results at the workplace
Description	This unit describes the skills and knowledge required to work effectively within a team to achieve the desired results.
Scope	<p>The scope covers the following:</p> <ul style="list-style-type: none"> Interact and communicate effectively with co-workers, superiors and subordinates across different teams Support co-workers, superiors and subordinates within the team and across interfacing teams to ensure effective execution of assigned task
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Interact and communicate in effective and conclusive manner	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. pass on work related information/ requirement clearly to the team members</p> <p>PC2. inform co-workers and superiors about any kind of deviations from work</p> <p>PC3. address the problems effectively and report if required to immediate supervisor appropriately</p> <p>PC4. receive instructions clearly from superiors and respond effectively on the same</p> <p>PC5. communicate to team members/subordinates for appropriate work technique and method</p> <p>PC6. seek clarification and advice as per the requirement and applicability</p>
Support co-workers to execute project requirements	<p>PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams</p> <p>PC8. work together with co-workers in a synchronized manner</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. own roles and responsibilities</p> <p>KA2. importance of effective communication and establishing strong working relationships with co-workers</p> <p>KA3. risks of a failure in teamwork in terms of effects on project outcomes, timelines, safety at the construction site, etc.</p> <p>KA4. different modes of communication, and its appropriate usage</p> <p>KA5. importance of creating healthy and cooperative work environment among the gangs of workers</p>

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<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. different activities within his work area where an interaction with other workers is required</p> <p>KB2. applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement</p> <p>KB3. importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timelines, safety, risks at the construction project site</p> <p>KB4. importance and need of supporting co-workers facing problems for smooth functioning of work</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. write in one or more languages, preferably in the local language of the site</p>
	<p>Reading Skills</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. read in one or more languages, preferably in the local language of the site</p> <p>SA3. read communication from team members regarding work completed, materials used, tools and tackles used, support required</p>
	<p>Oral Communication (Listening and Speaking skills)</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA4. speak in one or more languages, preferably in one of the local languages of the site</p> <p>SA5. listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes</p> <p>SA6. orally communicate with co-workers regarding support required to complete the respective work</p>
	<p>Decision Making</p>
<p>B. Professional Skills</p>	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. decide on what information is to be shared with co-workers within the team or from interfacing gang of workers</p>
	<p>Plan and Organise</p>

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	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. plan work and organize required resources in coordination with team members</p>
	<p>Customer centricity</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. complete all assigned task in coordination with team members</p>
	<p>Problem solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. take initiative in resolving issues among co-workers or report the same to superiors</p>
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB5. ensure best ways of coordination among team members</p> <p>SB6. communicate with co-workers considering their educational / social background</p>
	<p>Critical Thinking</p>
<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. evaluate the complexity of task and determine if any guidance is required from superiors</p>	

CON/N8001 Work effectively in a team to deliver desired results at the workplace

NOS Version Control

NOS Code	CON/N8001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/08/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
Occupation	Roads & Runways Construction	Next review date	23/08/2017



National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman to be proficient in maintaining a healthy & safe working environment for the group of people working under an individual.

CON/N9002 Manage workplace for safe and healthy work environment

National Occupational Standard

Unit Code	CON/N9002
Unit Title (Task)	Manage workplace for safe and healthy work environment
Description	This unit describes the skill and knowledge required to maintain a healthy & safe working environment for the group of people working under an individual
Scope	<p>The scope covers the following:</p> <ul style="list-style-type: none"> • Ensure healthy and safe working environment for subordinates. • Ensure effective implementation of health, safety and environment policies and procedures • Identify and respond to risks / fire and emergencies associated with the work practices, workplace and ensure related organizational & statutory requirement as followed
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Ensure a healthy and safe working environment for subordinates.	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. ensure proper housekeeping at workplace</p> <p>PC2. implement safe handling , stacking methods at workplace / store</p> <p>PC3. ensure that health and safety plan is followed by all subordinates</p> <p>PC4. identify any hazard in workplace and notify them to appropriate authority</p> <p>PC5. ensure that all safety and protection installation are correctly placed & adequate</p> <p>PC6. ensure safe access is available at work place for movement of workers & materials</p> <p>PC7. ensure safe use of tools and tackles by the workmen as per applicability</p> <p>PC8. ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability:</p> <ul style="list-style-type: none"> • Head Protection (Helmets) • Ear Protection • Fall Protection • Foot Protection • Face and Eye Protection, • Hand &Body Protection • Respiratory Protection <p>PC9. maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals</p>
Identify and respond to risks / emergencies	PC10. ensure organizational policies and procedures are followed for health , safety and welfare, in relation to:

CON/N9002 Manage workplace for safe and healthy work environment

<p>associated with the work practices, workplace</p>	<ul style="list-style-type: none"> • methods of receiving or sourcing information • dealing with accidents and emergencies associated with the work and environment • reporting • stooping work • evacuation • fire risks and safe exit procedures <p>PC11. follow procedures for accident recording and reporting as per organizational and statutory requirements</p> <p>PC12. ensure effective adherence to response to emergency procedures / protocols</p> <p>PC13. report any case of emergency / risks to the concern people at the construction site</p> <p>PC14. report any perceived risk hazards to the superiors / concerned EHS</p> <p>PC15. demonstrate the use of fire protection equipments for different type of fire hazard</p> <p>PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (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 policies, procedures and protocol set up by the EHS Department With respect to Health , Safety and Environment at the respective construction site</p> <p>KA2. reporting procedures in cases of breaches or hazards in site safety, accidents or emergency situations</p> <p>KA3. safe working practices for tools, tackles and equipment</p> <p>KA4. workplace policies and health and safety requirements for dealing with potential risks as defined by the EHS department</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. how to respond to accidents & emergencies</p> <p>KB2. the appropriate personal protective equipment to be used based on various working conditions</p> <p>KB3. how to use necessary material ,tools, tackles and equipment in a safe and appropriate manner as specified by site EHS for each level and respective workman gang</p> <p>KB4. how to monitor working in workplace keeping safety & health in mind</p>
<p>Skills (S)</p>	
<p>A. Core Skills/ Generic Skills</p>	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. write in one or more languages</p>

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	<p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA2. read in one or more languages SA3. read instructions, rules, guidelines, sign boards related to safety as per the requirements
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA4. speak in one or more language, preferably in one of the local languages of the site SA5. listen and follow instructions shared by site EHS and superiors regarding site safety SA6. communicate reporting of site conditions, hazards, accidents, etc.
	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. decide upon the appropriate application & installation of safety equipments like barricades and nets SB2. decide upon the tools box talks contents
B. Professional Skills	<p>Plan and Organise</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB3. identify any hazards in workplace organize safety equipments prior to commencing work
	<p>Customer centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB4. work to ensure safe and healthy environmental conditions at workplace
	<p>Problem solving</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB5. identify analysis & report hazards, accidents, health and safety risks, etc. or seek help from the appropriate authorities to address the same as per the guidelines laid down by site EHS
	<p>Analytical Thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB6. analyze areas of work which are potential safety hazards and could result in damage to life or property for the respective gang at the construction site
	<p>Critical Thinking</p>

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	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. respond to critical health risks or accidents on an urgent basis through appropriate actions</p>
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NOS Version Control

NOS Code	CON/N9002		
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Industry	Construction	Drafted on	07/08/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/08/2015
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Assessment Criteria for Foreman Roads & Runways

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role	Foreman Roads & Runways
Qualification Pack	CON/Q1003
Sector Skill Council	Construction

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.
6. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.
7. The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8. After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
9. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified timeframe set by SSC.
10. Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Out Of	Marks Allocation	
				Theory	Skills Practical
CON/N1007: Organise and allocate resources for pavement construction work	PC1. Confirm work targets from superior or concerned authority to be achieved in a day/ week as per applicability	100	6	2.4	3.6
	PC2. Read and interpret drawings and relevant specifications to determine type and quantity of required material		6	2.4	3.6
	PC3. Communicate to superior regarding requirement of material for daily construction work such as aggregates, fines, bitumen etc.		6	2.4	3.6
	PC4. Communicate to superior regarding requirement of vehicle/ equipment relevant to construction work and for resource mobilization		6	2.4	3.6
	PC5. Communicate to superior regarding requirement of manpower as per work target		7	2.8	5.2

Assessment Criteria for Foreman Roads & Runways

	PC6. Conduct storing and stacking of materials and tools at work locations following standard practice of storing		7	2.8	5.2
	PC7. Conduct erection of protective and safety cover/ barrication for material and equipment to prevent wastage or unauthorized access		7	2.8	5.2
	PC8. Conduct erection of barrication, dividers, safety signage as per applicable safe work methodology		6	2.4	3.6
	PC9. Assign specific tasks to respective workmen groups		7	2.8	5.2
	PC10. Brief safe work methods and parameters to be followed by subordinates while handling/ storing materials, carrying out earthwork or laying layers of pavements		7	2.8	5.2
	PC11. Ensure required tools are available at worksite prior to commencement of relevant activity		7	2.8	5.2
	PC12. Monitor consumption and wastage of construction material		7	2.8	5.2
	PC13. Dispose waste to specified location and recycle usable wastes		7	2.8	5.2
	PC14. Confirm that the equipments to be used for compaction, material shifting, grading, surfacing are properly functioning		7	2.8	5.2
	PC15. Confirm that the material shifting vehicle operators have valid driving license		7	2.8	5.2
		Total	100	40	60
CON/N1008: Conduct laying of base and sub-base course of pavements	PC1. Coordinate with surveyor for lay-outs, marking of level and edges prior to preparation of sub-grade for pavement		5	2	3
	PC2. Check level/ slope of earthwork in sub-grade by conducting checks and ensure it is as per drawing/ specification		5	2	3
	PC3. Conduct repair to the potholes, unstable/ loose soil by suitable methods as instructed by superior or quality department		5	2	3
	PC4. Conduct cleaning of surface of every pavement layers as per specification, prior to lay next layer		5	2	3
	PC5. Ensure derbies or wastes are disposed/ dumped to specified location as per work plan	100	5	2	3
	PC6. Carry out analysis of hazards conditions at work sites due to movement of vehicles or equipments, handling of hot asphalt for pavements, vehicular traffic and report to concerned authority		6	2.4	3.6
	PC7. Coordinate with superior or concerned departments to arrange safety measures, electrical connections and quality checks for progression of works		6	2.4	3.6
	PC8. Fill up permits, checklists, labour report formats as per organizational procedure and take approval from superior		6	2.4	3.6

Assessment Criteria for Foreman Roads & Runways

	PC9. Read and interpret drawing, material specification prior to start pavement laying operation and as per requirement thereafter		6	2.4	3.6
	PC10. Check construction materials, pipe segments visually for their usability as per material specification		5	2	3
	PC11. Monitor and check filling work to construct sub grade by using suitable material and ensure impurities are cleared and disposed to the specified location		6	2.4	3.6
	PC12. Check that aggregates are raked properly, spread along the width and stretch maintaining uniform thickness and edge within the acceptable tolerance limit		6	2.4	3.6
	PC13. Monitor and conduct compaction of sub-base/ base course layer using roller of specified weight as per applicable/ standard work methodology		6	2.4	3.6
	PC14. Monitor void filling by finer materials (sand/ morrum/ stone dust), application of water and further rolling		6	2.4	3.6
	PC15. Report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the completion of compaction process		5	2	3
	PC16. Conduct application of prime coating using specified compounds by specified application methods		6	2.4	3.6
	PC17. Carry out necessary measurements using appropriate measuring instruments		6	2.4	3.6
	PC18. Report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the penetration of prime coat compound in to the laid base course layers		5	2	3
		Total	100	40	60
CON/N1009: Conduct laying of binding and wearing course of pavements	PC1. Monitor preparation of asphalt mix by checking proportion of construction materials and heating arrangement if done manually	100	5	2	3
	PC2. Supervise and monitor asphalt spreading both by mechanically or manually		5	2	3
	PC3. Ensure that the hot asphalt is handled, placed and spread safely (if spread manually)		4	1.6	2.4
	PC4. Ensure uniformity in thickness and area of coverage by binding layer (asphalt mix)		5	2	3
	PC5. Monitor motion of paver and asphalt feeding to the paver at required interval		5	2	3
	PC6. Monitor and conduct compaction of binding course layer using roller of specified weight as per applicable/ standard work methodology		5	2	3
	PC7. Report to superior/ concerned authority regarding inspection/ checks to be carried out to determine the completion of compaction process		5	2	3

Assessment Criteria for Foreman Roads & Runways

	PC8. Monitor application of tack coats to completed binding course surface or existing pavement surface by manual means or by equipments		5	2	3
	PC9. Conduct application and spreading of wearing course asphalt by mechanical means or manually		4	1.6	2.4
	PC10. Conduct final rolling till required profile and compactness is achieved by suitable roller		5	2	3
	PC11. Conduct surfacing of pavements as per specification using suitable surface materials		5	2	3
	PC12. Ensure level, slopes, curves are constructed as per drawing by conducting repetitive survey at required interval throughout the pavement laying process		5	2	3
	PC13. Ensure erection of barrication, safety signage and installation of proper illumination systems at workplace		5	2	3
	PC14. Check cleanliness of bed of pavement prior to lay reinforcement bars		4	1.6	2.4
	PC15. Check diameter, number, cleanliness and completion of tying of reinforcement bars as per instruction		4	1.6	2.4
	PC16. Check location of expansion joints by carrying out suitable measurements and ensure their location is as per relevant drawing		5	2	3
	PC17. Carry out marking and measurements to ensure location of shuttering arrangements, supporting arrangements, expansion joints and utility drainage structures are as per drawing/ schematics		5	2	3
	PC18. Monitor paving activity when paver is used for laying wearing course		5	2	3
	PC19. Monitor concreting work when wearing course is laid manually		5	2	3
	PC20. Ensure poured concrete is finished within the specified time limit as per specification		4	1.6	2.4
	PC21. Allocate labour for curing of concrete, organize curing arrangements and ensure curing is as per specification		5	2	3
		Total	100	40	60
CON/N1010: Conduct laying of pipes for drainage works/ service lines	PC1. Ensure that the pipe segments are handled properly by labours or equipments and stored/stacked as per standard practise	100	10	4	6
	PC2. Measure pipe dimension and perform visual checks and confirm with relevant drawing		10	4	6
	PC3. Confirm that the level of the base of the pipe trench is in appropriate profile and centre line matches with specification		10	4	6
	PC4. Monitor lowering and placement of pipes in to their specified location by instructing equipment operators		10	4	6

Assessment Criteria for Foreman Roads & Runways

	PC5. Carry out necessary measurements to check orientation and levels of laid pipes		10	4	6
	PC6. Conduct necessary adjustments to pipelines and provide supports to the assembly by using appropriate supporting system		10	4	6
	PC7. Ensure pipe segments are locked properly and joints are provided with specified sealants		10	4	6
	PC8. Ensure proper joining of pipelines with drainage structure like manholes, storm water cat pits etc.		10	4	6
	PC9. Offer pipelines for quality tests as per proposed quality plan		10	4	6
	PC10. Carry out remedial/ repairing works as per agreed work method		10	4	6
		Total	100	40	60
CON/N8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members	100	10	4	6
	PC2. inform co-workers and superiors about any kind of deviations from work		10	4	6
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		20	8	12
	PC4. receive instructions clearly from superiors and respond effectively on the same		10	4	6
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	4	6
	PC6. seek clarification and advice as per the requirement and applicability		10	4	6
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		15	6	9
	PC8. work together with co-workers in a synchronized manner		15	6	9
		Total	100	40	60
CON/N9002: Manage workplace for safe and healthy work environment	PC1. ensure proper housekeeping at workplace		5	2	3
	PC2. implement safe handling , stacking methods at workplace / store		5	2	3
	PC3. insure that health and safety plan is followed by all subordinates		5	2	3
	PC4. identify any hazard in workplace and notify them to appropriate authority		5	2	3
	PC5. ensure that all safety and protection installation are correctly placed & adequate		5	2	3
	PC6. ensure safe access is available at work place for movement of workers & materials		5	2	3
	PC7. ensure safe use of tools and tackles by the workmen as per applicability		5	2	3
	PC8. ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability: ☑ Head Protection (Helmets) ☑ Ear Protection		10	4	6

Assessment Criteria for Foreman Roads & Runways

<ul style="list-style-type: none"> <input type="checkbox"/> Fall Protection <input type="checkbox"/> Foot Protection <input type="checkbox"/> Face and Eye Protection, <input type="checkbox"/> Hand & Body Protection <input type="checkbox"/> Respiratory Protection 			
PC9. maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals.	5	2	3
PC10. ensure organizational policies and procedures are followed for health , safety and welfare, in relation to: <ul style="list-style-type: none"> <input type="checkbox"/> methods of receiving or sourcing information <input type="checkbox"/> dealing with accidents and emergencies associated with the work and environment <input type="checkbox"/> reporting <input type="checkbox"/> stooping work <input type="checkbox"/> evacuation <input type="checkbox"/> fire risks and safe exit procedures 	10	4	6
PC11. follow procedures for accident recording and reporting as per organizational and statutory requirements	5	2	3
PC12. ensure effective adherence to response to emergency procedures / protocols	7.5	3	4.5
PC13. report any case of emergency / risks to the concern people at the construction site	7.5	3	4.5
PC14. report any perceived risk hazards to the superiors / concerned EHS	7.5	3	4.5
PC15. demonstrate the use of fire protection equipments for different type of fire hazard	7.5	3	4.5
PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies	5	2	3
Total	100	40	60