



# Pavement Layer

QP Code: CON/Q1002

Version: 1.0

NSQF Level: 4

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### CON/Q1002: Pavement Layer

#### Brief Job Description

This job role is responsible for preparing asphalt manually, applying adhesive and protective coatings to the pavement layers. Individual is also responsible for shifting and laying pipes, accessories for road drainage systems

#### Personal Attributes

The individual is expected to be physically fit and should be able to work across various locations withstanding environment of construction works. The individual should be able to implement and maintain safe working practices especially while handling/ spreading hot asphalt mix. The individual should have communication skills required to work within a team to handle various pavement laying tools and materials and work responsibly for own work within defined limits.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [CON/N1004: Apply prime coat and tack coat manually to the respective road layers](#)
2. [CON/N1005: Prepare and spread asphalt manually for construction of binding course/ wearing course](#)
3. [CON/N1006: Shift and place pipelines for drainage works](#)
4. [CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
5. [CON/N8002: Plan and organize work to meet expected outcomes](#)
6. [CON/N9001: Work according to personal health, safety and environment protocol at construction site](#)

#### Qualification Pack (QP) Parameters

<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Roads & Runway Construction
<b>Country</b>	India



## Qualification Pack



<b>NSQF Level</b>	4
<b>Credits</b>	NA
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2004/7122.50 & 9312.10
<b>Minimum Educational Qualification &amp; Experience</b>	8th Class with 3-5 Years of experience as a certified Assistant Pavement Layer OR 8th Class with 3-5 Years of experience in case of a Non trained worker, in same occupation
<b>Minimum Level of Education for Training in School</b>	
<b>Pre-Requisite License or Training</b>	Recommended training period of 6-8 weeks as per QP of Pavement Layer
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	23/08/2015
<b>Next Review Date</b>	31/03/2022
<b>Deactivation Date</b>	31/03/2022
<b>NSQC Approval Date</b>	21/07/2016
<b>Version</b>	1.0
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<b>NQR Version</b>	1.0



# CON/N1004: Apply prime coat and tack coat manually to the respective road layers

## Description

This unit describes the skills and knowledge required to apply prime coat and tack coat manually to the respective road layers.

## Scope

The scope covers the following:

- Carry out preparatory works prior to application
- Apply prime and tack coat to the base layers of the road
- Clean sprayer, tank and its accessories and dispose wastes

## Elements and Performance Criteria

### *Carry out preparatory works prior to application*

To be competent, the user/individual on the job must be able to:

- PC1.** ensure bituminous mix to be applied to road surface is free from contamination
- PC2.** check the tank for cleanliness prior to filling up with bituminous solution to be sprayed
- PC3.** check spraying gun is functional and connection to the equipment is free from leakage and free from any blockage
- PC4.** conduct loading of tank by required spraying materials as per required quantity
- PC5.** communicate with the operator of the vehicle carrying the tank for optimum speed of travelling and adjustment in pump characteristics according to the rate of spraying
- PC6.** select the type of jet to be fitted with spray gun

### *Apply prime and tack coat to the base layers of the road*

To be competent, the user/individual on the job must be able to:

- PC7.** adjust rate of flow of bituminous solution as per requirement
- PC8.** operate sprinklers or use tools to apply prime coat solution on the base course surface
- PC9.** maintain uniformity and homogeneity in the layer of prime coat while applying on the base course surface
- PC10.** check the spreading and penetration of the prime coat solution over the prepared base course surface
- PC11.** controls the wastage of prime coat compound during its application
- PC12.** ensure that the surface where tack coat is to be applied is cleaned properly and free from dust, moisture and any unwanted material
- PC13.** apply tack coat maintaining appropriate thickness over the patches of roads using appropriate sprinkling tools
- PC14.** control rate of application of tack coat compound to form a layer of uniform/ desired thickness
- PC15.** ensure appropriate coverage of surface area by application of tack coat compound



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**PC16.** use appropriate ppes while applying prime/tack coat

*Clean sprayer, tank and its accessories and dispose wastes*

To be competent, the user/individual on the job must be able to:

**PC17.** unload or empty tank into storage or waste as per instruction

**PC18.** clean spray bars and lances and ensure jets are free of contaminants

**PC19.** clear work area and dispose waste materials to specified location or recycle materials for re-use/ minimize wastage

**PC20.** carry out housekeeping work as per requirements

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

**KU1.** standard practices of roads and pavements laying works

**KU2.** safety rules and regulations

**KU3.** personal protection including the use of the related safety gears & safety equipment

**KU4.** requesting tools and materials as per set procedures

**KU5.** maintenance of tools and equipment

**KU6.** sequence of application of tack coat and prime coat in road construction

**KU7.** physical properties and basic idea about material used for formation of tack and prime coat

**KU8.** method of application of compounds ensuring adherence to quality aspect

**KU9.** standard procedure of handling, and using prime coat and tack coat compounds

**KU10.** surface preparation required for application of prime/ tack coat

**KU11.** minimum surface area to be covered by compound

### Generic Skills (GS)

User/individual on the job needs to know how to:

**GS1.** write in at least one language, preferably in the local language of the site

**GS2.** read in at least one language, preferably in the local language of the site

**GS3.** read sketches/routine working drawing or instructions provided for the work

**GS4.** read various, sign boards, safety rules and safety tags , instructions related to exit routes during emergency at the workplace

**GS5.** speak in one or more language, preferably in one of the local languages of the site

**GS6.** listen and follow instructions communicated by supervisors

**GS7.** orally and efficiently communicate with team member

**GS8.** decide whether the workplace is safe for working and also the relevant work is not creating hazardous conditions for others

**GS9.** determine whether spraying gun is functional and free from blockage

**GS10.** decide on type of jet to be fitted with the spray gun

**GS11.** determine appropriate thickness of tack coat applied



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- GS12.** determine whether surface area covered by tack coat is appropriate
- GS13.** plan work and organize required resource in coordination with team member and superior
- GS14.** complete work as per agreed time schedule and quality
- GS15.** resolve any conflict within the team
- GS16.** check for contamination in bituminous mix and rectify
- GS17.** check tank for cleanliness prior to filling with bituminous solution
- GS18.** optimize resources
- GS19.** minimize wastages
- GS20.** revert to superior for selection/sorting of materials
- GS21.** assess and adjust flow rate of bituminous solution
- GS22.** check for uniformity and homogeneity in prime coat layer
- GS23.** analyze and determine rate of application of tack coat as per application
- GS24.** evaluate the complexity of the tasks and determine if any guidance is required from superior



## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory works prior to application</i>	<b>8</b>	<b>18</b>	-	-
<b>PC1.</b> ensure bituminous mix to be applied to road surface is free from contamination	1	2	-	-
<b>PC2.</b> check the tank for cleanliness prior to filling up with bituminous solution to be sprayed	1	2	-	-
<b>PC3.</b> check spraying gun is functional and connection to the equipment is free from leakage and free from any blockage	1	2	-	-
<b>PC4.</b> conduct loading of tank by required spraying materials as per required quantity	2	5	-	-
<b>PC5.</b> communicate with the operator of the vehicle carrying the tank for optimum speed of travelling and adjustment in pump characteristics according to the rate of spraying	2	5	-	-
<b>PC6.</b> select the type of jet to be fitted with spray gun	1	2	-	-
<i>Apply prime and tack coat to the base layers of the road</i>	<b>16</b>	<b>38</b>	-	-
<b>PC7.</b> adjust rate of flow of bituminous solution as per requirement	2	5	-	-
<b>PC8.</b> operate sprinklers or use tools to apply prime coat solution on the base course surface	1	2	-	-
<b>PC9.</b> maintain uniformity and homogeneity in the layer of prime coat while applying on the base course surface	2	5	-	-
<b>PC10.</b> check the spreading and penetration of the prime coat solution over the prepared base course surface	2	5	-	-
<b>PC11.</b> controls the wastage of prime coat compound during its application	1	2	-	-
<b>PC12.</b> ensure that the surface where tack coat is to be applied is cleaned properly and free from dust, moisture and any unwanted material	2	5	-	-





## Qualification Pack



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> apply tack coat maintaining appropriate thickness over the patches of roads using appropriate sprinkling tools	2	5	-	-
<b>PC14.</b> control rate of application of tack coat compound to form a layer of uniform/ desired thickness	1	2	-	-
<b>PC15.</b> ensure appropriate coverage of surface area by application of tack coat compound	1	2	-	-
<b>PC16.</b> use appropriate pps while applying prime/tack coat	2	5	-	-
<i>Clean sprayer, tank and its accessories and dispose wastes</i>	<b>6</b>	<b>14</b>	-	-
<b>PC17.</b> unload or empty tank into storage or waste as per instruction	2	5	-	-
<b>PC18.</b> clean spray bars and lances and ensure jets are free of contaminants	2	5	-	-
<b>PC19.</b> clear work area and dispose waste materials to specified location or recycle materials for re-use/ minimize wastage	1	2	-	-
<b>PC20.</b> carry out housekeeping work as per requirements	1	2	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack



### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1004
<b>NOS Name</b>	Apply prime coat and tack coat manually to the respective road layers
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Roads & Runway Construction
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	23/08/2015
<b>Next Review Date</b>	31/03/2022
<b>NSQC Clearance Date</b>	21/07/2016



## CON/N1005: Prepare and spread asphalt manually for construction of binding course/ wearing course

### Description

This unit describes the skills and knowledge required to prepare and spread asphalt manually for construction of binding course/ wearing course.

### Scope

This unitTask Coverts the following

- Prepare asphalt manually for flexible pavement
- Spread asphalt manually over the prepared base
- Clean work location and tools used for asphalt spreading

### Elements and Performance Criteria

#### *Prepare asphalt manually for flexible pavement*

To be competent, the user/individual on the job must be able to:

- PC1.** collect aggregates, bitumen, fines in the heating systems in required quantity
- PC2.** mix materials homogeneously as per instruction
- PC3.** carry out heating of the mixture to form asphalt of desired workability
- PC4.** check the mixed asphalt for desired homogeneity and workability
- PC5.** use appropriate ppes, fire protection clothing while carrying out heating activity

#### *Spread asphalt manually over the prepared base*

To be competent, the user/individual on the job must be able to:

- PC6.** select and use appropriate asphalt spreading tools (raking tools)
- PC7.** check and ensure base layer is free of dust and moisture prior to start offloading and spreading of asphalt
- PC8.** use appropriate ppes while spreading asphalt manually
- PC9.** erect barrication, safety signage as per instruction at specified locations
- PC10.** instruct subordinate clearly for efficient shifting and placing of asphalt mix
- PC11.** ensure that the hot asphalt mix is unloaded at the specified location in required quantity
- PC12.** spread asphalt mix using appropriate hand tools
- PC13.** maintain uniform thickness of layer as per instruction
- PC14.** maintain slope/ level as per instruction or provided survey lines
- PC15.** spread asphalt in corners, turnings and edges of the road maintaining required layer thickness
- PC16.** assist roller operator during compaction of asphalt by spreading asphalt at required location to maintain required level

#### *Clean work location and tools used for asphalt spreading*

To be competent, the user/individual on the job must be able to:



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- PC17.** conduct cleaning of site and dispose waste material, debris at specified location
- PC18.** clean asphalt spreading tools after completion of work
- PC19.** store tools and tackles appropriately at specified location

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices for preparation of asphalt
- KU2.** safety rules and regulations
- KU3.** personal protection including the use of the related safety gears & safety equipment
- KU4.** requesting tools and materials as per set procedures
- KU5.** maintenance of tools and equipment
- KU6.** heating requirement to prepare asphalt mix
- KU7.** physical state of asphalt mix to determine its usability for laying
- KU8.** use of PPEs and safe work method to handle hot bitumen
- KU9.** nature of surface required for laying asphalt
- KU10.** sequence of asphalt spreading work in construction of road
- KU11.** safe method of offloading hot asphalt mix
- KU12.** appropriate tools used for spreading asphalt
- KU13.** how to maintain uniform thickness and of asphalt layer
- KU14.** how to maintain tools and tackles used for asphalt spreading

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read in at least one language, preferably in the local language of the site
- GS3.** read sketches/routine working drawing or instructions provided for the work
- GS4.** read instructions, guidelines, sign boards, safety rules ,safety tag and instructions related to exit routes during emergencies at the work place
- GS5.** speak in one or more language, preferably in one of the local languages of the site
- GS6.** listen and follow instructions communicated by supervisors
- GS7.** orally and efficiently communicate with team member
- GS8.** decide whether the workplace is safe for working and also the relevant work is not creating hazardous conditions for others
- GS9.** decide the methodology for preparing and spreading as per method statement
- GS10.** determine whether asphalt mixture meets the requirement of homogeneity and workability
- GS11.** select appropriate tools for spreading asphalt as per requirements
- GS12.** determine suitability of base layer prior to spreading asphalt
- GS13.** plan work and organize required resource in coordination with team member and superior



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- GS14.** complete work as per agreed time schedule and quality
- GS15.** resolve any conflict within the team
- GS16.** optimize resources
- GS17.** minimize wastage
- GS18.** revert to superior for selection/sorting of materials
- GS19.** assess and analyze homogeneity of mixture
- GS20.** analyze whether asphalt applied is as per uniform thickness and appropriate slope / level, within the defined survey lines
- GS21.** evaluate the complexity of the tasks to determine if any guidance is required from the superior
- GS22.** avoid violation of any safety norms which may lead to accidents



## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare asphalt manually for flexible pavement</i>	<b>7</b>	<b>15</b>	-	-
<b>PC1.</b> collect aggregates, bitumen, fines in the heating systems in required quantity	1	2	-	-
<b>PC2.</b> mix materials homogeneously as per instruction	1	2	-	-
<b>PC3.</b> carry out heating of the mixture to form asphalt of desired workability	1	2	-	-
<b>PC4.</b> check the mixed asphalt for desired homogeneity and workability	2	4	-	-
<b>PC5.</b> use appropriate ppes, fire protection clothing while carrying out heating activity	2	5	-	-
<i>Spread asphalt manually over the prepared base</i>	<b>18</b>	<b>43</b>	-	-
<b>PC6.</b> select and use appropriate asphalt spreading tools (raking tools)	1	2	-	-
<b>PC7.</b> check and ensure base layer is free of dust and moisture prior to start offloading and spreading of asphalt	2	5	-	-
<b>PC8.</b> use appropriate ppes while spreading asphalt manually	1	2	-	-
<b>PC9.</b> erect barrication, safety signage as per instruction at specified locations	2	5	-	-
<b>PC10.</b> instruct subordinate clearly for efficient shifting and placing of asphalt mix	2	5	-	-
<b>PC11.</b> ensure that the hot asphalt mix is unloaded at the specified location in required quantity	1	2	-	-
<b>PC12.</b> spread asphalt mix using appropriate hand tools	2	5	-	-
<b>PC13.</b> maintain uniform thickness of layer as per instruction	2	5	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> maintain slope/ level as per instruction or provided survey lines	1	2	-	-
<b>PC15.</b> spread asphalt in corners, turnings and edges of the road maintaining required layer thickness	2	5	-	-
<b>PC16.</b> assist roller operator during compaction of asphalt by spreading asphalt at required location to maintain required level	2	5	-	-
<i>Clean work location and tools used for asphalt spreading</i>	<b>5</b>	<b>12</b>	-	-
<b>PC17.</b> conduct cleaning of site and dispose waste material, debris at specified location	2	5	-	-
<b>PC18.</b> clean asphalt spreading tools after completion of work	2	5	-	-
<b>PC19.</b> store tools and tackles appropriately at specified location	1	2	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack



### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1005
<b>NOS Name</b>	Prepare and spread asphalt manually for construction of binding course/ wearing course
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Roads & Runway Construction
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	23/08/2015
<b>Next Review Date</b>	31/03/2022
<b>NSQC Clearance Date</b>	21/07/2016





# CON/N1006: Shift and place pipelines for drainage works

## Description

This unit describes the skills and knowledge required to shift and place pipelines for drainage works.

## Scope

The scope covers the following:

- Shift and lay pipe segments at specified locations

## Elements and Performance Criteria

### *Shift and lay pipe segments at specified locations*

To be competent, the user/individual on the job must be able to:

- PC1.** check base of pipelines for adequate compaction or pcc works as per applicability
- PC2.** shift and stack pipe segments as per instruction at specified location manually or by assisting lifting equipment
- PC3.** check pipe segments for dimension, damage, crack, distortion and report to senior if any ambiguity/ deviation observed
- PC4.** erect barricade and safety signage surrounding pipe trench/ excavated pits as per instruction
- PC5.** lower and place pipes in appropriate position in to excavated trench or specified location
- PC6.** communicate with superior during lowering of pipe segments by equipment in order to proper pacing, alignment and locking
- PC7.** join pipes correctly by doing suitable adjustments using appropriate hand tools as per instruction
- PC8.** lay pipe segments securely on ground, pcc base or thrust blocks/ supporting structures as per applicability
- PC9.** align bent, junction segments of pipes efficiently, maintaining proper orientation and level
- PC10.** identify, select and fix valves, fittings and flow control devices using appropriate hand tools at specified locations as per location
- PC11.** carry out necessary measurements to check alignment and level of pipelines throughout the laying process
- PC12.** provide support to erected pipe lines as per instruction by selecting and using appropriate supporting system
- PC13.** ensure pipe joints are locked efficiently and application of sealant material is as per specification
- PC14.** conduct backfilling of trenches by using specified material

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** standard practices for handling circular pipe sections
- KU2.** safety rules and regulations
- KU3.** personal protection including the use of the related safety gears & safety equipment
- KU4.** basic principles of measurement
- KU5.** requesting tools and materials as per set procedures
- KU6.** maintenance of tools and equipments
- KU7.** standard method of aligning and joining pipe segments in to their position
- KU8.** standard procedure of providing temporary supports to the pipelines using specified supporting system
- KU9.** method of stacking pipe segments as per standard practice
- KU10.** methods of linear measurements and checking of orientation/ level
- KU11.** use of hand tools and measuring instruments used for laying pipelines
- KU12.** use of pipes, valves and their accessories in drainage works

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read in at least one language, preferably in the local language of the site
- GS3.** read sketches/routine working drawing or instructions provided for the work
- GS4.** read instructions, guidelines, sign boards, safety rules ,safety tag and instructions related to exit routes during emergencies at the work place
- GS5.** speak in one or more language, preferably in one of the local languages of the site
- GS6.** listen and follow instructions communicated by supervisors
- GS7.** orally and efficiently communicate with team member
- GS8.** decide whether the workplace is safe for working and also the relevant work is not creating hazardous conditions for others
- GS9.** determine whether base of pipelines exhibit adequate compaction
- GS10.** determine appropriate position to lower and place pipes
- GS11.** determine and select appropriate valves, fittings and control devices
- GS12.** select appropriate material for backfilling of trenches
- GS13.** determine whether pipe joints are locked efficiently
- GS14.** determine whether pipe joints are locked efficiently
- GS15.** plan work and organize required resources in coordination with team members and superiors
- GS16.** plan for correct work sequence of shifting and placing pipes in place
- GS17.** complete work as per agreed time schedule and quality
- GS18.** resolve any conflict within the team
- GS19.** ensure the pipe dimension is as per requirements and report to superior in case of any deviations
- GS20.** optimize resources
- GS21.** minimize wastage



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- GS22.** revert to superior for selection/sorting of materials
- GS23.** analyze appropriate alignment, level and orientation of pipes
- GS24.** evaluate the complexity of the tasks to determine if any guidance is required from the superior
- GS25.** avoid violation of any safety norms which may lead to accidents



## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Shift and lay pipe segments at specified locations</i>	<b>30</b>	<b>70</b>	-	-
<b>PC1.</b> check base of pipelines for adequate compaction or pcc works as per applicability	1	2	-	-
<b>PC2.</b> shift and stack pipe segments as per instruction at specified location manually or by assisting lifting equipment	2	5	-	-
<b>PC3.</b> check pipe segments for dimension, damage, crack, distortion and report to senior if any ambiguity/ deviation observed	3	7	-	-
<b>PC4.</b> erect barricade and safety signage surrounding pipe trench/ excavated pits as per instruction	1	2	-	-
<b>PC5.</b> lower and place pipes in appropriate position in to excavated trench or specified location	3	7	-	-
<b>PC6.</b> communicate with superior during lowering of pipe segments by equipment in order to proper pacing, alignment and locking	1	2	-	-
<b>PC7.</b> join pipes correctly by doing suitable adjustments using appropriate hand tools as per instruction	4	9	-	-
<b>PC8.</b> lay pipe segments securely on ground, pcc base or thrust blocks/ supporting structures as per applicability	1	2	-	-
<b>PC9.</b> align bent, junction segments of pipes efficiently, maintaining proper orientation and level	4	9	-	-
<b>PC10.</b> identify, select and fix valves, fittings and flow control devices using appropriate hand tools at specified locations as per location	4	9	-	-
<b>PC11.</b> carry out necessary measurements to check alignment and level of pipelines throughout the laying process	1	2	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> provide support to erected pipe lines as per instruction by selecting and using appropriate supporting system	2	6	-	-
<b>PC13.</b> ensure pipe joints are locked efficiently and application of sealant material is as per specification	2	6	-	-
<b>PC14.</b> conduct backfilling of trenches by using specified material	1	2	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack



### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1006
<b>NOS Name</b>	Shift and place pipelines for drainage works
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Roads & Runway Construction
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	23/08/2015
<b>Next Review Date</b>	31/03/2022
<b>NSQC Clearance Date</b>	21/07/2016



# CON/N8001: 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

The scope covers the following:

- Interact and communicate effectively with co-workers, superiors and sub-ordinates across different teams
- Support co-workers, superiors and sub-ordinates within the team and across interfacing teams to ensure effective execution of assigned task

## Elements and Performance Criteria

### *Interact and communicate in effective and conclusive manner*

To be competent, the user/individual on the job must be able to:

- PC1.** pass on work related information/ requirement clearly to the team members
- PC2.** inform co-workers and superiors about any kind of deviations from work
- PC3.** address the problems effectively and report if required to immediate supervisor appropriately
- PC4.** receive instructions clearly from superiors and respond effectively on the same
- PC5.** communicate to team members/subordinates for appropriate work technique and method
- PC6.** seek clarification and advice as per the requirement and applicability

### *Support co-workers to execute project requirements*

To be competent, the user/individual on the job must be able to:

- PC7.** hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams
- PC8.** work together with co-workers in a synchronized manner

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** own roles and responsibilities
- KU2.** importance of effective communication and establishing strong working
- KU3.** risks of a failure in teamwork in terms of effects on project outcomes, timelines, safety at the construction site, etc.
- KU4.** different modes of communication, and its appropriate usage
- KU5.** importance of creating healthy and cooperative work environment among the gangs of workers



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- KU6.** different activities within his work area where an interaction with other workers is required
- KU7.** applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co- workers might need as per the requirement
- KU8.** importance of proper and effective communication and the expected adverse
- KU9.** importance and need of supporting co-workers facing problems for smooth

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read in one or more languages, preferably the local language of the site
- GS3.** read communication from team members regarding work completed, materials used, tools and tackles used, support required
- GS4.** speak in one or more languages, preferably in one of the local language of the site
- GS5.** listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes
- GS6.** orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide on what information is to be shared with co-workers within the team or from interfacing gang of workers
- GS8.** plan work and organize required resources in coordination with team members
- GS9.** complete all assigned task in coordination with team members
- GS10.** take initiative in resolving issues among co-workers or report the same to superiors
- GS11.** ensure best ways of coordination among team members
- GS12.** communicate with co-workers considering their educational / social background
- GS13.** evaluate the complexity of task and determine if any guidance is required from superiors





## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact and communicate in effective and conclusive manner</i>	<b>14</b>	<b>34</b>	-	-
<b>PC1.</b> pass on work related information/ requirement clearly to the team members	2	5	-	-
<b>PC2.</b> inform co-workers and superiors about any kind of deviations from work	2	5	-	-
<b>PC3.</b> address the problems effectively and report if required to immediate supervisor appropriately	3	7	-	-
<b>PC4.</b> receive instructions clearly from superiors and respond effectively on the same	2	5	-	-
<b>PC5.</b> communicate to team members/subordinates for appropriate work technique and method	3	7	-	-
<b>PC6.</b> seek clarification and advice as per the requirement and applicability	2	5	-	-
<i>Support co-workers to execute project requirements</i>	<b>16</b>	<b>36</b>	-	-
<b>PC7.</b> hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams	8	18	-	-
<b>PC8.</b> work together with co-workers in a synchronized manner	8	18	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack



### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N8001
<b>NOS Name</b>	Work effectively in a team to deliver desired results at the workplace
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.1
<b>Last Reviewed Date</b>	23/05/2015
<b>Next Review Date</b>	31/03/2022
<b>NSQC Clearance Date</b>	21/07/2016



## CON/N8002: Plan and organize work to meet expected outcomes

### Description

This unit describes the knowledge and the skills required for an individual to plan and organize own work in order to meet expected outcome

### Elements and Performance Criteria

#### *Prioritize work activities to achieve desired results*

To be competent, the user/individual on the job must be able to:

- PC1.** understand clearly the targets and timelines set by superiors
- PC2.** plan activities as per schedule and sequence
- PC3.** provide guidance to the subordinates to obtain desired outcome
- PC4.** plan housekeeping activities prior to and post completion of work

#### *Organize desired resources prior to commencement of work*

To be competent, the user/individual on the job must be able to:

- PC5.** list and arrange required resources prior to commencement of work
- PC6.** select and employ correct tools, tackles and equipment for completion of desired work
- PC7.** complete the work with allocated resources
- PC8.** engage allocated manpower in an appropriate manner
- PC9.** use resources in an optimum manner to avoid any unnecessary wastage
- PC10.** employ tools, tackles and equipment with care to avoid damage to the same
- PC11.** organize work output, materials used, tools and tackles deployed
- PC12.** processes adopted to be in line with the specified standards and instructions

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** importance of proper housekeeping
- KU2.** policies, procedures and work targets set by superiors
- KU3.** roles and responsibilities in executing the work for subordinates and self
- KU4.** standard practices of work to be adopted for assigned task
- KU5.** how to use available resources in a judicious and appropriate manner to minimize wastages or damage

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** list out the assigned works and targets



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- GS3.** read in one or more language, preferably the local language at the site
- GS4.** read communication from co-workers, superiors and notices from other departments as per requirement of the level
- GS5.** speak in one or more language, preferably one of the local language at the site
- GS6.** listen and follow communication shared by co-workers regarding standard work processes, resources available, timelines, etc.
- GS7.** communicate effectively with co-workers and subordinates
- GS8.** decide on what sequence is to be adopted for execution of work
- GS9.** plan and organize the materials, tools, tackles and equipment required to execute the work
- GS10.** complete all assigned task with proper planning and organizing
- GS11.** arrange or seek help to arrange for material, tools and tackles in case of shortfall
- GS12.** analyze areas of work which could result in a delay of work, wastage of material or damage to tools and tackles
- GS13.** evaluate potential solutions to minimize avoidable delays and wastages at the construction site



## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prioritize work activities to achieve desired results</i>	<b>9</b>	<b>22</b>	-	-
<b>PC1.</b> understand clearly the targets and timelines set by superiors	2	5	-	-
<b>PC2.</b> plan activities as per schedule and sequence	2	5	-	-
<b>PC3.</b> provide guidance to the subordinates to obtain desired outcome	3	7	-	-
<b>PC4.</b> plan housekeeping activities prior to and post completion of work	2	5	-	-
<i>Organize desired resources prior to commencement of work</i>	<b>21</b>	<b>48</b>	-	-
<b>PC5.</b> list and arrange required resources prior to commencement of work	3	7	-	-
<b>PC6.</b> select and employ correct tools, tackles and equipment for completion of desired work	3	7	-	-
<b>PC7.</b> complete the work with allocated resources	3	7	-	-
<b>PC8.</b> engage allocated manpower in an appropriate manner	3	6	-	-
<b>PC9.</b> use resources in an optimum manner to avoid any unnecessary wastage	3	6	-	-
<b>PC10.</b> employ tools, tackles and equipment with care to avoid damage to the same	2	5	-	-
<b>PC11.</b> organize work output, materials used, tools and tackles deployed	2	5	-	-
<b>PC12.</b> processes adopted to be in line with the specified standards and instructions	2	5	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack



### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N8002
<b>NOS Name</b>	Plan and organize work to meet expected outcomes
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	23/03/2015
<b>Next Review Date</b>	31/03/2022
<b>NSQC Clearance Date</b>	19/05/2015



## CON/N9001: Work according to personal health, safety and environment protocol at construction site

### Description

This NOS covers the skill and knowledge required for an individual to work according to personal health, safety and environmental protocol at construction site

### Scope

The scope covers the following:

- Follow safety norms as defined by organization
- Adopt healthy & safe work practices
- Implement good housekeeping and environment protection process and activities

### Elements and Performance Criteria

#### *Follow safety norms as defined by organization*

To be competent, the user/individual on the job must be able to:

- PC1.** identify and report any hazards, risks or breaches in site safety to the appropriate authority
- PC2.** follow emergency and evacuation procedures in case of accidents, fires, natural calamities
- PC3.** follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable
- PC4.** participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site
- PC5.** identify near miss, unsafe condition and unsafe act

#### *Adopt healthy & safe work practices*

To be competent, the user/individual on the job must be able to:

- PC6.** use appropriate Personal Protective Equipment (PPE) as per work requirements including: Head Protection (Helmets) Ear protection Fall Protection Foot Protection Face and Eye Protection, Hand and Body Protection Respiratory Protection (if required)
- PC7.** handle all required tools, tackles, materials & equipment safely
- PC8.** follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines
- PC9.** install and apply properly all safety equipment as instructed
- PC10.** follow safety protocol and practices as laid down by site EHS department

#### *Implement good housekeeping practices*

To be competent, the user/individual on the job must be able to:

- PC11.** collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes
- PC12.** apply ergonomic principles wherever required

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines
- KU2.** types of safety hazards at construction sites
- KU3.** basic ergonomic principles as per applicability
- KU4.** the procedure for responding to accidents and other emergencies at site
- KU5.** appropriate personal protective equipment to be used based on various
- KU6.** importance of handling tools, equipment and materials as per applicable
- KU7.** health and environment effect of construction materials as per
- KU8.** various environmental protection methods as per applicability
- KU9.** storage of waste including the following at appropriate location: non-combustible scrap material and debris combustible scrap material and debris general construction waste and trash (non-toxic, non-hazardous) any other hazardous wastes any other flammable wastes
- KU10.** how to use hazardous material, in a safe and appropriate manner as per
- KU11.** safety relevant to tools, tackles, & requirement as per applicability
- KU12.** housekeeping activities relevant to task

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** fill safety formats for near miss, unsafe conditions and safety suggestions
- GS3.** read in one or more language, preferably in the local language of the site
- GS4.** read sign boards, notice boards relevant to safety
- GS5.** speak in one or more language, preferably in one of the local language of the site
- GS6.** listen instructions / communication shared by site EHS and superiors regarding site safety, and conducting tool box talk
- GS7.** communicate reporting of site conditions, hazards, accidents, etc.
- GS8.** not create unsafe conditions for others
- GS9.** keep the workplace clean and tidy
- GS10.** identify safety risks that affect the health, safety and environment for self and others working in the vicinity, tackle it if within limit or report to appropriate authority
- GS11.** assess and analyze areas which may affect health, safety and environment protocol on the site
- GS12.** ensure personal safety behavior
- GS13.** respond to emergency





## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow safety norms as defined by organization</i>	<b>11</b>	<b>27</b>	-	-
<b>PC1.</b> identify and report any hazards, risks or breaches in site safety to the appropriate authority	2	5	-	-
<b>PC2.</b> follow emergency and evacuation procedures in case of accidents, fires, natural calamities	2	5	-	-
<b>PC3.</b> follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable	3	7	-	-
<b>PC4.</b> participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site	2	5	-	-
<b>PC5.</b> identify near miss , unsafe condition and unsafe act	2	5	-	-
<i>Adopt healthy &amp; safe work practices</i>	<b>15</b>	<b>33</b>	-	-
<b>PC6.</b> use appropriate Personal Protective Equipment (PPE) as per work requirements including: Head Protection (Helmets) Ear protection Fall Protection Foot Protection Face and Eye Protection, Hand and Body Protection Respiratory Protection (if required)	3	7	-	-
<b>PC7.</b> handle all required tools, tackles , materials & equipment safely	2	5	-	-
<b>PC8.</b> follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines	2	5	-	-
<b>PC9.</b> install and apply properly all safety equipment as instructed	4	8	-	-
<b>PC10.</b> follow safety protocol and practices as laid down by site EHS department	4	8	-	-
<i>Implement good housekeeping practices</i>	<b>4</b>	<b>10</b>	-	-



## Qualification Pack



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC11.</b> collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes	2	5	-	-
<b>PC12.</b> apply ergonomic principles wherever required	2	5	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N9001
<b>NOS Name</b>	Work according to personal health, safety and environment protocol at construction site
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.2
<b>Last Reviewed Date</b>	23/05/2015
<b>Next Review Date</b>	31/03/2022
<b>NSQC Clearance Date</b>	21/07/2016

### Assessment Guidelines and Assessment Weightage

#### Assessment Guidelines

- 1.Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (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 theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

#### Minimum Aggregate Passing % at QP Level : 70



## Qualification Pack



(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

### Assessment Weightage

#### Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N1004.Apply prime coat and tack coat manually to the respective road layers	30	70	-	-	100	17
CON/N1005.Prepare and spread asphalt manually for construction of binding course/ wearing course	30	70	-	-	100	20
CON/N1006.Shift and place pipelines for drainage works	30	70	-	-	100	18
CON/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	-	-	100	10
CON/N8002.Plan and organize work to meet expected outcomes	30	70	-	-	100	15
CON/N9001.Work according to personal health, safety and environment protocol at construction site	30	70	-	-	100	20
<b>Total</b>	<b>180</b>	<b>420</b>	<b>-</b>	<b>-</b>	<b>600</b>	<b>100</b>



## Qualification Pack



### Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training



## Qualification Pack



### Glossary

<b>Sector</b>	Sector is a 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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
<b>Scope</b>	Scope is a 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 quality of performance required.
<b>Knowledge and Understanding (KU)</b>	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.



## Qualification Pack



<b>Organisational Context</b>	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment 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.
<b>Electives</b>	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
<b>Options</b>	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.