सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

Qualification Pack

Transforming the skill landscape

- HOT MIX PLANT

Hot Mix Plant Operator

QP Code: IES/Q0114

NSQF Level: 4

Infrastructure Equipment Skill Council || Infrastructure Equipment Skill Council,Avik Royale–First Floor (Next of Vijaya Bank),No.6, 50 feet Main Road,Avalahalli Extension,Girinagar Bengaluru 560026

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IES/Q0114: Hot Mix Plant Operator

Brief Job Description

The operator is required to operate asphalt plant for the production of hot mix asphalt based on the mix designs used in the construction, roadways and maintenance of roadways.

Personal Attributes

The job requires an individual to be physically agile, strong and should have good eye sight. He should maintain constant alertness to the multiple concurrent activities of the asphalt/plant construction site, including the activities of other employees, contractors, the operation of stationary equipment etc. He should possess basic math skills and is required to be mentally alert at all times.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. IES/N0140: Carry out pre-operation checks on a hot mix plant
2. IES/N0141: Carry out hot mix plant operations
3. IES/N0142: Carry out routine maintenance and troubleshooting of the hot mix plant
4. IES/N7601: Comply with worksite health and safety guidelines

Qualification Pack (QP) Parameters

Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2004/8332.60
Minimum Educational Qualification & Experience	8th Class with 2-3 Years of experience experience as junior hot mix plantoperator
Minimum Level of Education for Training in School	

Pre-Requisite License or Training	Certification Training in Hot Mix Plant Operations preferred
Minimum Job Entry Age	18 Years
Last Reviewed On	26/04/2016
Next Review Date	30/06/2020
NSQC Approval Date	09/10/2017
Version	1.0

IES/N0140: Carry out pre-operation checks on a hot mix plant

Description

This unit provides insight into activities that need to be carried out to carry out pre-operational checks on the hot mix plant.

Scope

This unit/task covers the following: Hot Mix Plant Checks Material Checks Reporting and Documentation

Elements and Performance Criteria

Hot Mix Plant Checks

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

PC1. conduct visual inspection around the hot mix plant for oil leaks in different parts of the plant

PC2. check for various electrical connection including the motors used in the plant

PC3. ensure the conveyor belts is in proper working condition as per the manufacturers instructions

PC4. check if the roller filters are free of impurities

PC5. check whether the bolts and other valves are appropriately fixed

PC6. ensure that the power generator has enough amount of diesel as per the plant requirement

PC7. inspect all incoming electrical connections and the motors in the plant

PC8. check panel to ensure that controls are in correct position for starting

PC9. check if the fuel and lubricant levels in the burners is as per the requirement

PC10. visually check the cabin for any obstructions

PC11. check monitoring and warning systems as per the operational manual

Material Checks

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

PC12. ensure that the required amount and size of course aggregate and gravels are present in the hoppers

PC13. check if the quantity of the bitumen in the plant is as per the requirement of the mix design

PC14. ensure all the hoppers are clear and free from the obstructions

PC15. maintain a checking/maintenance logbook to record all activities performed before starting the compactor

Reporting and Documentation

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

PC16. maintain a checking/maintenance logbook to record all activities performed before starting the operation

PC17. report defects precisely to the supervisor if beyond scope of the role

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the organizations procedures and guidelines related to breakdown & maintenance services
KU2. the performance standards and procedures followed in the company
KU3. reporting structure in the company
KU4. timeframe in which the complaint/problem should be resolved
KU5. location of tools
KU6. contact person in case of queries on procedure or equipments
KU7. location and process for storage and disposal of waste material
KU8. safety policy of the company
KU9. different types of hot mix plants, its uses and functions- drum mix and batch mix plant
KU10. components of hot mix plant and its functioning- - cold bin feeder - automatic weighing system - mixing drums - screeners - exhaust control system - bitumen unit - pollution control device - conveyor belts- hot mix, aggregate, gravel, gathering, charging, etc. - hot mix surge silo - filler systems
KU11. basics of engine and motor functions
KU12. types of aggregates and its physical qualities
KU13. different types of motor and their respective capacities used in hot mix plant- drum, exhaust, conveyor, gathering conveyor, drum hydraulic, slinger, pollution bank, etc.
KU14. significance and methods of lubricating different parts of hot mix plant
KU15. instrument panel / cabin controls, their location and operation
KU16. basic electrical functioning and repairs
KU17. basic of hot mix plant installation procedures

Generic Skills (GS)

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

GS1. record any deviations/ incidents as per prescribed norms
GS2. read and comprehend basic english and regional language as applicable to read manuals of operations, guidelines, etc.
GS3. give clear instructions to co-workers, subordinates and other persons
GS4. use correct technical terms while interacting with supervisor
GS5. decide when to conduct maintenance checks
GS6. work with supervisors/ team mates to carry out work related tasks
GS7. plan work according to the required schedule and location
GS8. plan for cleaning and lubricating the appropriate equipment every day
GS9. provide service of the highest order to ensure customer satisfaction
GS10. identify immediate or temporary solutions to resolve mechanical issues
GS11. judge when to seek assistance from supervisor
GS12. identify cause and effect relations in his area of work

GS13. analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Hot Mix Plant Checks	**6**	**13**	**-**	**-**
PC1. conduct visual inspection around the hot mix plant for oil leaks in different parts of the plant	1	1	-	-
PC2. check for various electrical connection including the motors used in the plant	-	1	-	-
PC3. ensure the conveyor belts is in proper working condition as per the manufacturers instructions	1	1	-	-
PC4. check if the roller filters are free of impurities	-	2	-	-
PC5. check whether the bolts and other valves are appropriately fixed	1	1	-	-
PC6. ensure that the power generator has enough amount of diesel as per the plant requirement	-	1	-	-
PC7. inspect all incoming electrical connections and the motors in the plant	1	1	-	-
PC8. check panel to ensure that controls are in correct position for starting	-	2	-	-
PC9. check if the fuel and lubricant levels in the burners is as per the requirement	1	1	-	-
PC10. visually check the cabin for any obstructions	-	1	-	-
PC11. check monitoring and warning systems as per the operational manual	1	1	-	-
Material Checks	**2**	**5**	**-**	**-**
PC12. ensure that the required amount and size of course aggregate and gravels are present in the hoppers	1	1	-	-
PC13. check if the quantity of the bitumen in the plant is as per the requirement of the mix design	-	1	-	-
PC14. ensure all the hoppers are clear and free from the obstructions	-	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. maintain a checking/maintenance logbook to record all activities performed before starting the compactor	1	1	-	-
Reporting and Documentation	**1**	**3**	**-**	**-**
PC16. maintain a checking/maintenance logbook to record all activities performed before starting the operation	1	1	-	-
PC17. report defects precisely to the supervisor if beyond scope of the role	-	2	-	-
NOS Total	**9**	**21**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0140
NOS Name	Carry out pre-operation checks on a hot mix plant
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	26/04/2016
Next Review Date	30/04/2018
NSQC Clearance Date	

IES/N0141: Carry out hot mix plant operations

Description

This unit provides insight into activities that are required for starting and running the hot mix plant.

Scope

This unit/task covers the following: Preparatory activities Hot Mix plant Operation Safety during operations Reporting and Documentation

Elements and Performance Criteria

Preparatory activities

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

PC1. heat the pipeline of the bitumen before starting the operation to clear the residual from previous operations

PC2. heat the bitumen 12 hours before mixing at a temperature of 150-160 degrees celsius or as per the manufacturers instructions

PC3. turn on the exhaust motor to clear the dust from the filler elevators as per the set procedures

PC4. turn on the exhaust motor to clear the dust from the filler elevators as per the set procedures

PC5. turn on the hot mix plant by pressing on the appropriate switches

PC6. test run the hot mix plant for checking the normal functioning

PC7. ensure there is enough heated bitumen inthe tank by checking on the control panel

Hot Mix Plant Operation

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

PC8. feed the numeric data and operational data into a computer system for asphalt plant production activities as per the mix design

PC9. turn on the hot mix plant as per the manufacturers instructions

PC10. start components in correct order manually or through computer controls

PC11. ensure proper flow of materials into the mixing drum visually and by monitoring the indicators on the control panel

PC12. control the speed and flow of different materials in the drum as per the required output

PC13. observes gauges, dials, and operation of machinery to ensure conformance to processing specifications.

PC14. monitor the temperature of the bitumen regularly by checking the indicators on the control panel

PC15. coordinate with the co- workers to ensure regular supply of raw materials in the appropriate hoppers

PC16. ensure removal of obstructions if any during the operations

PC17. ensure water supply in the mixing drum and pollution bank as per the manufacturers instructions

PC18. check the output is as per the mix design/ customer requirements
PC19. monitor the weigh hopper for appropriate flow of output
PC20. ensure proper flow of hot mix in hot mix surge silo as per the requirement
PC21. coordinate with the vehicle operators for collecting the output
PC22. monitor for proper functioning of the hot mix plant as per the requirement
PC23. turn off the plant operation during emergencies by pressing the emergency switch button
PC24. inform supervisor of any problems while operating the hot mix plant

Safety during operations

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

PC25. wear dust masks when working around the plant
PC26. make positive eye contact with other equipment operators at the site before crossing in front of or behind the equipment
PC27. wear all PPE while sampling asphalt binder and for all operations

Reporting and Documentation

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

PC28. record input and output flow as per the desired formats of the organization

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the organizations procedures and guidelines related to breakdown & maintenance services
KU2. the performance standards & procedures followed in the company
KU3. reporting structure in the company
KU4. timeframe in which the complaint/problem should be resolved
KU5. contact person in case of queries on procedure or equipments
KU6. location and process for storage and disposal of waste material
KU7. safety policy of the company the user/individual on the job needs to know and understand:
KU8. different types of hot mix plants, its uses and functions: drum mix plant and batch type plant
KU9. components of hot mix plant and its functioning- - cold bin feeder - automatic weighing system - mixing drums - screeners - exhaust control system - bitumen unit - pollution control device - conveyor belts- hot mix, aggregate, gravel, gathering, charging, etc. - hot mix surge silo - filler systems
KU10. basics of engine and motor functions
KU11. types of raw materials and its physical qualities- gravel, aggregate, limestone, bitumen, etc.
KU12. different types of motor used in hot mix plant- drum, exhaust, conveyor, gathering conveyor, drum hydraulic, slinger, pollution bank, etc.
KU13. sequence of activities for starting the operation
KU14. instrument panel / cabin controls, their location and operation
KU15. basic electrical functioning and repairs
KU16. basic ms office applications and print settings
KU17. basics of SCADA or other systems if applicable

Generic Skills (GS)

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

GS1. record any deviations/ incidents as per prescribed norms
GS2. read and comprehend basic english and regional language as applicable to read manuals of operations, guidelines, etc.
GS3. comprehend basic sign and symbols at the worksite
GS4. give clear instructions to co-workers, subordinates and other persons
GS5. use correct technical terms while interacting with supervisor
GS6. assess for any damage/faulty component in the hot mix plant and take actions accordingly
GS7. decide on when to start and stop the operations based on the machine functioning
GS8. work with supervisors/ team mates to carry out work related tasks
GS9. plan work according to the required schedule and location
GS10. provide service of the highest order to ensure customer satisfaction
GS11. identify immediate or temporary solutions to resolve mechanical issues
GS12. judge when to seek assistance from supervisor
GS13. identify cause and effect relations in his area of work
GS14. analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Preparatory activities	**2**	**6.5**	**-**	**-**
PC1. heat the pipeline of the bitumen before starting the operation to clear the residual from previous operations	-	1	-	-
PC2. heat the bitumen 12 hours before mixing at a temperature of 150-160 degrees celsius or as per the manufacturers instructions	-	1	-	-
PC3. turn on the exhaust motor to clear the dust from the filler elevators as per the set procedures	1	1	-	-
PC4. turn on the exhaust motor to clear the dust from the filler elevators as per the set procedures	-	0.5	-	-
PC5. turn on the hot mix plant by pressing on the appropriate switches	1	1	-	-
PC6. test run the hot mix plant for checking the normal functioning	-	1	-	-
PC7. ensure there is enough heated bitumen inthe tank by checking on the control panel	-	1	-	-
Hot Mix Plant Operation	**7**	**14.5**	**-**	**-**
PC8. feed the numeric data and operational data into a computer system for asphalt plant production activities as per the mix design	-	0.5	-	-
PC9. turn on the hot mix plant as per the manufacturers instructions	1	1	-	-
PC10. start components in correct order manually or through computer controls	-	1	-	-
PC11. ensure proper flow of materials into the mixing drum visually and by monitoring the indicators on the control panel	-	1	-	-
PC12. control the speed and flow of different materials in the drum as per the required output	1	0.5	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. observes gauges, dials, and operation of machinery to ensure conformance to processing specifications.	1	1	-	-
PC14. monitor the temperature of the bitumen regularly by checking the indicators on the control panel	-	0.5	-	-
PC15. coordinate with the co- workers to ensure regular supply of raw materials in the appropriate hoppers	1	1	-	-
PC16. ensure removal of obstructions if any during the operations	-	1	-	-
PC17. ensure water supply in the mixing drum and pollution bank as per the manufacturers instructions	-	1	-	-
PC18. check the output is as per the mix design/ customer requirements	1	0.5	-	-
PC19. monitor the weigh hopper for appropriate flow of output	-	1	-	-
PC20. ensure proper flow of hot mix in hot mix surge silo as per the requirement	1	1	-	-
PC21. coordinate with the vehicle operators for collecting the output	-	1	-	-
PC22. monitor for proper functioning of the hot mix plant as per the requirement	-	0.5	-	-
PC23. turn off the plant operation during emergencies by pressing the emergency switch button	-	1	-	-
PC24. inform supervisor of any problems while operating the hot mix plant	1	1	-	-
Safety during operations	**-**	**3**	**-**	**-**
PC25. wear dust masks when working around the plant	-	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. make positive eye contact with other equipment operators at the site before crossing in front of or behind the equipment	-	1	-	-
PC27. wear all PPE while sampling asphalt binder and for all operations	-	1	-	-
Reporting and Documentation	**1**	**1**	**-**	**-**
PC28. record input and output flow as per the desired formats of the organization	1	1	-	-
NOS Total	**10**	**25**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0141
NOS Name	Carry out hot mix plant operations
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	26/04/2016
Next Review Date	30/04/2018
NSQC Clearance Date	

IES/N0142: Carry out routine maintenance and troubleshooting of the hot mix plant

Description

This unit provides insight into activities that are required for performing routine maintenance and troubleshooting hot mix plant.

Scope

This unit/task covers the following: Routine maintenance Repair and troubleshooting Reporting and documentation

Elements and Performance Criteria

Routine maintenance

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

PC1. assess the right service schedule by tracking machine operating hours

PC2. arrange for and perform scheduled maintenance, such as replace worn parts such as belts, roller bearings, etc.

PC3. perform basic maintenance, such as change spark plug, grease controls, cleaning of conveyor belts

PC4. check bearings at the burner end of the slinger conveyor for excessive heating

PC5. replenish coolants, lubricants and fluids regularly as per the manufacturers instructions

PC6. change filter, clean and change flameeye regularly as per the operating hours/ manufacturers instructions

PC7. inspect silos, fuel tanks for leaks or scattering of concrete or limestone regularly

PC8. lubricate all pins and pivot points regularly as per the machine manuals/manufacturers instructions

PC9. check battery levels and condition of the terminals and carry out minor adjustments if required

Repair and troubleshooting

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

PC10. identify service needs, defects, and hazardous conditions through visual inspection

PC11. arrange for and assist repair or replacement of defective components, such as motor, burner, temperature control

PC12. read indicators that signal need for replacement, such as air filter on compressor

PC13. identify missing or defective components or controls as per the equipment drawings

PC14. comply with safety requirements, such as confined space, lock-out procedures

Reporting and documentation

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

PC15. maintain records and documentation relating to service, such as log books, repair lists, etc

PC16. follow reporting procedures as laid down by the employer

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the organizations procedures and guidelines related to breakdown & maintenance services
KU2. the performance standards & procedures followed in the company
KU3. reporting structure in the company
KU4. timeframe in which the complaint/problem should be resolved
KU5. location of tools
KU6. contact person in case of queries on procedure or equipments
KU7. location and process for storage and disposal of waste material
KU8. safety policy of the company
KU9. different types of hot mix plants, its uses and functions- drum type and batch type
KU10. components of hot mix plant and its functioning- - cold bin feeder - automatic weighing system - screeners - mixing drum - exhaust control system - bitumen unit - pollution control device - conveyor belts- hot mix, aggregate, gravel - hot mix surge silo - filler systems
KU11. basics of engine and motor functions
KU12. different types of motor used in hot mix plant- drum, exhaust, conveyor, gathering conveyor, drum hydraulic, slinger, pollution bank, etc.
KU13. significance and methods of lubricating different parts of hot mix plant
KU14. basic electrical functioning and repairs
KU15. basic plant maintenance procedures
KU16. basic of hot mix plant installation procedures

Generic Skills (GS)

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

GS1. record any deviations/ incidents as per prescribed norms
GS2. read and comprehend basic english and regional language as applicable to read manuals of operations, guidelines, etc.
GS3. give clear instructions to co-workers, subordinates and other persons
GS4. use correct technical terms while interacting with supervisor
GS5. decide when to conduct maintenance checks
GS6. work with supervisors/ team mates to carry out work related tasks
GS7. plan work according to the required schedule and location
GS8. plan for cleaning and lubricating the appropriate equipment every day
GS9. provide service of the highest order to ensure customer satisfaction
GS10. identify immediate or temporary solutions to resolve mechanical issues
GS11. judge when to seek assistance from supervisor
GS12. identify cause and effect relations in his area of work
GS13. analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Routine maintenance	**3.5**	**8**	**-**	**-**
PC1. assess the right service schedule by tracking machine operating hours	1	1	-	-
PC2. arrange for and perform scheduled maintenance, such as replace worn parts such as belts, roller bearings, etc.	-	1	-	-
PC3. perform basic maintenance, such as change spark plug, grease controls, cleaning of conveyor belts	-	1	-	-
PC4. check bearings at the burner end of the slinger conveyor for excessive heating	0.5	0.5	-	-
PC5. replenish coolants, lubricants and fluids regularly as per the manufacturers instructions	1	1	-	-
PC6. change filter, clean and change flameeye regularly as per the operating hours/ manufacturers instructions	-	1	-	-
PC7. inspect silos, fuel tanks for leaks or scattering of concrete or limestone regularly	-	0.5	-	-
PC8. lubricate all pins and pivot points regularly as per the machine manuals/manufacturers instructions	1	1	-	-
PC9. check battery levels and condition of the terminals and carry out minor adjustments if required	-	1	-	-
Repair and troubleshooting	**2**	**4.5**	**-**	**-**
PC10. identify service needs, defects, and hazardous conditions through visual inspection	-	1	-	-
PC11. arrange for and assist repair or replacement of defective components, such as motor, burner, temperature control	1	1	-	-
PC12. read indicators that signal need for replacement, such as air filter on compressor	0.5	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. identify missing or defective components or controls as per the equipment drawings	-	0.5	-	-
PC14. comply with safety requirements, such as confined space, lock-out procedures	0.5	1	-	-
Reporting and documentation	**0.5**	**1.5**	**-**	**-**
PC15. maintain records and documentation relating to service, such as log books, repair lists, etc	-	1	-	-
PC16. follow reporting procedures as laid down by the employer	0.5	0.5	-	-
NOS Total	**6**	**14**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IES/N0142
NOS Name	Carry out routine maintenance and troubleshooting of the hot mix plant
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	26/04/2016
Next Review Date	30/04/2018
NSQC Clearance Date	

IES/N7601: Comply with worksite health and safety guidelines

Description

This unit is about adhering to health and safety requirements at the worksite during equipment operations.

Scope

This unit/task covers the following: Worksite health and safety

Elements and Performance Criteria

Worksite health and safety

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

PC1. comply with safety, health, security and environment related regulations/ guidelines at the work site

PC2. use personal protective equipment (ppe) and other safety gear such asseat belt, body protection, respiratory protection, eye protection, earprotection and hand protection

PC3. follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk

PC4. carry out operations as per the manufacturers and worksite related health and safety guidelines

PC5. handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines

PC6. follow safety regulations and procedures with regard to worksitehazards and risks

PC7. operate various grades of fire extinguishers, as applicable

PC8. support in administering basic first aid and report to concerned team members, as required, in case of an accident

PC9. respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. health, safety, environmental(hse) and security related policies/ guidelines of the organization and the worksite

KU2. the importance of complying with health, safety, environmental and security guidelines at the worksite and during operations

KU3. contact details of personnel responsible for health, safety and environment (hse) related matters

KU4. location of worksite storage, she team and safe assembly points

KU5. concerned personnel to reach out in case of emergencies and accidents/ incidents

KU6. reporting and documentation procedures for hse and security matters

KU7. manufacturers guidelines related to health and safety requirements

KU8. common types of health, safety, environment and security risks related to the worksite and operations

KU9. types, use and importance of personal protective equipment (ppe) and other safety gear

KU10. safe working practices to avoid common hazards and risks

KU11. guidelines for transport, storage and disposal of hazardous materials and waste

KU12. types of common hazards and risks at the worksite including fire, electrical, gas emergencies, accidents, incidents, structure collapse, machine breakdown

KU13. knowledge of safe lockdown/ stop of machinery use in case of emergencies and incidents/ accidents

KU14. types of fire extinguishers and their use

KU15. common injuries and appropriate basic first aid treatment eg. electrical shock, bleeding, wounds, fractures, minor burns, eye injuries

Generic Skills (GS)

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

GS1. document and report any health and safety related incidents/ accidents

GS2. read and comprehend basic english to read manuals of operations

GS3. read all organizational and equipment related health and safety manuals and documents

GS4. read instructions, guidelines/procedures/rules related to the worksite and equipment operations

GS5. give clear instructions to co-workers, subordinates and other personnel

GS6. use correct technical terms while interacting with supervisor

GS7. make an appropriate timely decision in responding to emergencies/accidents in line with organizational/ worksite guidelines

GS8. use correct ppe and other safety gear while at the worksite

GS9. work with supervisors/ team mates to carry out work related tasks

GS10. plan work according to the required schedule and location

GS11. build and maintain positive and effective relationships with colleagues and customers

GS12. seek appropriate assistance from other sources to resolve problems

GS13. assess the intensity of the fire accident and operate fire extinguishers

GS14. analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

GS15. document and report any health and safety related incidents/ accidents

GS16. read and comprehend basic english to read manuals of operations

GS17. read all organizational and equipment related health and safety manuals and documents

GS18. read instructions, guidelines/procedures/rules related to the worksite and equipment operations

GS19. give clear instructions to co-workers, subordinates and other personnel

GS20. use correct technical terms while interacting with supervisor

GS21. make an appropriate timely decision in responding to emergencies/accidents in line with organizational/ worksite guidelines

GS22. use correct ppe and other safety gear while at the worksite
GS23. work with supervisors/ team mates to carry out work related tasks
GS24. plan work according to the required schedule and location
GS25. build and maintain positive and effective relationships with colleagues and customers
GS26. seek appropriate assistance from other sources to resolve problems
GS27. assess the intensity of the fire accident and operate fire extinguishers
GS28. analyse, evaluate and apply the information gathered from observation, experience, reasoning, or communication to act efficiently

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Worksite health and safety	**6**	**24**	**-**	**-**
PC1. comply with safety, health, security and environment related regulations/ guidelines at the work site	-	2	-	-
PC2. use personal protective equipment (ppe) and other safety gear such asseat belt, body protection, respiratory protection, eye protection, earprotection and hand protection	1	3	-	-
PC3. follow safety measures during operations to ensure that the health and safety of self or others (including members of the public) is not at risk	1	3	-	-
PC4. carry out operations as per the manufacturers and worksite related health and safety guidelines	1	2	-	-
PC5. handle the transport, storage and disposal of hazardous materials and waste in compliance with worksite health, safety and environmental guidelines	1	3	-	-
PC6. follow safety regulations and procedures with regard to worksitehazards and risks	1	2	-	-
PC7. operate various grades of fire extinguishers, as applicable	-	3	-	-
PC8. support in administering basic first aid and report to concerned team members, as required, in case of an accident	1	3	-	-
PC9. respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility	-	3	-	-
NOS Total	**6**	**24**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IES/N7601
NOS Name	Comply with worksite health and safety guidelines
Sector	Infrastructure Equipment
Sub-Sector	Equipment Operations
Occupation	Operator
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2015
Next Review Date	31/03/2017
NSQC Clearance Date	18/06/2015

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % : 70

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
IES/N0140.Carry out pre-operation checks on a hot mix plant	9	21	-	-	30	27
IES/N0141.Carry out hot mix plant operations	10	25	-	-	35	30
IES/N0142.Carry out routine maintenance and troubleshooting of the hot mix plant	6	14	-	-	20	17

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
IES/N7601.Comply with worksite health and safety guidelines	6	24	-	-	30	26
Total	**31**	**84**	**-**	**-**	**115**	**100**

Acronyms

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

Glossary

Sector	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.
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 organisation.
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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	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.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	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.
Scope	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.

Knowledge and Understanding (KU)	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.
Organisational Context	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.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	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.
Electives	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.
Options	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.