ELMS

Establishing an Employer led Labour Market Secretariat

With support from dakchyata TVET PRACTICAL PARTNERSHIP

Funded by EUROPEAN UNION

Managed by BRITISH COUNCIL

Nepal Industrial and Business Sector

Occupational Standard (OS)

of

Batching Plant Operator Level-2

In jointly implemented by

FNCCI FNCSI HOTEL ASSOCIATION NEPAL

Occupational classification linkage with NSCO

Occupational Title:	**Batching Plant Operator**
Level:	**2 (Foreman Level)**
Sector:	**Construction**
Sub – Sector:	**Building, Infrastructure and Tunnel Construction.**
OS ID No:	**CT-004-078**
Major Group:	**8**
Sub-major Group:	**81**
Minor Group:	**811**
Unit Group:	**8114**

Occupation Specific Employers Panel:

S.N.	Name	Designation	Organization
1.	Mr. Himlal Neupane	Director	Readymix concrete Pvt. Ltd., Bharatpur, Chitwan
2.	Mr. Manoj Chaudhary	Managing Director	Janakpur RMC & Precast Yard Pvt. Ltd., Janakpur, Mahendranagar
3.	Mr. Pramod Lamichhane	Managing Director	Batuk Bhairab Construction, Kathmandu
4.	Mr. Rabindra Nepal	Senior Engineer	Nepal Aadarsh Nirman Company Pvt. Ltd., Kathmandu
5.	Mr. Anil Man Shrestha	Director	Bandan Bhagwati Nirman Sewa, Kathmandu
6.	Mr. Ganesh Koirala	Manager	Vision Nirman Sewa, Tanahu
7.	Mr. Jhinak Ram Thanet	Manager	Nawalpur Readymade Concrete Pvt. Ltd., Nawalpur
8.	Mr. Hom Kumar Sharma Acharya	Managing Director	KBC Builders Company, Chitwan
9.	Mr. Hari Ghimire	Managing Director	Niti Construction, Chitwan
10.	Mr. Keshav Lamichanne	Managing Director	Samrakshyan Nirman Pvt. Ltd., Chitwan
11.	Mr. Nirmal Kumar Chettri	Managing Director	Jaymata Dakchhinkali Construction, Chitwan
12.	Mr. Utsav Bhattarai	Manager	Bhim Joyoti Pvt. Ltd., Chitwan

Occupation Specific Expert Workers Panel:

S.N.	Name	Designation	Organization
1.	Mr. Saugat Adhikari	Assistant Batching Plant Operator	Samrakshyan JV Nirman Sewa Pvt. Ltd., Devchuli-17, Nawalparasi East.
2.	Mr. Kamal Sapkota	Assistant Batching Plant Operator/Helper	Samrakshyan JV Nirman Sewa Pvt. Ltd., Devchuli-17, Nawalparasi East.
3.	Mr. Yubaraj Baniya	Proprietor	Samrakshyan JV Nirman Sewa Pvt. Ltd., Bharatpur-11, Chitwan.
4.	Mr. Arbind Thakur	Civil Engineer	Manakamana RMC Pvt. Ltd., Sundarharicha-8, Morang
5.	Mr. Min Bd. Khadka	Batching Plant Operator (Asphalt)	Mandan Bhagwati Construction Pvt. Ltd., Naya Baneshwor, Kathmandu.
6.	Mr. Prashish Shrestha	Supervisor	Vision Nirman Sewa, Aabukhairini-3, Tanahu
7.	Mr. Narendra Shrestha	Batching Plant Operator (Concrete)	Narayani Readymix Pvt. Ltd., Bharatpur-4, Chitwan
8.	Mr. Sandeep Lamsal	Batching Plant Operator (Concrete)	Narayani Readymix Pvt. Ltd., Bharatpur-4, Chitwan
9.	Mr. Vijaya Kumar Chaudhary	Civil Engineer	Janakpur RMC & precast YARE Pvt. Ltd., Janakpur-9, Dhanusha
10.	Mr. Ramesh Pandey	Quality control Supervisor/ Laboratory quality control /Batching plant -Asphalt Plant	China State Construction Engineering Cooperation, Kawaswoti-4, Nawalpur East
11.	Mr. Tej Raj Gurung	Batching Plant Operator	Nawalpur Readymade Concrete Pvt. Ltd., Kawaswoti, Nawalpur East
12.	Mr. Bashuki Jha	Asphalt plant operator	Nepal Adarsha Nirman Sewa Pvt. Ltd., Kuleshwor, Kathmandu

OS Development Workshop facilitated by:

S.N.	Name	Designation	Organization
1.	Raju Bajracharya	Facilitator	Freelance
2.	Yubak Raj Ghimire	Co-facilitator/Recorder	Freelancer

OS Reviewed by ELMS Construction Sector Working Group:

S.N.	Name	Designation	Representation (Organization)
1.	Mr. Gore Sherpa	General Secretary	FNCCI (IPAAN)
2.	Mr. Saurav Sharma	Member	CNI
3.	Mr. Satya Narayan Prajapati	Treasurer	FNCSI
4.	Mr. Santosh Shah	Executive board member	FCAN
5.	Mr. Ramesh Man Shakya	Construction Sector Expert	ELMS

OS Verified by ELMS Technical Advisory Committee:

S.N.	Name	Designation	Organization
1.	Dr. Mahesh Nath Parajuli	Professor	KU
2.	Mr. Kul Bahadur Phadera	Under secretary	MoEST
3.	Mr. Pravat Uprety	Associate Professor	TU
4.	Mr. Kishor KC	Statistic Officer	CBS
5.	Ms. Sharada Ghimire	Deputy Director	CTEVT, Curriculum Division
6.	Mr. Keshab Ghimire	Deputy Director	CTEVT, NSTB

OS Recommended by ELMS Coordination Committee:

S.N.	Name	Designation	Organization
1.	Mr. Rabin Kumar Shrestha	Focal Person/Ex. EC Member	FNCCI
2.	Mr. Sumit Kumar Kedia	Executive Committee Member	FNCCI
3.	Mr. Birendra Raj Pandey	Vice President	CNI
4.	Ms. Megh Nath Neupane	Senior Consultant	CNI
5.	Ms. Shobha Gurung	Vice President	FNCSI
6.	Mr. Mohan Katuwal	Vice President	FNCSI
7.	Mr. Binayak Shah	Senior Vice President	HAN
8.	Mr. Sajan Shakya	Secretary General	HAN
9.	Mr. Nicholas Pandey	Senior Vice President	FCAN
10.	Mr. Roshan Dahal	General Secretary	FCAN

OS Approved by ELMS Board:

S.N.	Name	Designation	Organization
1.	Mr. Shekhar Golchha	President	FNCCI
2.	Mr. Vishnu Kumar Agarwal	President	CNI
3.	Mr. Shyam Prasad Giri	President	FNCSI
4.	Ms. Srijana Rana	President	HAN
5.	Mr. Rabi Singh	President	FCAN
6.	Mr. Chandra Kanta Adhikari	Member Secretary	ELMS

Occupational Description:

A batching plant operator oversees the quality assurance unit of a ready-mix concrete factory and responsible for making the concrete as per mix design supplied by the authorized concerned person.

As a batch plant operator, job duties include entering data in computer system as he receives the work order from the management; supervising the mixing process to ensure the correct combination of cement, admixtures and water; testing batches to confirm they have meet the specifications; and addressing any issues to seniors.

Construction is an interesting business and an art in itself. The nuances of construction should be known to be able to conduct the process efficiently and effectively. In order to effectively produce and deliver concrete, all plants and equipment have to be maintained well. They should be regularly cleaned and be in efficient working condition.

The batching plant operator not only operates the plant, but also maintains adequate level of batch plant components by regular checking and inspection of all plant components. The plant components include aggregate batcher, aggregate transporting system, cement storage and transporting system, water and additive supplying system, weighting system, mixing system, electrical control system, hydraulic and pneumatic system. The batching plant operator develops and follows checklist on daily, weekly, monthly and semi-annual basis and maintains the plant in working condition.

Furthermore, batching plant operator generally work under a supervisor within the plant area environment. A complete batching plant operation includes maintaining the health and safety of its working team of transit mixture (TM), driver, loader operator, cement in-charge, admixture/water in-charge, plant helpers, executing regular inspections and performing regular maintenance on the complete plant machine, including cleaning and washing to extend its life expectancy. This occupation is blooming in urban and semi-urban contexts. As of today, operators began as assistants to Indian operators and civil engineers without any prior skills or technical knowledge, and after a few months or years of apprenticeship, became operators themselves. Due to the widening of

this ready-mix concrete business in the country as well as abroad, it has great opportunities to hunt jobs in this sub-sector. The investors of this sub-sectors are facing shortage of competent operators for the extension of their business.

The occupation **Batching plant operator Level-2 (Foreman Level)** describes the individual with required knowledge for applying basic method of performance, knowledge to select tools, equipment and materials appropriate for the given task. S/he possess the ability to apply basic theory and principle of the common duties and tasks to solve the given assignment. Further, the batching plant operator has ability to act independently in simple core skills and can work under the supervision of supervisor for some higher level of tasks to ensure the technicality as a co-worker. The batching plant operator supervises assistant workers and labour in the team. Nepal's industrial & business sector expects individuals having set level of skills, knowledge and attitudes which reflect for the improvement of production/services and workers' productivity.

Occupational and environmental safety:

Operation of batching plant basically creates sound, water and air pollution in the environment. DG, TM, mixture, cement bulgur, hooter, exhaust fan and the compressor create the noise and sound. Regular maintenance and installation of sound absorbing devices are some remedies for the sound pollution. Absorption of dust from cement, sand, aggregates, spilling of admixtures, and spilling of diesel and mobile are the causes of water pollution. It can be controlled by constructing soak pit, sand filters and controlling leakages of diesel, mobil and chemical admixtures. Likewise, the dust and smoke create the air pollution which can be reduced by regular maintenance of silo filter, use of water sprayer. In asphalt plant operation, electrical heaters are used. Thus, applying fire safety protocol is a must in batching plant operation.

The batching plant environment should keep neat and clean. Housekeeping within production area, shipping area, control room, water tank, generator area, air compressor area and materials stocks area keeps the environment safe. Further, the disposal of waste, debris, metal scraps, cements, aggregates, plastics, oil spilling and other undegradable materials and recycling of degradable organic materials are also fall under prime important. Similarly, s/he must use personal protective equipment while working with chemical and mineral admixtures and apply occupational safety and health measures as prescribed.

Minimum Job Entry Requirement:

As per the labour law the Nepalese citizen aged 18 years and above and competent as per this occupation standards are eligible to enter in this occupation. To cope the required knowledge and tasks performance standard of this occupation SEE graduates or equivalent qualification with basic computer knowledge or with 8th grade, 6 month Batching Plant Operator training with 3 month basic computer training, or 2 years experiences on Asst. batching plant operator are recommended to enter in the skills and knowledge impartation courses.

Worker's traits:

The desired workers traits for the Batching plant operation industries are mentally and physically fit and strong, having good sense of humor, disciplined and positive attitudes, prompt responsive to the assignment, good team players, high level of passionate, courteous, can be enjoyed to work with cement, aggregate, sand, admixtures and water, mechanical drive, hydraulic and pneumatic system. Further, executing regular inspections and performing regular maintenance on the complete plant machine, including cleaning and washing to extend its life expectancy. Additionally, individual having friendly behaviors, good interpersonal skills and exhibiting strong organizational loyalty and professional ethics are essential attributes needed to enter in this occupation.

Occupational carrier path:

- **Above the Position-** Batching Plant In-charge – Level 3 (Supervisor Level)
- **Current Position-** Batching Plant Operator – Level 2 (Foreman Level)
- **Below the Position-** Assistant Batching Plant Operator – Level 1 (Assistant Level)

Abbreviation used:

Task Level		Rating number and their meaning
Significance	:	1- Important; 2-Moderately important; 3-Highly important
Ease	:	1- Easy; 2-Moderately easy; 3- Very easy
Occurrence	:	1-Rarely occurred; 2-Moderately occurred; 3-Frequently occurred

N/A	:	Not Applicable
OS	:	Occupation Standard
FNCCI	:	Federation of Nepalese Chambers of Commerce & Industry
CNI	:	Confederation of Nepalese Industries
FNCSI	:	Federation of Nepali Cottage & Small Industries
FCAN	:	Federation of Contractors' Associations of Nepal
HAN	:	Hotel Association Nepal
ELMS	:	Employers Led Market Secretariat
SWG	:	Sector Working Group
TAC	:	Technical Advisory Committee
SOP	:	Standard Operating Procedure
KU	:	Kathmandu University
MoEST	:	Ministry of Education, Science & Technology
TU	:	Tribhuvan University
CBS	:	Central Bureau of Statics
CTEVT	:	Council of Technical Education and Vocational Training
NSTB	:	National Skill Testing Board
Div.	:	Division
PPE	:	Personal Protective Equipment
SEE	:	Secondary Education Examination
GGBFS	:	Ground Granulated Blast Furnace Slag
FRL	:	Filter, Regulator and Lubricator
LDO	:	Light Diesel Oil
TM	:	Transit Mixture

List of duties and tasks of Batching Plant Operator: level-2 (Foreman Level)

Soft Skills Area			
SN	**Duty statements**	**Task No**	**Task statements**
1.	Demonstrate Positive Attitudes	1.	Manage time for occupational assignment
		2.	Exhibit empathy with customer and team members
		3.	Apply the work ethics of batching plant operator
		4.	Respond assignment
		5.	Give/ Receive feedback and feed forward
2.	Exhibit Interpersonal Skills	6.	Listen customers' demands, complaints and other information
		7.	Communicate with others about products and services
		8.	Coordinate with customers, team members and stakeholders
		9.	Perform net-working with customers, team and stakeholders
3.	Demonstrate Occupational Leadership	10.	Exhibit behavior of team player among the members
		11.	Make decision at different situation of the occupation
		12.	Solve problem encountered in the occupation
		13.	Take responsibility and accountability of the assignment
		14.	Develop work plan of batching plant operator
SN	**Duty statements**	**Task No**	**Task statements**
4.	Comply with worksite health and safety guidelines	15.	Wear PPE
		16.	Attend safety meeting
		17.	Maintain machine safety cover
		18.	Manage first aid kit/box
		19.	Operate fire fighting equipment
		20.	Handle the admixture with care
5.	Carryout pre-operation checks of plant machine	21.	Inspect aggregate hopper (Concrete & Asphalt)
		22.	Inspect charging belt
		23.	Inspect conveyor roller/belt
		24.	Inspect filler Silo unit
		25.	Inspect bucket rope (Concrete)
		26.	Inspect Mixture unit (Concrete/Asphalt)
		27.	Inspect vibrator screen (Asphalt)
		28.	Inspect air compressor machine
		29.	Inspect bag house unit (Asphalt)
		30.	Inspect dried heating burner (Asphalt)
		31.	Inspect heating benzene burner (Asphalt)
		32.	Inspect pipeline jacketing (Asphalt)
		33.	Inspect bitumen heating burner (Asphalt)
		34.	Inspect digital diesel generator
		35.	Inspect water tank/reserve tank
		36.	Inspect hydraulic pump
		37.	Inspect pneumatic unit
		38.	Inspect electrical control panel
6.	Operate plant machine	39.	Receive the work order from senior
		40.	Inform the operational team member about the work order
		41.	Enter the data of the mix design on a computer (Asphalt + Concrete)
		42.	Implement a daily schedule of machine operations
7.	Monitor the Mix design in plant	43.	Report to senior about the workability of concrete
		44.	Re-set the mix design
		45.	Inspect the quantity and quality of production
8.	Report to senior about work progress	46.	Prepare dispatching report
		47.	Prepare daily production report
		48.	Prepare material consumption report

9.	Clean inlet and out let plant clarity	49.	Clean concrete mixture
		50.	Clean cement screw
		51.	Clean butterfly valve
		52.	Clean foot valve
		53.	Clean Silo filter
		54.	Clean back filter
		55.	Clean burner nozzle
		56.	Clean conveyor belt (Asphalt)
		57.	Clean tower unit
		58.	Clean bitumen filter unit
		59.	Clean hot oil line filter
		60.	Clean furnace oil filter
		61.	Clean Decanter unit
10.	Report the condition of plant machine	62.	Report error data of machine
		63.	Report the function of mixture gate, admixture gate, cement gate & water supply.
		64.	Report the function of skip bucket and its rope.
		65.	Report Silo condition.
		66.	Report electrical breakdown
		67.	Report mechanical function breakdown
		68.	Report malfunctions of pneumatic units
		69.	Report hydraulic unit failures
11.	Clean the work place	70.	Clean control room
		71.	Clean bitumen store room
		72.	Clean air compressor area/ room
		73.	Clean hydraulic pump section
		74.	Clean the scale of aggregate
		75.	Clean the inside part of the skid bucket and the conveyor belt
12.	Perform periodical maintenance	76.	Maintain batching plant on a daily basis
		77.	Maintain batching plant in weekly basis
		78.	Maintain batching plant in monthly basis
		79.	Maintain batching plant in semi-annual basis.
		80.	Maintain asphalt plant in semi-annual basis.

Task Competency Standard

Soft Skills Area:			
Task number:	**1**		
Task statement:	**Manage time for occupational assignment**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition** • Regular duty hours and work plan **Task:** Manage time for occupational assignment **Time:** N/A **Standard/Criteria:** • The daily work is started and ended as per given work plan (exhibited punctuality), • The work activities are performed as per the given work plan, • The task is completed within the given time frame.		
Related technical knowledge	• Meaning and importance of time management, • Work priority and rescheduling as per the urgency, • Points to be considered while managing time during duty hours.		

Task number:	**2**		
Task statement:	**Exhibit empathy with customers and team members**		
Level of task:	Significance	Ease	Occurence
	2	2	1
Terminal performance standard	**Given Condition** • Any incident (Problems, awkward situation or unusual situation) of customer or team members **Task:** Exhibit empathy with customers and team members **Time:** N/A **Standard/Criteria:** • Feelings (body language, gesture, posture, facial expression) are expressed as per the given incident during the performance; • Acted accordingly as per the feelings.		
Related technical knowledge	• Meaning and importance empathy; • Different situations for empathy; • Points to be considered while exhibiting empathy.		

Task number:	**3**		
Task statement:	**Apply the work ethics of the batching plant operator**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Occupational ethics and Code of conduct of organization or Standard operating procedure (SOP) **Task:** Apply the work ethics of the batching plant operator **Time:** N/A **Standard/Criteria:** • Organisational Code of conduct and occupational ethics are followed; • Standard Operating Procedure (SOP) is followed; • The confidentiality of the information is maintained; • The performer is satisfied and motivated in the occupation.		
Related technical knowledge	• Meaning and importance work ethics; • Occupational work ethics; • Code of conducts of organization or SOP.		

Task number:	4		
Task statement:	**Respond assignment**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition:** • Any assignment or task order **Task:** Respond assignment **Time:** N/A **Standard/Criteria:** • The task is responded promptly; • The given assignment is noted; • The given assignment is completed within the agreed time.		
Related technical knowledge	• Types of work and urgency; • Importance of timely response; • Time requirement of given assignment; • Methods of dealing with stakeholders.		

Task number:	5		
Task statement:	**Give/Receive feedback and feed forward**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Any assignment or task order **Task:** Give/Receive feedback and feed forward **Time:** N/A **Standard/Criteria:** • The feedback is listened actively; • The feedback and feed forward given is noted; • Feedback is started with positive part of the performance; • Constructive feedback is given objectively and specific; • Digestible amount of feedback is given.		
Related technical knowledge	• Meaning and importance of feed forward and feedback; • Types of feedback; • Techniques of giving and receiving feed forward and feedback.		

Task number:	6		
Task statement:	**Listen customers demand, complaints or others information**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Customer or team member is complaining / reporting/providing other information **Task:** Listen customers demand, complaints or others information **Time:** N/A **Standard/Criteria:** • Complaints/ demand and information is listened actively; • Response (nodding the head) is exhibited during active listening; • Questions are asked for clarification; • Complaints/demands and/or other information are clearly noted; • Reporter or complainant is satisfied with batching plant operator's listening skills.		
Related technical knowledge	• Importance of active listening; • Differences between active listening and hearing; • Techniques of active listening.		

Task No:	7		
Task statement:	**Communicate with others about products and services**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Information about products and services to be communicated; • Audience or stakeholders **Task:** Communicate with others about products and services **Time:** N/A **Standard/Criteria:** • Voice is clear and audible; • Vocal is pleasant; • Visual expressions are natural; • Information communicated is concise and complete.		
Related technical knowledge	• Meaning and importance of effective communication; • Effective communication model; • Types of communication; • Means of communication; • Techniques of effective communication.		

Task number:	8		
Task statement:	**Coordinate with customers, team members and stakeholders**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Agenda or issue or information to be coordinated; • Team members or relevant stakeholders and • Means of coordination. **Task:** Coordinate with customers, team members and stakeholders **Time:** N/A **Standard/Criteria:** • The given agenda, issues or information is shared with respective customers, team members and stakeholders; • The customers, team members and stakeholders are identified as per given the target receivers; • Coordination is done based on the given means of coordination.		
Related technical knowledge	• Meaning and importance coordination; • Means of coordination; • Techniques of effective coordination.		

Task number:	9		
Task statement:	**Perform net-working with customers, team and stakeholders**		
Level of task:	Significance	Ease	Occurrence
	3	1	2
Terminal performance standard	**Given Condition:** • Assignment and job description. **Task:** Perform net-working with customers, team and stakeholders **Time:** N/A **Standard/Criteria:** • List of customers and stakeholders are prepared; • Necessary communication and coordination are made with customers, team and stakeholders; • Service delivery is met the standard of the organization; • Additional service procurement is easily available.		
Related technical knowledge	• Meaning and importance of networking; • Means and techniques of effective networking.		

Task number:	10		
Task statement:	**Exhibit behavior of team player among the members**		
Level of task:	Significance	Ease	Occurrence
	2	1	2
Terminal performance standard	**Given Condition:** • Assignment and • Working team. **Task:** Exhibit behavior of team player among the members **Time:** N/A **Standard/Criteria:** • Team members are encouraged; • Ownership of the work is taken collectively; • Cooperative and assertiveness are possessed in the team; • Responsibilities and accountabilities are taken.		
Related technical knowledge	• Meaning and importance of team work; • Characteristics of good team player; • Phases of team formation; • Tips of effective team work.		

Task number:	11		
Task statement:	**Make decision at different situation of the occupation**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition:** • Any assignment with possible unusual situation during the process and Problem or case and time frame **Task:** Make decision at different situation of the occupation **Time:** N/A **Standard/Criteria:** • Decision is taken within given time frame; • Desired result is achieved; • Decision has considered efficient use of time, money and resources.		
Related technical knowledge	• Meaning and importance of decision making; • Simple decision making process.		

Task number:	12		
Task statement:	**Solve problem encountered in the occupation**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition:** • Any problem or case and time frame **Task:** Solve problem encountered in the occupation **Time:** N/A **Standard/Criteria:** • Problem is analyzed; • Possible solutions are identified; • Effective solution is selected; • Solution has considered efficient use of time, money and resources; • Problem is solved in given time frame; • Desired result is achieved.		
Related technical knowledge	• Meaning and importance of problem solving; • List of potential problems in the batching plant operation; • General problem solving techniques.		

Task number:	13		
Task statement:	**Take responsibility and accountability of the assignment**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment; • Job description **Task:** Take responsibility and accountability of the assignment **Time:** N/A **Standard/Criteria:** • All team members exhibited dedication to the assignment; • Every member has taken their respective responsibilities and attempted to complete the assignment; • The assignment is completed in time; • The ownership of the results of the assignment are taken collectively.		
Related technical knowledge	• Meaning of responsibility and accountability; • Importance of responsibility and accountability for batching plant operator.		

Task No:	14		
Task statement:	**Develop work plan of batching plant operator**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition:** • List of tasks and their priority order; • Planning forms and format; • Job description. **Task:** Develop work plan of batching plant operator **Time:** N/A **Standard/Criteria:** • Plan is developed as per given task; • Planning is done in given forms and formats; • Activities are listed sequentially in the given forms and format; • The start time and end time of every activity is mentioned; • The responsible person for the activity is mentioned in the plan; • The work plan has considered efficient use of resources (time, money, and people).		
Related technical knowledge	• Meaning of planning; • Importance of planning; • Different planning tools; • Points to be considered while planning.		

Core Skills Area			
Task number:	**15.**		
Task statement:	**Wear PPE**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Duty hours; • Safety helmet, safety glass, face mask, coverall (apron); • High visibility safety vest, safety harness, safety gloves and safety shoes. **Task:** Wear PPE. **Time:** 15 minutes /daily routine work. **Standard/Criteria:** • A safety helmet buckle is locked and its standard color is maintained; • The safety shoe with steel toe is worn; • The shoelace of the safety shoe is tightened; • Safety gloves are worn; • A safety glass is clear and transparent; • A medicated face mask is used; • An apron (coverall) of navy blue color is worn; • The high visibility vest is worn with its button locked and the standard color navy blue is maintained.		
Related technical knowledge	• Overview of personal protective equipment and its types; • Standards of personal protective equipment and their importance; • Use and application of personal protective equipment.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Safety helmet, safety glass, face mask, coverall (apron), high visibility safety vest, safety harness, safety gloves and safety shoes.		

Task number:	**16.**		
Task statement:	**Attend safety meeting**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Meeting time, location/venue and agenda from the safety officer. **Task:** Attend safety meeting. **Time:** 15 minutes /meeting. **Standard/Criteria:** • The team members reported the meeting venue 5 minute earlier; • All safety information given by the safety officer is received; • PPE is worn as per standard; • Workplace and machine safety are applied.		
Related technical knowledge	• Introduction of safety meeting and its importance; • Information about company safety rules and regulation.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Safety helmet; • Safety glass; • Face mask; • Coverall (apron); • High visibility safety vest; • Safety harness; • Safety gloves and safety shoes.		

Task number:	17.		
Task statement:	**Maintain machine safety cover**		
Level of task:	Significance	Ease	Occurrence
	3	3	2
Terminal performance standard	**Given Condition** • Rotating machine parts with damaged cover or without cover; • New covers of rotating machine parts (conveyor cover; air compressor cover, chain cover; fan belt cover; pump coupling cover; panel cover; mixture pan cover, skip bucket motor cover and water tank cover). **Task:** Maintain machine safety cover. **Time:** 15 minutes /safety cover. **Standard/Criteria:** • Damaged safety cover of machine parts are removed; • The rotating and moving parts of machines are protected by safety covers; • The safety covers are tightened to its original locking position; • Vibrations of the safety covers are minimized.		
Related technical knowledge	• Overview of rotating and moving parts of machines; • Introduction of safety in rotating machine components/units; • Explain safety covers and its mechanism of locking; • Familiarize with assembly drawing given in machine manual; • Describe the process of re-fixing the machine cover.		
Safety/precaution	• Apply PPE; • Switch off the machine, before removing/handling the safety cover, • Never leave the tools (after completing the work) in the machine area.		
Tools, equipment and materials	• Toolbox tool set (steel hammer, screw driver set, steel ruler, measuring tape, hand hacksaw, open spanner set, slide wrench, pin punch, center punch, combination plier, nose plier, monkey plier, back square, flat files, square file, round file, triangle file, half round file, protractor and line tester).		

Task number:	18.		
Task statement:	**Manage first aid kit/box**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • First aid kit/box with general medicines; bandages, anti-skeptics; • First aid manual. **Task:** Manage first aid kit/box. **Time:** 25 minutes /for one first aid kit **Standard/Criteria:** • First aid kit/box is kept at place visible and accessible to all; • First aid manual is attached at the front of the box; • The expiry dates of the emergency medicines are checked; • The first aid kit/box is checked for its contents (general and emergency medicines, bandages, anti-septic etc.} ; • List of emergency contact numbers and ambulances are posted in the first aid kit/box.		
Related technical knowledge	• Introduction of first aid kit/box; • Familiarize with first aid manual; • Describe the contents in the first aid kit/box; • Explain the first aid treatment and its importance; • Tips of first aid treatment.		
Safety/precaution	• Apply PPE (disposable gloves, face masks, safety shoes); • Handle the first aid kit/box safely.		
Tools, equipment and materials	• First aid kit/box; (band-aids, hydrogen peroxide, thermometer, sterile gauze pads, adhesive tape and bandages, triangular bandages, safety pins, scissors, tweezers, disposable non-latex gloves, antiseptic wipes or soap, instant cold packs, emergency blanket, eye patch, cotton roll, dettol, betadine, tincher Iodine, pain killer tablets, paracetamol, eye drops, CPR mask or face shield).		

Task number:	19.		
Task statement:	**Operate fire fighting equipment**		
Level of task:	Significance	Ease	Occurrence
	3	2	1
Terminal performance standard	**Given Condition** • Fire extinguisher; • Sand bucket; • The supply of water under pressure; • Fire sprinkler. **Task:** Operate fire fighting equipment. **Time:** 15 minutes /operation. **Standard/Criteria:** • Firefighting equipment is selected based on the types of fire; • The expiry dates mentioned on the fire extinguisher is valid (not expired); • The supply of water under pressure is checked. • Fire fighting equipment is operated immediately after the firing incident;		
Related technical knowledge	• Introduction of firefighting equipment; • Types of firefighting equipment; • Selection of firefighting equipment based on types of fire; • Procedure of operating firefighting equipment; • Safety on operating firefighting equipment.		
Safety/precaution	• Apply PPE. (safety Helmet, safety glass, face mask, coverall, high visibility safety vest, safety gloves and safety shoes); • Make sure the firefighting equipment are handled safely.		
Tools, equipment and materials	• Fire extinguisher; • Sand bucket; • The supply of water under pressure; • Fire sprinkler.		

Task number:	20.		
Task statement:	**Handle the admixture with care**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Mineral admixture (fly ash, micro Silica, GGBFS, rice husk ash); • Chemical admixture (accelerator, retarder, plasticizer, water proofing agent); • Mix design. **Task:** Handle the admixture with care. **Time:** 10 minutes /mix design. **Standard/Criteria:** • The admixtures are selected according to the given mix design; • The valid expiry date of admixtures (mineral and chemical) are checked; • The chemical admixture barrel is factory sealed.		
Related technical knowledge	• Introduction of admixture, types and uses; • Mixing ratio of mineral admixtures; • Mixing doses of chemical admixtures; • The storage procedure for mineral and chemical admixtures.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, safety shoes); • Make sure the mineral admixtures are stored in dry place, and chemical admixture in cool place; • Prevent admixtures from direct sunlight.		
Tools, equipment and materials	• Mineral admixture, chemical admixture; • Weighing machine, bucket; • Lever wrench and beaker.		

Task number:	21.		
Task statement:	**Inspect aggregate hopper (concrete/asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Concrete and asphalt batching plant machine ready for operation; • Aggregate hoppers, vibrator, load cell unit, pneumatic gate; • Daily inspection checklist. **Task:** Inspect aggregate hopper. **Time:** 10 minutes /inspection. **Standard/Criteria:** • Aggregate hopper gate is functioning and work pneumatically; • The vibrator attached to the aggregate hopper is free from dust and chips; • Foundation bolt is tightened; • The load cell weight unit is calibrated.		
Related technical knowledge	• The introduction and function of aggregate hopper; • Connecting parts of aggregate hopper, vibrator and their function.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list.		

Task number:	22.		
Task statement:	**Inspect charging belt (concrete/asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Concrete/asphalt batching plant machine; • Load cell unit, conveyor belt; • Daily inspection checklist. **Task:** Inspect charging belt. **Time:** 5 minutes /inspection. **Standard/Criteria:** • A conveyor belt is attached to a roller in its position; • The conveyor belt is flawless and stiffened; • The load cell unit is indicating the correct weight; • The charging belt is functioning.		
Related technical knowledge	• An introduction of charging belt and load cell unit; • Function of charging belt and load cell unit in batching plant operation; • Connecting parts and their function of charging bell.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list.		

Task number:	23.		
Task statement:	**Inspect conveyor roller/belt**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine roller assembled with shaft; • Oil level in gear box indicator; • Daily inspection check list. **Task:** Inspect conveyor roller/belt. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Motor, pulley, fan belt and the roller are functioning; • The oil level is indicated in the middle of the gearbox; • Foundation bolt is tightened.		

Related technical knowledge	• An introduction of conveyor roller and its function; • Connecting parts and function of conveyor roller; • Assembly of conveyor roller.
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).
Tools, equipment and materials	• Daily inspection check list.

Task number:	**24.**		
Task statement:	**Inspect filler silo unit**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Daily inspection check list. **Task:** Inspect filler silo unit. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Suction pipe is tightly clamped; • The screw conveyor is rotating smoothly; • The loose cement of the burglar is completely compressed; • Gate valve is attached to screw conveyor and functioning properly. • The ring washer in the silo unit is fitted tightly.		
Related technical knowledge	• Introduction of filler silo unit and its function; • Connecting parts of filler silo unit and their function; • Process of compressing the loose cement in burglar.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Silo unit; • Screw conveyor; • Aggregation pad; • Suction pipe; • Ring washer; • Gear box.		

Task number:	**25.**		
Task statement:	**Inspect bucket rope (concrete)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Daily inspection checklist. **Task:** Inspect bucket rope. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The bucket rope is stable in its pulley; • Rope is lubricated with grease; • The anchor bolt fitted to the rope is tight; • Bucket gate is functioning smoothly; • The sensor installed in the skip bucket channel is functioning.		
Related technical knowledge	• Introduction of bucket rope and its function; • Connecting parts of bucket rope and their function.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Filler elevator; • Hot elevator; • Wire rope drum.		

Task number:	26.		
Task statement:	**Inspect mixture unit (concrete/asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Concrete and asphalt batching plant machine; • Mixture unit; • Daily inspection check list. **Task:** Inspect mixture unit. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The mixture gate is free from leakage; • The appearance of arm tips/jaw blades are normal; • The mixture gate unit is free of concrete residue; • The mixture motor is well functioning; • Oil level in gear box is as per standard; • The air cylinder is functioning as intended.		
Related technical knowledge	• Introduction of mixture unit and its parts; • Functions of mixture unit and its parts.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Mixture gate; • Mixture motor; • Oil level in gear box.		

Task number:	27.		
Task statement:	**Inspect vibrator screen (asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine; • Daily inspection checklist; **Task:** Inspect vibrator screen. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Bolts and nuts are tightened on the vibrator screen; • Spring connections with vibrator screens are normal; • The vibrator screen is clear and free from residues.		
Related technical knowledge	• Introduction of vibrator screen and its function; • Connecting parts of vibrator screen and their function.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Vibrator screen; • Vibrator spring.		

Task number:	28.		
Task statement:	**Inspect air compressor machine**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Daily inspection checklist. **Task:** Inspect air compressor machine **Time:** 5 minutes /inspection. **Standard/Criteria:** • The electrical wiring and the auto-switch unit are defect-free; • The drive belt is tightened and fitted; • The valves of the air compressor are functioning; • The oil level on the indicator is matched with the standard; • In pressure bars, compressed air pressure is stable.		
Related technical knowledge	• Introduction and types of air compressor • Main parts and their functions of air compressor; • Introduction and principle of pneumatic control; • Connecting parts of air compressor to pneumatic control and their function.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Electrical wiring and auto switch; • Drive belt; • Pressure bar; • Gate valve; • Drain valve; • Oil level indicator.		

Task number:	29.		
Task statement:	**Inspect bag house unit (asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine; • Daily inspection checklist; **Task:** Inspect bag house unit. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Spiral springs attached to the bag house unit are fitted snugly; • Filter is free from jamming; • The exhaust fan belt is functioning; • The electrical motor's foundation board is in acceptable condition; • The anchor bolt on the bag house unit is working; • The damper nut bolt is fully tightened.		
Related technical knowledge	• Introduction of bag house unit and its parts; • Connecting parts of bag house unit and their functions.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Dust screw conveyor; • Filter; • Router; • Exhaust fan and damper.		

Task number:	30.		
Task statement:	**Inspect dried heating burner (asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine; • Daily inspection check list. **Task:** Inspect dried heating burner. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Disposal plate is cleaned and empty; • The filter pressure gauge is operational; • Filter is clear and clean; • The digital photocell is functioning; • The ignition rod and nozzle gun are functioning.		
Related technical knowledge	• Introduction of dried heating burner and its parts; • Connecting parts of dried heating burner and their functions.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Digital photocell; • Ignition rod; • Nozzle gun; • Disposal plate; • Filter pressure gauge.		

Task number:	31.		
Task statement:	**Inspect heating benzene burner (asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine; • Daily inspection check list. **Task:** Inspect heating benzene burner. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Disposal plate is clean and empty; • Pressure gauge fitted on heating burner is functioning; • Filter is cleaned and clear; • Photocell sensor is functioning; • The ignition rod and nozzle gun is functioning; • Thermo-couple is displaying the inside temperature.		
Related technical knowledge	• Introduction of heating benzene burner and its function; • Connecting parts of heating benzene burner and their function; • Introduction of thermo-couple thermometer and its reading; • Explain the function of photocell sensor; • Explain hot oil circulation system in pipeline.		
Safety/precaution	• Apply PPE (hand gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Thermocouple thermometer; • Ignition rod; • Filter; • Hot oil unit; • Coil, • Disposal photocell sensor; • Diesel pump.		

Task number:	32.		
Task statement:	**Inspect pipeline jacketing (asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine; • Heating insulation in pipeline. • Daily inspection check list; **Task:** Inspect pipeline jacketing. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The insulation on jacketing pipeline is wrapped with fiberglass and aluminum foil. • Jacketing pipeline is free from leakage.		
Related technical knowledge	• Introduction and application of pipeline jacketing; • Purpose of wrapping with fiberglass and aluminum foil on jacketing pipeline; • Procedure of wrapping jacketing pipeline.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, safety shoes).		
Tools, equipment and materials	• Daily inspection check list.		

Task number:	33.		
Task statement:	**Inspect bitumen heating burner (asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine; • Daily inspection check list; **Task:** Inspect bitumen heating burner. **Time:** 5 minutes /inspection. **Standard/Criteria:** • Disposal plate is clean and empty; • The filter pressure gauge is operational; • Filter is clear and clean; • The digital photocell is functioning; • The Ignition rod and nozzle gun fitted on bitumen heating burner is working; • Thermo-couple displays the inside temperature.		
Related technical knowledge	• Introduction of bitumen heating burner and its parts; • Connecting parts of bitumen heating burner and their function.		
Safety/precaution	• APPLY PPE (safety gloves, safety glass, face mask, apron, safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Ignition rod, nozzle gun, disposal plate, filter pressure gauge.		

Task number:	34.		
Task statement:	**Inspect digital diesel generator**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Daily inspection check list; **Task:** Inspect digital diesel generator. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The main switch and auto switch are working; • The diesel level in the tank is full; • The battery is charged; • Coolant level is full in indicator.		

Related technical knowledge	• Introduction of digital diesel generator and its connections; • Servicing schedule of digital diesel generator; • Spare parts and their importance.
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).
Tools, equipment and materials	• Daily inspection check list; • Diesel tank, oil pressure, coolant, battery, main switch, auto switch;

Task number:	**35.**		
Task statement:	**Inspect water tank/reserve tank**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Daily inspection check list; **Task:** Inspect water tank/reserve tank. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The water level in the tank is acceptable; • The water supply pipe is free from leakage; • The water pump is functioning; • All electrical connections and wiring are as per standard; • The quality of water is acceptable.		
Related technical knowledge	• Explain water tank/reserve tank and its connection; • Overview of water source and supply unit; • Describe water quality inspection at a satisfactory level.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Water level, water source, water pump and supply unit.		

Task number:	**36.**		
Task statement:	**Inspect hydraulic pump**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Hydraulic pump unit. • Daily inspection check list; **Task:** Inspect hydraulic pump. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The hydraulic pump is functioning • The hydraulic pump and its unit are free from leakage.		
Related technical knowledge	• Introduction of Hydraulic pump and its function; • Connecting parts, their function and method of preventing leakage.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list.		

Task number:	37.		
Task statement:	**Inspect pneumatic unit**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Pneumatic components, (actuator, cylinder b, tools and ladders); • Daily inspection check list; **Task:** Inspect pneumatic unit. **Time:** 5 minutes /inspection **Standard/Criteria:** • The oil level is as per standard; • The pneumatic components and its units are free from leakage;		
Related technical knowledge	• Introduction of pneumatic system and its connection; • Overview and importance of FRL system; • Connecting parts of pneumatic system and their function.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Oil level; • FRL unit.		

Task number:	38.		
Task statement:	**Inspect electrical control panel**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant machine; • Electrical control panel; • Daily inspection check list; **Task:** Inspect electrical control panel. **Time:** 5 minutes /inspection. **Standard/Criteria:** • The emergency switch is functioning; • Volt meter, amp meter, and frequency meter are displaying respective volts, current and frequencies matching the standards.		
Related technical knowledge	• Overview of control panel and emergency switch connection; • Components of control panel and their function; • Introduction and uses of volt, amp, and frequency meter.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Daily inspection check list; • Frequency meter; • Indicator light; • Volt meter; • Amp meter; • Emergency switch.		

Task number:	39.		
Task statement:	**Receive the work order from senior**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Work order in standard format • Clients detail; • Location of the site; • Concrete grade and limit design; • Quantity of concrete/asphalt; **Task:** Receive the work order from senior. **Time:** 5 minutes /receipt **Standard/Criteria:** • The location detail of the client is received; • Details information about the client is received (name of person/company, contact no and address); • Quantity of concrete that needs to be prepared is received; • The mix design of specific grades is clearly stated on the work order format.		
Related technical knowledge	• Introduction and types of mix design; • Specific grades of mix design and their application; • Contents of standard work order format.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Work order format; • Calculator; • Record file.		

Task number:	40.		
Task statement:	**Inform the operational team member about the work order**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Operational team members (TM driver, loader operator, cement in-charge, admixture/water in-charge, plant helper); • Work order (order slip). **Task:** Inform the operational team member about the work order. **Time:** 5 minutes /information or order slip or work order. **Standard/Criteria:** • Each team member received the work order of the day. • Each team member received their respective tasks of the day.		
Related technical knowledge	• Define operational team and its members; • Describe the team members' duties and responsibilities.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Forms / format		

Task number:	41.		
Task statement:	**Enter the data of the mix design on a computer (concrete/asphalt)**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Concrete and asphalt batching plant machine • Clients detail; • Grade of concrete; • Ingredient (weight of cement, weight of sand, weight of aggregate, weight of water, weight of admixture, weight of bitumen); **Task:** Enter the data of the mix design on a computer. **Time:** 5 minutes /set data entry. **Standard/Criteria:** • The respective computer program is selected in the computer • Client detail is entered into the respective computer program; • Grade of content is entered on computer; • Ingredients of the mix design is entered as - wt. of sand, cement, aggregate, water, admixture and bitumen in case of asphalt; • Sand and aggregate absorbance are entered into a computer program to determine their free moisture content.		
Related technical knowledge	• Basic computer application skill; • Specific grades of mix design and their application		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Computer with batching plant software; • Work order slip.		

Task number:	42.		
Task statement:	**Implement a daily schedule of machine operations**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Machine operational schedule. **Task:** Implement a daily schedule of machine operations. **Time:** N/A (depends on the volume of load) **Standard/Criteria:** • Operational in-charges (T.M. driver, loader operator, cement in-charge, admixture/water in-charge, plant helper) are informed about the daily schedule of machine operation; • Daily work schedule (starting for: load charging, dispatch concrete/asphalt and delivery to site) is informed to the respective operational team members.		
Related technical knowledge	• Explain daily schedule of machine operations (8 AM – 12 PM) and (1 PM- 6 PM) lunch (12PM – 1PM).		
Safety/precaution	• Apply PPE. • Make sure the rotation of mixing drum in transit mixture is anti-clockwise during loading.		
Tools, equipment and materials	• Delivery chalan; • Transit mixture (TM); • Loader.		

Task number:	43.		
Task statement:	**Report to senior about the workability of concrete**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Abnormal reading of mixture displayed on the monitor • Segregation and bleeding of concrete **Task:** Report to senior about the workability of concrete. **Time:** 5 minutes /report. **Standard/Criteria:** • The senior is reported when the concrete mix produced is different from the mix design; • The senior is reported in verbal immediately after inspection; • The senior is reported right after receipt of Lab test results		
Related technical knowledge	• Introduction of concrete mix and its workability. • Explain abnormal concrete mixing like segregation, bleeding, and their remedies. • Reading of lab test report and mix design.		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Mobile phone.		

Task number:	44.		
Task statement:	**Re-set the mix design**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • New or modified mix design. **Task:** Re-set the mix design. **Time:** 5 minutes /reset. **Standard/Criteria:** • Old mix design data is replaced with new modified data; • New/modified data entered in computer software is matched with given new/modified mix design; • The new data is saved in the computer system for further reporting.		
Related technical knowledge	• Definition of mix design and its types. • Explain grades of mix design and their denotation. • Explain resetting techniques.		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Computer with software; • Hard copy of work order slip for new/modified mix design.		

Task number:	45.		
Task statement:	**Inspect the quantity and quality of production**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Total quantity of the products (computer hard copy); • Weight slip and work order slip; • Mix design. **Task:** Inspect the quantity and quality of production. **Time:** 5 minutes /inspection **Standard/Criteria:** • Cement and mineral admixtures contents are less than 2% when tested/inspected during production; • aggregate, chemical admixtures, and/or water in a proportion is less than 3% when tested/inspected • Production quantity is matched with work order slip and mix design.		

Related technical knowledge	• Definition of work order slip/weight slip and its uses; • Quantity and quality of asphalt and concrete.
Safety/precaution	• Apply PPE.
Tools, equipment and materials	• Weighing machine; • Weight order slip.

Task number:	**46.**		
Task statement:	**Prepare dispatching report**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • System generated report (computer printed hard copy); • Registered copy. **Task:** Prepare dispatching report. **Time:** 10 minutes /report. **Standard/Criteria:** • The required dispatching report is generated in the computer. • The computer generated report is verified and matched with the dispatching data in the register; • The computer generated dispatch report is printed.		
Related technical knowledge	• Techniques for preparing dispatch reports; • Contents of the report and their importance; • The method of printing a computer report.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Computer; • Printer; • Register copy.		

Task number:	**47.**		
Task statement:	**Prepare daily production report**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • System generated report (hard copy); • Registered copy; • Dispatching report. **Task:** Prepare daily production report. **Time:** 10 minutes /report preparation. **Standard/Criteria:** • Computer generated reports are verified with the data in registers; • The computer generated daily production report is matched with the production data in the register; • The dispatching report is signed by the operator.		
Related technical knowledge	• Techniques for preparing daily production reports; • Contents of the report and their importance; • The method of printing a computer report.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Computer; • Printer; • Register copy.		

Task number:	48.		
Task statement:	Prepare material consumption report		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • System generated consumption report (hard copy); • Registered copy; • Consumption report. **Task:** Prepare material consumption report. **Time:** 10 minutes /report. **Standard/Criteria:** • Computer generated reports are verified with the data in registers; • The computer generated material consumption report is matched with the data in the register; • The report is signed by the operator.		
Related technical knowledge	• Techniques for preparing material consumption reports; • Contents of the report and their importance. • The method of printing a computer report.		
Safety/precaution	• N/A.		
Tools, equipment and materials	• Computer; • Printer.		

Task number:	49.		
Task statement:	Clean concrete mixture		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Concrete mixture; • Completion of production work. **Task:** Clean concrete mixture. **Time:** 25 minutes /cleaning event **Standard/Criteria:** • Concrete mixture is washed and cleaned with water immediately after completion of the production work; • The aggregate, cement, admixtures, and dirt are removed; • In case of asphalt (drum mix) - dust, sand, chips are removed.		
Related technical knowledge	• Importance of cleaning; • Method of cleaning concrete mixture and panel board.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Pipe line with water supply.		

Task number:	50.		
Task statement:	Clean cement screw		
Level of task:	Significance	Ease	Occurrence
	3	3	2
Terminal performance standard	**Given Condition** • Dirty cement screws. **Task:** Clean cement screw. **Time:** 60 minutes /cleaning event. **Standard/Criteria:** • Cement hydrate residues stuck in the cement screws are cleaned; • The cement bag knitted threads stuck in the cement screws are removed.		
Related technical knowledge	• Method of cleaning cement screw; • Opening and shutting down the cover of the cement screw.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Slide wrench, cotton waste jute, wire brush, hammer, screw drivers, scraper.		

Task number:	51.		
Task statement:	Clean butterfly valve		
Level of task:	Significance	Ease	Occurrence
	3	3	2
Terminal performance standard	**Given Condition** • Dirty butterfly valve **Task:** Clean butterfly valve. **Time:** 15 minutes /cleaning. **Standard/Criteria:** • Cement hydrate residues stuck in butterfly valve are cleaned • The cement bag knitted threads stuck in the butterfly valve are removed.		
Related technical knowledge	• Method of cleaning butterfly valve;		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Cotton waste jute; • Wire brush; • Hammer; • Screw driver; • Scraper.		

Task number:	52.		
Task statement:	Clean foot valve		
Level of task:	Significance	Ease	Occurrence
	3	2	2
Terminal performance standard	**Given Condition** • Dirty foot valve nozzle **Task:** Clean foot valve. **Time:** 15 minutes /check and clean. **Standard/Criteria:** • Foot valve nozzle is checked for dust contents; • Dust stuck on the foot valve nozzle is cleaned.		
Related technical knowledge	• Method of cleaning foot valve.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Cotton waste jute; • Water; • Screw driver.		

Task number:	53.		
Task statement:	Clean silo filter		
Level of task:	Significance	Ease	Occurrence
	3	2	2
Terminal performance standard	**Given Condition** • Dirty silo filter. **Task:** Clean silo filter. **Time:** 15 minutes /clean **Standard/Criteria:** • Cotton filter fitted in silo is removed; • Dust is removed from cotton filter by blower. • Cotton filter is fitted back in its original place in silo after cleaning.		
Related technical knowledge	• Method of cleaning silo filter.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, safety shoes, and safety harness).		
Tools, equipment and materials	• Blower, slide wrench; • Combination plier; • Cotton waste jute; • Hammer.		

Task number:	54.		
Task statement:	Clean back filter		
Level of task:	Significance	Ease	Occurrence
	3	2	2
Terminal performance standard	**Given Condition** • Dirty back filter. **Task:** Clean back filter. **Time:** 45 minutes /cleaning **Standard/Criteria:** • Filter net is removed for cleaning; • Dust and materials stuck in filter net is removed by air compressor blower; • The filter net is placed in its original place after cleaning.		
Related technical knowledge	• Method of cleaning back filter		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, safety shoes, and safety harness).		
Tools, equipment and materials	• Blower; • Slide wrench; • Combination plier; • cotton waste jute; • Hammer.		

Task number:	55.		
Task statement:	Clean burner nozzle		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Dirty nozzle **Task:** Clean burner nozzle. **Time:** 30 minutes /cleaning. **Standard/Criteria:** • The dust in the photocell lenses is cleaned with petrol. • The oil residual in the air filter is cleaned with diesel; • The dust and the materials stuck in the burner nozzle and ignition rod is cleaned with diesel and cotton cloth.		
Related technical knowledge	• Explain cleaning methods of photocell, oil filter, burner nozzle, ignition rod etc.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, safety shoes, and safety harness). • Make sure the petrol is handled very carefully.		
Tools, equipment and materials	• Cotton waste jute • Slide wrench; • Ring and open spanner; • Allen key; • Combination plier; • Screw driver (plus-minus); • Scraper; • Diesel; • Petrol; • Photo cell; • Filter; • Ignition rod.		

Task number:	56.		
Task statement:	Clean conveyor belt (asphalt)		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine **Task:** Clean conveyor belt. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • Bitumen stuck on the conveyor belt are removed with stone dust and sand mixture.		
Related technical knowledge	• Method of cleaning bitumen stuck-on conveyor belt.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, face mask, apron, and safety shoes).		
Tools, equipment and materials	• Stone dust/sand; • Shovel.		

Task number:	57.		
Task statement:	Clean tower unit (asphalt)		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Asphalt batching plant machine **Task:** Clean tower unit. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • Dust in the mixture tank on tower unit is cleaned; • Bitumen stuck in the Bitumen scale of tower unit removed; • Dust in the air cylinder connected to tower unit is cleaned; • Dust in the aggregate weighed of tower unit is cleaned.		
Related technical knowledge	• Method of cleaning tower unit.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, and safety mask).		
Tools, equipment and materials	• Stone dust/sand; • Shovel; • Air blower; • Cotton cloth.		

Task number:	58.		
Task statement:	Clean bitumen filter unit		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Non-functioning or dirty bitumen filter. **Task:** Clean bitumen filter unit. **Time:** 30 minutes /cleaning **Standard/Criteria:** • The bitumen residues stuck on filter unit is removed. • Bitumen filter is functional when tested.		
Related technical knowledge	• Method of cleaning bitumen filter unit.		
Safety/precaution	• Apply PPE (safety gloves, safety glass and safety mask).		
Tools, equipment and materials	• Diesel; • Cotton cloth; • Painting brush; • Wire brush; • Match box.		

Task number:	59.		
Task statement:	**Clean hot oil line filter**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Dirty hot oil line filter. **Task:** Clean hot oil line filter. **Time:** 30 minutes /cleaning **Standard/Criteria:** • Oil residues and materials stuck in hot oil line filter is removed and cleaned. • The oil is passed through oil line filter without any obstruction.		
Related technical knowledge	• Method of cleaning hot oil line filter.		
Safety/precaution	• Apply PPE (safety gloves, safety glass and safety mask).		
Tools, equipment and materials	• Diesel; • Cotton cloth; • Painting brush.		

Task number:	60.		
Task statement:	**Clean furnace oil filter**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Dirty furnace oil filter. **Task:** Clean furnace oil filter. **Time:** 30 minutes /cleaning. **Standard/Criteria:** • The oil residues and stuck materials in the furnace oil filter is removed and cleaned: • Furnace oil is passed through furnace oil filter without obstruction.		
Related technical knowledge	• Method of cleaning furnace oil filter.		
Safety/precaution	• Apply PPE (Safety gloves, safety glass and safety mask).		
Tools, equipment and materials	• Diesel; • Cotton cloth; • Painting brush.		

Task number:	61.		
Task statement:	**Clean decanter unit**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Decanter unit with bitumen residues. **Task:** Clean decanter unit. **Time:** 30 minutes /cleaning **Standard/Criteria:** • Bitumen residues stocked in decanter unit is removed and cleaned.		
Related technical knowledge	• Method of cleaning bitumen residues on decanter unit.		
Safety/precaution	• Apply PPE (safety gloves, safety glass and safety mask).		
Tools, equipment and materials	• Diesel; • Hammer; • Chisel.		

Task number:	62.		
Task statement:	**Report error data of machine**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batch report (computer print copy); • Weight slips report. **Task:** Report error data of machine. **Time:** 10 minutes /reporting. **Standard/Criteria:** • The senior is reported when the production of cement mineral admixture is noted above ± 2% than machine data; • The senior is reported when the ratio of chemical admixture, water and aggregate is more than ± 3% or as per standard data of machine. • The senior is reported if the concrete produced by the machine is unmatched with a weight slip • Reporting is done immediately after the error in machine is detected.		
Related technical knowledge	• Content of batch report; • Weight slip and its uses. • IS standard for cement mineral admixture, chemical admixture, and water and aggregate. (Error is within ± 2% in cement mineral admixture and Chemical admixture, water & aggregate error is ± 3%)		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Weighing machine; • Printer for hard copy; • Calculator.		

Task number:	63.		
Task statement:	**Report the function of mixture gate, admixture gate, cement gate & water supply**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Pneumatic and hydraulic system of mixture gate, admixture gate, aggregate gate, cement gate and water; • External particles; • Solenoid valve. **Task:** Report the function of mixture gate, admixture gate, cement gate & water supply. **Time:** 10 minutes /reporting. **Standard/Criteria:** • The gates are checked if they are functioning in every 1st to 3rd batch of concrete produced and reported; • Reporting is done verbally to in-charge.		
Related technical knowledge	• Definition and function of pneumatic system, hydraulic system, sensor on gate, and solenoid valve. • Blockage and preventions of mixture gate, admixture gate, cement gate.		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone; • Walky-Talky.		

Task number:	64.		
Task statement:	**Report the function of skip bucket and its rope.**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Rope displaced on pulley; • Damaged rope; **Task:** Report the function of skip bucket and its rope. **Time:** 10 minutes /reporting. **Standard/Criteria:** • Malfunctioning of skip bucket and its rope is reported. • The in charge is reported immediately after the breakdown or the skip bucket stopped functioning.		
Related technical knowledge	• Function of break pad and rectifier; • Drive pulley and rope; • Introduction to the moisture separator; • Definition of sensor and unit switch.		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone, Walky-talky; • Sensor; • Limit switch and break pad.		

Task number:	65.		
Task statement:	**Report silo condition**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Aggregation pad, cement gate, vibrator; • Motor and gear box, screw conveyor; • Filter unit, filler elevator. **Task:** Report silo condition. **Time:** 10 minutes /reporting. **Standard/Criteria:** • Malfunctioning of silo and connected components (Aggregation pad; Cement gate; Vibrator; Motor and gear box; Screw conveyor; Filter unit; Filler elevator) are reported; • The breakdown is reported verbally to the in-charge immediately after its occurrence.		
Related technical knowledge	• The working nature of a silo and its components.		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone, walky-talky.		

Task number:	66.		
Task statement:	**Report electrical breakdown**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Stopped plant machine and electrical motors; • Stopped power supply on lights and power socket; **Task:** Report electrical breakdown. **Time:** 10 minutes /reporting. **Standard/Criteria:** • The in charge is reported verbally when electrical power supply is partially or completely interrupted.		
Related technical knowledge	• An overview of the electrical power supply and possible interruptions;		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone, walky-talky.		

Task number:	67.		
Task statement:	**Report mechanical function breakdown**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Mechanical function of screw conveyor; roller and shaft, jaw & blade, pulley and belt, bucket rope, drum supporting guard roller, load cell, and rail and guards. **Task:** Report mechanical function breakdown. **Time:** 10 minutes /reporting. **Standard/Criteria:** • Verbal reporting to the in-charge is done immediately after noticing the defects in mechanical functional system of given batching plant; • Problems with possible solutions are reported to the In charge when mechanical function of screw conveyor; roller and shaft; jaw & blade; pulley and belt; bucket rope; drum supporting guard roller; load cell; and rail and guards are stopped functioning; • Problems, possible solutions, reporting date and time and instructions received from the in charge are recorded in the register.		
Related technical knowledge	• The functioning of mechanical components, devices and connections.		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone, walky-talky.		

Task number:	68.		
Task statement:	**Report malfunctions of pneumatic units**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Batching plant with poor pneumatic system; **Task:** Report malfunctions of pneumatic units. **Time:** 10 minutes /reporting. **Standard/Criteria:** • Verbal reporting to the in-charge is done immediately after noticing the defects in pneumatic system of given batching plant; • Problems with possible solutions are reported to the In charge when pneumatic units stopped functioning; • Problems, possible solutions, reporting date and time are recorded in the register; • Instructions received from the in charge is recorded in the register.		
Related technical knowledge	• An overview of pneumatics systems with operating units;		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone; • Walky-talky.		

Task number:	69.		
Task statement:	**Report hydraulic unit failures**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Defective hydraulic system in units~~;~~ (gates, hydraulic hoses, hydraulic cylinders and connections) **Task:** Report hydraulic unit failures. **Time:** 10 minutes /reporting. **Standard/Criteria:** • Verbal reporting to the in-charge is done immediately after noticing the defects in hydraulic system of given batching plant; • Problems with possible solutions are reported to the In charge when hydraulic units (gates, hydraulic hoses, hydraulic cylinders) stopped functioning; • Problems, possible solutions, reporting date and time are recorded in the register; • Instructions received from the in charge is recorded in the register.		
Related technical knowledge	• An overview of hydraulic systems with operating units;		
Safety/precaution	• Apply PPE.		
Tools, equipment and materials	• Cell phone and walky-talky.		

Task number:	70.		
Task statement:	**Clean control room**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Dirty/messy control room; • After completion of work /before start of daily routine work. **Task:** Clean control room. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • An office table, control panel, computer and printer in the control room are dust free and spotless. • The floor of the control room is broomed. • Garbage, dust, and waste materials are removed from the control room.		
Related technical knowledge	• Methods of cleaning control room.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Vacuum cleaner; • Broom; • Cleaning brush, • Colin, • Dust bin, • Dust pan, • Scoop • Cotton waste jute • Vacuum cleaner.		

Task number:	71.		
Task statement:	Clean bitumen store room		
Level of task:	Significance	Ease	Occurrence
	3	1	3
Terminal performance standard	**Given Condition** • Dirty/messy bitumen store room; • After completion of work or before start of daily routine work. **Task:** Clean bitumen store room. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • The floor, wall and ladder in the store is free of bitumen stuck and spots. • The floor of the store room is broomed. • Garbage, dust, and waste materials are removed from the store room.		
Related technical knowledge	• Methods of removing bitumen stuck from floor, wall and ladder.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Wire brush, chisel, hammer; • Scraper, shovel, pick; • Diesel, dust bin; • Dust pan and cotton waste jute.		

Task number:	72.		
Task statement:	Clean air compressor area/room		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Dirty/messy compressor area/room; • After completion of work or before start of daily routine work. **Task:** Clean air compressor area/room. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • The floor and wall area of the compressor and air compressor machine are cleaned and are free from waste materials, bushes, cobweb and dusts. • The floor of the compressor area/room is broomed; • Garbage, dust, and waste materials are removed from the compressor area/room.		
Related technical knowledge	• Methods of cleaning compressor area/room		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Cleaning brush; • Blower, • Broom, • Dust bin, • Dust pan, • Cotton waste jute.		

Task number:	73.		
Task statement:	**Clean hydraulic pump section**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Messy hydraulic pump section. **Task:** Clean hydraulic pump section. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • The floor and wall area of hydraulic pump section is cleaned and free from oil spilled, waste materials, cobweb and dusts. • The floor of the hydraulic pump section is broomed. • Garbage, dust, and waste materials are removed from the hydraulic pump section; • A daily cleaning schedule for hydraulic pump sections is followed.		
Related technical knowledge	• Methods of cleaning spilled hydraulic oil.		
Safety/precaution	• PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Cleaning brush; • Blower; • Dust bin; • Dust pan; • Cotton waste jute.		

Task number:	74.		
Task statement:	**Clean the scale of aggregate**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Dirty aggregate scale with oil spots, cobweb and dusts **Task:** Clean the scale of aggregate. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • The scale of aggregate is cleaned and free from oil spots, cobweb and dusts; • Weight value in aggregate scale is indicated '0' on the indicator screen; • A daily cleaning schedule is followed.		
Related technical knowledge	• Overview of aggregate scale; • Methods of cleaning aggregate scale.		
Safety/precaution	• PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Cleaning brush; • Shovel; • Broom; • Blower.		

Task number:	75.		
Task statement:	**Clean the inside part of the skid bucket and the conveyor belt**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Skid bucket with garbage, dust, waste materials stuck in inside space; • Conveyor belt with chips, dust and waste materials stocked. **Task:** Clean the inside part of the skid bucket and the conveyor belt. **Time:** 10 minutes /cleaning. **Standard/Criteria:** • The inside spaces of skid bucket is cleaned and free from stuck on materials and dusts; • The conveyor belt is free from stuck-on materials, chips and dusts; • The bucket is repositioned to original; • Garbage, dust, and waste materials are removed from the skid bucket area; • A daily cleaning schedule function of screw conveyor; roller and shaft; jaw & blade; pulley and belt; bucket rope; drum supporting guard roller; load cell; and rail and guards of skid bucket and the conveyor belt is followed .		
Related technical knowledge	• Skid bucket and conveyor belt. • Position of bucket and conveyor belt • Cleaning inside space of skid bucket and conveyor belt.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Shovel; • Broom; • Dust pan; • Cotton waste jute.		

Task number:	76.		
Task statement:	**Maintain batching plant on a daily basis**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Daily periodical maintenance check list. **Task:** Maintain batching plant on a daily basis. **Time:** 10 minutes /daily maintenance check list. **Standard/Criteria:** • Alignment and excessive wear and tear of conveyor belts are inspected; • Oil levels are checked in all oil tanks of given batching plant; • Lubricants are applied to all moving and rotating parts (bearing, rope & pulley, mixture, skip bucket track, gates and roller); • Air leaks or loss of air pressure in air compressors and pneumatic components are checked; • Excessive wear and tear of batch plant components is examined; • The air tanks, water traps, and manifolds are emptied at the end of the day.		
Related technical knowledge	• Introduction of preventive maintenance and its methods; • Lubrication, lubricants and lubricating spots of machine; • Periodical maintenance of batching plant and its importance; • Periodical maintenance check list of a daily basis.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, and safety mask).		
Tools, equipment and materials	• Grease gun, oil can, funnel, extra nipple, nipple spot; • Diesel, combination plier, wire brush, screw driver; • Cotton waste jute, slide wrench, alien key set. • Daily periodical maintenance checklist.		

Task number:	77.		
Task statement:	**Maintain batching plant in weekly basis**		
Level of task:	Significance	Ease	Occurrence
	3	3	3
Terminal performance standard	**Given Condition** • Periodical maintenance check list of a weekly basis; **Task:** Maintain batching plant in weekly basis. **Time:** 60 minutes /weekly maintenance check list. **Standard/Criteria:** • Air filters on aeration blowers are cleaned or replaced (as needed); • All bearings of cement feeder screw, mixtures, head and tail pulleys of conveyors are lubricated; • Belt wipers are inspected and adjusted to proper position; • Screws, nut and bolts of all components are examined and tightened; • Aggregate gate pivot points are inspected and applied lubricants as necessary.		
Related technical knowledge	• Introduction of preventive maintenance and its methods. • Lubrication, lubricants and lubricating spots of machine. • Periodical maintenance of batching plant and its importance. • Periodical maintenance check list of a weekly basis.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Grease gun, oil can, funnel, extra nipple, nipple spot; • Diesel, combination plier, screw driver; • Cotton waste jute; slide wrench, alien key set; • Periodical maintenance check list of a weekly basis.		

Task number:	78.		
Task statement:	**Maintain batching plant in monthly basis**		
Level of task:	Significance	Ease	Occurrence
	3	2	3
Terminal performance standard	**Given Condition** • Periodical maintenance check list of a monthly basis. **Task:** Maintain batching plant in monthly basis. **Time:** 120 minutes /monthly maintenance check list. **Standard/Criteria:** • The conveyor belts are stiffened and adjusted to their correct position. • Silo filter vents and dust collectors are inspected and confirmed they are functional; • Oil levels in all gear transmissions are checked and refilled as needed; • Conveyor skirt boards and sealers are inspected and replaced as necessary; • Pinch valves, level indicators of storage compartments, and light bars are tested and ensured its proper operation; • The butterfly gate, hot bin aggregate gate, cement gate, bitumen bank hopper gate, drum drive C-clamp and S-clamp, mixture blade, compressor fan belt, a level indicator of the hot bin, solenoid, vibrator, reservoir water tank, submersible water pump, fuel oil pump, and control panel are examined and lubricated as needed.		
Related technical knowledge	• Introduction of preventive maintenance and its methods; • Lubrication, lubricants and lubricating spots of machine; • Periodical maintenance of batching plant and its importance.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Allen key set; • Grease gun; • Combination plier; • Screw driver; • Diesel; • Cotton waste jute; • Periodical maintenance check list of a monthly basis.		

Task number:	79.		
Task statement:	**Maintain batching plant in semi-annual basis.**		
Level of task:	Significance	Ease	Occurrence
	3	2	1
Terminal performance standard	**Given Condition** • Periodical maintenance check list of a semi-annual basis. **Task:** Maintain batching plant in semi-annual basis. **Time:** 60 minutes /semi-annual maintenance checklist. **Standard/Criteria:** • Measuring and weighing scales are checked and calibrated as needed. • The hanger bearing and feeder screws are examined and the damage one are replaced; • The accuracy of water meter is checked and replace or repair them as needed. • Storage compartments are cleaned and the replacement of the silo vents and dust collectors are recommended; • The bin aeration pads are examined and replace them as needed; • Conveyor belt, rope. Screw conveyor, liner, brake unit, limit switch, sensor position, admixture gate, hose pipe, strainer, control panel, switch gear yard, Pneumatic cylinder, and Transformer termination are examined and maintained them as needed.		
Related technical knowledge	• Introduction of preventive maintenance and its methods; • Lubrication, lubricants and lubricating spots of machine; • Periodical maintenance of batching plant and its importance.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, safety mask).		
Tools, equipment and materials	• Allen key set, grease gun; combination plier; • Screw driver, diesel, cotton waste jute; • Periodical maintenance check list of a semi-annual basis.		

Task number:	80.		
Task statement:	**Maintain asphalt plant in semi-annual basis.**		
Level of task:	Significance	Ease	Occurrence
	3	1	1
Terminal performance standard	**Given Condition** • Asphalt batching plant machine • Periodical maintenance checklist of a semi-annual basis, **Task:** Maintain asphalt plant in semi-annual basis. **Time:** 1 day /semi-annual maintenance chedklist. **Standard/Criteria:** • Hot elevator bucket, hot section unit pipeline, oil hot section unit, dry burner transformer, exhaust fan, are examined and the damage one are replaced; • Jacketing pipeline section unit, bitumen pump, solenoid valve, screen sieve, bot bin aggregate gate, aggregate hopper, bitumen hopper gate, air cylinder jack are inspected and tested they are operational; • Filter rotary, back filler, filler elevator bucket, drum slider, chain pulley, drum device, return roller and stand roller are oiled, greased and cleaned.		
Related technical knowledge	• Introduction of preventive maintenance and its methods; • Lubrication, lubricants and lubricating spots of machine; • Periodical maintenance of batching plant and its importance; • Definition and maintenance of bitumen tank, furnace oil tank, and light diesel oil (LDO) tank, hot oil circulation pump and diesel tank.		
Safety/precaution	• Apply PPE (safety gloves, safety glass, and safety mask).		
Tools, equipment and materials	• Allen key set, grease gun, combination plier, screw driver; • Engine oil, diesel, gear oil, cotton waste jute; • Periodical maintenance check list of a semi-annual basis.		

ELMS

Establishing an Employer led Labour Market Secretariat

Pachali Shahid Shukra FNCCI
Milan Marg, Teku, Kathmandu

Phone: 01-5362061
Email: info@elms.com.np
Website: elms.com.np