ELMS

Establishing an Employer led

Labour Market Secretariat

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Nepal Industrial and Business Sector

Occupational Standard (OS)

of

Aluminum Fabricator Level-2

In jointly implemented by

Occupational classification linkage with NSCO

Occupational Title:	**Aluminum Fabricator**
Level:	**2 (Foreman Level)**
Sector:	**Construction**
Sub – Sector:	**Building Construction**
OS ID No:	**CT-009-078**
Major Group:	**7**
Sub-major Group:	**72**
Minor Group:	**721**
Unit Group:	**7213**

Occupation Specific Employers Panel:

S.N.	Name	Designation	Organization
1.	Mr. Krishna Pd. Dhungel	Owner	Aluminum World, Gaighat
2.	Mr. Dhanik Lal Shah	Owner	Hulas Aluminum & Glass Link, Janakpur
3.	Mr. Hom Prasad Dangi	Owner	A-one Aluminum Fabricators, Kathmandu
4.	Mr. Basu GC	Owner	Sunrise Aluminum Udyog, Pokhara
5.	Mr. Mahesh Shrestha	Owner	Global Hi-Tech Engineering Pvt. Ltd., Pokhara
6.	Mr. Durga Marasini	Owner	Pokhara Aluminum Fabrication, Pokhara
7.	Mr. Bishal Shrestha	Owner	Gandaki Aluminum & Steel Supplier, Syanja Waling
8.	Mr. Tej Ghimire	Owner	Shree Mahalaxmi Aluminum and Steel Fabrication, Tanahu
9.	Mr. Raj Thapa	Owner	Manisha Steel and Aluminum Fabrication, Baglung
10.	Mr. Man Bd. Thapa	Owner	New A to Z Aluminum and Steel Decoration, Surkhet
11.	Mr. Pankaj Bhusal	Owner	Pashupati Furniture, Steel & Aluminum, Dhangadi
12.	Mr. Binod Malla	Owner	Sahalaxmi Steel, Railing & Grill Udhyog, Lumbini

Occupation Specific Expert Workers Panel:

S.N.	Name	Designation	Organization
1.	Mr. Shyam Bd. Rawal	Worker	Bright Panchakoshi Aluminum and Steel Center, Surkhet
2.	Mr. Mohit Chaudhary	Worker	Pashupati Kastha tatha steel aluminum udhyog, Dhangadi
3.	Mr. Mahendra Tamang	Worker	Usha Aluminum, Lumbini
4.	Mr. Shiva Raj Mishra	Worker	Aluminum world Udayapur, Gaighat,Udayapur
5.	Mr. Anil Kumar Thakur	Worker	Hulas Aluminum and Glass link, Janakpur
6.	Mr. Furpa Tamang	Worker	A-one Aluminum Fabrication, Kathmandu
7.	Mr. Gopal GC	Worker	Sunrise Aluminum, Pokhara
8.	Mr. Arjun Tharu	Worker	Global Hi-Tech, Pokhara
9.	Mr. Roshan Chaudhary	Worker	Pokhara Aluminum, Baglung
10.	Mr. Kishor Pun	Worker	Kishor Alumi & Steel Udhyog, Tanahu
11.	Mr. Raju Tamang	Worker	Kshemadevi Aluminum, Gorkha
12.	Mr. Dipesh BK	Worker	ADB Aluminum & Metal Udhyog, Pokhara

OS Development Workshop facilitated by:

S.N.	Name	Designation	Organization
1.	Mr. Raju Bajracharya	Facilitator	Freelance
2.	Mr. 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	Statisitcs 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:

An Aluminum Fabricator is a tradesman who specializes in fabricating and installing the doors, windows and staircase railings for building essentials from system profiles. An aluminum fabrication usually used different types of pre-manufactured system profiles including channel frames and hardware fittings. Simple power tools with handfull of hand tools is essential to fabricate any design as costumer require and pictures from the catalogues.

Aluminum is high in demand across different segments of industrial units. It is versatile and lightweight and has strong properties. Aluminum is fabricated and then anodized; it is used in making finished product items like railings, windows, doors, ladders, shelves, staircases, etc., it's one of the essential parts in the modern construction industry. In the modern-day, wood specific items that were made traditionally are being replaced with aluminum-fabricated items, as they are relatively low cost, reliable, durable, and flexible, needs very less maintenance and gives good appearance.

This occupation includes interpreting engineering drawing, raw material preparation, cutting different cross sectional system profile materials, bending to different shape and size, operating power tool machine equipment to joints or assemble and fabricate different items. Installing at the costumer site is finally completing the job. This technician also responsible to take care of machine equipment as well as needs to take care of environmental safety, keeping workspaces hazard free, walkways clear of debris and litter.

Furthermore, Aluminium fabricator generally work under the supervisor in an indoor and outdoor environment while fabricating door windows. Aluminum fabrication include handrails, windows, supports, staircases, and railings for verandah and so on of private house and commercial buildings. Modern trends in aluminum structure change elegant furniture, modern kitchen and interior decorators. Aluminum uses for making such household items have become to be a very standard and conventional approach. This occupation is blooming in urban and semi-urban context. Till the date, workers enter as a labor without prior skills and technical knowledge and after apprenticeship of few months or years they became a semi-skilled workers. Due to the widening of this aluminum fabrication business in the country as well as abroad has great opportunities to hunt jobs in this sub-sector. The investors of this sub-sectors are facing shortage of skilled work force for the extension of their business.

The occupation **Aluminum Fabricator 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. He/she possess the ability to apply basic theory and principle of the common duties and tasks to solve the given assignment. Further, the aluminum fabricator 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. This individual has to operate machines and supervises assistant worker and labor in the team. Nepal's industrial & business sector expects Individual reserving set level of skills, knowledge and attitudes which reflect for the improvement of production/services and workers' productivity.

Occupational and environmental safety:

The aluminum fabrication workshop environment should keep neat and clean. Housekeeping within workshop and construction site, proper management of tools equipment and fabricating materials keep the worker and environment safe. Further, proper disposal of the waste like metal scraps, pieces of glass, rubbers, plastics, etc. is very important. Recycling of degradable organic materials and establishing glass recycling business could be one of the solutions for protecting environment.

Cutting, grinding, assembling, drilling and installing the aluminum members create high sound level, thus by creating noise pollution in the surrounding area. So, constructing /creating sound proof workshop or allocating the aluminum workshops separately in industrial area could be the solutions. Likewise, the workshop shall be covered or duct collector shall be used to get rid of from dust composition. Personal protective equipment (PPE) including face mask, earplug, hard hat, safety shoes, safety gloves, safety goggles, and overall and high visibility safety jacket must be used by every aluminum fabricator when working with cutting, drilling and grinding work and take health safety measures as prescribed.

Minimum job entry requirement:

As per the labor 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 Secondary Education Examination (SEE) grade graduates or equivalent qualification are recommended to enter in the skills and knowledge impartation courses.

Worker's traits:

The desired workers traits for the aluminum fabrication 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 aluminum and system profiles, consumable rivets and screws, fabrication tools, equipment and machineries. Further, creative in fabrication structure design, assemblies, and installation of door, windows, railings technology, like to work in blue-collar environment. Additionally, individuals having learning attitude, friendly behavior, good interpersonal skills, exhibiting ownership and strong organizational loyalty, and professional ethics are essential attributes needed to enter in this occupation.

Occupational carrier path:

- **Above the Position-** Senior Aluminum Fabricator – level 3 (Supervisor Level)
- **Current Position-** Aluminium Fabricator - Level-2 (Foreman Level)
- **Below the Position-** Junior/Assistant Aluminium Fabricator – 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-Rerely 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
BSL	:	Both Side Laminated
ACP	:	Aluminum Composite Panel
PU Foam	:	Polyurethane Foam
RPM	:	Revolution Per Minute

List of duties and tasks of the Aluminum Fabricator: 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 aluminum fabricator
		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 aluminum fabricator
Core Skills Area			
SN	**Duty statements**	**Task No**	**Task statements**
4.	Apply safety measure	15.	Apply personal safety
		16.	Apply tools and equipment safety
		17.	Apply material safety
		18.	Apply workplace safety
5.	Take costumer prerequisite	19.	Take measurement
		20.	Draw sketch of costumer requirement
6.	Estimate quantity of materials	21.	Estimate Aluminum system profile
		22.	Estimate hardware fittings
		23.	Estimate glass for window/door/partition.
		24.	Estimate BSL/ACP Board
		25.	Estimate consumables
7.	Prepare work plan	26.	Form a working team
		27.	Prepare a plan for tools and equipment
		28.	Prepare a work schedule
8.	Perform cutting and assembling	29.	Perform marking-out
		30.	Perform cutting
		31.	Perform punching with punching machine
		32.	Drill profile by hand drill machine
		33.	Drill profile by table drill machine
		34.	Perform Pop riveting
		35.	Perform milling a groove
		36.	Fit single pane glass window
		37.	Insert rubber gasket
		38.	Cut glass pane by glass cutter
		39.	Bend aluminum profile using bending machine
		40.	Install ACP board construction
		41.	Bend aluminum profile (sections) by cutting
		42.	Perform crimping of aluminum section
		43.	Make groove on aluminum section by copy router
		44.	Cut BSL/ACP board by jig saw
		45.	Perform wrapping fabricated aluminum sections

9.	Fit hardware	46.	Install hinges on doors and windows
		47.	Install handles on doors and windows
		48.	Install tower bolt on doors and windows
		49.	Install locks on doors and windows
		50.	Fix sliding rollers to the doors and windows
		51.	Insert brush strips to aluminum windows and doors
		52.	Fix the window stopper
		53.	Install door and windows
		54.	Perform concrete drilling by hammer drill machine
		55.	Fix the sliding panel
		56.	Install fly mesh panel
		57.	Fill PU foam on gaps of door and window
		58.	Fill silicon paste on gaps of door and window
		59.	Clean door and window after fitting
		60.	Clean the work site
10.	Maintain tools & equipment	61.	Change carbon brush of grinding machine
		62.	Change carbon brush of hammer drill machine
		63.	Change carbon brush of cut-off machine
		64.	Change carbon brush of hand Drill machine
		65.	Change cutting wheel of cut-off machine
		66.	Replace power cable of electric power machine
		67.	Change nozzle of silicon gun
		68.	Change drill bit in drill machine and hammering machine
		69.	Clean workshop
11.	Keep records	70.	Maintain raw material cutting records
		71.	Keep a record of completed tasks
		72.	Keep a record of customers
		73.	Keep income and expenditures records of petty contractor
		74.	Keep the worker's record
		75.	Keep a record of all tools and equipment
12.	Computer skills	76.	Calculate cutting size of the profile in computer software excel
		77.	Calculate quantity of materials using computer software excel
		78.	Print the document

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 aluminum fabricator**		
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 aluminum fabricator. **Time:** N/A **Standard/Criteria:** • Organizational Code of conduct and occupational ethics are followed; • Standard Operating Procedure (SOP) is followed; • The confidentiality of the information is maintained; • The aluminum fabricator 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 aluminum fabricator'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; • 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 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 is possessed in the team; • Responsibility and accountability 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 aluminum fabrication; • 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 aluminum fabricator.		

Task No:	14		
Task statement:	**Develop work plan of aluminum fabricator**		
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 aluminum fabricator **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:	**Apply personal safety**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Location or site; • Performing aluminum fabrication works or on duty. **Task:** Apply personal safety. **Time:** 10 minutes /PPE application **Standard/Criteria:** • The safety harness is tightened; • Hard hat clip is worn and locked; • Gloves and safety footwear are worn; • Mask and safety goggles are worn; • High visibility jacket and coverall is worn; • An ear plug is used.		
Related technical knowledge	• Meaning and importance of personal safety in aluminum fabrication work; • Minimum items required in safety gears; • Points needed to be considered while using personal safety equipment.		
Safety/precaution	• All safety gears are functional and placed in accessible place; • Personal safety equipment are cleaned and maintained.		
Tools, equipment and materials	• Safety hard hat; • Safety harness; • Gloves; • Face mask; • Coverall; • Safety goggle; • Safety shoes; • Ear plug; • High visibility jacket.		

Task number:	**16**		
Task statement:	**Apply tools, and equipment safety**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Handling and storing tools and equipment. **Task:** Apply tools and equipment safety. **Time:** N/A **Standard/Criteria:** • Tools and equipment are functional; • Tools and equipment are used according to their intended purpose; • Standard operating procedure (SOP) is followed; • The tools and equipment are cleaned and maintained after use.		
Related technical knowledge	• Meaning and importance tools and equipment safety; • Types of tools and equipment used in aluminum fabrication works; • Points needed to be considered in using and storing the tool and equipment.		
Safety/precaution	• Tools and equipment are well maintained and cleaned after use; • Safe handling of tools and equipment.		
Tools, equipment and materials	• Tool kit (box/bag); • Closed drawer for tool store; • Lubricants (grease, mobil oil, oil etc.); • Brush, cotton cleaning cloth.		

Task number:	17		
Task statement:	**Apply material safety**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Any materials related with aluminum fabrication. **Task:** Apply material safety (scratching and minimum wastage). **Time:** N/A **Standard/Criteria:** • System profiles are labelled with stickers and stored in rack; • Glasses are set a side safely with wrapping paper; • BSL/ACP boards are set a side; • Materials are handled safely and without scratch.		
Related technical knowledge	• Meaning and importance of material safety; • Points needed to be considered to apply material safety; • Procedure of applying material safety.		
Safety/precaution	• Materials are handled and stored safely.		
Tools, equipment and materials	• Open rack; • Foam; • Carpet/mattress (green color); • Kerosene oil; • Brush/ cotton cleaning cloth.		

Task number:	18		
Task statement:	**Apply workplace safety**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Workshop or working site. **Task:** Apply workplace safety. **Time:** N/A **Standard/Criteria:** • Workplace is cleaned and free from slip, trip and falls; • Platforms with scaffolding are safe; • The electrical extensions are insulated; • Power plugs are well-maintained without leakage of current flow; • Separate areas are located for cutting, fabricating and assembling aluminum profiles and members.		
Related technical knowledge	• Meaning and importance of workplace safety; • Procedure of workplace safety; • Points needed to be considered in workplace safety.		
Safety/precaution	• Ensure scaffolding is safe.		
Tools, equipment and materials	• Brush/broom; • Dust pan; • Dust collection bucket.		

Task number:	19		
Task statement:	**Take measurement**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Site or location; • Profiles ready for marking. **Task:** Take measurement of profile. . **Time:** 5 minutes /profile (one window or door frame). **Stanrdard/Criteria:** • The length, breadth or width and height of the given profiles are measured; • The quantity (linear, area, volume) of given profiles are calculated if required; • Every measurement, quantity, and units are recorded; • Additional measurements and dimensions if taken are also recorded; • The no of given profiles are counted and recorded; • The measurement taken must match with the measurements quoted or measurement recorded by the supervisor.		
Related technical knowledge	• Importance of measurement system (MKS & FPS system); • Conversion from one system to another system (linear, area); • Procedure of measurement.		
Safety/precaution	• Safe handling of measuring instrument (measuring tape);		
Tools, equipment and materials	• Measuring tape; • Note book; • Pen.		

Task number:	20		
Task statement:	**Draw sketch of costumer requirement**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Door, window and other requirements of customer; • Selected picture or design from catalogues. **Task:** Draw sketch of costumer requirement. **Time:** 5 minutes /sketch **Standard/Criteria:** • The sketch drawn satisfies the customer requirement; • The sketch has clearly mentioned the respective dimensions with units; • Color, hardware fittings and sizes as per costumer requirement are mentioned in the sketch.		
Related technical knowledge	• Meaning and importance of sketch; • Points needed to be considered while preparing sketch; • Tips for sketching; • Different views of the aluminum fabrication structure.		
Safety/precaution	• Task is critical and needs to be done precisely.		
Tools, equipment and materials	• Pencil; • Picture or design from catalogue; • Paper; • Scale/ruler; • Eraser.		

Task number:	21		
Task statement:	**Estimate aluminum system profile**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Sketch with all necessary dimensions of every units; • List of available system profile with specification. **Task:** Estimate aluminum system profile. **Time:** N/A (depends on size, unit and quanitty of project). **Standard/Criteria:** • List of aluminum profiles required is prepared from the given assignment/project; • Quantity of aluminum profile is calculated from the sketch; • Sizes and specification of every units as per assignment/ project is mentioned; • Minimum wastage is included in the calculations.		
Related technical knowledge	• Meaning and importance of aluminum profile estimation; • List of system profile available in market; • Points needed to be considered while estimating aluminum profile; • Calculation method to minimize wastage.		
Safety/precaution	• Task is critical and precisely done.		
Tools, equipment and materials	• List of system profile available in market; • Pencil; • Form/format; • Sketch; • Specification.		

Task number:	22		
Task statement:	**Estimate hardware fittings.**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Sketch; • List of hardware parts. **Task:** Estimate hardware fittings (handles, hinges, locks, tower bolt etc.). **Time:** N/A **Standard/Criteria:** • Different hardware fittings (handles, hinges, locks, tower bolt etc.) required for the given project (with specification) are listed out; • Total quantities of different hardware fittings are calculated separately in the given format; • Total estimated quantity of hardware fittings is matched with the quantity estimated by the supervisor.		
Related technical knowledge	• Meaning of hardware fittings and its types; • Importance and use of hardware fittings in aluminum fabrication; • Selection of hardware fittings; • Quantity calculation (estimation) of hardware fittings.		
Safety/precaution	• Task is critical and needs to be precisely done. • Handle the tools and fittings safely.		
Tools, equipment and materials	• Pencil, form/format; • Calculator; • Sketch/project; • Specification; • Catalogues of hardware fittings.		

Task number:	23		
Task statement:	**Estimate glass for window/door/partition.**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project/sketch; • Aluminum frames ready for glass fitting; • Customer chosen colors (blue, green, ocean blue…) and standard format. **Task:** Estimate glass for window, door, partition. **Time:** N/A (depend on size of project). **Standard/Criteria:** • Precise length and breadth/height measurement is taken in all given aluminum frames for glass fitting; • All measurements are recorded (in standard format); • Sizes of glass for different given aluminum frames is calculated; • Size and thickness of the glass is mentioned; • Quantity and specification is mentioned in the estimate; • Total estimated quantity of glass for windows, doors, partition are recorded separately; • Estimated size and quantity of glass is matched with quantity estimated by the supervisor.		
Related technical knowledge	• Overview of glass, its types colors and use; • Glass sizes and its measuring techniques; • Calculation and estimation of glass sizes; • Points needed to be considered when estimating the glass.		
Safety/precaution	• N/A		
Tools, equipment and materials	• Project/sketch, glass with different color (white, blue, green, ocean blue), pencil; • Form/format, specification.		

Task number:	24		
Task statement:	**Estimate BSL/ACP Board**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Measurement of board at site or as per sketch and costumer chosen color. **Task:** Estimate BSL/ACP board. **Time:** N/A **(**depends on size of project). **Standard/Criteria:** • Precise measurement (length and breadth/height) of all given aluminum frames is taken for BSL/ACP board fitting; • All measurements are recorded in standard format and sizes of BSL/ACP board is calculated for given different aluminum frames; • Quantity, size and thickness is mentioned in the estimate; • Total estimated quantity of BSL/ACP board is recorded separately; • Estimated size and quantity of BSL/ACP board is matched with the quantity estimated by the supervisor.		
Related technical knowledge	• BSL/ACP board and its importance; • Types and use of BSL/ACP board in construction sector; • Standard sizes and colors of BSL/ACP board available in the market; • Points needed to be considered while estimating BSL/ACP board; • Estimating BSL/ACP board.		
Safety/precaution	• N/A		
Tools, equipment and materials	• Project, format, sketch, specification, • List of available size and color of BSL/ACP board.		

Task number:	25		
Task statement:	**Estimate consumables**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Total numbers and quantity of units in project; • Sketches of units; • Format. **Task:** Estimate consumables (screws, rivets, sealing materials etc.). **Time:** 15 minutes /estimate **Standard/Criteria:** • Different consumables required for the given project (with specification) are listed out. • Total quantities of different consumables are calculated separately in the given format; • Total estimated quantity of consumables is matched with the quantity estimated by the supervisor.		
Related technical knowledge	• Meaning of consumables and its types; • Importance and use of consumables in aluminum fabrication; • Different sizes and selection of consumables; • Quantity calculation (estimation) of different consumables; • Application methods of consumables in aluminum fabrication and installation.		
Safety/precaution	• N/A		
Tools, equipment and materials	• Pencil; • Form/format; • Calculator; • Sketch/project; • Specification of consumables; • List of consumables materials used in aluminum fabrication and installation work.		

Task number:	26		
Task statement:	**Form a working team**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Work schedule; • List of available working staffs. **Task:** Form a working team. **Time:** 10 minutes /team formation (depend on the size of the project). **Standard/Criteria:** • No of team members are decided based on the volume of work or *(on a thumb rule of 40 square feet per person per day)*; • Team members are selected based on the required expertise; • Each team member is assigned his/ her duties, tasks and responsibilities.		
Related technical knowledge	• Meaning of team and team work; • Importance of team work in aluminum fabrication; • Formation of team; • Selection of team members; • Team members and their roles and responsibilities in the team.		
Safety/precaution	• Task is critical and team members are required to be selected cautiously.		
Tools, equipment and materials	• Project, pencil, form/format/paper, list of workers with their duties.		

Task number:	27		
Task statement:	**Prepare a plan for tools and equipment**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Flow chart of fabrication process; • Work schedule. **Task:** Prepare a plan for tools and equipment. **Time:** 10 minutes /plan. **Standard/Criteria:** • List of tools and equipment is prepared based on given flow chart of fabrication process; • The quantity and time schedule (with time and duration required) for the use of each individual tools and equipment is prepared; • Tools and equipment prepared are functioning and in an acceptable condition.		
Related technical knowledge	• Meaning and importance of planning tools and equipment; • Points needed to be considered while preparing the plan for tools and equipment.		
Safety/precaution	• N/A		
Tools, equipment and materials	• Flow chart of fabrication process; • Form/format/paper; • Sketch.		

Task number:	28		
Task statement:	**Prepare a work schedule**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Assignment/project; • Flow chart of fabrication process; • Prepared teamwork plan; • Start and end date of the project. **Task:** Prepare a work schedule. **Time:** 60 minutes /schedule. **Standard/Criteria:** • A work schedule is based on the assignment and project; • All project deliverables and activities required to achieve them are listed out. • All activities required to complete the project are listed in sequential order; • Respective start date and end dates for each activity is mentioned in the list; • Respective responsible person is assigned for every activity; • The work schedule must be planned in between given time frame.		
Related technical knowledge	• Meaning of work schedule and its importance in construction work; • Relation of activities and time duration; • Critical path method; • Tips of preparing work schedule.		
Safety/precaution	• Task is critical and required to be done precisely.		
Tools, equipment and materials	• Project; • Flow chart of the fabrication process; • Form/format; • Calendar of working days; • Sketch; • A work team plan.		

Task number:	29		
Task statement:	**Perform marking-out**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Profile; • Sketch; • Measurement of profile. **Task:** Perform marking-out. **Time:** 5 minutes /marking. **Standard/Criteria:** • Measure and marking-out on given profile for cutting is done as per given measurement; • Measure and marking-out on given profile for hardware fitting is done; • Measuring, marking and center punching on given profile for drilling holes is done; • Measuring and marking-out on given profile for bending, routing, milling and key hole is done; • The mark on the given profile is rechecked prior cutting, drilling and bending the profile.		
Related technical knowledge	• Meaning and importance of measurement and marking-out; • Points needed to be considered while measuring and marking-out; • Calculation method of measuring and marking.		
Safety/precaution	• Handle measuring and marking tools safely.		
Tools, equipment and materials	• Sketch, china graph pencil, metal marker, ruler, hammer, center punch; • Engineering square, bevel protractor, outside and inside caliper; • Depth measuring tool, measuring tape, try square (right angle).		

Task number:	30		
Task statement:	**Perform cutting**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Sketch or design; • Profile /ACP board with cutting mark; • Instruction for special design; **Task:** Perform cutting. **Time:** 5 minutes /cut (depends on size and quantity of profile/ACP boards). **Standard/Criteria:** • Specific instructions are followed for special designs; • The cutting length of the profile/ACP board is measured; • The cutting length is verified with the given cutting list; • Profile and ACP board is cut throughout the cutting mark; • The cutting edge/surface is smooth and straight.		
Related technical knowledge	• Meaning and importance of cutting; • Clamping and work holding devices; • Measuring and marking on the profile for cutting; • Cutting method (different angle); • Points needed to be considered while cutting.		
Safety/precaution	• Apply PPE; • Vice is tightly clamped on machine; • Machine is safe guarded.		
Tools, equipment and materials	• Cutting machine, grinder, miter saw, measuring tape, stopper for machine. • Hacksaw blade, jig saw, router, profile, clamping device.		

Task number:	31		
Task statement:	**Perform punching with punching machine**		
Level of task:	Significance	Ease	Occurence
	2	3	2
Terminal performance standard	**Given Condition:** • Cut profile pieces ready to punch fitting holes; • Profile with marking-out. **Task:** Perform punching with the punching machine. **Time:** 5 minutes /punch (dependes on quantity of materials) **Standard/Criteria:** • Profile is punched as per fitting hole in marking-out line; • Profile is punched in marking-out line as per fitting hole; • Stopper is adjusted to continue for next profile; • Different punches for top member and bottom member of frame are ensured; • Punching a hole is done based on their series; • Punching for shutter lock (left/right) is done.		
Related technical knowledge	• Meaning and importance of punching a hole; • Meaning and importance of die and punch; • Points needed to be considered while punching; • Punching method in different angle; • Punching procedure.		
Safety/precaution	• Apply PPE; • Tight the stopper.		
Tools, equipment and materials	• Sketch, punching machine, profile with marking; • Punching dies with series number, measuring tape.		

Task number:	32		
Task statement:	**Drill profile by hand drill machine**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Cut profile ready for making hole; • Profile with marking out. **Task:** Drill a hole on profile by hand drill machine. **Time:** 10 minutes /profile (depends on quantity of materials) **Standard/Criteria:** • Drill bit size is selected meeting the hole size; • RPM is set as per drill bit size; • Hole is drilled on the given mark; • Hole is straight to profile section; • Drilled hole is matched with given screw and revit size.		
Related technical knowledge	• Meaning and importance of drilling a hole; • Rules for marking hole; • Use of hand drill machine; • Holding and clamping the profile while drilling; • Points needed to be considered while drilling a hole on profile by hand drill.		
Safety/precaution	• Apply PPE; • Use hand drill machine safely; • Fit the drill bit tightly in the drill machine.		
Tools, equipment and materials	• Hand drill machine; • Drill bit matching the size of hole/screw and rivet. • Sketch; • Screw/Revit and chuck key.		

Task number:	33		
Task statement:	**Drill profile by table drill machine**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Cut profile ready for making hole; • Profile with marking out; • Drill bit matching the size of hole/screw and rivet. **Task:** Drill profile by table drill machine. **Time:** 20 minutes /profile (dependes on quantity of materials) **Standard/Criteria:** • Aluminum profile is tightly clamped in the work holding device; • Drill bit size is selected meeting the hole size; • RPM is set per drill bit size. • Hole is drilled on the given mark; • Hole is straight to profile section; • Drilled hole is matched with given screw and revit size.		
Related technical knowledge	• Meaning and importance of drilling a hole; • Rules for marking hole; • Use of table drill machine; • Holding and clamping the profile while drilling; • Points needed to be considered while drilling a hole on profile by table drill machine.		
Safety/precaution	• Apply PPE; • Handle drill machine safely; • Fit the drill bit tightly in the table drill machine.		
Tools, equipment and materials	• Table drill machine, machine vice, drill bit; • Sketch, screw/rivet, chuck key.		

Task number:	34		
Task statement:	**Perform pop riveting**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Cut profile ready to assemble; • Profile with drilled holes; **Task:** Perform pop riveting. **Time:** 5 minutes / pop rivet (dependes on quantity and size of structure) **Standard/Criteria:** • Riveting is done at given position; • Riveting joints are compacted; • Riveting parts are still; • Rivet pin is trimmed at the level of head surface.		
Related technical knowledge	• Meaning and importance of rivets and riveting; • Types of rivets; • Points needed to be considered while riveting; • Procedure of Pop riveting.		
Safety/precaution	• Apply PPE; • Follow workshop safety; • Handle riveting gun safely.		
Tools, equipment and materials	• Drill machine: • Drill bit; • Rivet gun; • Pop rivet.		

Task number:	35		
Task statement:	**Perform milling a groove**		
Level of task:	Significance	Ease	Occurence
	2	1	2
Terminal performance standard	**Given Condition:** • Cut profile ready for grooving; • Profile clamped on milling vice; • End mill cutter fitted on milling spindle. **Task:** Perform milling a groove. **Time:** 20 minutes /groove. **Standard/Criteria:** • Profile is clamped in milling vice; • Milling groove is done as marking-out; • Milling hole is matched with the lock size; • Finishing of the groove is smooth and chips free; • Lock is tightly/firmly fitted in the milling hole.		
Related technical knowledge	• Meaning and importance of milling a groove; • Points needed to be considered while milling a groove; • Process of milling a groove/slot/key way.		
Safety/precaution	• Apply PPE; • Fit the cutter tightly in the milling machine; • Handle the milling machine safely.		
Tools, equipment and materials	• Sketch; • Milling machine; • End mill cutter; • Machine vice.		

Task number:	36		
Task statement:	**Fit single pane glass window**		
Level of task:	Significance	Ease	Occurence
Terminal performance standard	**Given Condition:** • Aluminum window/door panel ready for fixing single pane glass; • Number of single pane windows and doors. **Task:** Fit single pane glass window. **Time:** 5 minutes /single pane glass. (depends on quantity of lock) **Standard/Criteria:** • Glass pane is fitted tightly in all units of the windows and doors; • Screws are fixed intermittently in all side of the frame panel; • Silicon paste is filled at all gaps.		
Related technical knowledge	• Meaning and importance of glass pane in windows and doors; • Types of application of glazed glass pane; • Points needed to be considered while fixing the glass; • Procedure for fixing glazed glass pane.		
Safety/precaution	• Apply PPE; • Handle the glass and other materials carefully and safely.		
Tools, equipment and materials	• Door/window panel ready for fixing multi glazed glass pane; • Glazed glass pane; • Rubber gasket; • Silicon paste, silicon gun; • Masking tape; • Double tape; • Glass capture and guide.		

Task number:	37		
Task statement:	**Insert rubber gasket**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Aluminum frame with fitted glass; • Quantity of aluminum frames (door/window panel) with glass fitted and ready for inserting rubber gasket; **Task:** Insert rubber gasket. **Time:** 10 minutes /insertion (dependes on size and number of door/window) **Standard/Criteria:** • Gasket is fitted in all side of the glass pane; • Gasket is trimmed and fitted tightly at the corner; • Gasket is inserted uniformly at all corners and sides.		
Related technical knowledge	• Meaning of rubber gasket and its use; • Points needed to be considered while fixing the rubber gasket; • Procedure for fixing rubber gasket.		
Safety/precaution	• Apply PPE; • Handle and use rubber gasket safely; • Stop using aging rubber gasket.		
Tools, equipment and materials	• Aluminum frame (door/window panel) with glass fitted and ready for inserting rubber gasket; • Strip of rubber gasket; • Paper cutter; • Scissor; • Silicon paste and gun; • Rubber gasket locking tool; • Mallet (rubber hammer).		

Task number:	38		
Task statement:	**Cut glass pane by glass cutter**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Standard size glass; • List of required shape and size of glass matching the door/window panel. **Task:** Cut glass pane by glass cutter. **Time:** 10 minutes /glass pane (depends on the size, design and numbers of glass pane) **Standard/Criteria:** • Ruler is set as per required line; • Glass pane is cut as per given shape and size; • Cut lines are straight and smooth; • Number of cut glass is matched with the given list.		
Related technical knowledge	• Meaning and importance of glasses; • Specification (types, thickness and standard size) of glass; • Different standard shape and size of glasses; • Use of glasses (in door and window panels); • Glass cutting procedure; • Points needed to be considered while cutting the glasses of different shapes and sizes.		
Safety/precaution	• Apply PPE and handle glass pane safely.		
Tools, equipment and materials	• Table with soft cotton table post, glass cutter, wooden ruler • Kerosene oil, glass capture, plier; cotton piece, mallet		

Task number:	39		
Task statement:	**Bend aluminum profile using bending machine**		
Level of task:	Significance	Ease	Occurence
	3	1	1
Terminal performance standard	**Given Condition:** • Aluminum profile ready for bending; • Sketch with specification; **Task:** Bend an aluminum profile using bending machine. **Time:** 30 minutes /bend (depends on size and quantity) **Standard/Criteria:** • Profile is bend as per given sketch and size; • Profile is matched with the given shape and size of installation site; • Profile is free from stretch mark, wrinkle, cracks and damage; • Color coating is maintained.		
Related technical knowledge	• Meaning and importance of bending profile; • Bending machine and its safe use; • Destructive points needed to be considered while bending profile; • Heating with hot air gun gradually while bending progress; • Procedure for bending profile.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle tools, equipment and machine safely.		
Tools, equipment and materials	• Rolling machine; • Dies matching profile to be bend; • Profile ready for bending; • Measuring tape and guide/template.		

Task number:	40		
Task statement:	**Install ACP board construction**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Site or location; • Sketch of fabrication; • Color and size matching the customer demand. • Number of ACP boards **Task:** Install ACP board construction. **Time:** 30 minutes /installation (depends on design and quantity) **Standard/Criteria:** • ACP board is fabricated and installed as per given design on site; • ACP board construction is plain and smooth; • ACP board construction is free from damage and scratch.		
Related technical knowledge	• Meaning and importance of ACP board construction; • Points needed to be considered while constructing ACP board; • Rules for grooving and bending ACP board; • Procedure of handling ACP board.		
Safety/precaution	• Apply PPE; • Maintain workshop and personal safety; • Handle tools, equipment and machine safely.		
Tools, equipment and materials	• ACP board, ACP groove cutter, router machine, measuring tape; • Masking tape, screws; silicon paste; silicon gun; • Paper cutter; drill machine, glass cleaner; • Cotton cleaning cloth/plastic card, wiper.		

Task number:	41		
Task statement:	**Bend aluminum profile (sections) by cutting**		
Level of task:	Significance	Ease	Occurence
	3	1	3
Terminal performance standard	**Given Condition:** • Design; • Section (profile) ready for bend (marked for bending point); • Quantity of section (profile) required to be bend. **Task:** Bend aluminum sections by cutting. **Time:** 20 minutes /bend (depends on desing and quantity). **Standard/Criteria:** • Aluminum sections are bend as per given design, shape and size; • Bended sections are free from damage, wrinkle and scratch; • Silicon paste is used in cutting gaps in final stage; • Quantity of bended sections are matched with given quantity.		
Related technical knowledge	• Meaning and importance of bend section by cutting; • Destructive points while bending section by cutting; • Procedure of bending section by cutting.		
Safety/precaution	• Apply PPE; • Maintain workshop and personal safety; • Handle tools, equipment and machine safely.		
Tools, equipment and materials	• Miter saw; • Grinder with cutting wheel; • Hacksaw. • Silicon paste, silicon gun, paper cutter.		

Task number:	42		
Task statement:	**Perform crimping of aluminum section**		
Level of task:	Significance	Ease	Occurence
	3	1	1
Terminal performance standard	**Given Condition:** • Design (shape and size); • Male and female sections ready for crimping (marked for crimping point); • Quantity of set of sections for crimping. **Task:** Perform crimping of aluminum section. **Time:** 30 minutes /piece or section (depends on desin and quantity) **Standard/Criteria:** • Male and female section is crimped as per given design, shape, and size; • Male and female section is fitted tightly without any gaps in-between; • Crimp sections are free from chips, damage, wrinkle and scratch; • Quantity of crimped sections are matched with given quantity.		
Related technical knowledge	• Meaning and importance of crimping; • Points needed be considered while crimping sections; • Do's and don'ts of crimping and clamping; • Types of crimp; • Operation of crimper machine (hand, electric, hydraulic); • Procedure for crimping.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle tools, equipment and machine safely; • Keep your hands safe at the time of clamping and crimping.		
Tools, equipment and materials	• Crimp machine/crimper (manual, electrical, hydraulic); • Fine flat file, measuring tape; spanner set; • Masking tape, Allen key		

Task number:	43		
Task statement:	**Make groove on aluminum section by copy router**		
Level of task:	Significance	Ease	Occurence
	2	3	1
Terminal performance standard	**Given Condition:** • Sketch; • Section ready for grooving (measured and marked); • Quantity of aluminum section required to be grooved. **Task:** Make groove on aluminum section by copy router. **Time:** 10 minutes /section (depends on size) **Standard/Criteria:** • Grooving is done at marked place on aluminum section; • Grooving is matched with given design shape, size and quantity; • Number of grooved hole is matched with given quantity; • Grooved section is free from chips, damage and scratch; • Grooved surface is cleaned.		
Related technical knowledge	• Meaning and importance of groove copied; • Points needed to be considered while copying grooves by router; • Do's and don'ts for grooving by copy router; • Operating copy router for grooving.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle tools, equipment and machine safety.		
Tools, equipment and materials	• Router machine with copy attachment; • Guide/template piece; • Grooving cutter, Allen key.		

Task number:	44		
Task statement:	**Cut BSL/ACP board by jig saw**		
Level of task:	Significance	Ease	Occurence
	3	3	2
Terminal performance standard	**Given Condition:** • BSL/ACP board with marking line for cutting; • Quantity of boards required to be cut. **Task:** Cut BSL/ACP board by jig saw. **Time:** 10 minutes /board (depends on design). **Standard/Criteria:** • BSL/ACP board is cut on marked line; • Cut piece of BSL/ACP board is matched with given shape and size; • Cutting depth is straight; • Cut piece of BSL/ACP is free from scratch and damage; • Dust are removed and surface is cleaned; • Maintained free from 'pip' in the corner (at the end of the cut).		
Related technical knowledge	• Meaning and importance of cutting BSL/ACP board by jig saw; • Points needed to be considered while cutting BSL/ACP; • Do's and don'ts for cutting BSL/ACP board cutting; • Operation of jig saw; • Procedure for cutting BSL/ACP board.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle machine safely;		
Tools, equipment and materials	• Table and C-clamp; • Jig saw, jig saw blade; • Mason thread; compass.		

Task number:	45		
Task statement:	**Perform wrapping of fabricated aluminum sections.**		
Level of task:	Significance	Ease	Occurence
	2	3	3
Terminal performance standard	**Given Condition:** • Finished components (as per work schedule); **Task:** Perform wrapping of fabricated aluminum sections. **Time:** 15 minutes /piece (depends on quantity). **Standard/Criteria:** • Wrapped sections are tight and fixed; • The particular aluminum sections are wrapped (size by size and unit by unit); • Wrapping material are tight with the sections; • Paper boards/cartoon boxes are used to cover the end of the profile to protect from damaging incidents.		
Related technical knowledge	• Meaning of wrapping; • Types of wrappers and their applications; • Points needed to be considered while wrapping; • Procedure of wrapping.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle the profile safely ; • Use paper boards/cartoon boxes to cover the end of the profile and protect from damaging incidents.		
Tools, equipment and materials	• Roll of plastic wrapping, scissor, plastic rope, sack for less than 1 ft. • profiles and parts, cartoon box; • Label.		

Task number:	46		
Task statement:	**Install hinges on doors and windows**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Frame and sections ready for installation; **Task:** Install hinges on doors and windows. **Time:** 10 minutes /hinge. **Standard/Criteria:** • The height of the door/window panel is measured; • Position of hinges is marked on the door/window panel; • At least 3 hinges for door panel and 2 hinges for window panel are installed (based on height of door) and fixed on marked position of the panels ; • Panels are levelled and all screws and rivets are screwed tight in hinges; • The door/window panels must swing smoothly without any noise; • The door/window panel should not swing back after panels are closed; • All given door/window panels are fitted with required no of hinges.		
Related technical knowledge	• Meaning and importance of hinges on door and window panels; • Points needed to be considered while fitting hinges; • Types and sizes of hinges; • Procedure of fixing hinges.		
Safety/precaution	• Apply PPE, follow workshop safety; • Handle tools (drill machine, rivet gun, grinder, screw drivers) and equipment safely; • Consider the upside of hinges when installing.		
Tools, equipment and materials	• Drill machine, drill bit, rivet gun, rivet pin; screw, screw driver; • Grinder with cutting wheel, flat file, hand hacksaw • Hinges, (recommended 3 for one door panel and 2 for one window panel).		

Task number:	47		
Task statement:	**Install handles on doors and windows**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Door and window panels marked and ready for handle installation; • Quantity of panels and handles (recommended 2 handles for one panel). **Task:** Install handles on door and window panels. **Time:** 10 minutes /panel (depends on quantity of panels and handles) **Standard/Criteria:** • The height of the door/window panel is measured; • Position of handles is determined based on the height and weight of the panel; • Position of handles is marked on the door/window panel; • For door panel, handles are placed at minimum 1 meter height from the bottom of the door panel; • At least 2 handles for door/window panels are fixed on the marked position; • Panels are levelled; • All screws and rivets are screwed tight in handles; • All given door/window panels are fitted with 2 no of handles (one each in front and back side of the panel; • Handles are placed straight either vertical or horizontal.		
Related technical knowledge	• Meaning and importance of handles on doors and windows; • Points needed to be considered while fitting handles; • Types and sizes of handles; • Procedure of fixing handles.		
Safety/precaution	• Apply PPE; • Follow workshop safety; • Handle tools and equipment safely; • Make sure the screws are fitted tight in respective holes.		
Tools, equipment and materials	• Drill machine, drill bit, rivet gun, rivet pin, screws and screw driver.		

Task number:	48		
Task statement:	**Install tower bolt on doors and windows**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Door and window frames and panel are marked and ready for tower bolt installation; • Quantity of door and window frames and panels; • Quantity of tower bolts. **Task:** Install tower bolt on doors and windows. **Time:** 10 minutes /installation (depends on quantity) **Standard/Criteria:** • The height of the door/window panel is measured; • Number of tower bolts needed is determined; • Position of tower bolt is marked on the door/window panel; • At least 2 tower bolts for door/window panel are fixed on marked position; • The tower bolts are fixed at the top and bottom of each door and window panels; • Tower bolts are fixed at horizontal or vertical straight part at 3 to 4 ft. height if position is not given; • Tower bolt are placed either horizontal or vertical straight in inner side of the panel; • Tower bolts are easily inserted, tightly screwed and matched with hole; • All given door/window panels are fitted with required no of tower bolts.		

Related technical knowledge	• Meaning and importance of tower bolt on doors and windows; • Points needed to be considered while fitting tower bolt; • Types and sizes of tower bolt; • Procedure of fixing tower bolt.
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle tools and materials safely.
Tools, equipment and materials	• Drill machine; • Drill bit; • Rivet gun; • Rivet pin; • Screw; • Screw driver. • Tower bolt recommended 2 for one panel.

Task number:	**49**		
Task statement:	**Install locks on doors and windows**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Frame and panel are marked and ready for lock installation; • Number, types and design of locks (auto lock-window/mico lock-door, aldrop, cam handle). **Task:** Install locks on doors and windows. **Time:** 10 minutes /installation (depends on types and quantity) **Standard/Criteria:** • A lock is placed at the center of the window panel and at least three feet height from the bottom in the door panel; • Locks are placed straight; • All screws are tightened; • Lock are placed in inner side of the panel; • Locks match with lock hole; • Locks are smoothly operational.		
Related technical knowledge	• Meaning and importance of locks on doors and windows; • Points needed to be considered while fitting locks; • Types and sizes of locks; • Procedure of fixing locks.		
Safety/precaution	• Apply PPE; • Follow workshop safety; • Handle tools safely.		
Tools, equipment and materials	• Drill machine; • Drill bit; • Rivet gun; • Rivet pin; • Screw; • Screw driver; • File; • Lock.		

Task number:	50		
Task statement:	**Fix sliding rollers to the doors and windows**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Frame and panels ready for fixing sliding rollers; • Quantity of frames/panels and sliding roller (sliding roller, c-roller for door, double roller); **Task:** Fix sliding rollers to the doors and windows. **Time:** 20 minutes /unit (depends on quantity of door/window panels and types of rollers) **Standard/Criteria:** • Sliding rollers are placed at bottom of the C-channel frame; • Two rollers are placed in one panel; • Rollers are adjusted as required; • All screws are tightened; • Roller are operational without any sound; • Doors and windows are operated smoothly.		
Related technical knowledge	• Meaning of sliding roller; • Points needed to be considered while fitting sliding roller; • Procedure of installing sliding roller; • Types of roller.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle tools and materials safe.		
Tools, equipment and materials	• Drill machine, drill bit, sliding roller, screws, screw driver; hammer, C-channel.		

Task number:	51		
Task statement:	**Insert brush strips to aluminum windows and doors**		
Level of task:	Significance	Ease	Occurence
Terminal performance standard	**Given Condition:** • Frame with C- slot section and sliding panel ready for brush strips insertion; • Types and size of self-adhesive seal brush strip. **Task:** Insert brush strips to aluminum windows and doors. **Time:** 5 minutes /strip (depends on types and size of door and window). **Standard/Criteria:** • Brush strips are inserted to entire profile; • The brush strip is firmly inserted into the channel slot of the frame panels; • Three strips are placed in one window panel, two strips in the door panel, and one strip in the hinge side ; • Door or window is sealed for soundproof, windproof, dustproof, weatherproof and insect resistance.		
Related technical knowledge	• Meaning and important of Self-adhesive seal brush strip; • Points needed to be considered while inserting brush strip; • Types and sizes of brush strips; • Uses of brush strips that provides all season protection against, moisture, drafts, dust and insects and to bring warm in winter and keep cool in summer.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Make sure the brush strip is free from torn.		
Tools, equipment and materials	• Paper cutter; • Scissor, brush insertion tool; • Red seal brush strip (7 mm, 6 mm, 10 mm,).		

Task number:	52		
Task statement:	**Fix the window stopper**		
Level of task:	Significance	Ease	Occurence
Terminal performance standard	**Given Condition:** • Window panel fabricated, installed and ready for fixing stopper; • Numbers of stoppers (4 – Top stopper) for one window. **Task:** Fix the window stopper. **Time:** 5 minutes /sopper (depends on quantity of window panels and window stoppers) **Standard/Criteria:** • Window stopper are fixed at designed position; • Window stopper is small, compact and strong; • Window stopper sits easily inside the window track to permanently limit the window opening distance; • Everything is secure, including the screws & rivets; • Top stopper are place at top of the profile groove; • Four top stopper are placed in one window panel.		
Related technical knowledge	• Meaning of window stopper; • Types and application of window stopper. • Points needed to be considered while fitting window stopper; • Procedure of fitting window stopper.		
Safety/precaution	• Apply PPE; • Maintain workshop safety; • Handle tools and materials safely.		
Tools, equipment and materials	• Drill machine; • Drill bit; • Screw driver; • Screw; • Brackets; • Window Stopper.		

Task number:	53		
Task statement:	**Install door and windows**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Window and door opening of building; • Doors and windows constructed from fabricated units; • Quantity of door and windows required to be installed. **Task:** Install door and windows. **Time:** 5 minutes /installation (depends on types and quantity of doors and windows). **Standard/Criteria:** • Vertical position of wall is checked by plumbob; • Base level and top level is checked for horizontality with spirit level; • Profile/frame is positioned in the door/window opining; • Diagonal distances are measured and checked.		
Related technical knowledge	• Meaning of positioning door and window structure; • Points needed to be considered while positioning structure; • Procedure of positioning structure.		
Safety/precaution	• Apply PPE; • Maintain workplace safety; • Handle tools and materials safely.		
Tools, equipment and materials	• Plum bob; • Spirit level; • Measuring tape, marker and pencil.		

Task number:	54		
Task statement:	**Perform concrete drilling by hammer drill machine**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Quantity of different size and shape of frames; • All frames are positioned in openings; **Task:** Perform concrete drilling by hammer drill machine. **Time:** 10 minutes /frame (depends on size, shaper and position of frame) **Standard/Criteria:** • Drill bit size is selected/checked for meeting the hole size; • RPM is set per drill bit size; • Hole is drilled on the given mark; • Hole is straight to concrete surface; • Drilled hole is matched with given screw and rivet size; • Depth of drill hole is matched with grip/screw length.		
Related technical knowledge	• Meaning of hammering drill machine; • Points needed to be considered while operating hammer drill machine; • Operation of hammer drill machine.		
Safety/precaution	• Apply PPE; • Maintain workplace safety; • Handle the hammer drill machine safely.		
Tools, equipment and materials	• Electric power extension cord; • Hammer drill machine; • Concrete drill bit; • Master bit (minus-plus bit) or driver screw; • Marker; • Screw and grips.		

Task number:	55		
Task statement:	**Fix the sliding panel**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Site or location and design; • Fabricated sliding panels ready to fix in door or window frame; • Door and window frames ready to fix sliding panel; • Quantity of door and window panels and frames. **Task:** Fix the sliding panel. **Time:** 5 minutes /panel (depends on design, types and quantity of doorl and window frames and panels) **Standard/Criteria:** • Sliding panel is fixed on frame as per design; • Panel is adjusted to slide smoothly.		
Related technical knowledge	• Meaning of sliding panel; • Types of sliding panel; • Points needed to be considered while fitting sliding panel; • Procedure of fitting sliding panel.		
Safety/precaution	• Apply PPE; • Maintain workplace safety; • Handle the sliding panel safely.		
Tools, equipment and materials	• Screw driver; • Sliding panel.		

Task number:	56		
Task statement:	**Install fly mesh panel**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Site or location and design; • Fabricated fly mess panel ready for fitting; • Quantity of door and window frames. **Task:** Install fly mesh panel. **Time:** 5 minutes /panel (depends on types, design and quantity of fly mesh panel) **Standard/Criteria:** • Fly mesh panel is matched with the frame; • Fly mesh panel is fixed on frame as per design; • Fly mesh panel is adjusted for balance and slide smoothly; • Fly mesh is tightened by roller.		
Related technical knowledge	• Meaning of fly mesh; • Different design of fly mesh panel and its types; • Points needed to be considered while fitting fly mesh; • Procedure of fitting fly mesh.		
Safety/precaution	• Apply PPE; • Maintain workplace or workshop safety; • Handle tools and materials safely.		
Tools, equipment and materials	• Fly mesh; • Cutter; • Metal scissor; • Screw driver; • Gasket (round roll);		

Task number:	57		
Task statement:	**Fill PU foam on gaps of door and window**		
Level of task:	Significance	Ease	Occurence
	2	3	2
Terminal performance standard	**Given Condition:** • Door and windows fitted with gap (more than 10 mm) in the building; • Size of gaps between door and window frame and wall of building. **Task:** Fill PU foam on gaps of door and window. **Time:** 10 minutes /gap (depends on size and quantity of gaps) **Standard/Criteria:** • All gaps between wall and doors/windows are filled; • Leaking of water and air is stopped; • Excess foam flowed and then surface is trimmed smoothly.		
Related technical knowledge	• Meaning and importance of filling gaps between wall and doors/windows; • Introduction and advantage of Polyurethane (PU) foam insulation seal; • Points needed to be considered while spraying PU foam; • Procedure of spraying and re-use of PU foam.		
Safety/precaution	• Apply PPE; • Handle cylinder of Polyurethane (PU) foam safely.		
Tools, equipment and materials	• Cylinder of Polyurethane (PU) foam; • Cleaning Brush; • Paper cutter; • Nozzle cleaner; • Long needle wire.		

Task number:	58		
Task statement:	**Fill silicon paste on gaps of door and window**		
Level of task:	Significance	Ease	Occurence
	2	3	2
Terminal performance standard	**Given Condition:** • Door and windows fitted with gaps (less than 10 mm) in the building; • Quantity and size of gaps. **Task:** Fill silicon paste on gaps of door and window. **Time:** 5 minutes /door or window gap (Depends on size and quantity of gaps between door and window) **Standard/Criteria:** • Surface is cleaned prior applying silicon; • All gaps between wall and doors/windows are filled with silicon; • Excess silicon are cut/trimmed to maintain the level; • Frame is cleaned; • Leakage of water and air is stopped after application of silicon; • Excess foam is flowed and then surface is trimmed smoothly.		
Related technical knowledge	• Meaning and importance of filling gaps between wall and doors/windows; • Introduction and advantage of Silicon paste; • Points needed to be considered while filling silicon paste; • Procedure of filling and re-use of silicon paste.		
Safety/precaution	• Apply PPE; • Handle cylinder of silicon paste safely.		
Tools, equipment and materials	• Cylinder of silicon paste; • Cleaning Brush; • Paper cutter; • Nozzle cleaner; • Silicon gun.		

Task number:	59		
Task statement:	**Clean door and window after fitting**		
Level of task:	Significance	Ease	Occurence
Terminal performance standard	**Given Condition:** • Installed door/windows/partition; • Cleaning material; • Quantity of door/windows/partitions. **Task:** Clean doors and windows after fitting. **Time:** 15 minutes /door or windows. (depends on quantity of installed doors/windows and partitions) **Standard/Criteria:** • Stickers pasted on channel surfaces are removed; • Stains and spots on glasses are cleaned. • The installed window/door/partitions are clean, shiny and free from stain, spots and dust.		
Related technical knowledge	• Meaning of Cleaning; • Points needed to be considered while cleaning; • Procedure of cleaning.		
Safety/precaution	• Apply PPE; • Handle cleaning materials safely; • Use safety harness for personal safety.		
Tools, equipment and materials	• Glass cleaner / soap water; • Newspaper, cotton piece; • Paper cutter, putty blade and wiper.		

Task number:	60		
Task statement:	**Clean the work site**		
Level of task:	Significance	Ease	Occurence
	3	2	1
Terminal performance standard	**Given Condition:** • Completed working site or project. **Task:** Clean the work site. **Time:** 60 minutes /site (depends on area of working site or location). **Standard/Criteria:** • Tools, equipment are collected; • Stock materials are shifted; • All debris are collected on a bin bag; • All working area is cleaned with broom; • Scraps and debris are removed.		
Related technical knowledge	• Meaning of cleaning the working site; • Points needed to be considered while cleaning the working site; • Procedure of cleaning the working site.		
Safety/precaution	• Apply PPE; • Handle broken glasses, scraps and metal chips safely.		
Tools, equipment and materials	• Broom; • Cotton cleaning cloth; • Sack/collecting bin bag/ plastic bag.		

Task number:	61		
Task statement:	**Change carbon brush of grinding machine**		
Level of task:	Significance	Ease	Occurence
	3	2	1
Terminal performance standard	**Given Condition:** • Noticed the symptoms like burning smell, sparkling, reduced performance and inconsistent power; • Speed of machine started decreasing; • Grinding machine unable to take load. **Task:** Change carbon brush of grinding machine. **Time:** 10 minutes. **Standard/Criteria:** • Grinding machine is run without burning smell and sparkling; • Grindingg machine started giving high performance and constant power.		
Related technical knowledge	• Meaning and importance of grinding machine and its use; • Meaning and importance of carbon brush; • Symptoms of worn or broken carbon brush; • Process for replacing carbon brush in grinding machine.		
Safety/precaution	• Remove the carbon brush from the grinding machine as soon as possible to prevent the armature from getting damage; • Apply PPE; • Handle the grinding machine safely; • Prevent from getting electrical shock and hazards.		
• Tools, equipment and materials	• Carbon brush; • Emery paper of 300 grade; • Tester; • Screw driver; • Gloves; • Plier; • File; • Carbon and stone/sand paper.		

Task number:	62		
Task statement:	**Change carbon brush of hammer drill machine**		
Level of task:	Significance	Ease	Occurence
	3	2	1
Terminal performance standard	**Given Condition:** • Noticed the symptoms like burning smell, sparkling, reduced performance and inconsistent power; • When speed of machine start decreasing; • Hammer drill machine unable to take load. **Task:** Change carbon brush of hammer drill machine. **Time:** 10 minutes /machine **Standard/Criteria:** • Hammer drill machine is run without burning smell and sparkling; • Hammer drill machine started giving high performance and constant power.		
Related technical knowledge	• Meaning and importance of hammer drill machine and its use; • Meaning and importance of carbon brush; • Symptoms of worn or broken carbon brush; • Process for replacing carbon brush in hammer drill machine.		
Safety/precaution	• Remove the carbon brush from the hammer drill machine as soon as possible to prevent the armature from getting damage; • Apply PPE; • Handle the hammer drill machine safely; • Prevent from getting electrical shock and hazards.		
Tools, equipment and materials	• Screw driver; • Carbon brush; • Emery paper of 300 grade; • Tester, gloves, plier, file; • Carbon, stone/sand paper.		

Task number:	63		
Task statement:	**Change carbon brush of cut-off machine**		
Level of task:	Significance	Ease	Occurence
	3	2	1
Terminal performance standard	**Given Condition:** • Noticed the symptoms like burning smell, sparkling, reduced performance and inconsistent power. **Task:** Change carbon brush of cut-off machine. **Time:** 10 minutes /carbon brush **Standard/Criteria:** • Cut-off machine is run without burning smell and sparkling; • Cut-off Machine started giving high performance and constant power.		
Related technical knowledge	• Meaning and importance of cut-off machine and its use; • Meaning and importance of carbon brush; • Symptoms of worn or broken carbon brush; • Process for replacing carbon brush in cut-off machine.		
Safety/precaution	• Remove the carbon brush from the cut-off machine as soon as possible to prevent the armature from getting damage; • Apply PPE; • Handle the cut-off machine safely; • Prevent from electrical shock and hazards.		
Tools, equipment and materials	• Carbon brush, emery paper of 300 grade, tester; • Screw driver, gloves; • Plast, file, carbon, stone/khaksi.		

Task number:	64		
Task statement:	**Change carbon brush of hand drill machine.**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Noticed the symptoms like burning smell, sparkling, reduced performance and inconsistent power. **Task:** Change carbon brush of hand drill machine. **Time:** 10 minutes /carbon brush. **Standard/Criteria:** • Hand drill machine run without burning smell, stopped sparkling; • Hand drill machine in high performance and constant power.		
Related technical knowledge	• Meaning and importance of hand drill machine and its use; • Meaning and importance of carbon brush; • Symptoms of worn or broken carbon brush; • Process for replacing carbon brush in hand drill machine.		
Safety/precaution	• Remove the carbon brush from the hand drill machine as soon as possible to prevent the armature from getting damage; • Apply PPE; • Handle the hammer drill safely; • Prevent from electrical shock and hazards.		
Tools, equipment and materials	• Screw driver, carbon brush, emery paper of 300 grade.		

Task number:	65		
Task statement:	**Change cutting wheel of cut-off machine**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** Cut-off machine with: • Cutting wheel breakage or cracks; • Cutting teeth fragmented; • Wheel stops cutting; (wear and tear the cutting teeth). **Task:** Change cutting wheel of cut-off machine. **Time:** 10 minute /cutting wheel **Standard/Criteria:** • Blade/wheel is replaced by new one; • The cutting process is smooth; • Rotation of blade/wheel is smooth and balanced; • The cutting blade is rotated clockwise.		
Related technical knowledge	• Meaning and importance of cutting blade or wheel; • Types of cutting wheel and blades; • Do's and don'ts of using and changing wheel on cut-off machine; • Points needed to be considered while changing wheel on cut-off machine; • Procedure for changing blade/wheel.		
Safety/precaution	• Apply PPE; • Handle cut-off machine safely; • Never use the cutting wheel for cutting larger diameter greater than 25mm rod and 75 mm for tubes; • Make sure that a safety guard is correctly positioned and securely fitted; • Cover at least one half of the wheel by the safety guard to protect the operator from sudden breakage of the wheel; • Always switch 'OFF' the power at supply source and/or remove the plug from the socket before changing the wheel.		
Tools, equipment and materials	• Cut-off machine, cutting wheel or blade of 10 inches, slide wrench/ key; • Gloves.		

Task number:	66		
Task statement:	**Replace power cable of electric power machine**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Power cable with cut insulation; • Power cable with visible scratch/fusen; **Task:** Replace power cable of electric power machine (grinding machine, cut-off machine). **Time:** 10 minutes /power cable **Standard/Criteria:** • Damaged power cable is replaced with new one; • The length of the power cable is matched with the required length; • Electrical power is supplied in the electric power machine.		
Related technical knowledge	• Meaning and importance of power cable and its types; • Meaning of electricity/power supply, insulation; • Importance of safe power cable in electric power machine; • Procedure for changing the power cable in electric power machine.		
Safety/precaution	• Apply PPE; • Disconnect the power cable from the source before replacing with new power cable; • Prevent from getting electric shock and hazards; • Connect the cables in the plug respectively.		
Tools, equipment and materials	• Tester; • Universal plier; • Wire stripper; • Spare power cable; • Screw driver.		

Task number:	67		
Task statement:	**Change nozzle of silicon gun**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Reloading new silicon tube/pouch; • Gap between wall and door/window frame is small or big; • Nozzle is jammed; **Task:** Change nozzle of silicon gun (pouch gun /normal gun; can gun). **Time:** 5 minutes /nozzle. **Standard/Criteria:** • Damaged nozzle is replaced by new one; • Nozzle tip is cut in angle; • Nozzle is matched with the type of gun; • Silicon is placed uniformly by the new nozzle.		
Related technical knowledge	• Meaning and importance of nozzle in silicon gun; • Types of nozzles; • Points needed to be considered while changing the nozzle; • Procedure for changing nozzle of silicon gun.		
Safety/precaution	• Apply PPE; • Do not use expired silicon.		
Tools, equipment and materials	• Silicon gun; • Paper cutter; • Cotton cleaning cloth. • Spare nozzle.		

Task number:	68		
Task statement:	**Change drill bit in drill machine and hammering machine.**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • Damaged drill bit; • Drill bit doesn't make hole; • Number of drill bits needed to be changed. • Size of drill bit not matching. **Task:** Change drill bit in drill machine and hammering machine. **Time:** 5 minutes /drill bit. **Standard/Criteria:** • Drill bit is selected/matched with its purpose or types of material; • Drill bit is replaced by new one, matching the lock; • Drill bit is fitted straight and tightened in the drill bit machine; • Replaced drill bit is matched with its purpose/material.		
Related technical knowledge	• Meaning of drill bit and its types based on material; • Points needed to be considered; • Procedure for changing drill bit.		
Safety/precaution	• Apply PPE; • Handle drilling machine safely; • Prevent from getting electrical shock and hazard; • Make sure the power cable is removed from the source or switch is turned off.		
Tools, equipment and materials	• Drill machine; • Hammering machine; • Drill bit; • Screw driver (±); • Chuck key.		

Task number:	69		
Task statement:	**Clean workshop**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • At the time of work completion; • During progression of work; • Workshop cleaning schedule. **Task:** Clean workshop. **Time:** 30 minutes /workshop (depends on the size fo workshop and cleaning schedule) **Standard/Criteria:** • Tools, equipment and materials are cleaned and stored in their original places; • The scraps, dirts and debris are removed from the workshop.		
Related technical knowledge	• Workshop and its cleanliness; • Storing tools, equipment and materials in workshop; • Points needed to be considered while cleaning the workshop; • Procedure of cleaning the workshop.		
Safety/precaution	• Apply PPE (glove, mask); • Handle broken glasses, scraps and metal chips safely.		
Tools, equipment and materials	• Broom; • Cotton cleaning cloth; • Sack/collecting bin bag/ plastic bag; • Blower; • Kerosene oil; • Dust pan.		

Task number:	70		
Task statement:	**Maintain raw material cutting records**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Quantity of cutting profiles and materials; • The stock balance; • Repairing reference record. **Task:** Maintain raw material cutting records. **Time:** 10 minutes /record (depends upon different types and sizes of cutting records) **Standard/Criteria:** • Cutting record is kept daily with day and date; • List of cutting size and cutting quantity is recorded; • All cutting pieces are verified with the list and recorded; • All records are kept up to date; • Records are signed by authorized person.		
Related technical knowledge	• Meaning of keeping raw material cutting record; • Importance and points needed to be considered in keeping raw material cutting record; • Documents required for keeping raw material cutting record; • Procedure for keeping raw material cutting record.		
Safety/precaution	• Make sure the record sheet is safe from tearing; • Data integrity is maintained at all times.		
Tools, equipment and materials	• Format, register copy, pen; • Calculator, ruler, record file.		

Task number:	71		
Task statement:	**Keep a record of completed tasks**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Completion of the project; • Preparing a new job. **Task:** Keep a record of completed tasks. **Time:** 10 minutes /record. **Standard/Criteria:** • Actual size and quantity of used materials are recorded; • The actual work schedule is recorded; • The assigned team members and their roles and responsibilities are recorded; • Actual petty cash and other expenses are recorded; • The respective document is signed with seal by the client, owner, the contractor and other authorised personals.		
Related technical knowledge	• Meaning of keeping record of completed tasks; • Importance and points needed to be considered in keeping record of completed tasks; • Documents required for keeping record of completed tasks; • Procedure for keeping record of completed tasks.		
Safety/precaution	• Make sure the record sheet is safe from tearing; • Data integrity is maintained at all times.		
Tools, equipment and materials	• Format, note book; • Pen; • Calculator; • Ruler; • Record file.		

Task number:	72		
Task statement:	**Keep a record of customers**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Approved sketch and detail/address before starting project; • Update after completion of work/ project. **Task:** Keep a record of customers. **Time:** 15 minutes /record. **Standard/Criteria:** • Detailed information about the customer is listed, including name, address, and phone number; • Approved sketch is attached; • A copy of the approved quotation is attached; • Detail information about used aluminium series of profile is listed, including glass colour and BSL/ACP board; • Work completion date is mentioned; • The respective document is signed with seal by the client, owner, the contractor and other authorised personals.		
Related technical knowledge	• Meaning of customer record keeping; • Importance and points needed to be considered during customer record keeping; • Documents required for customer record keeping; • Procedure for customer record keeping.		
Safety/precaution	• Make sure the record sheet is safe from tearing; • Data integrity is maintained at all times.		
Tools, equipment and materials	• Format; • Pen; • Record file; • Note book.		

Task number:	73		
Task statement:	**Keep income and expenditures records of petty contractor**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Agreement of petty contractor, BOQ and approved rate; • Day to day record of income and expenditures of petty contractor. **Task:** Keep income and expenditures records of petty contractor. **Time:** 15 minutes /record. **Standard/Criteria:** • An approved rate is indicated with signature and recorded; • Quantity of BOQ is matched with quantity in records; • All income and expenditure vouchers and receipts related to the petty contractor are signed and attached; • All instructions given during the work progress are recorded; • All respective documents are signed by the record keeper and the contractor.		
Related technical knowledge	• Meaning of income and expenditure record keeping; • Importance and points needed to be considered during income and expenditure record keeping; • Documents required for keeping income and expenditure record keeping; • Procedure for income and expenditure record keeping.		
Safety/precaution	• Make sure the record sheet is safe from tearing; • Data integrity is maintained at all times.		
Tools, equipment and materials	• Format, pen, record file, register/note book, calculator and ruler.		

Task number:	74		
Task statement:	**Keep the worker's record**		
Level of task:	Significance	Ease	Occurence
	3	2	3
Terminal performance standard	**Given Condition:** • A progress report on each day's work; • Starts the project; • Project/work completion. **Task:** Keep the worker's record. **Time:** 15 minutes /record. **Standard/Criteria:** • Worker's wages is mentioned and recorded; • Workers attendance card is completely filled and recorded with the signature of respective supervisor; • The attendance card of the worker is verified and matched with the supervisors record; • The supervisor has checked, verified and signed in the register daily.		
Related technical knowledge	• Meaning of worker's record keeping; • Importance and points needed to be considered in worker's record keeping; • Documents required for worker's record keeping; • Procedure for worker's record keeping.		
Safety/precaution	• Make sure all attendance cards are kept safely; • Make sure the record sheet is safe from tearing; • Ensure records are kept without mistake.		
Tools, equipment and materials	• Attendance card; • Pen; • Register.		

Task number:	75		
Task statement:	**Keep a record of all tools and equipment**		
Level of task:	Significance	Ease	Occurence
	3	3	3
Terminal performance standard	**Given Condition:** • Before proceeding to work; • Returned from site and back to store; • Annual verification to update the inventory; • Newly purchased machine and equipment. **Task:** Keep a record of all tools and equipment. **Time:** 5 minutes /record. **Standard/Criteria:** • Condition and quantity of machine is mentioned and recorded; • The name and uses of machine is clearly mentioned and record; • Comments and Interpretations are noted in remarks columns and recorded; • Date issued and returned date is clearly mentioned and recorded; • All respective documents are signed by the record keeper and the store keeper.		
Related technical knowledge	• Meaning of keeping tools and equipment record; • Importance and points needed to be considered in keeping tools and equipment record; • Documents required for keeping tools and equipment record; • Procedure for keeping tools and equipment record.		
Safety/precaution	• Make sure the record sheet is safe from tearing; • Records are kept without mistake.		
Tools, equipment and materials	• Register, pen and note book.		

Task number:	76		
Task statement:	**Calculate cutting size of the profile in computer software excel**		
Level of task:	Significance	Ease	Occurence
	3	2	2
Terminal performance standard	**Given Condition:** • Site measurement with sketch. **Task:**. Calculate cutting size of the profile in Excel. **Time:** 15 minutes /calculation. **Standard/Criteria:** • Size of the profile is entered in respective field (column heading) in excel sheet; • Correct formula is used for calculating the cutting size; • Result is verified with the given sketch.		
Related technical knowledge	• Basic computer knowledge; • Basic knowledge of excel application; • Use of formula for calculating area and volume.		
Safety/precaution	• Handle the computer safely without loss of data. • Make sure the file is saved in safe drive.		
Tools, equipment and materials	• Computer; • Printer; • Sketch site.		

Task number:	77		
Task statement:	**Calculate quantity of materials using computer software excel**		
Level of task:	Significance	Ease	Occurence
	3	2	2
Terminal performance standard	**Given Condition:** • Site measurement with sketch; • List of materials; • Section of profile. **Task:** Calculate quantity of materials using computer software excel. **Time:** N/A (depends on quantity and the accuracy of data input in the software). **Standard/Criteria:** • List of materials and site measurement data are entered in respective field (column) without mistake in excel sheet; • Correct formula is entered for material quantity calculation; • The result is matched with the quantity calculated manually.		
Related technical knowledge	• Basic computer knowledge; • Basic knowledge of excel application; • Use of formula for calculating quantity of materials.		
Safety/precaution	• Handle and use the computer software safely without loss of data; • Make sure the file is saved in safe drive.		
Tools, equipment and materials	• Computer; • Printer; • Sketch site.		

Task number:	78		
Task statement:	**Print the document**		
Level of task:	Significance	Ease	Occurence
	3	3	2
Terminal performance standard	**Given Condition:** • Documents are checked, verified and ready for print. **Task:** Print the document. **Time:** 2 minutes /print (depends on quantity of printing documents). **Standard/Criteria:** • Documents are verified and free from error; • Documents are formatted as per requirement (content, font style, font size, pages etc.); • Printed documents are matched as per requirement.		
Related technical knowledge	• Basic knowledge on formatting documents; • Basic computer printing knowledge; • Printing steps.		
Safety/precaution	• Handle the computer and printer safely without loss of any data.		
Tools, equipment and materials	• Computer; • Printer; • A4 Print paper; • Sketch site.		