









Facilitator Guide







Sector

Furniture & Fittings

Sub-Sector

Furniture Design & Production

Occupation

Furniture Production (Machine Shop)

Reference ID: FFS/Q1001, Version 1.0

NSQF Level 4.0

Assistant Panelworks Machine Operator

(Pasting and Pressing machines/
Cutting and Sizing machines /
Edge Band machines/ Drilling machines/
Routing machines/ Veneer
Cutting and Splicing machines)

This book is prepared by

Furniture & Fittings Skill Council (FFSC)

Address: 407-408, 4th Floor, DLF City Court, Sikanderpur

Gurgaon 122002, Haryana, India

Email: info@ffsc.in Website: www.ffsc.in Phone: +91 124 4513900

All Rights Reserved First Edition, May 2025

Under Creative Commons License: CC BY-NC-SA

Copyright © 2025

Attribution-Share Alike: CC BY-NC-SA



This license lets others remix, tweak, and build upon the work even for commercial purposes, as long as they credit you and license their new creations under identical terms. This license is often compared to "copyleft" free and open-source software licenses. All new works based on thes will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.

Disclaimer

The information contained herein has been obtained from sources reliable to Furniture & Fittings Skill Council (FFSC). Furniture & Fittings Skill Council (FFSC) disclaims all warranties to the accuracy, completeness or adequacy of such information. Furniture & Fittings Skill Council (FFSC) shall have no liability for errors, omissions, or inadequacies, in the information contained herein, or for interpretations thereof. Every efforthas been made to trace the owners of the copyrighted material included in the book. The publishers would be thankful for any omissions in the book being brought to their notice; which will be acknowledged as applicable in future editions of the same. No entity in Furniture & Fittings Skill Council (FFSC) shall be responsible for any loss whatsoever, sustained by any person who relies on this material. The material in this publication is copyrighted. No parts of this publication may be reproduced, stored or distributed in any form or by any means either on paper or electronic media, unless authorized by the Furniture & Fittings Skill Council (FFSC).





Skilling is building a better India.

If we have to move India towards development then Skill Development should be our mission.

Shri Narendra ModiPrime Minister of India



-Acknowledgements

We are thankful to all organizations and individuals who have helped us in the preparation of this Facilitator Guide. We also wish to extend our gratitude to all those who reviewed the content and provided valuable inputs for improving the quality, coherence and content presentation of chapters. This Facilitator Guide will lead to the successful rollout of the skill development initiatives, helping greatly our stakeholders particularly trainees, trainers and assessors etc. We are thankful to our Subject Matter Expert for the content and for helping us in the preparation of this Facilitator Guide. It is expected that this publication would meet the complete requirements of QP/NOS based training delivery. We welcome suggestions from users, industry experts and other stakeholders for any improvement in future.

About this Guide -

The objective of the guide is to provide an approach map for interacting with the trainees undergoing training in this job role. The course aims to provide both theoretical and practical knowledge to the trainees and also to guide them about Assistant Panel works Machine Operator. The guide is neither a substitute nor a complete road map, but an aid to help to pass on the knowledge on all the aspects to the trainees in a systematic manner. It is expected that the trainer is fully conversant with all the contents of the guide. The guide is just to indicate how to proceed in covering a topic and includes some additional information that may be necessary for the trainer to develop better comprehension of the following aspects:

- · Knowledge and Understanding: Satisfactory operational learning and comprehension to play out the required chore.
- · Performance Criteria: Pick up the required aptitudes through hands-on preparation and play out the required operations inside the predetermined measures.
- Professional Skills: Capacity to settle on operational choices relating to the zone of work.

The job will also include judging comprehension and also help them learn more through hands-on training. But it has to be ensured that these are following the knowledge imparted and time spent on each unit. It is expected that irrespective of the region, knowledge of all aspects will be imparted to trainees.

Symbols Used















Elaborate



Example



Exercise



















Role Play

Facilitation Notes Field Visit Learning Outcomes









Table of Contents

S.No	. Modules and Units	Page No.
1.	Introduction to the Interiors, Furniture, and Allied Industry (Bridge Module)	1
	Unit 1.1 - Introduction to the Interiors, Furniture, and Allied Industry	3
2.	Introduction to the Organizational Context and Workplace Policies (Bridge Module)	9
	Unit 2.1 - Organizational Framework and Workplace Guidelines	11
3.	Introduction to the Role of an Assistant Panelworks Machine Operator (Bridge Module)	17
	Unit 3.1 - Role of an Assistant Panelworks Machine Operator	19
4.	Job Card Interpretation (FFS/N1001)	26
	Unit 4.1 - Interpreting Job Card	28
5.	Plan for Machine Operation (FFS/N1001)	32
	Unit 5.1 - Planning for Machine Operations	34
6.	Organize the Worksite (FFS/N1001)	41
	Unit 6.1 - Arranging the Worksite	43
7.	Assist in Machine Initiation Process (FFS/N1002)	50
	Unit 7.1 - Assisting the Machine Start-up Process	52
8.	Handling Job Work during Machine Operation (FFS/N1002)	59
	Unit 8.1 - Managing Job Work During Machine Operation	61
9.	Assist in Performing required Machine Operation (FFS/N1002)	67
	Unit 9.1 - Support in Executing the Required Machine Operation	69
10.	Clean and Maintain the Machine (FFS/N1003)	75
	Unit 10.1 - Maintain and Clean the Machine	77
11.	Assist in Maintenance Operation (FFS/N1003)	84
	Unit 11.1 - Assisting in Maintenance Operation	86
12.	Assist in Quality Control and Assurance Process (FFS/N1003)	92
	Unit 12.1 - Support the Quality Control and Assurance Process	94

Table of Contents

S.No	. Modules and Units	Page No.
13.	Health and Safety Practices at the Worksite (FFS/N8201)	100
	Unit 13.1 - Worksite Health and Safety Practices	102
14.	Greening Practices at the Worksite (FFS/N8201)	109
	Unit 14.1 - Worksite Greening Practices	111
15.	Assist in Operating Pasting and Pressing Machines (FFS/N1004)	117
	Unit 15.1 - Assist in Workplace Setup for Pasting/Pressing Machine	119
	Unit 15.2 - Assist in Pasting Operation	124
	Unit 15.3 - Assist in Pressing Operation	129
	Unit 15.4 - Workplace and Equipment Management for Pasting/Pressing Machine	134
16.	Assist in Operating Cutting and Sizing Machines (FFS/N1005)	140
	Unit 16.1 - Assist in Workplace Setup for Cutting/Sizing Machine	142
	Unit 16.2 - Assist in Cutting/Sizing Operation	147
	Unit 16.3 - Workplace and Equipment Management for Cutting/Sizing Machine	153
17 .	Assist in Operating Edge Band Machines (FFS/N1006)	160
	Unit 17.1 - Assist in Workplace Setup for Edge Banding Machine	162
	Unit 17.2 - Assist in Edge Banding Operation	168
	Unit 17.3 - Workplace and Equipment Management for Edge Banding Machine	174
18.	Assist in Operating Drilling Machines (FFS/N1007)	181
	Unit 18.1 - Assist in Workplace Setup for Drilling Machine	183
	Unit 18.2 - Assist in Drilling Operation	189
	Unit 18.3 - Workplace and Equipment Management for Drilling Machine	195
19.	Assist in Operating Routing Machines (FFS/N1008)	202
	Unit 19.1 - Assist in Workplace Setup for Routing Machine	204
	Unit 19.2 - Assist in Routing Operation	209
	Unit 19.3 - Workplace and Equipment Management for Routing Machine	215



Table of Contents

S.No	. Modules and Units	Page No.
20.	Assist in Operating Veneer Cutting/Splicing Machines (FFS/N1009)	223
	Unit 20.1 - Assist in Workplace Setup for Veneer Cutting/Splicing Machine	225
	Unit 20.2 - Assist in Veneer Cutting/Splicing Machine	231
	Unit 20.3 - Workplace and Equipment Management for Veneer Cutting/Splicing Machine	237
21.	Employability Skills (60 Hours) (DGT/VSQ/N0102)	245
	It is recommended that all trainings include the appropriate Employability skills Module. Content for the same is available here: https://www.skillindiadigital.gov.in/content/list	
22.	Annexure	247
	Annexure I - Training Delivery Plan	248
	Annexure II - Assessment Criteria	288
	Annexure III - QR Codes – Video Links	292













1. Introduction to the Interiors, Furniture, and Allied Industry

Unit 1.1 - Introduction to the Interiors, Furniture, and Allied Industry



Bridge Module

Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Explain the functioning of the furniture industry.
- 2. Describe the segments of the furniture industry.
- 3. Explain the scope and significance of the furniture industry.

UNIT 1.1: Introduction to the Interiors, Furniture, and Allied Industry

-Unit Objectives │◎



At the end of this unit, you will be able to:

- 1. Describe the scope and significance of the furniture industry.
- 2. Discuss the various segments of the furniture industry and how they function.
- 3. Explain various types and categories of furniture.
- 4. Describe the types of allied or enabling industries involved in furniture manufacturing.
- 5. Describe the relationship between interiors and the furniture industry.
- 6. Classify different types of Interior projects.
- 7. Describe the occupational map of the furniture industry.
- 8. Explain the significance of the Interiors, Furniture, and Allied industries.

Resources to be Used



Theory:

- · Whiteboard and markers
- $Presentation \ slides \ on \ industry \ overview \ and \ segmentation$
- Handouts summarizing key sectors, furniture types, and allied industries
- Charts/posters showing occupational map and furniture industry workflow
- Sample images/catalogues of different interior and furniture project types

Practical:

- Interactive chart of furniture industry segments and their interrelations
- Flashcards or tags with names of job roles or industry segments for activity
- Matching game kit (furniture types \leftrightarrow usage/room type)
- Sample project blueprints showing role of furniture in interiors



"Welcome to the training program for the role of Assistant Panelworks Machine Operator. Before we dive into the technicalities, let's get a sense of the world we're about to explore. The Interiors, Furniture, and Allied industry is more than just making and assembling furniture — it connects design, materials, machines, and people. Today's session will help us understand where this industry fits in the larger picture, who the key players are, and how various job roles contribute to building beautiful and functional spaces."

Ice Breaker Activity: 'Furniture & Me'



Objective:

Help participants connect personally to the world of furniture and interiors while warming up to group participation.

Materials Needed:

- Index cards
- Markers

Procedure:

- Ask each trainee to write down their favorite piece of furniture at home or a memorable furniture setup they've seen (e.g., sofa, study table, temple shelf, modular kitchen).
- Have them share why they chose it and what makes it special or useful.
- Write keywords on the board from their responses (comfort, style, function, space-saving, wood, durability, etc.).
- Highlight how these words represent real considerations in furniture design and manufacturing.



"See, without even realizing it, we all engage with furniture daily — as users, critics, and even as accidental designers. Now let's look at this industry from a more structured point of view."



- "When you walk into a well-furnished home or office, what catches your eye first design, comfort, materials, or something else?"
- "Can you think of any job roles or industries that support or work alongside furniture manufacturing?"
- "Why do you think furniture and interior projects go hand-in-hand in modern construction or renovation?"

Encourage participants to speak freely. Note ideas on the board to visually map the industry's interconnectedness.

Elaborate



- Present a simple industry map that shows the furniture sector, interior projects, and allied industries like plywood, laminates, hardware, polish/finishes, upholstery, etc.
- Explain how the industry is divided into residential, commercial, hospitality, institutional, and custom furniture segments.
- Discuss different furniture types (modular, free-standing, built-in) and categories (wooden, metal, plastic, mixed-material).
- Illustrate how interiors depend on furniture design and placement for function and aesthetics.
- Introduce the occupational map from furniture designers and machine operators to polishers, supervisors, and project managers.
- Highlight industry scope: employment potential, export market, and the rise in demand due to urban housing and commercial infrastructure.

Activity-1



Match the Segment Objective: Identify different segments of the furniture and interiors industry and their functions.

Materials Needed:

- Flashcards with industry segments (e.g., residential, modular office, hospitality, kitchen systems)
- Flashcards with project features (e.g., space optimization, aesthetics, mobility, hygiene)

Procedure:

- Distribute flashcards among small groups.
- Ask participants to match the segment with its features.
- Each group presents why they made that match.

Outcome: Learners will better understand how each segment meets specific needs and demands.

Activity-2



Visual Mapping - Allied Industry Link-Up Objective: Understand how supporting industries enable furniture manufacturing.

Materials Needed:

- Chart paper
- Markers
- Images of materials (plywood, laminates, screws, adhesives, fabrics)

Procedure:

- Participants create a visual mind map linking furniture to at least 3 enabling industries.
- Discuss how delays or issues in these sectors can impact furniture production.

Outcome: Participants grasp the interconnectedness of furniture manufacturing and allied industries.

Do



- Map the flow of a furniture project from design to installation using a flowchart.
- Classify different types of furniture and interior project types through group discussion and examples.
- Identify enabling industries in a matching or linking activity.
- Review and explain a sample occupational map through group reading and short presentations.

Say



"The furniture industry isn't limited to just carpentry or design — it's a vast network of creativity, material science, machine operations, logistics, and human skill. By the end of this course, you'll not only understand your role as an Assistant Panelworks Machine Operator but also where it fits in the larger picture of transforming spaces and lives."

Notes for Facilitation



- Use visual examples from local environments to make the content relatable.
- Encourage trainees to share what they've seen or experienced during home renovations or visits to showrooms.
- Keep the session interactive and open-ended this unit sets the tone for deeper technical learning ahead.
- Reinforce industry terminology gently through repetition and real-world analogies.
- Use diagrams, job maps, and flowcharts to anchor abstract concepts.

– Notes 🗐 ———————————————————————————————————













2. Introduction to the Organizational Context and Workplace Policies

Unit 2.1 - Organizational Framework and Workplace Guidelines





Key Learning Outcomes 🕎

At the end of this module, you will be able to:

- 1. Explain the methods and mechanisms for effective communication.
- 2. Demonstrate the usage of effective communication and interpersonal skills.
- 3. List the latest skills and technologies prevalent in the furniture industry.
- 4. Demonstrate the usage of different tools and technologies.
- 5. Describe organizational hygiene and sanitation guidelines.

UNIT 2.1: Organizational Framework and Workplace Guidelines

-Unit Objectives | $^{ ilde{ ilde{o}}}$



At the end of this unit, you will be able to:

- 1. Explain the importance of team objectives and goals.
- 2. List the basic parts of a computer and explain their functions.
- 3. Explain the working of various social media platforms: WhatsApp, Facebook, Twitter, etc.
- 4. State the significance of payment methods and gateways for financial transactions.
- 5. List the steps involved in a financial transaction using a suitable medium.
- 6. Differentiate and learn the escalation in the hierarchy.
- 7. Explain the functions of MS Office.
- 8. Explain the importance of effective communication and team coordination.
- 9. Explain the difference between briefing and debriefing.
- 10. State the importance of coordinating and resolving conflicts with the team members to achieve a smooth workflow.
- 11. Discuss organizational hygiene and sanitation guidelines and ways of reporting breaches/gaps, if any.
- 12. Describe how to address and resolve conflicts among employees.

Resources to be Used | &



Theory:

- Training manual or presentation on organizational hierarchy and communication channels
- Escalation matrix and SOPs for internal communication
- Job role charts and reporting structure maps
- · Workplace hygiene and discipline guidelines
- Introduction to MS Office tools (Word, Excel, PowerPoint) and digital apps (Email, WhatsApp, UPI, etc.)
- Briefing and debriefing formats

Practical:

- Laptops or desktop systems with MS Office installed
- Internet access for simulated digital communication (email/WhatsApp practice)
- Printable templates for briefing/debriefing reports
- Workplace simulation materials: ID badges, reporting formats, sample job cards
- Case studies and roleplay scenarios for conflict resolution
- Cleanliness supplies checklist and cleaning audit forms

Say



"Today, we're stepping into the real working environment — not just the technical side of things but how organizations function smoothly. We'll learn about structure, communication, teamwork, digital tools, and personal conduct — all of which are key to thriving in any production unit. These soft systems form the backbone of workplace success."

Ask



- "Have you ever worked in a team where things went wrong due to poor communication?"
- "Why do you think an organization needs a defined structure with roles and reporting?"
- "What digital tools have you used in your daily life that could also be useful at work?"
 (Encourage responses and write key terms on the board to refer back to later.)

Elaborate



Break down the content into three core learning themes:

1. Understanding Organizational Structure and Communication Channels

- Introduce common organizational setups hierarchy, teams, reporting lines.
- Explain job roles and escalation paths in a typical furniture production unit.
- Clarify communication protocols verbal, written, and digital.

Key Points:

- Importance of hierarchy and role clarity
- Using escalation charts to resolve problems
- Professional vs. informal workplace communication

2. Workplace Digital Tools and Their Application

- Introduce the use of computers, laptops, and common workplace software.
- Demonstrate MS Word (for reports), Excel (for tracking), and PowerPoint (for presentations).
- Simulate workplace use of WhatsApp, email, and UPI for quick coordination and transactions.

Key Points:

- Digital literacy as a core competency
- Choosing the right tool for the task

Cyber hygiene and responsible online behavior

3. Professional Conduct, Hygiene, and Conflict Resolution

- Define briefing and debriefing practices what they are and why they matter.
- Explore workplace hygiene rules, reporting hazards, and personal cleanliness.
- Discuss conflict resolution tone, language, escalation, and maintaining respect.

Key Points:

- Maintaining a clean and safe work environment
- Communicating professionally under pressure
- · Knowing when and how to escalate issues

Activity-1



Role Mapping and Communication Practice

Objective: Identify roles, reporting lines, and simulate proper communication in the workplace.

Materials Needed: Organizational structure chart, job cards, sample communication scripts.

Instructions:

- Assign each participant a role in a simulated unit.
- Conduct a task where trainees must report progress or an issue to the correct person.
- Practice drafting a professional email or WhatsApp message.

Expected Outcome: Trainees can identify where to report and use appropriate communication formats.

Activity-2



Digital Tools Drill

Objective: Use MS Office and workplace apps to complete simple digital tasks.

Materials Needed: Laptops, MS Office suite, job brief templates, WhatsApp simulation cards.

Instructions:

- Open and edit a Word document with a daily task summary.
- Create an Excel log of production materials.
- Prepare a 2-slide presentation on workplace safety.

Expected Outcome: Trainees can confidently perform basic tasks using MS Office and digital platforms.

Activity-3



Conflict Resolution Roleplay

Objective: Practice resolving a workplace disagreement using escalation protocol.

Materials Needed: Scenario cards (e.g., machine misuse, team miscommunication).

Instructions:

- In pairs, act out a conflict and use professional language to resolve it.
- Practice identifying when escalation is needed and whom to escalate to.
- Reflect as a group on what strategies worked.

Expected Outcome: Trainees demonstrate calm, clear, and professional problem-solving skills.

Do



Ask trainees to:

- Complete a simulated briefing or debriefing report
- Identify and report a simulated workplace cleanliness issue
- Roleplay escalating a safety concern to a supervisor

Say



"Well done! You've now seen how much of a workplace's success depends not just on your technical skills, but on how you communicate, how you present yourself, and how you interact with your team. These behaviors build the foundation of a professional career. In our next unit, we'll focus on actual production line activities and how teams collaborate to achieve output goals."

Notes for Facilitation



- Be patient with learners who are new to digital tools assist one-on-one where needed.
- Highlight real examples of organizational miscommunication and its outcomes.
- Use bilingual instructions or visuals if literacy is a concern.
- Reinforce good posture, polite tone, and respectful body language during all activities.
- Conduct a quick hygiene inspection at the end of class and reward top performers.

– Notes 🗐 ———————————————————————————————————













3. Introduction to the Role of an Assistant Panelworks Machine Operator

Unit 3.1 - Role of an Assistant Panelworks Machine Operator



Bridge Module

Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Explain the role and responsibilities of an Assistant Panelworks Machine Operator.
- 2. Discuss the scope of work for an Assistant Panelworks Machine Operator.

UNIT 3.1: Role of an Assistant Panelworks Machine Operator

-Unit Objectives | @



At the end of this unit, you will be able to:

- 1. Elaborate on the various organizational structure, processes, code of conduct, reporting matrix, and escalation hierarchy.
- 2. Explain the role, responsibilities, and limitations of an Assistant Panelworks Machine Operator.
- 3. Describe the attributes and basic skill sets required for an Assistant Panelworks Machine Operator.
- 4. Explain the process of communication with team members and supervisors as per the protocol of the organization.
- 5. List all the documents required to carry out the job, such as a job sheet and checklist for oneself.
- 6. List the various operations/activities that take place at the worksite and Assistant Panelworks Machine Operator's role in the same.
- 7. Discuss the regulatory authorities, laws, and regulations related to an individual while working in the Furniture and Fittings Industry.
- 8. Discuss the career path for the Assistant Panelworks Machine Operator job role.
- 9. Explain the nature of work, timeliness, and requirement.

Resources to be Used



Theory:

- · Presentation on organizational structure and escalation matrix
- SOPs and code of conduct manuals for panelworks operations
- Sample job roles, responsibility charts, and workflows
- Job sheets, checklists, and workplace communication formats
- Overview of relevant labor laws and industry regulations
- Career progression chart in the furniture and fittings industry

Practical:

- Mock job sheets and daily checklists
- Templates for reporting and escalation
- Printed communication protocols (verbal, written, and digital)
- Access to expert guest speaker or pre-recorded session from industry professional
- Career path handouts and regulatory reference posters

Say



"Welcome back! Today we'll focus on your future role — the Assistant Panelworks Machine Operator. You'll learn not just what the job is about, but how it fits into the bigger picture of the organization. This session will also help you understand the ethics, processes, legal responsibilities, and the exciting career path ahead in the furniture industry."

Ask



- "What do you think a typical day looks like for an Assistant Panelworks Machine Operator?"
- "Have you ever followed a checklist or SOP to complete a task?"
- "Why do you think it's important to know the escalation matrix in a workplace?"

(Encourage brief answers and write key terms on a flipchart or board.)

Elaborate



Break the session into clear, engaging parts:

1. Understanding the Job Role and Workplace Structure

- Overview of organizational structures in manufacturing units.
- Understanding the Assistant Operator's position within the team and reporting chain.
- Role clarity, expectations, and code of conduct.

Key Points:

- Reporting relationships (who to report to and when)
- Limits of authority and scope of responsibility
- Examples of daily and weekly tasks

2. Required Attributes and Skill Sets

- Basic technical skills and soft skills needed
- Communication protocols with peers and supervisors
- Use of job sheets, daily checklists, and escalation templates

Key Points:

- · Attention to detail, teamwork, punctuality
- Speaking professionally and using standard terms
- Documentation skills and workplace etiquette

3. Legal and Professional Conduct Framework

- Introduction to regulatory authorities, basic labor laws, and worker rights
- Professionalism at the workplace attendance, safety, hygiene, and behavior
- · Overview of career growth in the panelworks machine operations field

Key Points:

- Adherence to industry laws and organizational rules
- Safety compliance and reporting violations
- Career path from Assistant to Supervisor roles

Activity-1



Job Role Mapping and Checklists

Objective: Understand daily job responsibilities and complete sample documents.

Materials Needed: Job sheet templates, checklist formats, printed SOPs

Instructions:

- Trainees complete a sample job sheet based on a mock task
- Review each other's sheets for completeness and accuracy

Expected Outcome: Trainees are confident in filling and using job documentation tools.

Activity-2



Roleplay – Communication and Escalation

Objective: Practice team interaction and structured problem escalation.

Materials Needed: Scenario cards (e.g., machine delay, quality issue), escalation charts

Instructions:

- Small groups act out scenarios requiring communication and escalation
- Trainees determine who to inform and how (verbal/written)

Expected Outcome: Learners understand when and how to escalate issues properly.

Activity-3



Industry Expert Talk - "A Day in the Life"

Objective: Gain insights from a real professional in the field.

Materials Needed: Guest speaker (virtual or physical), presentation setup

Instructions:

- Invite a current or former Panelworks Machine Operator or supervisor
- Ask them to describe their career journey, challenges, tools, and tips
- Open Q&A session for trainees to ask real-world questions

Expected Outcome: Learners understand practical aspects of the role and future growth opportunities.



Ask trainees to:

- Complete a daily checklist based on a mock production scenario
- Participate in a roleplay involving reporting a fault to a supervisor
- Write one takeaway from the expert session that inspired them



"Great work! You now have a clearer picture of what being an Assistant Panelworks Machine Operator really involves — from skills and tools to ethics and communication. And hearing from a real professional helps connect theory with reality. In the next unit, we'll explore safety measures and workplace hazards to keep you and your team protected while on the job."

Notes for Facilitation



- Ensure the expert speaker shares relatable experiences especially challenges and solutions.
- Use breakout groups or pairs during roleplays to encourage active participation.
- Reinforce importance of checklists and clear documentation habits.
- Keep copies of legal posters and escalation matrix visible in the training room.

– Notes













4. Job Card Interpretation

Unit 4.1 - Interpreting Job Card





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Discuss the process of effectively planning resources, communicating instructions, and guiding team members.
- 2. Demonstrate proficiency in completing and submitting job cards within the required timeframe, adhering to the importance of timely documentation.
- 3. Plan and allocate appropriate resources based on the scope of work outlined in the job card.
- 4. Assist in preparing and maintaining accurate and efficient documentation related to maintenance, operation, and quality check processes

UNIT 4.1: Interpreting Job Card

-Unit Objectives 🏻 🎯



At the end of this unit, you will be able to:

- 1. Explain the process of interpreting the scope of work as per the job card and planning resources effectively.
- 2. Discuss the methods of effective communication techniques and methods to instruct and guide the team members.
- 3. Explain the importance of completing and submitting job cards within the required timeframe.
- 4. Explain various documentation requirements related to maintenance, operation, and quality check processes.
- 5. Plan and allocate appropriate resources based on the scope of work outlined in the job card.
- 6. Instruct and guide the multipurpose assistant in interpreting the job card and working as per instructions effectively.
- 7. Fill out job cards accurately and completely within the specified timeframe.
- 8. Assist in preparing and maintaining documents related to maintenance, operation, and quality check accurately and efficiently.

Resources to be Used



Theory:

- Whiteboard/Marker or Presentation Slides
- Sample job cards (blank and filled)
- Posters or visuals on job card workflow
- SOP manuals related to maintenance and quality check

Practical:

- Dummy job cards for practice
- Real or simulated equipment details for referencing
- Checklist templates for operation/maintenance/quality
- Pen, clipboard, forms for hands-on filling

Say



Introduction:

"Every task in a workshop or production environment begins with a job card. It's like a roadmap — it tells you what needs to be done, what tools you need, and who should do it. If you learn to read a job card properly, you're already halfway through doing the job right."

Ask



Engage

- "Have you seen or filled out a job card before?"
- "What kind of information do you expect to find in a job card?"
- "What happens if the job card is misread or incomplete?"

(Encourage 2–3 trainees to share their thoughts.)

Elaborate



Break it down into segments:

1. Interpreting Job Card:

- Explain what a job card is: A document that outlines the job to be performed, tools required, timeline, and safety or quality instructions.
- Components include: job description, assigned personnel, tools required, estimated time, safety notes, signatures.

2. Planning and Resource Allocation:

- Discuss how to identify materials, tools, and team needed based on job scope.
- Introduce prioritization: urgent tasks vs. routine.

3. Communication Techniques:

- Discuss how to guide team members by breaking down instructions from the job card.
- Role of clear, respectful, and direct communication.

4. Importance of Timely Documentation:

- Talk about why job cards should be filled out accurately and submitted on time.
- Connection to project tracking, maintenance logs, and accountability.

5. Documentation for Maintenance/Quality/Operations:

- Show templates/checklists used for logging maintenance or inspections.
- Emphasize standard formats and traceability.

Activity



Title: "Job Card Simulation & Role Play"

Steps:

- 1. Divide the class into small groups (3–4 members).
- 2. Give each group a mock job card (with a different job scenario).
- 3. Each group must:
 - Interpret the job card
 - Identify resources/tools needed
 - Plan basic instructions for the assistant
 - Fill in the job card (completion section)
 - Prepare a maintenance or quality checklist related to the task
- 4. One member presents their plan and approach to the class.



Trainer Tasks:

- Observe group discussions and correct misunderstandings.
- Support them in identifying tools and planning resource use.
- Ensure accurate filling of documents and clarity in instruction delivery



"Well done! As you've seen, understanding a job card is more than just reading—it's about planning, instructing, documenting, and taking responsibility for quality work. This simple document is your professional checklist for excellence."

Notes for Facilitation



- Use real-world examples to show how poor interpretation affects production timelines or safety.
- Encourage peer discussion and debate on prioritization of tasks.
- During role plays, focus on communication tone and clarity.
- Reinforce that documentation is a legal and procedural necessity, not just a formality.
- Provide a model filled job card for reference after the activity.

– Notes 🗐 ———————————————————————————————————	
-	













5. Plan for Machine Operation

Unit 5.1 - Planning for Machine Operations





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Discuss the importance of interpreting technical drawings, part lists, cutting lists, material lists, tools, equipment, etc., in achieving successful outcomes.
- 2. Organize different tools, equipment, and consumables for a given machining task.
- 3. Apply knowledge of different types of machine programs, processes, and their functions to perform machining operations according to the specified requirements.

UNIT 5.1: Planning for Machine Operations

-Unit Objectives 🏻 🎯



At the end of this unit, you will be able to:

- 1. Explain the importance of accurate interpretation of technical drawings, part lists, cutting lists, material lists, tools, equipment, etc., for the required machining operation.
- 2. Differentiate tools, equipment, and consumables for a given machining task.
- 3. Explain the different types of machine programs, processes, and their functions based on machining requirements.
- 4. State the importance of organizing and maintaining tools, materials, and components as per given specifications and standard operating procedures.
- 5. Explain the importance of work health and safety (WHS) requirements, including the use of personal protective equipment (PPE), during operations.
- 6. Assist in interpreting technical drawings, part lists, cutting lists, material lists, tools, equipment, etc., for the required machining operation.
- 7. Assist in selecting and preparing the appropriate tools, equipment, and consumables for a given machining task.
- 8. Employ suitable skills relating to different machine programs, processes, and functions while performing machining operations.
- 9. Assist in organizing and maintaining all the necessary tools, materials, and components for the required operation.
- 10. Manage the work health and safety (WHS) requirements, including personal protective equipment (PPE), during machining operations.

Resources to be Used



Theory:

- Diagrams and technical drawings for sample parts
- Sample cutting lists, material lists, and tool charts
- Overview of machining processes and common machine programs
- SOPs for tool organization and machine setup
- WHS guidelines, PPE usage protocols, and risk identification charts

Practical:

- Real or mock technical drawings and cutting lists
- Common tools, consumables, and machine parts for setup
- PPE kits (gloves, safety goggles, helmets, earplugs, etc.)
- Sample materials (MDF, plywood, laminates, hardware components)
- Practice kits for tool selection and layout organization

Say



"In this unit, we will learn how to prepare and plan for machine operations. From reading technical drawings to organizing tools and ensuring safety—each step is crucial for smooth and accurate machining. Planning well before the operation ensures we save time, reduce errors, and maintain safety."

Ask



- "Have you seen a technical drawing or part list before? What did you find challenging about it?"
- "Why do you think it's important to organize tools before starting a task?"
- "Can you name some PPE that should be worn during machine operation?"

(Encourage responses and relate them to real-life workshop experience.)

Elaborate



Break the session into clear, engaging parts:

1. Understanding Technical Drawings and Lists

- Learn how to read and interpret part lists, cutting lists, material lists, and tool lists.
- Identify the required machine settings and materials from the drawing.

Key Points:

- What symbols, views, and dimensions on a drawing mean
- Matching drawings to material types and quantities
- Understanding machine instructions or job cards

2. Tools, Equipment, and Consumables Identification

- Classify tools and consumables based on their machining functions.
- Hands-on familiarization with cutting tools, clamps, bits, blades, etc.

Key Points:

- Tool selection based on material and operation
- Difference between consumables and reusable tools
- Tool handling and storage safety

3. Machine Processes and Programming

- Introduction to types of machine operations and programs (e.g., CNC, semi-automatic).
- Overview of process steps and how different programs affect cutting paths and speeds.

Key Points:

- Matching process to material and machine
- Basic awareness of CNC programming flow (code, feed rate, path)
- Knowing when manual input or adjustments are needed

4. Organization of Tools and Materials

- Step-by-step guidance on organizing the workspace before machining.
- Creating layouts or tool trays as per job order.

Key Points:

- The 5S principle (Sort, Set in order, Shine, Standardize, Sustain)
- Reducing time loss by keeping frequently used items handy
- Maintaining material safety and minimizing errors

5. Work Health and Safety (WHS) Measures

- Identifying WHS hazards in a panelworks machining setup
- Proper use of PPE and safety signage

Key Points:

- Risk of injury from sharp edges, noise, dust
- Using the right PPE for eyes, ears, hands, and respiratory safety
- First aid and emergency reporting

Activity-1



Drawing and Part List Interpretation

Objective: Accurately read and understand technical drawings and related lists.

Materials Needed: Sample part drawings, cutting and material lists

Instructions:

- · Each trainee receives a drawing and related lists
- Identify key dimensions, tools required, and materials to be used

Expected Outcome: Trainees match drawings to task requirements and tool needs

Activity-2



Tool and Material Setup Challenge

Objective: Set up a tool and material station as per given specifications.

Materials Needed: Toolkits, consumables, trays, labels, part mockups

Instructions:

- Groups organize tools and materials for a mock job order
- Instructor evaluates based on neatness, accuracy, and readiness

Expected Outcome: Learners develop planning and tool management skills

Activity-3



WHS Drill and PPE Application

Objective: Practice safety awareness and proper PPE usage.

Materials Needed: PPE kits, WHS posters, hazard cards

Instructions:

- Hazard scenarios are introduced (e.g., dust exposure, slippery surface)
- Trainees must identify hazard, select appropriate PPE, and state the protocol

Expected Outcome: Trainees demonstrate safe behavior and WHS understanding



Ask trainees to:

- Review a sample job card and complete a checklist of tools and materials needed
- Organize their station for a mock task
- Complete a short quiz on WHS symbols and PPE application



"Excellent job everyone! By planning effectively and prioritizing safety, you've taken the first big step toward becoming a skilled machine operator. Our next unit will guide you into actual machine operations, where this preparation will come to life."

Notes for Facilitation |



- Encourage group discussions during tool selection—ask "why this tool?"
- Provide real-life examples of workplace mishaps due to poor planning or safety violations
- Allow peer reviews for station setups to promote quality awareness
- Keep PPE visible and practice its usage frequently

– Notes 🗐 ———————————————————————————————————













6. Organize the Worksite

Unit 6.1 - Arranging the Worksite



FFS/N1001

Key Learning Outcomes 👸

At the end of this module, you will be able to:

- 1. Discuss the importance of maintaining a clean and organized worksite to ensure smooth operations and optimize productivity.
- 2. Apply the appropriate procedures and techniques for cleaning and maintaining the worksite at regular intervals, adhering to established standards.
- 3. Safely and accurately arrange and stack panels before and after machine operations in Panelworks.
- 4. Assist in the verification process to ensure the received materials are suitable and in the required quantity for machine operations.

UNIT 6.1: Arranging the Worksite

-Unit Objectives 🏻 🎯



At the end of this unit, you will be able to:

- 1. Explain the importance of maintaining a clean and organized worksite for smooth operations.
- 2. Describe the procedures and techniques for cleaning and maintenance of the worksite.
- 3. Describe the process of arranging and stacking panels before and after the machine operation in Panel works operations.
- 4. Discuss the importance of verifying materials received for machine operation to ensure quality and productivity.
- 5. Follow the established procedures and techniques for cleaning and maintaining the worksite at regular intervals.
- 6. Arrange and stack panels accurately and safely before and after the machine operation.
- 7. Assist in the verification process to ensure the materials received are suitable and in the required quantity for the machine operation.

Resources to be Used



Theory:

- Guidelines or SOPs on worksite housekeeping and layout standards
- Illustrated examples of good vs. poor worksite arrangement
- SOPs for stacking and handling panels safely
- Quality checklist for incoming material verification
- Organization charts and panel handling flow diagrams

Practical:

- Cleaning tools and supplies (brooms, vacuum, dust cloths, bins, etc.)
- Safety signage and floor marking tapes
- Stackable panel sheets (various types and sizes)
- Panel handling tools (trolleys, lifts, gloves, safety pads)
- Sample material delivery notes and verification forms

Say



"A clean and well-organized worksite is not just about neatness—it's about efficiency, safety, and quality. In this unit, we'll explore how to prepare and maintain your work area so that panelwork operations run smoothly from start to finish."

Ask



- "Have you ever worked in a cluttered or disorganized space? What problems did you face?"
- "Why do you think correct stacking of panels is important in this industry?"
- "What could go wrong if the incoming material is not verified properly?"

(Encourage trainees to share practical challenges from experience or observations.)

Elaborate



Break the unit into simple, teachable segments:

1. Importance of a Clean and Organized Worksite

- Understand the link between cleanliness and productivity.
- Identify safety hazards caused by a cluttered or unclean work area.

Key Points:

- Clean worksites reduce tripping, damage, and machine faults
- Easy access to tools, materials = faster work
- Boosts morale and team efficiency

2. Procedures and Techniques for Worksite Cleaning

- Learn routine and periodic cleaning processes.
- Identify zones and materials that need regular upkeep.

Key Points:

- Use of cleaning schedules and cleaning responsibility charts
- Proper waste disposal (dust, offcuts, adhesive waste)
- Machine area vs. material storage area: different techniques

3. Arranging and Stacking Panels

- Safe and practical methods to store and handle panels.
- Arrangement of raw and processed panels before and after machine operations.

Key Points:

- Stack height, direction, and edge protection
- Labeling and sequencing for job order priority
- Use of trolleys and proper lifting methods

4. Material Verification before Operation

- Procedure to check material type, size, quality, and quantity
- Documentation and reporting of discrepancies

Key Points:

- · Matching materials against delivery notes/job orders
- Identifying damaged, warped, or incorrect materials
- Communicating with supervisors for replacements

Activity-1



Clean and Inspect the Workstation

Objective: Practice cleaning routines and identify unclean/unsafe conditions.

Materials Needed: Cleaning supplies, safety signage

Instructions:

- Teams clean designated work zones
- Identify hazards or misplacements and document them

Expected Outcome: Trainees demonstrate regular upkeep and hazard recognition

Activity-2



Stacking Panels Safely

Objective: Learn correct methods of arranging and stacking panel sheets.

Materials Needed: Panels of different sizes, stacking tools, markers

Instructions:

- · Practice stacking panels based on a mock job order
- Emphasize spacing, protection, and orientation

Expected Outcome: Trainees can stack and organize panels without damage or misalignment

Activity-3



Material Verification Drill

Objective: Verify incoming materials against job specs.

Materials Needed: Sample delivery notes, job cards, different panels

Instructions:

- · Teams check material quality and count against the provided sheet
- Mark any mismatch or damage

Expected Outcome: Trainees accurately verify and report material status

Activity-4



Guest Demonstration by Maintenance or QC Supervisor

Objective: Learn from a field expert about real-life challenges and best practices in organizing the worksite.

Session Includes:

- Live demonstration or photos of model worksites
- Tips for maintaining daily order and handling material quality issues
- Open Q&A session with trainees

Expected Outcome: Trainees gain industry insight and clarify practical doubts



Ask trainees to:

- Perform a complete mock setup: clean, stack, and verify
- Peer-review each other's arrangements for neatness and accuracy
- Discuss what could be improved in their workstations



"By maintaining a clean and well-arranged worksite, you're making it safer and more efficient for yourself and your team. In the upcoming units, we'll build on this foundation to focus on actual machine operations. A wellprepared space will help you work faster and avoid costly errors."

Notes for Facilitation



- Emphasize ergonomics and safety during stacking tasks
- Conduct a quick before/after photo review for cleaning activities
- Encourage teams to create their own 'cleaning and stacking checklist'
- Reinforce communication skills during the verification drill

– Notes 🗐 ———————————————————————————————————	













7. Assist in Machine Initiation Process

Unit 7.1 - Assisting the Machine Start-up Process





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Discuss the key constraints associated with checking and maintaining the safety equipment during machine initiation.
- 2. Perform adjustments to machine tools, such as blades, bits, edge bands, adhesives, cutters, table/bed, etc., according to job work requirements.
- 3. Verify and maintain the proper functioning of fundamental systems for effective work output.

UNIT 7.1: Assisting the Machine Start-up Process

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the importance of checking safety equipment before machine initiation in panel works machine operations.
- 2. Describe the process of performing adjustments to machine tools as per job work requirements.
- 3. Explain the purpose of fundamental systems such as air pressure, duct collector, stabilizers, etc.in the machining operation.
- 4. Explain the steps involved in the machine initiation operation based on manufacturer instructions.
- 5. List the appropriate consumables required for machine operation based on the machining process requirement.
- 6. Describe the steps involved in performing a trial run to evaluate operation, accuracy, and quality.
- 7. Check the safety equipment, including emergency stops, gauges, guards, and controls, before machine initiation, following the specified procedures and guidelines.
- 8. Assist in performing adjustments to machine tools, such as blades, bits, edge bands, adhesives, cutters, table/bed, etc., based on job work requirements.
- 9. Check and maintain the functioning of fundamental systems such as air pressure, duct collector, stabilizers, etc., as per manufacturer instructions and guidelines.
- 10. Assist in performing the machine initiation operation in accordance with the manufacturer instructions.
- 11. Feed the appropriate consumables, such as glue, adhesives, etc., required for machine operation as per the supervisor's instructions.
- 12. Assist in performing a trial run to evaluate operation, accuracy, and quality, making necessary adjustments in consultation with the supervisor.

Resources to be Used



Theory:

- Manufacturer manuals for panel works machines
- Visual aids and diagrams of air pressure systems, duct collectors, stabilizers
- · SOPs and checklists for pre-start and start-up procedures
- Safety equipment guidelines (guards, gauges, emergency stop buttons)
- Tool adjustment manuals and visuals

Practical:

- Panel machine start-up checklist
- Safety equipment: emergency stop, guards, PPE
- Tools: blades, bits, edge banding tools, cutters, adhesives
- Machines fitted with basic control systems
- · Adhesive feeders or glue pots
- Air pressure gauges, duct collectors (mock or real setup for demonstration)

Say



"Starting up a machine might seem simple, but skipping a single step can lead to major faults or even accidents. Today's session focuses on ensuring a safe and effective machine start-up by assisting your team and following standard procedures."

Ask



- "What could happen if a machine is started without checking for loose parts or proper tool adjustment?"
- "Why is it important to run a trial before starting the main machining job?"
- "Have you seen or assisted in a machine start-up process before?"

(Encourage learners to reflect on real or observed practices.)

Elaborate



Break down the core teaching points into smaller, practical parts.

- 1. Checking Safety Equipment
 - Identify safety controls, guards, and emergency systems
 - Understand the use of gauges, locks, and interlocks

Key Points:

- Always inspect emergency stops, guards, and PPE readiness
- All safety systems must function correctly before initiation

2. Adjusting Machine Tools

- Blade alignment, bit fitting, edge band fitting, adhesive pot positioning
- Table/bed positioning based on material size and shape

Key Points:

- · Adjustments must match job work specs and cutting lists
- Improper fitting leads to defective products and safety hazards

3. Understanding Fundamental Systems

- Air pressure ensures smooth material movement and control
- Duct collectors prevent dust accumulation and fire hazards
- Stabilizers regulate power and ensure machine safety

Key Points:

- Machines depend on external systems monitor these continuously
- Read gauge values, inspect filters, and report any malfunction

4. Machine Initiation Process

- Following step-by-step procedure from manufacturer's manual
- Supervisor-led or assistant-supported start-up

Key Points:

- Pre-checks, system power-up, material loading, control setup
- Operator must confirm everything is in place before final switch-on

5. Feeding Consumables

- Use of adhesives, glue, tapes, edge bands as per machine type
- Match quantity and type to material and output specs

Key Points:

- Wrong adhesive or excessive glue can damage both product and machine
- Supervisor instructions must be followed exactly

6. Trial Run for Quality Check

- Monitor tool action, edge precision, surface finish, etc.
- Adjust as required before full-scale operation

Key Points:

- Trial ensures setup is correct and safe
- Helps catch early errors in machine settings or adjustments

Activity-1



Pre-Start Safety Check

Objective: Perform a mock check of all safety systems on the machine.

Materials Needed: Safety checklist, mock/equipment setup

Instructions:

- · Teams inspect safety features and fill out the checklist
- Practice reporting a non-functioning safety feature

Expected Outcome: Learners confidently identify and verify safety systems

Activity-2



Machine Tool Adjustment Drill

Objective: Practice fitting and adjusting tools (blades, cutters, etc.)

Materials Needed: Blade holders, bits, measuring tools, alignment kits

Instructions:

- · Adjust machine parts based on a mock job sheet
- · Peer verify correct adjustments

Expected Outcome: Trainees can assist tool adjustment safely and accurately

Activity-3



Systems Functionality Walkthrough

Objective: Learn how to verify air pressure, duct collector, and stabilizer status

Materials Needed: System dials, mock air pressure setup, diagrams

Instructions:

- · Teams simulate system check based on SOP
- · Record readings, identify fault signs

Expected Outcome: Learners recognize system health indicators and follow protocols

Activity-4



Start-up and Trial Run Practice

Objective: Carry out the entire start-up procedure including trial run

Materials Needed: Panelwork machine (or demo unit), consumables, job card

Instructions:

- Assist in a mock start-up process
- Feed appropriate consumables
- · Conduct trial run and adjust as per supervisor feedback

Expected Outcome: Learners execute full start-up procedure with accuracy



Ask trainees to:

- Prepare a "Start-up Quick Guide" for their peer group
- Practice tool identification and naming in pairs
- Conduct a simulated start-up checklist for peer review



"The machine start-up process sets the tone for the entire operation. If done carefully and correctly, it ensures productivity, precision, and safety. Master this step, and you're already halfway to a successful shift."

Notes for Facilitation



- Emphasize clear communication with the supervisor during start-up
- Use real machine error stories (if available) to highlight importance of each check
- Reinforce learning through peer correction during tool adjustment practice

– Notes 🗐 ———————————————————————————————————













8. Handling Job Work during Machine Operation

Unit 8.1 - Managing Job Work During Machine Operation





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Demonstrate the importance of properly loading, unloading, and handling job work on/from the machine $bed in panel works \, machine \, operations.$
- 2. Operate different handling equipment for material movement.
- 3. Perform measurement and marking operations accurately based on job work specifications and guidelines.

UNIT 8.1: Managing Job Work During Machine Operation

-Unit Objectives 🏻 🎯



At the end of this unit, you will be able to:

- 1. Explain the importance of proper loading, unloading, and handling of job work on/from the machine bed in panel works machine operations.
- 2. Explain the functioning and proper operation of handling equipment used for material movement.
- 3. Explain the importance of performing measurement and marking operations accurately based on job work specifications.
- 4. Perform loading, unloading, and handling of the job work on/from the machine bed using appropriate techniques and procedures.
- 5. Display skills in operating different handling equipment for material movement.
- 6. Perform measurement and marking operations accurately based on job work specifications and guidelines.

Resources to be Used



Theory:

- Diagrams of job loading/unloading techniques
- SOPs for machine bed operations
- · Guidelines for manual and mechanical material handling
- Job work specification sheets
- Tools for measurement and marking (tape, square, chalk, marking gauge)

Practical:

- Panelworks machine or demo bed setup
- Handling tools: trolleys, lifters, clamps, rollers
- Sample panels or mock workpieces
- Measurement tools and marking instruments
- Safety PPE (gloves, boots, helmets)

Say



"Smooth handling of materials during machine operation is crucial to avoid damage, injury, or quality issues. Today's focus is on safely managing job work throughout the operation process — from lifting and loading to marking and measuring."

Ask



- "What might happen if a heavy panel is not loaded properly on the machine bed?"
- "How can accurate marking save time and reduce errors in cutting or processing?"
- "Have you worked with trolleys or lifters before to move heavy panels?"

 (Encourage brief learner responses based on personal experience or observation.)

Elaborate



1. Loading, Unloading, and Handling Job Work

- Understand the correct way to lift, load, and unload materials
- Identify and use safe lifting postures and aids
- Follow worksite protocols for machine bed operations

Key Points:

- · Poor handling leads to breakage or misalignment
- · Always support panels evenly and avoid dragging

2. Operating Handling Equipment

- Familiarize with basic handling tools: manual trolleys, lifters, clamps
- Match equipment use with the type and size of panel
- Follow operational safety measures

Key Points:

- · Always inspect equipment before use
- Use proper lifting points and support positions

3. Accurate Measurement and Marking

- Read and interpret work specifications
- Use tools like measuring tapes, T-squares, marking gauges
- Mark job work precisely before feeding into machines

Key Points:

- Precision here prevents machine errors
- Double-check measurements and tool alignment

Activity-1



Loading and Unloading Drill

Objective: Practice safe and proper techniques for loading/unloading panels onto/from a machine bed

Materials Needed: Sample panels, panel bed setup, clamps

Instructions:

- In pairs, learners lift, align, and load a panel
- · Practice proper unloading and placement

Expected Outcome: Learners show correct posture and handling methods

Activity-2



Handling Equipment Operation

Objective: Operate a basic handling tool (trolley, lifter) safely for material movement

Materials Needed: Trolley/lifter, mock panels

Instructions:

- Demonstrate tool inspection
- Move materials from stack to machine using tools

Expected Outcome: Learners correctly use equipment without damage or injury risk

Activity-3



Measurement and Marking Practice

Objective: Perform accurate measurement and marking as per a mock job sheet

Materials Needed: Measurement tools, chalk, ruler, sample panels

Instructions:

- · Learners measure dimensions based on the provided job work
- Mark cut lines or points clearly

Expected Outcome: Learners apply measuring and marking skills with accuracy

Do



Ask trainees to:

- · List safety rules to follow during loading/unloading
- Create a quick reference card for handling equipment
- Practice peer-verification of measurements and marks

Say



"Every panel counts — from the time it's loaded to the time it's cut. Careful handling, precise measuring, and proper tool usage make the difference between rework and results."

Notes for Facilitation



- Reinforce proper body posture during loading/unloading
- Use real-life stories (if available) of accidents due to poor handling
- Emphasize teamwork and communication during material movement

– Notes 🗐 ———————————————————————————————————













9. Assist in Performing Required Machine Operation

Unit 9.1 - Support in Executing the Required Machine Operation





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Demonstrate knowledge and skills in proper material storage and movement after the machine operation.
- 2. Apply the understanding of operating the machine within its designed capacity, performing machine $operations \, in \, accordance \, with \, manufacturer \, recommendations.$

UNIT 9.1: Support in Executing the Required Machine Operation

-Unit Objectives | @



At the end of this unit, you will be able to:

- 1. Explain the significance of operating the machine within its designed capacity and purpose based on manufacturer recommendations.
- 2. Describe the procedures for material storage and movement after the operation, ensuring safety and organization.
- 3. Assist in performing the machine operation in accordance with its designed capacity and purpose, adhering to manufacturer recommendations.
- 4. Ensure proper material storage and movement after the operation following the specified procedures and guidelines.

Resources to be Used



Theory:

- Manufacturer's manuals/specifications for machine operation
- SOPs (Standard Operating Procedures) for machine operation and safety protocols
- Materials handling guidelines and storage protocols
- Sample job specifications detailing machine requirements and material handling

Practical:

- Panelworks machine or relevant machine simulation setup
- Materials for post-operation handling (e.g., MDF, plywood panels)
- Appropriate lifting and material handling equipment (e.g., trolleys, lifters)
- Labels and marking tools for material storage
- Sample job orders/specifications for material movement

Say



"Today, we'll learn how to ensure machines are operated safely and efficiently, while also ensuring the proper handling and storage of materials after the operation is complete. This step is crucial for maintaining quality, safety, and smooth operations."

Ask



- "Why is it important to operate a machine within its designed capacity?"
- "What challenges might arise if materials are not stored properly after the operation?"
- "How can proper support during machine operation improve the overall efficiency of the process?"

 Encourage learners to share their thoughts and experiences as they relate to these questions, and use their insights to enhance the discussion.

Elaborate



Break down the core content into easy-to-understand segments:

1. Operating the Machine Within Its Designed Capacity

- Ensure the machine operates within its specified limits (e.g., material size, thickness, pressure, and speed). Overloading or misusing the machine can lead to breakdowns or safety risks.
- Key Points:
 - ✓ Always check manufacturer guidelines for capacity limits.
 - ✓ Follow SOPs for specific machine settings based on material type and job requirements.
 - ✓ Keep regular checks to avoid exceeding the machine's operating capacity.

2. Safe Storage and Movement of Materials Post-Operation

 After completing the operation, materials must be handled carefully to avoid damage or contamination. Materials should be labeled, stacked properly, and moved using appropriate equipment to prevent accidents and ensure organizational standards are met.

• Key Points:

- ✓ Use trolleys, lifters, or manual lifting equipment to move materials.
- ✓ Stack materials to avoid bending, warping, or surface damage.
- ✓ Label materials for easy identification and correct storage (e.g., completed, awaiting inspection).

3. Supporting the Machine Operation

- As a support worker, it's crucial to assist the machine operator by aligning materials, providing tools, and ensuring safe and efficient machine operation. This role often includes checking machine settings, ensuring the proper placement of materials, and maintaining communication with the operator.
- Key Points:
 - ✓ Be alert and follow all instructions from the machine operator.
 - ✓ Maintain an organized work environment to prevent accidents.
 - ✓ Ensure communication is clear regarding material handling and machine adjustments.

Activity-1



Machine Capacity Check

Objective: Help trainees understand machine capacity limits and why they matter.

Materials Needed: Manufacturer's manuals, machine settings, and job specifications.

Instructions:

- Have trainees review machine specifications and identify potential overloading scenarios.
- Ask them to match material sizes with the corresponding machine settings.

Expected Outcome: Trainees will learn how to identify and avoid exceeding machine limits.

Activity-2



Material Handling Practice

Objective: Practice the safe storage and movement of materials.

Materials Needed: Sample materials (e.g., MDF panels, plywood), lifting equipment, labels.

Instructions:

- Trainees will practice lifting and storing materials safely using different equipment (e.g., trolleys, lifters).
- Ask them to stack the materials correctly and label them for tracking.

Expected Outcome: Trainees will demonstrate proper material handling techniques.

Activity-3



Roleplay - Supporting the Operator

Objective: Develop skills in assisting the operator during machine operation.

Materials Needed: Panelworks machine or relevant simulation, materials to be processed.

Instructions:

- One trainee acts as the machine operator, while the other assists by aligning materials and performing minor adjustments.
- Switch roles so all learners get a chance to practice both roles.

Expected Outcome: Trainees will gain experience in providing support during live machine operations.

Do



(Wrap-Up Tasks for Learners):

- Supervised Practice: Have each trainee independently perform material handling tasks, including proper lifting, stacking, and labeling.
- Peer Review: Trainees will evaluate each other's work for efficiency, alignment, and material safety.

Say



You've learned how essential it is to support machine operations by working within machine capacity and following safe procedures for material handling. The next steps will involve taking these skills and applying them in more detailed machine operations, but remember, everything starts with the support you've practiced today."

Notes for Facilitation



- Continuously reinforce the importance of safety during machine operation and material handling. Ensure learners wear proper personal protective equipment (PPE).
- Provide feedback during each activity, especially during material handling and machine support exercises.
- Use real-world job specifications to make the activities more practical and relatable.
- Ensure trainees understand the connection between machine operations and the final product, emphasizing that their support is crucial for quality and safety.

– Notes 🗐 ———————————————————————————————————













10. Clean and Maintain the Machine

Unit 10.1 - Maintain and Clean the Machine





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Recognize and explain the importance of performing machine cleaning at regular intervals.
- 2. Properly handle and store different types of waste/offcut materials according to their specific requirements.
- 3. Perform checks on the machine, including key components and indicators for its working efficiency and troubleshoot maintenance problems.

UNIT 10.1: Maintain and Clean the Machine

-Unit Objectives 🏻 🎯



At the end of this unit, you will be able to:

- 1. Explain the importance of performing internal machine cleaning at regular intervals in machine operations.
- 2. Classify different types of waste/offcut materials relating to machining operations.
- 3. List key components and indicators to check for the machine's proper working condition.
- 4. Classify common types of minor machine malfunctions or issues based on symptoms and observations.
- 5. Describe the specific cleaning and maintenance requirements for various machine components.
- 6. Describe the process of reporting major machine malfunctions or maintenance requirements to the supervisor.
- 7. Perform internal machine cleaning at regular intervals following the specified procedures and guidelines.
- 8. Handle and store different types of waste/offcut materials according to their specific requirements.
- 9. Conduct comprehensive checks of the machine to ensure its proper working condition while following safety protocols.
- 10. Assist in identifying and diagnosing minor machine malfunctions or issues during operation using appropriate troubleshooting methods.
- 11. Assist in performing routine maintenance tasks, such as cleaning and lubrication following the specified procedures and guidelines.
- 12. Report any major machine malfunctions or maintenance requirements to the supervisor following the specified procedures and guidelines.

Resources to be Used



Theory:

- Training manual or presentation on machine maintenance and cleaning protocols
- SOPs for cleaning and lubricating machine components
- Waste classification and disposal guidelines
- Charts showing symptoms of minor machine malfunctions and basic troubleshooting techniques
- Maintenance checklist formats
- Manufacturer's operation and maintenance manuals

Practical:

- Panel processing or relevant machines (with cleaning and maintenance access)
- Cleaning tools and materials (brushes, cloths, air guns, vacuums)
- Lubricants and maintenance tools (wrenches, screwdrivers, grease guns)
- Waste bins and segregation containers (for wood dust, offcuts, metal shavings, etc.)
- PPE (gloves, goggles, dust masks, aprons)
- Sample maintenance logs and malfunction reporting templates

Say



"Today, we are going to learn how to maintain and clean the machines you work with. This is not just about cleanliness—maintenance directly impacts safety, machine lifespan, and production quality. A clean and well-maintained machine runs efficiently and helps prevent breakdowns."

Ask



- "What do you usually notice when a machine starts malfunctioning? Any specific sounds, smells, or performance issues?"
- "Have you ever cleaned a machine before? What steps did you take?"
- "Why do you think regular internal cleaning and proper waste handling are critical in woodworking or panel operations?"

Encourage group discussion. Note their responses and tie them into the content that follows.

Elaborate



Break the unit into understandable segments with key concepts.

1. Importance of Cleaning and Maintenance

- Regular cleaning reduces machine wear and prevents the buildup of dust or residue that may interfere
 with operation.
- Preventive maintenance helps detect issues early and avoid major breakdowns.

Key Points:

- Follow a maintenance schedule (daily, weekly, monthly).
- Internal areas are often overlooked—ensure filters, vents, and tight spaces are cleaned.
- Clean surroundings and waste bins help prevent fire hazards and accidents.

2. Types of Waste and Handling Methods

- Machines produce various offcuts and waste: wood shavings, metal fragments, plastic dust, etc.
- Handling methods differ based on material type—some are recyclable, some need special disposal.

Key Points:

- Use separate bins for different waste types.
- Always wear gloves and a dust mask while handling waste.
- Store waste materials away from machines to prevent clogging and hazards.

3. Routine Maintenance Checks and Minor Malfunctions

- Minor issues can be spotted by changes in noise, vibration, heating, or uneven cuts.
- Trainees should inspect parts like belts, cutters, feed rollers, guide rails, etc.

Key Points:

- Learn basic troubleshooting (e.g., checking alignment, lubrication needs).
- Identify warning signs like burning smells, slower performance, or overheating.
- Understand when to report and when to fix minor issues under guidance.

4. Reporting and Record Keeping

- Proper reporting helps prevent bigger problems and ensures timely repair.
- Use standard forms or digital logs to document issues and performed maintenance.

Key Points:

- Report any irregular noise, smoke, jamming, or sudden performance drop.
- Note time, symptoms, actions taken, and person responsible in the log.
- Always inform your supervisor about major issues before resuming work.

Activity-1



nternal Machine Cleaning

Objective: To perform safe and thorough cleaning of a machine's internal components.

Materials Needed: Cleaning brushes, cloths, vacuum, compressed air, PPE

Instructions:

- Demonstrate how to shut down and isolate the machine from power.
- Guide trainees through cleaning filters, vents, bed surfaces, and internal compartments.
- Reinforce safety protocols (wearing PPE, using proper tools).

Expected Outcome: Trainees perform internal cleaning using appropriate techniques and maintain cleanliness standards.

Activity-2



Waste Classification and Handling

Objective: To correctly identify and sort machine-generated waste.

Materials Needed: Waste samples (wood, plastic, metal shavings), labeled bins

Instructions:

- Trainees will identify and segregate different types of offcut materials.
- Use visual aids to reinforce waste types and handling methods.
- Simulate a full clean-up and disposal task.

Expected Outcome: Trainees demonstrate the ability to identify and handle different waste materials safely and correctly.

Activity-3



Maintenance and Troubleshooting Simulation

Objective: To perform a routine check and identify minor machine issues.

Materials Needed: Machine, maintenance checklist, malfunction symptom cards

Instructions:

- Trainees will perform a guided machine check using a checklist.
- They will simulate diagnosing issues based on symptom cards (e.g., vibration, overheating).
- Practice completing a maintenance log and reporting form.

Expected Outcome: Trainees identify minor faults, complete routine checks, and correctly log or report issues.



(Wrap-Up Tasks for Learners):

- Supervised Practice: Each trainee performs a machine clean-up, segregates waste, and completes a basic maintenance checklist.
- Peer Review: Rotate roles to inspect each other's work and give structured feedback.



"Well done! You've learned how crucial machine cleanliness and maintenance are to your job. A wellmaintained machine not only runs better but also keeps you and your coworkers safe. Next, we'll look at more advanced fault diagnosis and preventive care techniques."

Notes for Facilitation



- Always enforce lockout/tagout procedures during cleaning.
- Walk around during activities to correct posture, tool use, or safety violations.
- Emphasize real-world examples—like fire risks due to dust or a jammed cutter due to ignored maintenance.
- Provide positive reinforcement for proper maintenance log entries and waste handling.

– Notes 🗐 ———————————————————————————————————	
-	













11. Assist in Maintenance Operation

Unit 11.1 - Assisting in Maintenance Operation





Key Learning Outcomes 🕎



At the end of this module, you will be able to:

- 1. Recognize and explain the importance of checking and re-sharpening tools and equipment at regular intervals.
- $2. \quad Identify and check for common types of wear and tear on machine consumables.\\$

UNIT 11.1: Assisting in Maintenance Operation

-Unit Objectives | @



At the end of this unit, you will be able to:

- 1. Explain the importance of checking and resharpening tools and equipment at regular intervals.
- 2. List common types of wear and tear for machine consumables, such as edge bands, veneers, laminate, etc.
- 3. Describe the specific storage requirements and conditions recommended by the tool and material manufacturers.
- 4. Assist in checking and re-sharpening tools and equipment (like bits, saws, etc.) at regular intervals following the specified procedures and guidelines.
- 5. Check wear and tear of the machine consumables after operations such as edge bands, veneers, laminate, etc.
- 6. Store and maintain the tools and materials as per manufacturer instructions following the specified procedures and guidelines.

Resources to be Used



Theory:

- Training manual or presentation on maintenance of tools and consumables
- SOPs for tool sharpening and inspection procedures
- Charts showing types of wear and tear for materials (edge bands, laminate, veneers)
- Manufacturer's storage and maintenance recommendations
- Tool and material data sheets (e.g., hardness, cutting angles, shelf life)

Practical:

- Blunt and sharp samples of bits, saws, cutters, etc.
- · Manual and semi-automatic tool sharpening equipment
- Common consumables used in the workshop: edge bands, veneer rolls, laminates
- Storage racks, sealed containers, humidity-controlled cabinets (if available)
- PPE (gloves, goggles, ear plugs)
- Maintenance logs or checklists for tool re-sharpening

Say



"Today, we're going to learn how to support maintenance operations by assisting with the sharpening of tools and checking the condition of materials like edge bands and veneers. Well-maintained tools lead to smoother operations, higher precision, and a longer machine life."

Ask



- "Have you ever worked with dull or damaged tools? What effect did that have on your work?"
- "What signs do you think indicate that a tool needs re-sharpening?"
- "Why do you think proper storage of materials like veneers and laminates is important?"

Encourage responses and relate their observations to upcoming content.

Elaborate



Elaborate:

1. Importance of Checking and Resharpening Tools

- Dull tools increase power consumption, cause inaccurate cuts, and may damage workpieces.
- Regular sharpening ensures smoother operation, longer tool life, and better safety.

Key Points:

- Signs of dullness: burn marks, rough edges, noise, resistance during cutting
- Follow sharpening intervals or usage-based schedules
- Re-sharpen using correct angles and tools as per the manufacturer's guidelines

2. Identifying Wear and Tear in Consumables

- Repeated machine operations cause visible wear on edge bands, veneers, and laminates.
- These materials may become brittle, frayed, or lose adhesion properties.

Key Points:

- Visual signs: fraying, curling edges, discoloration, cracking
- Handling techniques to prevent further damage during use or storage
- Documenting wear in logs and replacing consumables on time

3. Storage and Maintenance of Tools and Materials

- Incorrect storage can warp, dull, or spoil tools and materials.
- Different items require different storage: e.g., veneers need humidity control, edge bands need protection from dust and sunlight.

Key Points:

- Store tools in designated holders or foam racks to avoid blade damage
- Seal and label consumables with dates and type
- Maintain storage conditions—cool, dry, protected from direct sunlight or moisture

Activity-1



Tool Condition Check and Sharpening

Objective: To assess and assist in sharpening dull tools safely.

Materials Needed: Dull and sharp tools (bits, blades, cutters), sharpening equipment, PPE

Instructions:

- Demonstrate identifying dull tools by touch and visual inspection
- Show proper sharpening angles and movements
- Let trainees assist in sharpening one tool under supervision

Expected Outcome: Trainees can identify dull tools and assist safely in resharpening using SOPs

Activity-2



Consumable Inspection

Objective: To check wear and tear of edge bands, veneers, and laminates.

Materials Needed: Samples of used and new edge bands, veneers, laminates, inspection checklist

Instructions:

- Distribute consumable samples
- Ask trainees to inspect and record the condition (acceptable, minor wear, damaged)
- Discuss causes and prevention

Expected Outcome: Trainees recognize different types of wear and document them correctly

Activity-3



Material and Tool Storage Setup

Objective: To correctly store tools and materials as per guidelines.

Materials Needed: Storage bins, racks, tool holders, labels, sealing materials

Instructions:

- Trainees categorize materials and tools based on their type
- Store them appropriately, using labels and date codes
- Explain the reasoning behind each choice

Expected Outcome: Trainees demonstrate correct storage techniques and understand the rationale

Do



(Wrap-Up Tasks for Learners):

- Supervised Practice: Each trainee assists in sharpening one tool, checks one type of consumable, and sets up one material/tool for storage.
- Peer Review: Trainees inspect each other's storage arrangements and sharpened tools for safety and accuracy.

Say



"By maintaining your tools and materials properly, you help extend their life and keep operations smooth. It also means less downtime and fewer accidents. In the next unit, we'll see how all these support activities connect with production efficiency."

Notes for Facilitation



- Ensure all sharpening tasks are closely supervised—sharpening tools involve risk.
- Keep safety reminders visible, especially during tool handling.
- Encourage group discussion on observed defects or best practices.
- Tie storage learning back to actual workshop constraints—space, humidity, dust, etc.
- Reinforce the habit of maintenance logs and regular checking through hands-on repetition.

– Notes 🗐 ———————————————————————————————————













12. Assist in Quality Control and Assurance Process

Unit 12.1 - Support the Quality Control and Assurance Process





Key Learning Outcomes 🕎



At the end of this module, you will be able to:

- 1. Explain the process of inspecting final output for its quality and required job specifications.
- 2. Demonstrate the ability to identify deviation from the required job specifications during machining operation.

UNIT 12.1: Support the Quality Control and Assurance Process

-Unit Objectives 🏻 🎯



At the end of this unit, you will be able to:

- 1. Explain the specific quality standards and criteria for inspecting the output, identifying defects.
- 2. Explain the process of identifying deviations from the desired specifications and taking corrective actions in machine operations.
- 3. Describe the importance of reporting quality issues or non-conformities to the supervisor.
- 4. Assist in inspecting the output at regular intervals, applying the specific quality standards and criteria to identify and report defects.
- 5. Employ the necessary corrective actions to identify and address deviations or non-conformities.
- 6. Detect and recognize quality issues or nonconformities in the product or workpiece based on the specified criteria.

Resources to be Used | ⊕



Theory:

- Training manual or presentation on quality control (QC) and quality assurance (QA) fundamentals
- Quality checklists and defect identification charts
- Product specification sheets and tolerance levels
- SOPs for conducting quality inspections and reporting non-conformities
- Sample quality reports and documentation formats

Practical:

- Finished and semi-finished workpieces (with both acceptable and defective examples)
- QC tools: calipers, gauges, measuring tapes, defect charts
- Marking and tagging tools for identified defects
- Sample job cards with specification details
- Reporting templates (digital or print)
- PPE for safe handling of inspected materials

Say



"Today we'll focus on how to support quality control and assurance by inspecting products, recognizing defects, and taking or reporting corrective actions. QC isn't just about catching errors—it's about preventing rework and ensuring customer satisfaction."

Ask



- "Have you ever spotted a defect in a product you were working on? What did you do next?"
- "Why do you think it's important to inspect output at regular intervals and not just at the end?"
- "How would you react if a colleague ignored a visible quality issue?"

Encourage sharing of real-life examples to build practical relevance.

Elaborate



1. Understanding Quality Standards and Inspection Criteria

- Each product or component has measurable parameters for quality (e.g., dimensions, surface finish, fit).
- Inspection is done using both visual and tool-based methods.

Key Points:

- Know what acceptable vs. non-conforming output looks like
- Understand common types of defects (e.g., rough edges, incorrect dimensions, poor finish)
- Refer to specification sheets and SOPs during inspection

2. Identifying Deviations and Taking Corrective Actions

- Regular checks can prevent large-scale rejection of faulty batches.
- Minor deviations can often be corrected early in the process.

Key Points:

- Types of deviations: dimensional, cosmetic, structural
- How to measure against tolerance limits
- Apply corrective actions like reworking, adjusting machine settings, or replacing material

3. Reporting Non-Conformities and Quality Issues

- Timely and accurate reporting allows supervisors to act quickly.
- Consistent documentation supports quality audits and continuous improvement.

Key Points:

- Use standard formats and reports
- Highlight type and location of defect
- Communicate clearly with the production team and supervisor

Activity-1



Defect Identification Practice

Objective: To identify visible and measurable defects using quality criteria

Materials Needed: Sample workpieces (both OK and defective), defect charts, measuring tools

Instructions:

- Distribute mixed workpieces
- Trainees will inspect for defects using tools and charts
- Tag or mark the defect type and location

Expected Outcome: Trainees can accurately detect defects and classify them based on severity

Activity-2



Quality Inspection Against Specification Sheet

Objective: To match product features against specification sheets and record results

Materials Needed: Job cards/spec sheets, sample products, inspection log sheet

Instructions:

- Trainees compare product dimensions, finish, or alignment to provided specs
- Record findings in a standard inspection format
- Discuss observations as a group

Expected Outcome: Trainees learn to evaluate work objectively and use documentation tools

Activity-3



Reporting Quality Issues

Objective: To practice reporting non-conformities to a supervisor

Materials Needed: Sample defect scenarios, reporting templates

Instructions:

- Present defect scenarios or let trainees use previously found issues
- Fill in the reporting form with defect description, possible causes, and corrective actions
- Present or simulate communication with a supervisor

Expected Outcome: Trainees demonstrate clear and timely defect reporting

Do



(Wrap-Up Tasks for Learners):

- Supervised Practice: Each trainee inspects a product batch, completes a QC report, and discusses findings
- Peer Review: Compare reports and defect identification among group members to encourage attention to detail

Say



• "You now understand that quality control is not just a final step—it's part of every stage of production. In the next unit, we'll look into how these inspections contribute to improving the entire production system."

Notes for Facilitation



- Encourage trainees to take time during inspection; emphasize accuracy over speed
- Highlight the importance of calm, respectful communication when reporting issues
- Use real examples from your own production line if available to add authenticity
- Reinforce the idea that early detection of quality issues reduces waste and increases efficiency

– Notes 🗐 ———————————————————————————————————













13. Health and Safety Practices at the Worksite

Unit 13.1 - Worksite Health and Safety Practices





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- Describe how to maintain a healthy, safe, and secure environment at the worksite.
- Implement safety practices and optimize the use of resources.
- 3. Demonstrate health and safety procedures.
- 4. Employ personal hygiene practices at the worksite.
- 5. Develop the ability to follow hygiene practices.

UNIT 13.1: Worksite Health and Safety Practices

-Unit Objectives | ©



At the end of this unit, you will be able to:

- 1. List the types of cleaning consumables and equipment.
- 2. Describe the various types of waste bins as per usage.
- 3. Explain how to label appropriate Personal Protective Equipment (PPE) needed for a job role and application.
- 4. Describe the evacuation process in case of fire.
- 5. Explain the importance of work ethics, dress code, and personal hygiene.
- 6. Explain the operational guidelines for the usage of tools and equipment.
- 7. Describe the storage and handling procedure for hazardous substances.
- 8. Describe the importance of safe lifting practices and correct body postures.
- 9. Document all possible health, safety, and security breaches at the worksite.
- 10. Demonstrate the housekeeping process using appropriate equipment.
- 11. Demonstrate the use of personal protective equipment such as goggles, gloves, earplugs, shoes, etc.
- 12. Demonstrate how to use a first aid kit.
- 13. Demonstrate the correct way of sanitizing and washing hands.
- 14. Demonstrate how to maintain a dress code and a well-groomed personality at the worksite.
- 15. Demonstrate the correct postures while working and handling hazardous materials at the workplace.
- 16. Identify and interpret the given pictorial representations of safety signs and hand signals.
- 17. Employ different ways to check if equipment/machines are functioning as per requirements and report malfunctioning.
- 18. Demarcate the waste based on recyclable and non-recyclable material.
- 19. Demonstrate the correct techniques while moving various types of products.

Resources to be Used



Theory:

- Safety training presentation or manual (covering PPE, waste management, fire safety, ergonomics)
- Safety sign and symbol charts

- SOPs on safe handling, lifting techniques, and evacuation procedures
- · Guidelines on hazardous material storage and first aid use

Practical:

- PPE (gloves, goggles, earplugs, safety shoes, masks, helmets)
- First aid kit
- Sample waste bins (color-coded: biodegradable, recyclable, hazardous)
- Cleaning tools (broom, mop, sanitizers)
- Safety signage cards
- · Dummy boxes and tools for lifting practice

Say



"Today, we will explore essential health and safety practices at the worksite. These practices not only ensure your safety but also contribute to a clean, efficient, and hazard-free work environment. From wearing the right gear to knowing how to handle emergencies, these skills are non-negotiable for every professional."

Ask



- "Can anyone share a time when a safety measure prevented an accident on the job?"
- "Why do you think proper waste segregation is important in a manufacturing or processing unit?"
- "What challenges do you face when using PPE at work?"

Please feel free to share your insights—we'll be using them to build our group safety checklist on the board.

Elaborate



Break the topic into three focused segments:

1. Personal Protective Equipment (PPE) and Hygiene

- Discuss types of PPE required for different tasks and how to wear/remove them.
- Importance of maintaining personal hygiene and worksite dress code.

Key Points:

- Each task has specific PPE needs (e.g., goggles for dust, gloves for chemicals).
- Poor hygiene can lead to contamination and health issues.
- Dress code promotes safety and professionalism.

2. Waste Management and Housekeeping

- Types of waste (organic, recyclable, hazardous) and associated color-coded bins.
- How to handle and dispose of different waste safely.
- Routine cleaning processes and equipment.

Key Points:

- Mismanaged waste leads to contamination, slips, or health risks.
- Housekeeping prevents accidents and improves efficiency.
- Hazardous waste must be stored and labeled per guidelines.

3. Emergency Readiness and Safe Practices

- Fire evacuation process and first aid basics.
- Ergonomic practices for safe lifting and working posture.
- Safety signs and signals for communication and hazard recognition.

Key Points:

- Evacuation plans must be known and rehearsed.
- Incorrect posture while lifting can cause serious injury.
- Recognizing safety signs helps prevent major accidents.

Activity-1



PPE Role Play and Identification Game

Objective: To correctly identify and wear PPE for different tasks

Materials Needed: Full PPE kit, task scenario cards

Instructions:

- Show learners cards with work scenarios (e.g., chemical spill, heavy lifting).
- Ask them to select and wear appropriate PPE.
- Discuss why their choices are correct or need revision.

Expected Outcome: Learners can match PPE with tasks and demonstrate proper usage.

Activity-2



Waste Sorting and Housekeeping Drill

Objective: To segregate waste properly and perform a basic cleaning task

Materials Needed: Color-coded bins, waste samples (labels, food scraps, plastic, cans), cleaning tools

Instructions:

- Spread waste samples randomly and ask trainees to sort into appropriate bins.
- Assign a small area to each trainee for cleaning using standard tools.

Expected Outcome: Learners understand waste segregation rules and proper housekeeping protocols.

Activity-3



Emergency Evacuation and Safety Sign Challenge

Objective: To practice fire evacuation and interpret safety signs

Materials Needed: Safety sign flashcards, first aid kit, fire alarm sound (or simulation)

Instructions:

- Conduct a mock fire drill; trainees follow the evacuation route.
- During the break, show safety signs—trainees must interpret meaning and response.
- End with a short demo on first aid kit usage.

Expected Outcome: Learners understand evacuation procedures, recognize safety signs, and demonstrate first aid basics.

Do



Ask trainees to:

- Participate in each activity hands-on.
- Reflect and share what new safety practice they learned today.
- Correct one common safety mistake they've seen at work.

Say



"You've just practiced how vital health and safety protocols are—from preventing injuries to saving lives. These habits should be second nature at your worksite. Next time you step into your role, observe your surroundings with a safety-first mindset."

Notes for Facilitation |



- $\bullet \quad \text{Keep sessions interactive} \text{use real scenarios for relatability}.$
- Emphasize correct posture and lifting techniques during demos.
- Praise correct use of PPE and good hygiene habits.
- Use a safety checklist to review key concepts during wrap-up.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-













14. Greening Practices at the Worksite

Unit 14.1 - Worksite Greening Practices





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Use the resources at the worksite efficiently.
- 2. Apply conservation practices at the worksite.

UNIT 14.1: Worksite Greening Practices

-Unit Objectives 🧭



At the end of this unit, you will be able to:

- 1. Explain the ways for efficient utilization and conservation of material.
- 2. Explain the various ways of saving energy.
- 3. Explain the benefits of periodic cleaning of tools and equipment.
- 4. Demonstrate ways for efficient utilization of material and water.
- 5. Employ different ways to check if tools and equipment are functioning correctly and report anomalies, if any.

Resources to be Used



Theory:

- Training manual or presentation on green worksite practices
- Case studies of eco-friendly production facilities
- Guidelines on energy-saving techniques and water conservation methods
- Tool maintenance checklists and SOPs

Practical:

- Tools and machines used in daily operations
- Water flow meter (or simulated tools for tracking usage)
- Cleaning materials (non-toxic cleaning agents, brushes, cloths)
- Sample job cards highlighting material usage and tool checklist logs



"Today, we'll explore sustainable practices that can make a big difference at your worksite. Greening your workplace means using materials, water, and energy wisely—saving money and protecting the environment at the same time. Every small step you take today helps build a safer and greener future."

Ask



- "Have you noticed areas at your workplace where water or energy is wasted?"
- "What are some simple changes we could make to reduce material wastage?"
- "Why do you think regular cleaning of equipment can lead to energy savings?"

Let's share our thoughts—it's these small observations that lead to big improvements!

Elaborate



Break the topic into three clear focus areas:

1. Efficient Utilization and Conservation of Resources

- Discuss methods to optimize raw material usage (accurate measurements, reuse of offcuts, lean production).
- Explain how to conserve water through leak checks, timed use, and recycling where possible.

Key Points:

- Plan material cuts efficiently to minimize waste.
- Monitor water usage regularly and reduce unnecessary consumption.
- Record and track usage data to identify saving opportunities.

2. Energy-Saving Practices and Equipment Maintenance

- Introduce common workplace energy-saving actions (switching off idle machines, using energy-efficient lighting).
- Emphasize how clean and well-maintained tools run more efficiently and consume less energy.

Key Points:

- Equipment running below capacity consumes more power.
- Dusty or unlubricated parts lead to higher energy draw.
- Scheduled maintenance avoids energy inefficiency and tool damage.

3. Monitoring Equipment Function and Reporting

- Teach how to check for signs of malfunction (unusual sounds, overheating, irregular performance).
- Explain importance of early reporting to avoid breakdowns and material waste.

Key Points:

- Regular inspections improve tool lifespan.
- Early issue detection prevents unplanned downtime.
- Reporting problems ensures smoother operations.

Activity-1



Material and Water Conservation Audit

Objective: To identify opportunities to reduce wastage of materials and water

Materials Needed: Sample job card with material usage data, mock water usage charts

Instructions:

- Trainees review job cards and water usage data to spot excessive usage.
- In groups, list 2–3 steps to reduce waste and improve efficiency.

Expected Outcome: Trainees suggest practical ways to reduce water/material waste based on current usage patterns.

Activity-2



Tool Cleaning and Inspection Drill

Objective: To demonstrate the effect of regular cleaning on tool efficiency

Materials Needed: Dirty and clean hand tools or mock machines, cleaning supplies

Instructions:

- Each trainee is given a tool to inspect and clean.
- After cleaning, compare functionality, smoothness, or signs of wear.

Expected Outcome: Trainees experience how cleaning improves tool performance and energy efficiency.

Activity-3



Equipment Functionality Check and Report

Objective: To check tool/machine function and identify/report anomalies

Materials Needed: Machine or tool with simulated issues, maintenance log sheet

Instructions:

- Trainees inspect the assigned equipment.
- Identify and document any visible or audible issues in the log sheet.
- Present findings to the group.

Expected Outcome: Trainees become comfortable inspecting tools and reporting early signs of malfunction.

Do



Ask trainees to:

- Record one sustainable habit they will adopt starting today.
- Identify at least one area at their actual workplace where they can help reduce energy or water use.
- Reflect on the difference clean tools made during the session.

Say



"By integrating these greening practices into your daily work, you contribute not just to the company's efficiency but also to a more sustainable world. In our next unit, we'll build on this by learning how to contribute actively to continuous improvement processes."

Notes for Facilitation



- Reinforce the long-term savings and benefits of greening practices.
- Encourage group discussions around real workplace examples.
- Let trainees take turns presenting findings to improve accountability.
- Keep examples relatable—focus on small changes that make big impacts.

– Notes













15. Assist in Operating Pasting and Pressing Machines

- Unit 15.1 Assist in Workplace Setup for Pasting/Pressing Machine
- Unit 15.2 Assist in Pasting Operation
- Unit 15.3 Assist in Pressing Operation
- Unit 15.4 Workplace and Equipment Management for Pasting/Pressing Machine





Key Learning Outcomes | 💆



At the end of this module, you will be able to:

- 1. Discuss the process of efficient stacking and storage of materials and workpieces at designated machine stations, employing proper handling techniques for pasting/pressing machine operation.
- 2. Employ critical thinking skills and understanding of quality standards to evaluate the quality of job work received for pasting/pressing machine operation.
- 3. Assist in perform machine setup process and prepare the machine for required pasting/pressing machining operation.
- 4. Demonstrate the ability to assist in applying the appropriate adhesive or glue to workpieces using designated equipment and techniques.
- 5. Discuss the significance of even and consistent distribution of adhesive on proper bonding between materials.
- 6. Demonstrate the skills to assist in operating and monitor the pasting machine for required job work.
- 7. Demonstrate accurate and efficient handling and loading of workpieces onto the machine, using appropriate handling techniques.
- 8. Demonstrate their ability to evaluate and adjust the machine parameters based on job work requirements.
- 9. Demonstrate the skills to assist in operating and monitor the pressing machine for required job work.
- 10. Demonstrate knowledge and understanding of the cleaning and maintenance procedures for the pasting/pressing machine and its part.
- 11. Apply organizational skills and principles to efficiently manage the workspace, including the proper storage of panels and the appropriate disposal of waste.
- 12. Utilize their knowledge of quality standards and specifications to assist in inspecting pasted/pressed materials for defects.
- 13. Utilizing appropriate record-keeping techniques and systems to prepare and maintain process documents.

UNIT 15.1: Assist in Workplace Setup for Pasting/Pressing Machine

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the importance of proper stacking and storage of materials and workpieces for pasting/pressing operations.
- 2. List the key constraints involved in checking the quality of job work received for pasting/pressing machine
- 3. List the functions of different components in a pasting/pressing machine.
- 4. Explain the purpose and effect of adjusting machine settings, such as temperature, time, and pressure, on the bonding process.
- 5. Perform stacking and storage of materials and workpieces following the specified procedures and guidelines.
- 6. Employ appropriate quality standards and techniques to assess the quality of job work received for pasting/pressing operation.
- 7. Assist in the setup and preparation of pasting/pressing machines according to job requirements following the specified procedures and guidelines.
- 8. Collaborate with the machine operator in adjusting machine settings, such as temperature, time, and pressure, to achieve optimal bonding results.

Resources to be Used



Theory:

- Training manual or presentation on pasting/pressing machine operations
- SOPs for material handling and machine setup
- Machine component diagram and setting charts (temperature, time, pressure)
- Quality checklists for job work received

Practical:

- Pasting/pressing machine with adjustable settings
- Sample workpieces and pasting materials (veneers, laminates, adhesives)
- Thermometers, pressure gauges, timers
- Sample defective and acceptable job work for inspection
- PPE (gloves, aprons, goggles)

Say



"Today, we'll focus on preparing for pasting and pressing operations by learning how to stack materials properly, check the quality of incoming workpieces, and assist in machine setup. Getting this step right ensures strong bonding, defect-free finishes, and smooth production runs."

Ask



- "Have you ever worked with pasting or pressing machines before? What kind of materials were involved?"
- "Why do you think temperature and pressure adjustments are critical in pasting operations?"
- "What might happen if poor-quality material is used or the machine settings are incorrect?"

Please feel free to share your insights—we'll be using them to build our group safety checklist on the board.

Elaborate



Break the content into practical segments:

1. Material Stacking and Quality Inspection

- Explain why correct stacking prevents warping, damage, and sticking.
- Introduce inspection methods for checking pasting surfaces—look for smoothness, defects, and consistency.

Key Points:

- Materials should be stacked on level surfaces and covered.
- Check adhesive surfaces for contamination or uneven coatings.
- Identify and reject warped, cracked, or incompatible workpieces.

2. Understanding the Machine and Its Settings

- Identify key components: heating plates, timers, pressure levers, safety locks.
- Explain the impact of adjusting temperature, time, and pressure on bonding quality.

Key Points:

- Higher temperatures speed bonding but may cause burns or bubbles.
- Excessive pressure may crush thin layers or force adhesive out.
- Proper timing ensures bond strength without overheating.

3. Assisting in Setup and Calibration

- Guide trainees in following SOPs for setting up the machine for operation.
- Emphasize safety checks, PPE, and trial runs for calibration.

Key Points:

- Set parameters based on material type and adhesive used.
- Perform trial runs and inspect bonding quality.
- Always log the settings used for future reference.

Activity-1



Material Stacking and Inspection Drill

Objective: To stack and inspect incoming job work for quality before pressing

Materials Needed: Sample veneers/laminates (some defective), stacking platforms, inspection checklist **Instructions:**

- Trainees inspect a mixed batch of workpieces.
- Identify defects and segregate good-quality items.
- Stack selected materials properly for easy access and safety.

Expected Outcome: Trainees correctly inspect and organize materials, ready for machine setup.

Activity-2



Machine Components and Setting Simulation

Objective: To familiarize trainees with pressing machine parts and setting controls

Materials Needed: Pasting/pressing machine, labelled diagram, setting charts

Instructions:

- Trainees identify machine parts and their functions using diagrams and the real machine.
- Simulate setting adjustment based on material and job card (temperature, time, pressure).

Expected Outcome: Trainees demonstrate understanding of components and simulate accurate setting adjustments.

Activity-3



Setup Assistance and Trial Bonding

Objective: To assist in machine setup and observe trial bonding process

Materials Needed: Pressing machine, adhesive, test materials, PPE

Instructions:

- In pairs, trainees assist the operator in setting up the machine.
- Apply adhesive and conduct a trial press.
- Evaluate the bond strength and appearance.

Expected Outcome: Trainees assist accurately in setup, understand adjustment impact, and recognize acceptable bonding.

Do



Ask trainees to:

- Note how adjustments in machine settings affected trial results.
- Share challenges they faced while inspecting job work.
- Reflect on how preparation impacts product quality and safety.

Say



"You've now seen how the setup stage can make or break the pasting/pressing process. Your ability to inspect materials, assist with machine settings, and collaborate with operators ensures efficiency and product quality. In the next session, we'll move on to actual operation and monitoring during production."

Notes for Facilitation



- Keep real defective samples to help trainees recognize quality flaws.
- Repeat safety practices during machine demonstrations.
- Use visual aids and hands-on guidance to support machine setting comprehension.
- Encourage peer feedback during trials to build observational skills.

– Notes

UNIT 15.2: Assist in Pasting Operation

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. List the characteristics and properties of different adhesives or glues commonly used in the industry.
- 2. Explain the process of even and consistent adhesive distribution for achieving proper bonding between materials.
- 3. Explain the process of accurate alignment and positioning of materials for proper joining process.
- 4. Assist in applying adhesives or glues to the workpieces using the correct application techniques.
- 5. Demonstrate skills to apply adhesives evenly and consistently on the workpieces to achieve proper bonding between the materials.
- 6. Assist in aligning and positioning the materials to ensure proper joining and prevent misalignment or gaps.

Resources to be Used



Theory:

- Training manual or presentation on types of adhesives and their properties
- · SOPs for adhesive application in woodwork and laminating tasks
- Diagrams or videos illustrating adhesive spread patterns and alignment techniques
- Safety data sheets (SDS) for commonly used adhesives

Practical:

- Variety of adhesives (PVA, contact cement, hot melt glue, urea-formaldehyde)
- Sample workpieces (veneers, laminates, MDF boards, etc.)
- Adhesive application tools (rollers, brushes, glue spreaders, nozzles)
- Fixtures or templates for alignment and positioning
- PPE: gloves, apron, safety goggles

Say



"Today we'll dive into the core of the pasting operation—understanding adhesives, applying them correctly, and ensuring the workpieces are aligned for a perfect bond. Precision in these steps ensures a durable product with clean finishes and no rework."

Ask



- "Which types of glues or adhesives have you worked with before? What were they used for?"
- "What problems might occur if glue is applied unevenly?"
- "How important do you think proper alignment is in bonding laminated surfaces?"

Feel free to share your thoughts or past experiences—it helps build confidence and connects theory to real-world practice.

Elaborate



Break the content into practical segments:

1. Characteristics and Uses of Adhesives

- Different adhesives have different drying times, bonding strengths, and uses.
- Understand properties like viscosity, heat resistance, and open time.

Key Points:

- Use PVA for general wood bonding; contact cement for laminates; hot melt for fast adhesion.
- Always check compatibility of adhesive with materials.

2. Proper Adhesive Application Techniques

- Even spread avoids weak bonds and air gaps.
- Tools and techniques vary: brush, roller, glue spreader.

Key Points:

- Use the right amount—too little won't bond, too much may seep out.
- Apply with consistent pressure and movement.

3. Alignment and Positioning of Workpieces

- After glue application, align workpieces before pressing.
- Fixtures/templates can help maintain straight edges and eliminate gaps.

Key Points:

- Align edges accurately to avoid visible misalignment.
- Press gently but firmly before moving to the pressing machine.

Activity-1



Adhesive Identification and Use Matching

Objective: To identify types of adhesives and their correct applications

Materials Needed: Sample adhesive types, adhesive selection chart, labeled material samples

Instructions:

- Trainees match adhesive types to suitable workpiece types and job cards.
- Discuss drying time, bond strength, and safety precautions for each.

Expected Outcome: Trainees understand adhesive properties and correct applications.

Activity-2



Adhesive Application Practice

Objective: To apply adhesive evenly on different surfaces using correct techniques

Materials Needed: Workpieces, different adhesives, rollers, brushes, PPE

Instructions:

- Trainees apply adhesive on sample boards using rollers or brushes.
- Trainer checks for even spread, edge coverage, and excess adhesive.

Expected Outcome: Trainees demonstrate clean, even adhesive application suitable for bonding.

Activity-3



Alignment and Positioning Drill

Objective: To practice aligning glued surfaces for proper joining

Materials Needed: Pre-glued or freshly glued surfaces, alignment fixtures or marking tools

Instructions:

- Trainees align and press paired workpieces.
- Evaluate results based on edge alignment, gap presence, and surface evenness.

Expected Outcome: Trainees align and join materials with minimal misalignment or bonding gaps.



Ask trainees to:

- Compare two samples—one done properly and one with incorrect glue application.
- Note how alignment affects bonding quality.
- Reflect on the importance of patience and precision during this phase.



"You've now practiced the crucial hands-on skills for pasting operations—from choosing adhesives to applying and aligning materials correctly. These steps, though simple, have a major impact on the durability and quality of your final product. In the next unit, we'll explore the pressing and bonding process to complete the operation."

Notes for Facilitation |



- Reinforce the importance of PPE when handling adhesives.
- Emphasize consistency in adhesive spread—use visual aids or camera feedback if available.
- Encourage peer comparison and feedback on alignment results.
- Use actual or simulated job orders to give real-world context.

- Notes	
140103	

UNIT 15.3: Assist in Pressing Operation

-Unit Objectives | @



At the end of this unit, you will be able to:

- 1. Explain the process of proper loading and unloading techniques for safe and efficient machine operations.
- 2. List the impact of standard ranges and recommended values for pasting/pressing operation.
- 3. Describe the importance of following standard operating procedures and safety guidelines to ensure safe and efficient machine operation.
- 4. Explain the importance of actively monitoring machine operations to ensure quality and identify any irregularities or defects.
- 5. Support the machine operator in loading and unloading workpieces onto and off the machine table or holding fixtures.
- 6. Assist in adjusting the pasting/pressing parameters, such as pressure, thickness, and duration, etc., based on the materials and adhesive types.
- 7. Assist the operator in following standard operating procedures and safety guidelines for pasting/pressing machine operation, adhering to the specified procedures and safety protocols.
- 8. Assist in monitoring machine operations, actively looking for irregularities or defects, and promptly communicating them to the machine operator.

Resources to be Used



Theory:

- Training manual or presentation on pressing machine operations
- SOPs and safety guidelines for loading, pressing, and unloading workpieces
- Charts showing standard values for pressure, time, and temperature
- Trouble-shooting checklist for common pressing defects

Practical:

- Pasting/pressing machine (hydraulic, pneumatic, or hot press type)
- Sample laminated workpieces (veneers, plywood, laminates)
- · Adhesives used in prior unit
- Measuring gauges for pressure, thickness, and temperature
- PPE: gloves, goggles, ear protection, safety shoes

Say



"Today we'll move into the final critical step in the bonding process—pressing. The pressing stage not only strengthens the bond between surfaces but also determines the flatness and finish of the final product. Precision in this operation is essential for professional-quality results."

Ask



- "Why do you think precise control of pressure and temperature is important during pressing?"
- "Have you ever noticed uneven surfaces or bubbling after pressing? What do you think caused that?"
- "What could go wrong if standard operating procedures are not followed during machine use?"

 $Your \,thoughts\, and\, examples\, are\, valuable-please\, feel\, free\, to\, share\, with\, the\, group.$

Elaborate



1. Loading and Unloading Techniques

- Safe handling is critical to prevent damage or injury.
- Proper alignment ensures even pressure and bonding.

Key Points:

- Always use PPE while operating the machine.
- Align workpieces correctly with guides or templates.

2. Understanding and Adjusting Pressing Parameters

- Different materials and adhesives require different pressure, temperature, and duration.
- Operator should follow recommended ranges closely.

Key Points:

- Over-pressing can squeeze out glue; under-pressing leads to poor bonding.
- Temperature and duration depend on adhesive used.

3. Monitoring Operation and Spotting Irregularities

- Continuous observation helps identify air gaps, delamination, or warping.
- Prompt reporting of faults prevents material wastage.

Key Points:

- Monitor pressure gauges, cycle duration, and surface temperature.
- Note visual indicators: uneven surface, misalignment, adhesive seepage.

Activity-1



Safe Loading and Unloading Practice

Objective: To practice correct loading/unloading techniques for pressing operations

Materials Needed: Sample laminated workpieces, pressing machine, PPE

Instructions:

- Trainees work in pairs to load a pre-glued board into the press.
- Emphasis on even placement, alignment, and correct positioning.
- After pressing, trainees safely unload and inspect the panel.

Expected Outcome: Trainees handle materials safely and maintain alignment during pressing.

Activity-2



Parameter Setting Simulation

Objective: To understand and assist in setting correct pressing parameters

Materials Needed: Parameter setting chart, test workpieces, simulated control panel (or instructor-guided machine)

Instructions:

- Review the job card for material and adhesive type.
- Use the chart to determine suitable pressure, temperature, and time.
- Assist the trainer in setting up the press accordingly.

Expected Outcome: Trainees can suggest appropriate settings based on material specs and job requirements.

Activity-3



Defect Identification and Monitoring Drill

Objective: To monitor a pressing operation and identify common issues

Materials Needed: Pressed workpiece samples (some with intentional defects), defect checklist

Instructions:

- Trainees examine pressed samples and record any defects.
- Identify likely causes (e.g., uneven pressure, misalignment, insufficient time).
- Discuss findings in small groups or with trainer.

Expected Outcome: Trainees recognize pressing defects and understand how to prevent or report them.

Do



Ask trainees to:

- Participate in a full cycle with supervision—load, assist in setting parameters, monitor operation, and unload.
- Note down any observed variations or concerns and discuss how they might be resolved.

Say



"You've now experienced how important pressing is to the integrity and appearance of laminated workpieces. From safe handling to precision in parameters, each step impacts the quality of your final product. In upcoming units, we'll cover post-processing checks and quality assurance."

Notes for Facilitation



- Reinforce safe practices at every step—pressing machines can pose serious risks if mishandled.
- Encourage teamwork when handling larger boards.
- Provide quick demonstrations before letting trainees handle real equipment.
- Use real job cards and trial setups for realism.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-

UNIT 15.4: Workplace and Equipment Management for Pasting/Pressing Machine

-Unit Objectives



At the end of this unit, you will be able to:

- 1. :Explain the specific cleaning procedures for the pasting/pressing machine and its components, ensuring proper maintenance.
- 2. Describe the principles of organizing and managing the workspace for panels storage and waste disposal procedures.
- 3. List the visual and tactile indicators of defects in finished materials.
- 4. Explain the importance of maintaining accurate documentation of manufacturing specifications and quality control inspections for the pasting/pressing process.
- 5. Assist the operator in cleaning and maintaining the pasting/pressing machine and its parts.
- 6. Organize and manage the workspace effectively, implementing proper storage techniques for panels and adhering to waste disposal procedures.
- 7. Assist in inspecting finished materials for defects following the specified procedures and guidelines.
- 8. Assist in maintaining proper documentation for manufacturing specifications and quality control inspections in the pasting/pressing process.

Resources to be Used



Theory:

- SOPs for cleaning and maintenance of pasting/pressing machines
- Guidelines for workspace organization, material storage, and waste disposal
- Sample defect charts for laminated or bonded panels
- Templates for inspection and production documentation

Practical:

- Pasting/pressing machine and components for cleaning practice
- Cleaning tools: brushes, cloths, cleaning agents, vacuum cleaner
- Racks or pallets for storing panels
- · Bins and labels for segregated waste
- Sample quality inspection sheets, defect reference panels

Say



"In this unit, we're focusing on maintaining an efficient, safe, and clean workspace—which is just as critical as operating the machine itself. Clean equipment runs longer and better, and a well-organized space helps improve workflow and reduce errors."

Ask



- "What do you think could happen if cleaning of the pasting/pressing machine is skipped for a few days?"
- "Why is proper storage of finished panels so important?"
- "What kind of defects have you noticed in bonded materials before—and how did you detect them?"

Feel free to share examples you've seen or experienced!

Elaborate



1. Cleaning and Maintenance

- Scheduled cleaning prevents glue buildup and equipment malfunction.
- Both surface and internal components need care.

Key Points:

- Use soft brushes or cloths for sensitive areas.
- Shut down the machine before cleaning.
- Clean glue trays, rollers, and press plates.

2. Workspace Management

- Neat, hazard-free areas boost productivity and reduce risk.
- Labeling storage areas for panels and organizing waste bins is essential.

Key Points:

- Store panels upright or flat with support to avoid bending.
- Sort waste into re-usable scraps and disposables.
- Maintain clear walkways and stack materials safely.

3. Defect Identification

- Look for warping, gaps, adhesive seepage, and surface imperfections.
- Use both sight and touch to inspect.

Key Points:

- Defects must be recorded for corrective action.
- Early identification reduces waste.

4. Documentation

- Keeps track of quality checks, machine settings, and job specifications.
- Useful for audits, maintenance records, and job traceability.

Key Points:

- Note date, time, operator name, parameters used, and outcome.
- Store documents safely for reference.

Activity-1



Clean the Press – Maintenance Drill

Objective: To practice cleaning and maintaining the pasting/pressing machine and its components

Materials Needed: Press machine (powered off), cleaning tools (brush, cloth, vacuum), gloves

Instructions:

- Trainees are divided into groups.
- Each group is assigned a component (e.g., glue tray, press plates).
- Practice step-by-step cleaning as per SOP.

Expected Outcome: Trainees learn proper cleaning procedures and understand the impact on machine efficiency and product quality.

Activity-2



Spot the Defect – Quality Inspection Simulation

Objective: To identify and record common defects in finished laminated panels

Materials Needed: Sample panels with various defects, defect checklist

Instructions:

- Trainees inspect 3–4 panels.
- Use visual and tactile checks to identify issues (e.g., air bubbles, edge gaps).
- Record observations on sample inspection sheets.

Expected Outcome: Trainees improve their ability to detect and record defects accurately.

Activity-3



Organize and Document - Workplace Management Roleplay

Objective: To simulate real-world workspace management and documentation tasks

Materials Needed: Storage racks, labeled bins, dummy job cards, inspection and maintenance log sheets

Instructions:

- Trainees arrange a mock storage area with panel boards and waste bins.
- Sort panels by type/size, and dispose of scraps into labeled bins.
- Fill in a sample inspection sheet for one job.

Expected Outcome: Trainees demonstrate knowledge of workspace organization and documentation procedures.



Ask trainees to:

- Assist in a full cleaning session of the pasting/pressing machine.
- Practice filling out documentation based on an actual or sample job.
- Work together to maintain order and cleanliness in the training space.



"Good equipment maintenance and a clean, organized workplace are the backbone of consistent production quality. Let's carry these habits forward into every project. In the next session, we'll review key learnings and get you ready for assessments."

Notes for Facilitation



- Supervise cleaning to ensure safety and effectiveness.
- Rotate tasks so every trainee gets hands-on experience with cleaning, inspection, and documentation.
- Use real or realistic samples and records for authenticity.

Notes 🗐 –	
Motes = -	
	,
	,













16. Assist in Operating Cutting and Sizing Machines

- Unit 16.1 Assist in Workplace Setup for Cutting/Sizing Machine
- Unit 16.2 Assist in Cutting/Sizing Operation
- Unit 16.3 Workplace and Equipment Management for Cutting/Sizing Machine





Key Learning Outcomes | 💆



At the end of this module, you will be able to:

- $1. \quad \text{Explain process of loading and unloading during cutting/sizing machine and associated fixtures}.$
- 2. Discuss various methods and techniques for adjusting different machine parameters to achieve desired cutting/sizing outcomes.
- 3. Discuss different principles and techniques of measurement and marking for cutting/sizing operations.
- Demonstrate the skills to assist in operating and monitor the cutting/sizing machine for required job work.
- 5. Explain process of loading and unloading during cutting/sizing machine and associated fixtures.
- 6. Discuss various methods and techniques for adjusting different machine parameters to achieve desired cutting/sizing outcomes.
- Discuss different principles and techniques of measurement and marking for cutting/sizing operations.
- Demonstrate the skills to assist in operating and monitor the cutting/sizing machine for required job work.
- 9. Demonstrate knowledge and understanding of the cleaning and maintenance procedures for the cutting/sizing machine and its part.
- 10. Apply organizational skills and principles to efficiently manage the workspace, including the proper storage of panels and the appropriate disposal of waste.
- 11. Utilize their knowledge of quality standards and specifications to assist in inspecting cutting/sizing materials for defects.
- 12. Utilizing appropriate record-keeping techniques and systems to prepare and maintain process documents.

UNIT 16.1: Assist in Workplace Setup for Cutting/Sizing Machine

-Unit Objectives



At the end of this unit, you will be able to:

- 1. Explain the importance of proper stacking and storage of materials and workpieces for cutting/sizing operations.
- 2. List the key constraints involved in checking the quality of job work received for cutting/sizing machine operation.
- 3. Explain the components and functions of machine setup, including adjusting blade height, alignment, and mitre angles to achieve accurate and consistent results.
- 4. Perform stacking and storage of materials and workpieces following the specified procedures and guidelines.
- 5. Employ appropriate quality standards and techniques to assess the quality of job work received for cutting/sizing operation.
- 6. Assist in the setting up cutting/sizing machines, adjusting blade height, alignment, and mitre angles to ensure accurate and consistent results in practical scenarios.

Resources to be Used



Theory:

- SOPs for cutting/sizing machine setup
- Safety and quality guidelines
- Diagrams of cutting/sizing machine components (blade, guide rails, mitre gauge, etc.)
- Material handling guidelines and stacking instructions

Practical:

- Cutting/sizing machine (table saw, panel saw, or circular saw)
- Raw panels or sheets for stacking and trial setup
- Measuring tools (tape, square, bevel gauge)
- Sample job cards or work orders

Say



"Before any cutting or sizing operation, setting up the machine and preparing the workspace properly is essential to ensure clean cuts, accurate dimensions, and minimal material wastage. Let's explore how to get this right every time."

Ask



- "Have you ever seen a job go wrong just because the machine wasn't set up properly?"
- "Why do you think proper stacking and alignment are important for cutting operations?"
- "What could happen if the blade height or angle is incorrect?"

Elaborate



1. Importance of Stacking and Storage

- Prevents warping, bending, or surface damage
 - Reduces handling time and improves workflow

Key Points:

- Store panels flat and on pallets or supports
- Stack by size and thickness with separation sheets if needed
- Avoid leaning panels against walls unless supported properly

2. Quality Constraints in Incoming Job Work

- Look for warping, chips, wrong sizes, or mismatched specifications
- Verify material type and thickness

Key Points:

- Use visual inspection and tape measure to check against job card
- Record anomalies before proceeding

3. Machine Setup Components and Functions

- Blade Height: Affects cut depth and finish
- Blade Alignment: Ensures straight cuts and avoids material damage
- Mitre Angle Settings: Required for angled cuts in panels

Key Points:

- Blade height should be slightly above the material surface
- Use a square to check alignment with guide
- Use mitre gauge or angle finder for precision

Activity-1



Stack It Right - Safe Stacking Drill

Objective: Practice safe stacking and storage of cutting materials

Materials Needed: Dummy panels, racks, separation sheets

Instructions:

- Divide trainees into small groups
- Each group arranges a pile of mixed panels (different sizes/thicknesses)
- Evaluate based on stability, accessibility, and protection from damage

Expected Outcome: Trainees understand and implement proper stacking techniques.

Activity-2



Inspect the Batch – Quality Check Simulation

Objective: Evaluate incoming job work for quality and suitability

 $\textbf{Materials Needed:} \ Sample \ work \ orders, \ mixed-quality \ sample \ panels$

Instructions:

- Provide a list of required specifications
- Ask trainees to inspect the batch, identify issues (e.g., incorrect sizes, damaged corners), and report observations

Expected Outcome: Trainees practice critical thinking and inspection against quality parameters.

Activity-3



Set the Blade - Machine Setup Practice

Objective: Assist in setting blade height, alignment, and mitre angles

Materials Needed: Cutting machine (powered off), square, bevel gauge, wrench

Instructions:

- Trainees take turns adjusting blade height
- Use tools to check and align blade parallel to fence
- Practice setting 45° or 60° mitre cuts as per instruction

Expected Outcome: Trainees gain hands-on experience in assisting machine setup for accurate cutting



Ask trainees to:

- Document the job specifications before setup
- · Assist in checking machine calibration and cleanliness before starting
- Participate in team discussion on setup improvements



"Cutting accuracy begins long before the blade meets the board. It starts with smart stacking, proper checking, and precise setup. In the next unit, we'll see how you can assist during the actual cutting operation to ensure safety and quality."

Notes for Facilitation |



- Demonstrate blade and angle adjustment on a machine yourself first
- Highlight the importance of powering off the machine before setup
- Reinforce safety measures throughout the session

– Notes 🗐 ———————————————————————————————————

UNIT 16.2: Assist in Cutting/Sizing Operation

-Unit Objectives 🏻 ©



At the end of this unit, you will be able to:

- 1. Explain process of proper loading and unloading techniques for safe & efficient machine operations.
- 2. List various methods for positioning and securing materials on cutting/sizing machines, utilizing clamps, jigs, or other appropriate methods.
- 3. Discuss the process of adjusting various machine parameters and their impact on the desired cutting/sizing outcomes.
- 4. Describe the importance of measurement and marking for cutting/sizing operations.
- 5. Describe the importance of following standard operating procedures and safety guidelines to ensure safe and efficient machine operation.
- 6. Discuss the impact of applying printed labels on finished panels.
- 7. Explain the importance of actively monitoring machine operations to ensure quality and identify any irregularities or defects.
- 8. Support the machine operator in loading and unloading workpieces onto and off the machine table or holding fixtures.
- 9. Employ appropriate methods in positioning and securing of materials on cutting/sizing machines.
- 10. Assist in adjusting machine parameters during the cutting/sizing process, using the appropriate methods and techniques.
- 11. Assist in performing accurate measurement and marking on the job work for cutting/sizing operations, applying the principles and techniques discussed.
- 12. Assist the operator in following standard operating procedures and safety guidelines for cutting/sizing machine operation, adhering to the specified procedures and safety protocols.
- 13. Apply printed labels on finished panels accurately, ensuring ease in tracking and identification as per the purpose discussed.
- 14. Assist in monitoring machine operations, actively looking for irregularities or defects, and promptly communicating them to the machine operator.

Resources to be Used



Theory:

- Training manual or presentation on cutting/sizing operations, machine parameters, and labeling protocols
- SOPs for operating and maintaining cutting/sizing machines
- Job cards/specifications and quality guidelines
- Safety procedures and machine handling best practices

Practical:

- Cutting/sizing machine (e.g., table saw, panel saw)
- Panels, boards, or sheets for practice (MDF, plywood, etc.)
- Measuring tools (tape measure, steel square, scriber)
- Labeling tools and materials (printed labels, stickers)
- PPE (gloves, safety goggles, ear protection)

Say



"Today, we will learn how to assist in the actual cutting and sizing operations. Your role in supporting the operator with precision, safety, and consistency is essential to meet production and quality goals."

Ask



- "Why do you think measurement and marking are so important before cutting materials?"
- "What might happen if a material isn't clamped securely on the machine?"
- "How do labeling and tracking help once the panels are cut and moved for further processing?"

Elaborate



Break down the core content into simple, understandable segments:

1. Loading and Unloading Workpieces

- Demonstrate safe handling techniques for feeding panels into machines.
- Highlight the importance of keeping hands clear of blades and moving parts.

Key Points:

- Use support tools (push sticks, guides)
- · Check machine table for cleanliness and alignment before placing panels

2. Positioning and Securing Material

- Discuss clamps, jigs, fences, and guides used for precision cuts.
- Emphasize prevention of shifting or misalignment during cutting.

Key Points:

- Safety hazards of unsecured panels
- Using guide fences or jigs for repeated cuts

3. Adjusting Machine Parameters

- Explain how pressure, feed rate, and blade height affect cut quality.
- Demonstrate basic parameter adjustment steps under supervision.

Key Points:

- Proper settings for different materials
- Performing a trial cut to check for accuracy

4. Measurement and Marking

- Introduce tools for marking dimensions—tape, ruler, scriber, chalk.
- Teach how to mark accurately before cutting.

Key Points:

- Double-check dimensions before proceeding
- · Clear, visible lines that guide the operator

5. Following SOPs and Safety Guidelines

- Reiterate standard operating procedures—turning on/off, E-stop, safe zones.
- Discuss mandatory PPE and risk zones.

Key Points:

- · Avoid distractions during machine use
- Follow lock-out/tag-out procedures if maintenance is needed

6. Labeling and Monitoring Operations

- Show where and how to apply labels for identification.
- Discuss observing machine behavior—sounds, movement, cut quality.

Key Points:

- Tracking panels by label
- Reporting irregularities early for correction

Activity-1



Practice Safe Loading and Positioning

Objective: To demonstrate proper loading and clamping techniques.

Materials Needed: Practice boards, clamps, saw table, PPE.

Instructions:

- Load the panel using safe lifting techniques
- · Clamp and align it correctly
- Explain steps taken before mock cutting

Expected Outcome: Trainees apply safe and secure handling practices.

Activity-2



Measurement and Marking Challenge

Objective: To improve accuracy in layout work.

Materials Needed: Measuring tape, squares, sample panels

Instructions:

- Mark given dimensions on sample boards
- Peers verify the accuracy
- Discuss how inaccurate markings affect results

Expected Outcome: Consistent and precise marking by all trainees.

Activity-3



Machine Parameter Adjustment (Simulated)

Objective: To understand how machine settings influence outcomes.

Materials Needed: Machine (in demo mode), test materials, settings sheet

Instructions:

- Adjust blade height and angle as per instructions
- Discuss effect of adjustments on panel edge quality
- Perform one trial cut and assess result

Expected Outcome: Ability to identify correct settings based on material type.



Ask trainees to:

- Supervised Practice: Each trainee will complete one operation cycle load a panel, measure and mark, assist in setup, perform mock cutting, and label the panel.
- · Peer Feedback: Partners check each other's measurements, markings, and label placement for quality assurance.



"Now that you've practiced assisting in the cutting process, you understand how your support role ensures quality and safety. In the next unit, we'll focus on the maintenance and organization of the cutting area to avoid downtime and improve workflow."

Notes for Facilitation |



- Reinforce correct posture and hand positions while loading/unloading.
- Encourage open discussion about machine noises, movement, or any observed defects.
- Use real job cards and quality specs to simulate actual work orders.
- Guide trainees to evaluate each other's accuracy respectfully.
- Emphasize cleanliness and tidiness around the machine for safety and efficiency.

– Notes 🗐 ———————————————————————————————————	
-	

UNIT 16.3: Workplace and Equipment Management for Cutting/Sizing Machine

-Unit Objectives



At the end of this unit, you will be able to:

- 1. Explain the specific cleaning procedures for the cutting/sizing machine and its components, ensuring proper maintenance.
- 2. Describe the principles of organizing and managing the workspace for panels storage and waste disposal procedures.
- 3. List the visual and tactile indicators of defects in finished materials.
- 4. Explain the importance of maintaining accurate documentation of manufacturing specifications and quality control inspections for the cutting/sizing process.
- 5. Assist the operator in cleaning and maintaining the cutting/sizing machine and its parts.
- 6. Organize and manage the workspace effectively, implementing proper storage techniques for panels and adhering to waste disposal procedures.
- 7. Assist in inspecting finished materials for defects following the specified procedures and guidelines.
- 8. Assist in maintaining proper documentation for manufacturing specifications and quality control inspections in the cutting/sizing process.

Resources to be Used



Theory:

- Training manual or presentation on machine cleaning, maintenance, and defect detection techniques
- SOPs for machine cleaning, workspace organization, and waste disposal
- Guidelines for defect identification in finished materials (visual and tactile)
- Documentation protocols for quality control and production specifications
- Visual aids for workspace organization and defect identification

Practical:

- Cutting/sizing machine with all necessary attachments and components
- Cleaning supplies (brushes, cloths, lubricants, cleaning agents)
- Sample panels with various types of defects for inspection
- Waste disposal bins and storage solutions for panels
- Job cards, inspection checklists, and documentation forms
- PPE (gloves, eye protection, aprons, etc.)

Say



"Today, we will focus on the critical tasks of managing the workplace and maintaining the cutting/sizing machine. These tasks are essential for ensuring the machine runs efficiently, the workspace remains organized, and the finished products meet the required quality standards. Proper maintenance and workspace management also prevent downtime and improve overall productivity."

Ask



- "Why do you think keeping the cutting/sizing machine clean is crucial for its performance?"
- "What could happen if we don't dispose of waste properly or manage storage incorrectly?"
- "How do you think defects in finished materials can affect the production process?"

Elaborate



1. Cleaning Procedures for the Cutting/Sizing Machine

- Demonstrate the proper cleaning steps for different machine components: blades, guides, feed rollers, and tables
- Emphasize the importance of using correct cleaning agents and techniques to avoid damage to machine parts
- Discuss the scheduled cleaning intervals and what should be cleaned daily vs. weekly

Key Points:

- Always turn off and lock out the machine before cleaning
- Use non-abrasive cloths and brushes to avoid damaging surfaces
- Apply lubricants and ensure moving parts are free of debris

2. Organizing and Managing the Workspace

- Teach how to properly store panels to avoid damage, warping, or scratching
- Show how to organize materials for easy access—keeping finished and unfinished panels separate
- Discuss waste disposal procedures and their importance in maintaining cleanliness and safety

Key Points:

- Store materials in a cool, dry place to prevent warping
- Segregate recyclable and non-recyclable waste
- Keep the workspace free of clutter to reduce the risk of accidents

3. Inspecting Finished Materials for Defects

- Describe the common defects in finished panels (e.g., splintering, warping, uneven cuts, discoloration)
- Teach trainees how to visually inspect panels for such defects and the use of tactile checks for subtle imperfections
- Discuss the importance of recording defects for quality control purposes

Key Points:

- Always perform a final inspection before moving panels to the next stage of production
- Use a consistent inspection method for each batch of panels
- Document defects and inform the operator if corrections are needed

4. Maintaining Documentation for Manufacturing Specifications

- · Explain the importance of accurate documentation for job specifications, machine settings, and finished product quality
- · Demonstrate how to complete inspection checklists and record any deviations from expected standards
- Emphasize the role of documentation in improving future production runs and troubleshooting

Key Points:

- Documentation ensures traceability and consistency
- Review completed job cards regularly to verify adherence to specifications
- Keep records of quality checks, including visual and tactile inspections

Activity-1



Cleaning and Maintenance of the Cutting/Sizing Machine

Objective: To practice cleaning and maintaining the cutting/sizing machine according to SOPs

Materials Needed: Cleaning tools, lubricants, machine parts for demonstration

Instructions:

- · Trainees will clean various components of the cutting/sizing machine, paying attention to each part's specific cleaning requirements
- Ensure all parts are cleaned without damaging machine surfaces

Expected Outcome: Trainees demonstrate proper cleaning procedures, maintaining the machine in optimal working condition

Activity-2



Organizing and Managing the Workspace

Objective: To demonstrate proper organization of the workspace and panel storage

Materials Needed: Panels, clamps, storage bins, waste containers

Instructions:

- Trainees will arrange materials and ensure they are properly stored to avoid damage
- Trainees will also practice waste disposal according to safety and environmental protocols

Expected Outcome: Trainees successfully organize their workspace and manage materials and waste efficiently.

Activity-3



Inspecting Finished Materials for Defects

Objective: To practice inspecting finished panels for defects using visual and tactile methods

Materials Needed: Sample panels with defects, inspection checklist

Instructions:

- Trainees will inspect panels for common defects, using both sight and touch
- Record defects using the inspection sheet and report findings

Expected Outcome: Trainees can accurately identify and record defects in finished panels

Do



Ask trainees to:

- Supervised Practice: Each trainee will clean a specific part of the machine and organize the workspace under supervision
- Defect Identification Practice: Trainees will inspect a batch of finished panels for defects and record them on a quality checklist
- Documentation Exercise: Trainees will fill out job cards and inspection forms as part of the daily production process

Say



"By keeping the machine clean, maintaining an organized workspace, and following thorough inspection and documentation protocols, we ensure that the cutting/sizing process remains efficient, safe, and produces high-quality products. In the next unit, we will explore how to implement these practices into daily production routines for maximum efficiency."

Notes for Facilitation



- Emphasize the importance of regular maintenance and documentation in improving long-term machine performance and product quality
- Encourage trainees to ask questions during defect identification and documentation tasks to ensure they understand common defects
- Reinforce the safety and environmental guidelines for waste disposal and workspace management
- Use real-world examples and job cards to make the training more relevant to the trainees' day-to-day tasks
- Guide trainees to evaluate each other's accuracy respectfully
- Emphasize cleanliness and tidiness around the machine for safety and efficiency

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-













17. Assist in Operating Edge Band Machines

- Unit 17.1 Assist in Workplace Setup for Edge Banding Machine
- Unit 17.2 Assist in Edge Banding Operation
- Unit 17.3 Workplace and Equipment Management for Edge Banding Machine





Key Learning Outcomes | 💆



At the end of this module, you will be able to:

- 1. Discuss the process of efficient stacking and storage of materials and workpieces at designated machine stations, employing proper handling techniques for edge banding machine operation
- 2. Employ critical thinking skills and understanding of quality standards to evaluate the quality of job work received for edge banding machine operation.
- 3. Assist in perform machine setup process and prepare the machine for required edge banding machining operation.
- 4. Discuss the process of configuring the edge banding machine depending on project requirements.
- 5. Assist in selecting or implementing the appropriate machine program on the workpiece for the edge banding operation.
- 6. Demonstrate the skills to assist in operating and monitor the edge banding machine for required job work.
- 7. Demonstrate knowledge and understanding of the cleaning and maintenance procedures for the edge banding machine and its part.
- 8. Apply organizational skills and principles to efficiently manage the workspace, including the proper storage of panels and the appropriate disposal of waste.
- 9. Utilize their knowledge of quality standards and specifications to assist in inspecting edge banding materials for defects.
- 10. Utilizing appropriate record-keeping techniques and systems to prepare and maintain process documents.

UNIT 17.1: Assist in Workplace Setup for Edge Banding Machine

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the importance of proper stacking and storage of materials and workpieces for edge banding operations.
- 2. List the key constraints involved in checking the quality of job work received for edge banding machine
- 3. Explain the process of proper alignment and installation of edge banding materials, tools, and adhesives in Panelworks.
- 4. Describe the responsibilities while collaborating with the machine operator in adjusting machine settings for optimal edge banding results.
- 5. Perform stacking and storage of materials and workpieces following the specified procedures and guidelines.
- 6. Employ appropriate quality standards and techniques to assess the quality of job work received for edge banding operation.
- 7. Assist in aligning and installing edge banding materials, tools, and adhesives following the specified procedures and guidelines.
- 8. Collaborate with the machine operator to adjust machine settings, such as temperature, feed rate, and pressure, following the specified procedures and guidelines.

Resources to be Used



Theory:

- · Training manual or presentation on edge banding operations, material handling, and machine setup procedures
- · SOPs for edge banding machine operation and maintenance
- Guidelines for quality assessment and standards for edge banding
- Documentation forms for machine settings, quality checks, and job records

Practical:

- Edge banding machine (with necessary attachments and components)
- Panels (for edge banding practice)
- Edge banding materials (e.g., PVC, wood veneer, melamine)
- Adhesives (appropriate for edge banding)

- Measuring tools (calipers, tape measure)
- Tools for installation (e.g., rollers, cutters, trimmers)
- PPE (gloves, eye protection, safety footwear)

Say



"Today, we will learn how to assist in setting up the workplace for edge banding operations. Proper material handling, machine setup, and quality assessments are crucial for achieving optimal results. You will learn to collaborate with the machine operator to ensure the edge banding process is efficient and meets the required standards."

Ask



- "Why is it important to store materials correctly before starting the edge banding operation?"
- "What are some key factors to check when assessing the quality of workpieces before edge banding?"
- "How do machine settings, such as temperature and pressure, affect the quality of the edge banding?"

Elaborate



1. Stacking and Storing Materials for Edge Banding

- Discuss the importance of proper stacking and storage to prevent material damage, warping, or misalignment.
- Explain best practices for organizing and storing materials such as edge banding rolls, panels, and adhesives.
- Demonstrate how to stack panels and materials to ensure they remain flat, undamaged, and ready for the edge banding process.

Key Points:

- Stack panels on flat, sturdy surfaces to avoid distortion
- Organize materials by size and type for easy access
- Store adhesives according to manufacturer instructions to prevent drying out

2. Quality Check of Job Work for Edge Banding

- Explain the constraints and criteria for checking the quality of panels or workpieces before edge banding.
- Discuss potential defects such as scratches, uneven edges, or moisture damage that could affect the edge banding process.
- Teach how to perform a visual inspection of panels for defects and assess their suitability for edge banding.

Key Points:

- Ensure the edges are clean and free of debris
- Check for warping, scratches, or any damage that could impact the edge banding quality
- Use measuring tools to verify the panel dimensions and edge straightness

3. Alignment and Installation of Edge Banding Materials

- Describe how to properly align edge banding materials (PVC, melamine, etc.) to the panels.
- Demonstrate the installation process, ensuring correct adhesive application, material positioning, and trimming after banding.
- Explain the importance of alignment in achieving a seamless, high-quality finish.

Key Points:

- Ensure correct alignment to prevent misapplication of the edge banding
- Apply adhesive evenly and ensure even pressure during banding
- Trim excess material after banding for a clean finish

4. Collaborating with the Machine Operator on Machine Settings

- Teach how to adjust machine settings such as temperature, feed rate, and pressure for optimal edge banding results.
- Explain how each setting affects the banding process and the final quality of the product.
- Demonstrate the process of adjusting the machine settings under the guidance of the operator.

Key Points:

- Temperature settings are crucial for adhesive activation
- Feed rate should be adjusted based on the material type and thickness
- Pressure needs to be consistent to ensure proper bonding of the edge banding material

Activity-1



Material Stacking and Storage Practice

Objective: To demonstrate proper stacking and storage techniques for edge banding materials.

Materials Needed: Panels, edge banding materials, adhesive containers, storage racks

Instructions:

- Trainees will practice stacking panels and organizing materials in the storage area.
- Focus on preventing material damage and ensuring easy access to required items.

Expected Outcome: Trainees will demonstrate safe and organized storage methods to maintain material integrity.

Activity-2



Quality Check and Inspection of Workpieces

Objective: To perform a quality inspection of workpieces before edge banding.

Materials Needed: Panels with defects (e.g., scratches, warped edges), measuring tools

Instructions:

- Trainees will inspect panels for quality issues such as warping, scratches, and dimensional accuracy.
- Record defects and determine if the panels are suitable for edge banding.

Expected Outcome: Trainees will accurately identify defects and determine whether the workpieces meet the quality standards for edge banding.

Activity-3



Aligning and Installing Edge Banding Materials

Objective: To practice the alignment and installation of edge banding materials on panels.

Materials Needed: Edge banding materials (PVC, melamine), adhesive, tools for trimming

Instructions:

- Trainees will align and apply edge banding materials to the panels, ensuring correct application and trimming.
- Focus on uniform adhesive application, alignment, and trimming excess material.

Expected Outcome: Trainees will demonstrate proper edge banding installation, ensuring a clean, aligned finish.

Do



Ask trainees to:

- Supervised Practice: Each trainee will complete one round of material stacking and a quality inspection of workpieces for edge banding.
- Collaborative Practice: Assist in aligning and installing edge banding on panels, following the guidelines provided.
- Machine Settings: Trainees will collaborate with the machine operator to adjust and monitor machine settings for optimal edge banding results.

Say



"By following the correct stacking, inspection, and alignment procedures, you contribute to achieving highquality edge banding results. Working closely with the machine operator ensures that the right settings are used for each job, improving both productivity and the quality of the finished product. In the next unit, we will focus on troubleshooting common issues during the edge banding process."

Notes for Facilitation



- Reinforce the importance of teamwork and communication when collaborating with the machine operator to adjust settings and monitor progress.
- Encourage trainees to take notes during the activities to ensure they understand the setup process and key quality checks.
- Use real workpieces and job cards to simulate actual edge banding tasks and conditions.
- Emphasize the importance of maintaining a clean and organized workspace for safety and efficiency.

– Notes 🗐 ———————————————————————————————————

UNIT 17.2: Assist in Edge Banding Operation

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the importance of configuring the edge banding machine based on project requirements to achieve desired results.
- 2. Describe the importance of selecting or implementing the appropriate machine program for the edge banding operation to achieve desired outcomes.
- 3. Describe the importance of following standard operating procedures and safety guidelines to ensure safe and efficient machine operation.
- 4. Describe the proper positioning and feeding of panel materials into the conveyor of the edge banding machine for smooth and efficient operation.
- 5. Explain the importance of proper alignment and placement of the edge band material during feeding to achieve accurate and consistent results.
- 6. Describe the different machine functions and their significance in the edge banding process.
- 7. Explain the importance of actively monitoring machine operations to ensure quality and identify any irregularities or defects.
- 8. Assist in configuring the edge banding machine, as instructed by the operator.
- 9. Assist in selecting or implementing the appropriate machine program on the workpiece for the edge banding operation.
- 10. Assist the operator in following standard operating procedures and safety guidelines for edge banding machine operation, adhering to the specified procedures and safety protocols.
- 11. Assist the machine operator in positioning and feeding panel materials into the conveyor of the edge banding machine.
- 12. Display skills in proper alignment and placement of the edge band material during feeding operation.
- 13. Perform the edge banding operation manually using specific hand or power tools as per job work requirement.
- 14. Assist in monitoring machine operations, actively looking for irregularities or defects, and promptly communicating them to the machine operator.

Resources to be Used



Theory:

- Training manuals on edge banding operations and machine configurations
- Standard operating procedures (SOPs) for edge banding machine use

- Safety guidelines for machine operation
- Technical data sheets for edge banding materials and machines
- Documentation on common defects and troubleshooting methods

Practical:

- Edge banding machine with necessary attachments and settings
- Panel materials (e.g., MDF, plywood, particleboard)
- Edge banding materials (PVC, wood veneer, melamine)
- Adhesives and applicators
- Hand tools (e.g., utility knives, trimmers, rollers)
- PPE (gloves, eye protection, safety footwear)

Say



"Today, we will be focusing on assisting in the actual edge banding operation. You'll learn how to properly set up the machine, follow safety protocols, feed materials into the machine, and monitor the process for any defects. The key to successful edge banding lies in precision and consistent monitoring of both machine settings and the materials used."

Ask



- "What do you think could happen if the edge banding machine is not configured correctly for a specific project?"
- "Why is it important to follow safety guidelines when operating an edge banding machine?"
- "What could go wrong if the panel material is not properly aligned or fed into the machine?"

Elaborate



1. Configuring the Edge Banding Machine for the Project

- Discuss how to configure the machine settings (temperature, feed rate, pressure) based on the type of material and edge banding material being used.
- Explain the importance of matching machine settings to the specific project requirements (e.g., material thickness, edge banding type).
- Teach how to adjust machine parameters for optimal bonding and finish.

Key Points:

- Temperature settings for adhesive curing
- Feed rate adjustment based on material type and size
- Pressure control to ensure even banding

2. Selecting the Appropriate Machine Program

- Describe how to select or implement the machine program based on the type of edge banding and the specific project.
- Explain how different machine programs affect the outcome of the edge banding operation.
- Show how to load or set up the correct program on the machine.

Key Points:

- Each program is optimized for specific edge banding tasks
- Using the wrong program can lead to defects, such as poor adhesion or misalignment
- Always double-check the program before starting the operation

3. Following SOPs and Safety Guidelines

- Emphasize the importance of following standard operating procedures (SOPs) for machine setup and operation.
- Review the key safety guidelines to ensure a safe working environment.
- Discuss the potential risks and how to avoid accidents or machine damage.

Key Points:

- Always wear the appropriate PPE (gloves, safety glasses)
- Follow machine operation manuals and SOPs carefully
- · Regularly inspect the machine for any safety hazards

4. Proper Positioning and Feeding of Materials

- Describe how to properly feed panel materials into the edge banding machine, ensuring smooth and efficient movement through the conveyor.
- Discuss the importance of correct material positioning for accurate and consistent edge banding.
- Teach how to monitor the material flow to avoid jams or misalignment.

Key Points:

- Ensure panels are fed straight into the machine to avoid crooked edge banding
- Keep the feed rate consistent to avoid overloading the machine
- Monitor the machine to ensure smooth feeding

5. Monitoring Machine Operations and Identifying Irregularities

- Explain how to actively monitor machine operations for irregularities such as jams, adhesive issues, or misalignment.
- Teach how to spot defects in the edge banding process, such as uneven edges or poor adhesion.
- Discuss the importance of promptly notifying the machine operator if defects are detected.

Key Points:

- Be aware of any unusual noises or movements in the machine
- Inspect the edges of the workpieces periodically to ensure quality
- Communicate any issues immediately to the machine operator

Activity-1



Machine Configuration Practice

Objective: To practice configuring the edge banding machine based on project requirements.

Materials Needed: Edge banding machine, panels, edge banding materials

Instructions:

- Trainees will work with the operator to adjust machine settings (temperature, feed rate, and pressure) for different types of edge banding operations.
- Discuss how to adjust settings for different materials (e.g., wood, MDF, plastic).

Expected Outcome: Trainees will demonstrate the correct configuration of the machine settings for various edge banding tasks.

Activity-2



Panel Feeding and Alignment Practice

Objective: To practice proper feeding and alignment of panels into the machine.

Materials Needed: Panel materials, edge banding machine

Instructions:

- Trainees will position and feed panels into the machine's conveyor system.
- Emphasize proper alignment to ensure smooth operation and accurate edge banding.

Expected Outcome: Trainees will correctly feed panels into the machine, maintaining consistent alignment for edge banding.

Activity-3



Monitoring and Troubleshooting Practice

Objective: To practice monitoring the machine during operation and identifying potential issues.

Materials Needed: Edge banding machine, panels, edge banding materials

Instructions:

- Trainees will observe machine operations and identify any irregularities (e.g., misalignment, adhesive issues).
- They will practice notifying the operator of defects and assisting with troubleshooting.

Expected Outcome: Trainees will demonstrate the ability to monitor machine operations effectively and communicate any defects to the operator.

Do



Ask trainees to:

- Supervised Practice: Each trainee will assist in configuring the edge banding machine for a specific project.
- Collaborative Practice: Assist in feeding and aligning materials into the machine with a focus on quality results.
- Monitoring Practice: Observe the edge banding operation and report any irregularities to the machine operator.

Say



"Proper configuration and monitoring of the edge banding machine are crucial to ensure the quality and efficiency of the operation. By following standard procedures, aligning materials correctly, and staying vigilant for any issues, we can achieve the desired results while maintaining a safe working environment. In the next unit, we will explore post-production activities and maintenance tasks."

Notes for Facilitation



- Reinforce the importance of adhering to machine settings and SOPs to ensure high-quality results and safety.
- Remind trainees that early identification and communication of issues can prevent defects and costly mistakes.
- Encourage collaboration between trainees and the machine operator to ensure smooth operations.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-

UNIT 17.3: Workplace and Equipment Management for Edge Banding Machine

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the specific cleaning procedures for the edge banding machine and its components, ensuring proper maintenance.
- 2. Describe the principles of organizing and managing the workspace for panels storage and waste disposal procedures.
- 3. List the visual and tactile indicators of defects in finished materials.
- 4. Explain the importance of maintaining accurate documentation of manufacturing specifications and quality control inspections for the edge banding process.
- 5. Assist the operator in cleaning and maintaining the edge banding machine and its parts.
- 6. Organize and manage the workspace effectively, implementing proper storage techniques for panels and adhering to waste disposal procedures.
- 7. Assist in inspecting finished materials for defects following the specified procedures and guidelines.
- 8. Assist in maintaining proper documentation for manufacturing specifications and quality control inspections in the edge banding process.

Resources to be Used



Theory:

- Training materials on machine cleaning and maintenance protocols
- Standard operating procedures (SOPs) for equipment management
- Waste disposal guidelines and storage management techniques
- Documentation templates for quality control and manufacturing specifications
- Information on common defects in finished materials

Practical:

- Edge banding machine and associated components
- Cleaning materials (e.g., brushes, cloths, solvents)
- Panel materials (e.g., MDF, plywood, particleboard)
- Waste disposal containers
- Documentation sheets or digital systems for recording specifications and inspections

Say



"In this unit, we will focus on managing the workspace and maintaining the equipment to ensure the edge banding operation runs smoothly and efficiently. We'll cover how to clean the machine properly, organize the workspace, inspect finished products for defects, and maintain accurate documentation throughout the process."

Ask



- "Why do you think it's important to regularly clean and maintain the edge banding machine?"
- "What could happen if the workspace isn't organized or waste isn't disposed of properly?"
- "How would you identify defects in finished materials, and why is this important?"

Elaborate



1. Cleaning and Maintaining the Edge Banding Machine

- Discuss the specific cleaning procedures for the edge banding machine, including cleaning of the adhesive applicators, rollers, and conveyor systems.
- Teach how to inspect and maintain machine components such as the feed mechanism, pressure rollers, and edge banding material applicators.
- Emphasize the importance of scheduled maintenance to ensure the longevity of the machine and consistent performance.

Key Points:

- Always follow the manufacturer's cleaning and maintenance instructions
- Regular cleaning prevents build-up of adhesive, dust, or debris that can affect machine performance
- Keep all moving parts well-lubricated and free of contaminants

2. Organizing and Managing the Workspace

- Teach how to organize the workspace for easy access to materials and tools.
- Discuss proper storage techniques for panels to avoid warping or damage, and how to store edge banding materials correctly.
- Review waste disposal procedures, including how to dispose of excess materials, off-cuts, and waste adhesives in an environmentally responsible manner.

Key Points:

- Panels should be stored flat and off the floor to prevent warping
- Edge banding materials should be stored in a dry, temperature-controlled area
- Waste materials should be sorted and disposed of following local regulations to minimize environmental impact

3. Identifying Defects in Finished Materials

- Explain the visual and tactile indicators of defects in finished edge banded materials, such as rough edges, gaps, or uneven adhesion.
- Teach how to visually inspect the finished product for defects and how to perform tactile checks (e.g., feeling for smoothness or irregularities along the edges).
- Discuss the importance of early detection and correction of defects to ensure product quality.

Key Points:

- Look for visible inconsistencies in the edge banding, such as bubbles, lifting, or uneven application
- Run fingers along the edge to feel for any rough spots or areas where the edge banding hasn't adhered properly
- Defects should be reported immediately for correction

4. Documentation of Manufacturing Specifications and Quality Control Inspections

- Explain the importance of maintaining accurate documentation throughout the edge banding process.
- Describe the required documentation for manufacturing specifications, including materials used, machine settings, and operator notes.
- Emphasize the role of quality control records in tracking product quality and ensuring compliance with specifications.

Key Points:

- Keep accurate records of machine settings, material lot numbers, and production runs
- Ensure that all inspections and quality control checks are documented for traceability
- Regularly review and update records to ensure quality standards are met

Activity-1



Cleaning and Maintaining the Edge Banding Machine

Objective: To practice cleaning and maintaining the edge banding machine according to the manufacturer's guidelines.

Materials Needed: Edge banding machine, cleaning supplies, lubricants, brushes

Instructions:

- Trainees will work with the operator to clean different components of the machine (e.g., adhesive rollers, feed mechanism, conveyor system).
- Discuss and demonstrate the maintenance checks required to ensure the machine is functioning

Expected Outcome: Trainees will demonstrate how to clean and maintain key machine components and ensure proper operation.

Activity-2



${\bf Organizing}\ the\ Work space\ and\ Storing\ Materials$

Objective: To practice organizing the workspace for panel storage and waste disposal procedures.

Materials Needed: Panels, edge banding materials, waste disposal containers

Instructions:

- Trainees will organize the workspace, ensuring panels are stored properly and waste materials are sorted for disposal.
- Discuss the importance of efficient workspace management to improve productivity and reduce material damage.

Expected Outcome: Trainees will show how to effectively organize materials and dispose of waste according to best practices.

Activity-3



Inspecting Finished Materials for Defects

Objective: To practice inspecting finished edge banded materials for defects.

Materials Needed: Finished panels, edge banding materials

Instructions:

- Trainees will inspect a batch of finished panels for defects such as uneven edges, poor adhesion, or visible gaps.
- They will document any defects found and report them to the operator.

Expected Outcome: Trainees will be able to identify common defects in finished materials and understand the importance of early detection.

Do



Ask trainees to:

- Supervised Practice: Clean and maintain the edge banding machine as per the manufacturer's cleaning instructions.
- Collaborative Practice: Organize the workspace and practice storing materials and disposing of waste in the correct manner.
- Monitoring Practice: Inspect finished panels for defects, documenting and reporting any issues found.

Say



"By properly maintaining the edge banding machine, organizing our workspace, and thoroughly inspecting finished materials, we ensure the production process runs smoothly, efficiently, and with high-quality results. In the next unit, we will explore troubleshooting and resolving any issues that arise during the edge banding operation."

Notes for Facilitation



- Reinforce the importance of proper maintenance and workspace organization in minimizing downtime and maintaining product quality.
- Encourage trainees to always adhere to cleaning and maintenance schedules to avoid costly machine malfunctions.
- Emphasize that accurate documentation helps maintain quality control and ensures traceability in the production process.

– Notes 🗐 ———————————————————————————————————







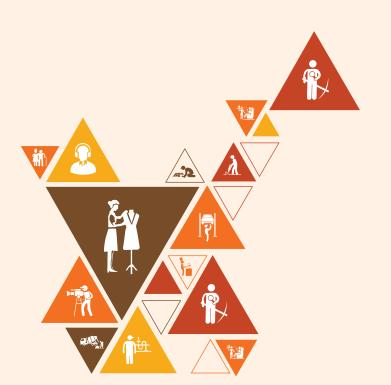






18. Assist in Operating Drilling Machines

- Unit 18.1 Assist in Workplace Setup for Drilling Machine
- Unit 18.2 Assist in Drilling Operation
- Unit 18.3 Workplace and Equipment Management for Drilling Machine





Key Learning Outcomes | 👸



At the end of this module, you will be able to:

- 1. Discuss the process of efficient stacking and storage of materials and workpieces at designated machine stations, employing proper handling techniques for drilling machine operation.
- 2. Employ critical thinking skills and understanding of quality standards to evaluate the quality of job work received for drilling machine operation.
- 3. Assist in perform machine setup process and prepare the machine for required drilling machining operation.
- 4. Demonstrate accurate and efficient handling and loading of workpieces onto the machine, using appropriate handling techniques.
- 5. Discuss the process of configuring the drilling machine depending on project requirements.
- 6. Perform labeling or sorting techniques to track and monitor the workpieces after drilling operation for further processes.
- 7. Demonstrate the skills to assist in operating and monitor the drilling machine for required job work.
- 8. Demonstrate knowledge and understanding of the cleaning and maintenance procedures for the drilling machine and its part.
- 9. Apply organizational skills and principles to efficiently manage the workspace, including the proper storage of panels and the appropriate disposal of waste.
- 10. Utilize their knowledge of quality standards and specifications to assist in inspecting drilling materials for defects.
- 11. Utilizing appropriate record-keeping techniques and systems to prepare and maintain process documents

UNIT 18.1: Assist in Workplace Setup for Drilling Machine

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the importance of proper stacking and storage of materials and workpieces for drilling operations.
- 2. List the key constraints involved in checking the quality of job work received for drilling machine operation.
- 3. Describe the responsibilities while collaborating with the machine operator in adjusting machine settings for optimal edge drilling results.
- 4. Perform stacking and storage of materials and workpieces following the specified procedures and guidelines.
- 5. Employ appropriate quality standards and techniques to assess the quality of job work received for drilling operation.
- 6. Collaborate with the machine operator to adjust machine settings, including machine controls, and install drilling tools by following the specified procedures and guidelines.

Resources to be Used



Theory:

- Training materials on proper material handling, stacking, and storage techniques
- Standard operating procedures (SOPs) for drilling machine setup and operation
- Machine adjustment guidelines for drilling tools
- Quality control techniques and criteria for assessing drilled workpieces

Practical:

- Drilling machine and associated components
- Various materials and workpieces for drilling (e.g., metal, wood, plastic)
- Tools for checking material quality (e.g., calipers, rulers, micrometers)
- Drilling tools (e.g., drill bits, reamers, counterbores)
- Documentation sheets or systems for recording job work quality checks

Say



"In this unit, we will focus on how to properly set up the workplace for drilling operations, including the proper stacking and storage of materials, ensuring quality control, and adjusting machine settings with the operator to ensure the most precise drilling results."

Ask



- Why is it essential to store materials properly before drilling, and what could happen if the materials are not stored according to guidelines?
- What quality checks do you think are necessary to ensure the drilled workpieces meet the required standards?
- How can you contribute to adjusting the machine settings when working alongside the operator?

Elaborate



1. Proper Stacking and Storage of Materials

- Discuss the importance of stacking materials properly to prevent damage, deformation, or warping before drilling.
- Teach trainees how to store materials such as metal, wood, or plastic in designated areas to keep them
 organized and accessible for the drilling operation.
- Emphasize the significance of ensuring that materials are free from debris and contamination, as this can affect the quality of the drilling operation.

Key Points:

- Store materials in a dry, clean environment to avoid rusting or warping
- Stack materials neatly to ensure ease of access during drilling
- Protect materials from dirt or contaminants that could affect the drilling precision

2. Checking the Quality of Job Work Received

- Teach trainees how to assess the quality of workpieces before beginning the drilling process.
- Describe key constraints such as size tolerance, surface finish, and material properties that could affect the drilling process.
- Introduce quality control techniques like measuring tools (e.g., calipers, micrometers) to ensure workpieces meet the specified dimensions and tolerances.

Key Points:

- · Verify that the material has the correct dimensions before drilling
- Check for any visible defects or irregularities in the workpieces
- Use tools like calipers to measure thickness or diameter to ensure precision

3. Collaborating with the Machine Operator for Machine Setup

- Explain how to work with the machine operator to adjust machine settings for drilling operations.
- Discuss machine parameters such as drilling speed, feed rate, and depth settings that must be calibrated for optimal results.
- Teach how to install and check the correct drill bit or tooling required for the job.
- Emphasize the importance of communicating with the operator to ensure that all settings are in place before beginning the operation.

Key Points:

- Work closely with the operator to adjust settings for different material types and hole sizes
- Ensure the correct tool is installed for the job to achieve the desired results
- Double-check that the machine settings are correct before starting the drilling operation

4. Quality Standards and Techniques for Job Work

- Discuss the quality standards and specific measurements that must be met for drilling operations.
- Teach trainees to perform visual and tactile checks on workpieces to assess the accuracy and quality of drilled holes.
- Emphasize that all workpieces should meet the required tolerance levels to ensure proper functionality and performance of the final product.

Key Points:

- Ensure all drilled holes are accurately sized and positioned as per the job specifications
- Check the surface finish of drilled holes to ensure smoothness and avoid burrs or chips
- Record all quality checks for traceability and to monitor the performance of the operation

Activity-1



Storing and Stacking Materials

Objective: To practice proper stacking and storing of materials and workpieces for drilling operations.

Materials Needed: Various workpieces (e.g., wood, metal), storage racks

Instructions:

- Trainees will organize a workspace by properly stacking and storing materials, ensuring materials are ready for drilling.
- Discuss how the positioning of materials impacts accessibility and efficiency during the drilling process.

Expected Outcome: Trainees will demonstrate the correct storage methods for different types of materials and ensure they are stored in an orderly fashion.

Activity-2



Checking the Quality of Job Work

Objective: To practice assessing the quality of workpieces before drilling operations begin.

Materials Needed: Workpieces, calipers, rulers

Instructions:

- Trainees will inspect workpieces to verify that they meet the required size and quality standards.
- They will measure the workpieces using calipers or rulers to ensure they meet the specified dimensions and tolerances.

Expected Outcome: Trainees will be able to identify defects or irregularities in the workpieces and assess whether they are suitable for drilling.

Activity-3



Collaborating with the Operator for Machine Setup

 $\textbf{Objective:} \ \textbf{To practice adjusting machine settings and installing the correct drilling tools.}$

Materials Needed: Drilling machine, drill bits, measuring tools

Instructions:

• Trainees will work alongside the machine operator to adjust machine settings such as speed and feed rate

• They will install the appropriate drill bits for the job and check the setup to ensure it meets the requirements.

Expected Outcome: Trainees will be able to set up the drilling machine with the operator and install the correct tools for the job.

Do



Ask trainees to:

- Supervised Practice: Stack and store materials properly in preparation for the drilling operation.
- Collaborative Practice: Work with the operator to adjust machine settings and install the correct tooling for the job.
- Inspection Practice: Perform quality checks on workpieces before drilling, using appropriate measuring tools.

Say



"By properly storing materials, checking the quality of workpieces, and collaborating with the machine operator to adjust machine settings, we ensure that the drilling operation is efficient and precise. In the next unit, we will look into the specific steps for performing the drilling operation itself.

Notes for Facilitation



- Reinforce the importance of preparation before drilling to ensure smooth operations and avoid errors during the process.
- Encourage active communication with machine operators, as collaboration is key to achieving optimal results in drilling operations.
- Stress the importance of thorough quality checks to maintain high standards throughout the drilling process.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-

UNIT 18.2: Assist in Drilling Operation

-Unit Objectives 🏻 ©



At the end of this unit, you will be able to:

- 1. Explain the process of proper loading and unloading techniques for safe and efficient machine operations.
- 2. Describe the importance of maintaining a steady and controlled feeding pace to achieve accurate and consistent results.
- 3. Explain the labelling or sorting techniques used to identify routed workpieces according to project requirements.
- 4. Describe the importance of following standard operating procedures and safety guidelines to ensure safe and efficient machine operation.
- 5. Describe the techniques and parameters for adjusting machines, including speed, depth, feed rate, or tool selection, to achieve desired drilling results.
- 6. Explain the importance of actively monitoring machine operations to ensure quality and identify any irregularities or defects.
- 7. Support the machine operator in loading and unloading workpieces onto and off the machine table or holding fixtures.
- 8. Collaborate with the machine operator to feed workpieces through the drilling machine, maintaining a steady and controlled pace as instructed.
- 9. Apply the appropriate labelling or sorting techniques to identify routed workpieces accurately.
- 10. Assist the operator in following standard operating procedures and safety guidelines for drilling machine operation, adhering to the specified procedures and safety protocols.
- 11. Assist the operator in drilling machine operation, adhering to the specified procedures and safety protocols.
- 12. Assist in monitoring machine operations, actively looking for irregularities or defects, and promptly communicating them to the machine operator.

Resources to be Used



Theory:

- Training materials on safe machine operation, feeding techniques, and machine adjustment
- · Standard operating procedures (SOPs) for loading, unloading, and machine adjustments
- Instructional guidelines for labelling or sorting routed workpieces
- Safety guidelines and protocols for drilling machine operation

Practical:

- Drilling machine with proper setup for operations
- Workpieces for drilling (e.g., wood, metal, plastic)
- Tools for labelling or sorting routed workpieces
- · Personal protective equipment (PPE) for safety

Say



"In this unit, we'll focus on how to assist in a drilling operation, including the proper techniques for loading and unloading materials, controlling the feeding pace for precision, and following safety and procedural guidelines throughout the operation."

Ask



- Why is it important to maintain a steady feeding pace during the drilling operation?
- What could happen if the workpiece is not properly loaded or unloaded from the machine?
- How can we identify and sort routed workpieces to ensure that each piece meets the project's specifications?

Elaborate



1. Loading and Unloading Techniques

- Explain the process of safely loading and unloading workpieces onto the machine table or holding fixtures.
- Discuss how to use the proper techniques to ensure the workpiece is correctly aligned for drilling.
- Emphasize the importance of using personal protective equipment (PPE) and ensuring the machine is turned off or properly secured before handling workpieces.

Key Points:

- Load and unload workpieces with care to prevent injury or damage to materials
- Always secure the workpiece properly on the machine before starting the operation
- Use appropriate lifting techniques to avoid injury or damage

2. Maintaining a Steady Feeding Pace

- Explain how a steady, controlled feeding pace is essential for accurate and consistent drilling results.
- Teach trainees how to monitor and adjust the feed rate of the workpiece through the machine to avoid variations in hole sizes or surface defects.
- Stress the importance of proper coordination between the operator and assistant for a smooth workflow.

Key Points:

- Keep a steady pace to ensure consistency and prevent overloading the machine
- Adjust the feed rate based on the material being drilled to achieve optimal results
- Work in sync with the machine operator to maintain a consistent pace

3. Labelling and Sorting Routed Workpieces

- Describe the importance of labelling or sorting routed workpieces according to project specifications.
- Discuss different labelling or sorting methods, such as color coding, barcoding, or manual marking, to ensure each workpiece is easily identifiable during the manufacturing process.
- Ensure trainees understand that proper identification helps in tracking quality control and improving workflow efficiency.

Key Points:

- Label workpieces according to the project's requirements (e.g., part number, material type)
- Use clear and durable labels to avoid confusion during or after the operation
- Sort workpieces correctly to match project specifications

4. Adjusting Machine Settings

- Explain how to adjust the machine for optimal drilling performance by modifying parameters like speed, depth, and feed rate.
- Teach trainees the importance of selecting the correct drill bits and tooling for different materials to achieve the desired result.
- Collaborate with the machine operator to ensure adjustments are made safely and effectively.

Key Points:

- Adjust speed, depth, and feed rate based on the material and job requirements
- Choose the appropriate drill bit size and type for the material being drilled
- Always double-check settings before starting the machine

5. Monitoring Machine Operations

- Emphasize the importance of actively monitoring machine operations during the drilling process to ensure that everything is running smoothly.
- Teach trainees to identify any irregularities, such as unusual sounds, vibrations, or changes in the quality of the drilled hole, and communicate these issues to the machine operator.
- Promote early detection of defects to prevent further damage to the machine or workpieces.

Key Points:

- Listen for abnormal machine sounds or detect changes in drilling performance
- · Report any irregularities to the machine operator immediately
- Follow quality control procedures to ensure high standards

Activity-1



Practicing Loading and Unloading

Objective: To practice proper loading and unloading techniques for safe and efficient drilling operations.

Materials Needed: Workpieces, drill machine, PPE

Instructions:

- Trainees will load and unload workpieces onto the drilling machine using proper safety procedures.
- Discuss the importance of securing the workpieces and ensuring that they are properly aligned.

Expected Outcome: Trainees will demonstrate safe and effective loading and unloading techniques.

Activity-2



Controlling Feeding Pace

Objective: To practice controlling the feeding pace of the workpieces through the drilling machine.

Materials Needed: Workpieces, drill machine

Instructions:

- Trainees will assist the machine operator in feeding workpieces at a consistent pace through the machine.
- Emphasize the importance of maintaining a steady pace to achieve consistent drilling results.

Expected Outcome: Trainees will successfully maintain a controlled pace during the operation, ensuring smooth and consistent drilling.

Activity-3



Labelling and Sorting Routed Workpieces

Objective: To practice labelling and sorting routed workpieces according to project requirements.

Materials Needed: Workpieces, labelling materials (e.g., tags, markers), sorting bins

Instructions:

- Trainees will label and sort routed workpieces according to predefined project specifications.
- Discuss various methods of labelling, such as color coding or using barcodes.

Expected Outcome: Trainees will accurately label and sort workpieces for easy identification and tracking.

Do



Ask trainees to:

- Supervised Practice: Load and unload workpieces safely and properly onto the machine.
- Collaborative Practice: Feed workpieces through the machine, maintaining a steady pace under the operator's guidance.
- Inspection Practice: Label and sort workpieces according to the project's requirements.

Say



"By mastering the techniques of loading, unloading, controlling feeding pace, and labelling workpieces accurately, you contribute significantly to the efficiency and quality of the drilling process. In the next section, we will focus on ensuring the drilled workpieces meet the required quality standards."

Notes for Facilitation



- Reinforce the importance of teamwork with the machine operator to ensure the drilling operation runs smoothly.
- Emphasize the need for safety at all stages of the drilling process, including loading and unloading, to avoid accidents.
- Encourage trainees to stay vigilant and alert during operations to ensure quality is maintained throughout.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-

UNIT 18.3: Workplace and Equipment Management for Drilling Machine

-Unit Objectives



At the end of this unit, you will be able to:

- 1. Explain the specific cleaning procedures for the drilling machine and its components, ensuring proper maintenance.
- 2. Explain the proper techniques for cleaning, sharpening, or replacing cutting tools.
- 3. Describe the principles of organizing and managing the workspace for panels storage and waste disposal procedures.
- 4. List the visual and tactile indicators of defects in finished materials.
- 5. Explain the importance of maintaining accurate documentation of manufacturing specifications and quality control inspections for the drilling process.
- 6. Assist the operator in cleaning and maintaining the drilling machine and its parts.
- 7. Employ appropriate techniques while cleaning, sharpening, or replacement of cutting tools, as instructed by the machine operator.
- 8. Organize and manage the workspace effectively, implementing proper storage techniques for panels and adhering to waste disposal procedures.
- 9. Assist in inspecting finished materials for defects following the specified procedures and guidelines.
- 10. Assist in maintaining proper documentation for manufacturing specifications and quality control inspections in the drilling process.

Resources to be Used



Theory:

- · Training materials on the cleaning, sharpening, and maintenance of drilling machines and tools
- Workspace organization guidelines and waste disposal protocols
- Instructional materials on quality inspection techniques and defect identification
- Documentation procedures for manufacturing specifications and quality control

Practical:

- · Drilling machine with working parts
- Cleaning supplies (brushes, cloths, solvents)
- Sharpening and tool replacement equipment
- · Workpieces for inspection
- Personal protective equipment (PPE)

Say



"In this unit, we'll explore the important practices of maintaining both the drilling machine and the workspace. You'll learn how to clean the machine, sharpen or replace cutting tools, and manage the workspace for optimal efficiency and safety."

Ask



- "Why is it important to maintain the drilling machine regularly?"
- "How does the sharpness of cutting tools impact the quality of the drilling operation?"
- "What are the signs you should look for when inspecting finished materials for defects?"

Elaborate



1. Cleaning Procedures for Drilling Machine and Components

- Explain the cleaning procedures for the drilling machine and its components, such as the bed, spindle, and feed mechanisms.
- Discuss how regular cleaning helps prevent build-up of dust, metal shavings, and other debris, which can affect the machine's performance.
- Teach trainees the importance of following safety protocols while cleaning, including turning off the machine and using proper PPE.

Key Points:

- Clean the machine after each operation to maintain optimal performance
- Pay special attention to areas where debris can accumulate, such as the feed mechanism and cutting area
- Use approved cleaning agents and tools to avoid damaging the machine

2. Cleaning, Sharpening, and Replacing Cutting Tools

- Discuss the techniques for cleaning cutting tools, ensuring that they are free from buildup that could impair their function.
- Teach the importance of sharpening cutting tools regularly to maintain cutting accuracy and avoid excessive wear on the machine.
- Show how to replace dull or damaged cutting tools in accordance with safety and operational guidelines.

Key Points:

- Regularly clean tools to remove dirt and residues that could impact performance
- Sharpen cutting tools according to the manufacturer's specifications
- Always replace worn or damaged cutting tools to maintain precision and prevent machine strain

3. Organizing and Managing the Workspace

- Explain the principles of organizing the workspace, including proper storage techniques for panels and waste disposal methods.
- Discuss the importance of keeping work areas clean, safe, and free from obstructions to enhance workflow and prevent accidents.
- Emphasize the importance of proper disposal of waste materials like offcuts, shavings, and used tools.

Key Points:

- Store materials and workpieces in a designated area to prevent clutter
- Maintain a tidy workspace to ensure safety and efficiency
- Follow proper waste disposal procedures to adhere to environmental and workplace standards

4. Identifying Defects in Finished Materials

- Teach trainees how to inspect finished materials for defects by using both visual and tactile indicators.
- Explain how to identify common defects such as uneven edges, misaligned holes, or surface imperfections.
- Stress the importance of reporting defects to the operator or supervisor to ensure corrections are made before the workpiece proceeds to the next stage of production.

Key Points:

- Look for visible defects such as scratches, dents, or incorrect dimensions
- Use tactile methods to check for surface smoothness or irregularities
- Document and report any defects as part of the quality control process

5. Maintaining Documentation for Quality Control

- Discuss the importance of keeping accurate documentation for manufacturing specifications and quality control inspections.
- Explain the role of documentation in tracking the quality of work, recording adjustments made during the operation, and ensuring compliance with project standards.
- Show trainees how to properly document inspection results and machine adjustments.

Key Points:

- Keep clear records of each project's specifications and quality control results
- Document any changes or adjustments made to the machine settings or procedures
- Use documentation to track progress, identify recurring issues, and improve future operations

Activity-1



Cleaning and Maintenance Practice

Objective: To practice cleaning the drilling machine and its parts.

Materials Needed: Drilling machine, cleaning supplies (brushes, rags, solvents), PPE

Instructions:

- Trainees will clean different parts of the drilling machine under supervision, focusing on areas that require frequent cleaning.
- Emphasize the importance of safety and the proper tools for cleaning.

Expected Outcome: Trainees will clean the machine safely and thoroughly, ensuring no debris is left behind.

Activity-2



Tool Sharpening and Replacement

Objective: To practice sharpening and replacing cutting tools on the drilling machine.

Materials Needed: Cutting tools, sharpening tools, replacement parts

Instructions:

- Trainees will practice cleaning, sharpening, and replacing cutting tools following proper procedures.
- Discuss the importance of checking tools before and after each use to ensure they are in optimal condition.

Expected Outcome: Trainees will demonstrate proper techniques for tool maintenance.

Activity-3



Inspecting Finished Materials

Objective: To inspect finished materials for defects using visual and tactile methods.

Materials Needed: Finished workpieces

Instructions:

- Trainees will inspect finished materials and identify any defects such as misalignment or surface issues.
- Trainees will document defects found during the inspection process.

Expected Outcome: Trainees will identify and record defects and understand how to communicate findings to the operator.

Do



Ask trainees to:

- Supervised Practice: Clean and maintain the drilling machine following standard procedures.
- Collaborative Practice: Sharpen and replace cutting tools under supervision.
- Inspection Practice: Inspect finished workpieces for defects and document their findings.

Say



"Proper cleaning, tool maintenance, and workspace organization are key components of maintaining a safe and efficient drilling operation. Now that you've practiced these skills, you're ready to keep your workspace and equipment in top condition for ongoing production."

Notes for Facilitation



- Reinforce the importance of regular machine maintenance for prolonging the life of equipment and preventing downtime.
- Emphasize safety during all cleaning and tool maintenance procedures.
- Encourage trainees to always follow company procedures for documenting inspections and adjustments.

– Notes 🗐 ———————————————————————————————————	













19. Assist in Operating Routing Machines

Unit 19.1 - Assist in Workplace Setup for Routing Machine

Unit 19.2 - Assist in Routing Operation

Unit 19.3 - Workplace and Equipment Management for Routing Machine





Key Learning Outcomes | 👸



At the end of this module, you will be able to:

- 1. Discuss the process of efficient stacking and storage of materials and workpieces at designated machine stations, employing proper handling techniques for drilling machine operation.
- 2. Employ critical thinking skills and understanding of quality standards to evaluate the quality of job work received for drilling machine operation.
- 3. Assist in perform machine setup process and prepare the machine for required drilling machining operation.
- 4. Demonstrate accurate and efficient handling and loading of workpieces onto the machine, using appropriate handling techniques.
- 5. Discuss the process of configuring the drilling machine depending on project requirements.
- 6. Perform labeling or sorting techniques to track and monitor the workpieces after drilling operation for further processes.
- 7. Demonstrate the skills to assist in operating and monitor the drilling machine for required job work.
- 8. Demonstrate knowledge and understanding of the cleaning and maintenance procedures for the drilling machine and its part.
- 9. Apply organizational skills and principles to efficiently manage the workspace, including the proper storage of panels and the appropriate disposal of waste.
- 10. Utilize their knowledge of quality standards and specifications to assist in inspecting drilling materials for defects.
- 11. Utilizing appropriate record-keeping techniques and systems to prepare and maintain process documents

UNIT 19.1: Assist in Workplace Setup for Routing Machine

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the importance of proper stacking and storage of materials and workpieces for routing operations.
- 2. List the key constraints involved in checking the quality of job work received for routing machine operation.
- 3. Describe the responsibilities while collaborating with the machine operator in adjusting machine settings for optimal edge routing results.
- 4. Perform stacking and storage of materials and workpieces following the specified procedures and guidelines
- 5. Employ appropriate quality standards and techniques to assess the quality of job work received for routing operation.
- 6. Collaborate with the machine operator to adjust machine settings, including machine controls, and install routing tools by following the specified procedures and guidelines.

Resources to be Used



Theory:

- Training materials on machine setup, storage procedures, and quality assessment
- Instruction manuals for routing machines and tool setup guidelines
- Documents on routing machine operations and troubleshooting

Practical:

- Routing machine with working parts
- Workpieces and materials for routing
- · Stacking tools and storage materials
- Personal protective equipment (PPE)

Say



"In this unit, we will focus on the proper setup of the routing machine, including the stacking and storage of materials, assessing job work quality, and collaborating with the machine operator to adjust settings for optimal routing results."

Ask



- "Why is it important to store materials and workpieces properly before routing?"
- "What are some common constraints you should consider when checking the quality of job work for routing operations?"
- "How can you help the operator ensure the routing machine is set up correctly for each project?"

Elaborate



1. Stacking and Storing Materials for Routing Operations

- Discuss the significance of proper stacking and storage techniques to prevent material damage, maintain accessibility, and ensure efficient operations.
- Explain how incorrect storage can lead to warped or damaged materials, impacting the routing process.
- Teach trainees how to organize workpieces by type, size, and material to optimize workflow.

Key Points:

- Store materials in a way that prevents damage, such as avoiding excessive stacking height or exposure to environmental factors
- Ensure materials are easy to access for quick loading onto the routing machine
- Use proper shelving, racks, or pallets for efficient organization

2. Constraints in Checking the Quality of Job Work for Routing Operations

- Describe the key constraints involved in checking the quality of job work received for routing operations, such as material defects, incorrect dimensions, and surface irregularities.
- Discuss how even small defects in the material can affect the final routing result, leading to inefficiency or a need for rework.
- Explain the importance of reviewing the job work specification thoroughly to avoid misalignments between received work and required results.

Key Points:

- Look for visible material defects such as cracks, knots, or warping
- Ensure the dimensions of the workpiece are within required tolerances
- Inspect the surface for smoothness and readiness for routing

3. Responsibilities in Collaborating with the Machine Operator

- Explain the collaborative role of assisting the machine operator in adjusting machine settings for optimal edge routing.
- Discuss how machine settings, such as speed, depth, and tool selection, impact the routing results and how proper adjustments can improve efficiency and accuracy.
- Teach how to install routing tools correctly according to the machine's specifications and job requirements.

Key Points:

- Collaborate with the machine operator to ensure the right routing tools are selected and installed
- Adjust machine settings based on the material type and desired edge routing results
- Communicate any discrepancies or concerns during setup to avoid operational issues later

Activity-1



Material Stacking and Storage Practice

Objective: To practice proper stacking and storage of materials for routing operations.

Materials Needed: Various workpieces, storage racks or pallets

Instructions:

- Trainees will organize materials according to size, type, and storage guidelines.
- Emphasize the importance of preventing material damage during storage.

Expected Outcome: Trainees will demonstrate how to store materials effectively and accessibly, ensuring efficient routing operations.

Activity-2



Quality Check of Received Job Work

Objective: To practice assessing the quality of received job work based on given constraints.

Materials Needed: Pre-prepared workpieces with various defects (e.g., dimensional errors, surface imperfections)

Instructions:

- Trainees will inspect the received job work, checking for defects and assessing whether the work meets specifications.
- They will document the issues found and discuss how they might impact the routing process.

Expected Outcome: Trainees will identify and document defects accurately and understand how to handle defective workpieces.

Activity-3



Adjusting Machine Settings and Installing Routing Tools

Objective: To assist in adjusting the routing machine settings and installing routing tools.

Materials Needed: Routing machine, variety of routing tools, workpieces

Instructions:

- Trainees will collaborate with the operator to adjust machine settings such as speed, depth, and feed rate for a specific routing task.
- They will help install routing tools according to the specifications and assist with tool alignment.

Expected Outcome: Trainees will assist in configuring the routing machine for optimal operation.

Do



Ask trainees to:

- Supervised Practice: Stack and store materials according to guidelines.
- Collaborative Practice: Perform quality checks on received job work, documenting any defects.
- Hands-On Practice: Collaborate with the machine operator to adjust settings and install routing tools.

Say



"By ensuring proper storage, conducting thorough quality checks, and adjusting machine settings collaboratively, you contribute to the efficient and successful routing operation. Now, let's practice what we've discussed to ensure the routing machine is always set up properly."

Notes for Facilitation



- Reinforce the importance of communication between trainees and machine operators to ensure that all setup steps are performed correctly.
- Emphasize safety while adjusting machine settings and installing tools.
- Encourage trainees to always follow proper protocols for quality inspection and material handling.

– Notes 🗐 –

UNIT 19.2: Assist in Routing Operation

-Unit Objectives | @



At the end of this unit, you will be able to:

- 1. Explain the process of proper loading and unloading techniques for safe and efficient machine operations.
- 2. Describe the importance of maintaining a steady and controlled feeding pace to achieve accurate and consistent results.
- 3. Explain the labelling or sorting techniques used to identify routed workpieces according to project
- 4. Describe the importance of following standard operating procedures and safety guidelines to ensure safe and efficient machine operation.
- 5. Describe the techniques and parameters for adjusting machines, including speed, depth, feed rate, or tool selection, to achieve desired routing results.
- 6. Explain the importance of actively monitoring machine operations to ensure quality and identify any irregularities or defects.
- 7. Support the machine operator in loading and unloading workpieces onto and off the machine table or holding fixtures
- 8. Collaborate with the machine operator to feed workpieces through the routing machine, maintaining a steady and controlled pace as instructed.
- 9. Apply the appropriate labelling or sorting techniques to identify routed workpieces accurately
- 10. Assist the operator in following standard operating procedures and safety guidelines for routing machine operation, adhering to the specified procedures and safety protocols.
- 11. Assist the operator in routing machine operation, adhering to the specified procedures and safety protocols.
- 12. Assist in monitoring machine operations, actively looking for irregularities or defects, and promptly communicating them to the machine operator.

Resources to be Used



Theory:

- Instruction manuals on routing machine operations and safety procedures
- Training materials on routing machine feeding, adjustment, and monitoring techniques
- Quality control guidelines for routed workpieces

Practical:

- · Routing machine with workpieces for routing
- Personal protective equipment (PPE)
- · Various routing tools and materials
- Labeling or sorting equipment for routed workpieces

Say



"In this unit, we will cover the importance of loading and unloading workpieces correctly, maintaining a controlled feeding pace, and ensuring that all routed workpieces are properly identified according to the project's requirements."

Ask



- "Why do you think maintaining a steady and controlled feeding pace is crucial for routing operations?"
- "How would you ensure that the correct label or sorting technique is applied to routed workpieces?"
- "What is the significance of following standard operating procedures during routing operations?"

Elaborate



1. Proper Loading and Unloading Techniques

- Explain the importance of safe and efficient loading and unloading of workpieces onto the routing machine.
- Demonstrate how to handle workpieces carefully to avoid damage during the process.
- Emphasize the need to follow safety guidelines to prevent injury while loading and unloading.

- Always check the workpieces for defects before loading onto the machine
- Ensure that workpieces are securely positioned on the machine table or holding fixtures
- Follow the operator's instructions for correct handling procedures

2. Maintaining a Steady and Controlled Feeding Pace

- Discuss how maintaining a steady and controlled feeding pace ensures uniformity in routing results.
- Explain that feeding too fast can lead to inaccurate cuts, while feeding too slowly can cause inefficiency and may impact material quality.
- Teach the importance of working at the pace directed by the operator for the best results.

Key Points:

- Maintain a consistent pace that aligns with the machine's operating speed and the type of material being routed
- Avoid sudden jerks or changes in speed to prevent errors or uneven routing results
- Adjust feeding speed as necessary depending on material type and machine settings

3. Labelling or Sorting Routed Workpieces

- Explain how accurate labeling and sorting of routed workpieces are essential for project tracking and quality control.
- Discuss the different methods used for labeling or sorting workpieces, such as color codes, tags, or sorting by type of routing.
- Demonstrate how proper sorting and labeling can reduce confusion and prevent errors in the next steps of production.

Key Points:

- Always label or sort workpieces according to the project's specifications
- Ensure that labels are legible and attached securely to workpieces
- Sort routed pieces based on their quality, dimensions, or other relevant characteristics

4. Machine Adjustment and Operation

- Teach the significance of machine adjustment in achieving accurate routing results, including the speed, depth, feed rate, and tool selection.
- Collaborate with the operator to adjust the machine settings based on the material being routed and the desired outcome.
- Emphasize the need to periodically check and adjust settings during the operation to maintain consistent results.

- Adjust machine settings to match the specific requirements of each routing job
- Select the appropriate routing tools based on material type and job specifications
- · Monitor machine performance to ensure settings are maintaining the desired routing quality

Activity-1



Loading and Unloading Practice

Objective: To practice safe and efficient loading and unloading of workpieces on the routing machine.

Materials Needed: Routing machine, workpieces of different sizes and materials

Instructions:

- Trainees will practice loading workpieces onto the routing machine following safety procedures and guidelines.
- They will unload workpieces once routed and handle them carefully to avoid damage.

Expected Outcome: Trainees will demonstrate proper loading and unloading techniques while adhering to safety guidelines.

Activity-2



Feeding Pace Control Practice

Objective: To practice maintaining a steady and controlled feeding pace during routing operations.

Materials Needed: Routing machine, workpieces, speed control settings

Instructions:

- Trainees will collaborate with the operator to maintain a controlled feeding pace, adjusting based on machine speed and material type.
- Emphasize the importance of consistency and accuracy in feeding pace.

Expected Outcome: Trainees will demonstrate the ability to maintain the correct feeding pace to achieve uniform routing results.

Activity-3



Labeling and Sorting Routed Workpieces

Objective: To practice the labeling and sorting of routed workpieces according to the project's requirements.

Materials Needed: Routed workpieces, labeling tools, sorting equipment

Instructions:

- Trainees will apply labeling and sorting techniques to routed workpieces based on the project specifications.
- Ensure that labeling is clear and sorted accurately for the next steps in the process.

Expected Outcome: Trainees will accurately label and sort routed workpieces, adhering to project guidelines.

Do



Ask trainees to:

- Supervised Practice: Load and unload materials onto the routing machine following correct procedures.
- Collaborative Practice: Feed materials through the routing machine at a controlled pace, ensuring consistent results.
- Hands-On Practice: Label and sort routed workpieces, following project guidelines and ensuring clarity.

Say



"By practicing correct loading, feeding, and sorting techniques, as well as ensuring that machine settings are adjusted to the specific job, we can achieve high-quality, accurate routed workpieces. Let's now apply these skills in real-time practice to reinforce our learning."

Notes for Facilitation



- Encourage trainees to communicate openly with the machine operator to adjust machine settings and ensure the best results.
- Always remind trainees to use PPE and follow safety protocols during machine operation.
- Offer feedback during practical activities to ensure trainees are following the correct procedures.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-

UNIT 19.3: Workplace and Equipment Management for Routing Machine

-Unit Objectives |@



At the end of this unit, you will be able to:

- 1. Explain the specific cleaning procedures for the routing machine and its components, ensuring proper maintenance.
- 2. Explain the proper techniques for cleaning, sharpening, or replacing cutting tools.
- 3. Describe the principles of organizing and managing the workspace for panels storage and waste disposal procedures.
- 4. List the visual and tactile indicators of defects in finished materials.
- 5. Explain the importance of maintaining accurate documentation of manufacturing specifications and quality control inspections for the routing process.
- 6. Assist the operator in cleaning and maintaining the routing machine and its parts.
- 7. Employ appropriate techniques while cleaning, sharpening, or replacement of cutting tools, as instructed by the machine operator.
- 8. Organize and manage the workspace effectively, implementing proper storage techniques for panels and adhering to waste disposal procedures.
- 9. Assist in inspecting finished materials for defects following the specified procedures and guidelines.
- 10. Assist in maintaining proper documentation for manufacturing specifications and quality control inspections in the routing process.

Resources to be Used



Theory:

- Instruction manuals for routing machine maintenance and cleaning procedures
- Maintenance schedules and tools required for machine upkeep
- Waste disposal guidelines and quality control standards for routing operations

Practical:

- · Routing machine and maintenance tools
- Personal protective equipment (PPE)
- Cutting tools, sharpening equipment
- Waste disposal containers and storage racks
- Finished routed workpieces for defect inspection

Say



"In this unit, we will focus on the maintenance and cleaning procedures for the routing machine, along with how to organize the workspace for efficiency and safety. Proper management of the equipment and workspace ensures quality and smooth operation."

Ask



- "Why is it important to clean and maintain the routing machine regularly?"
- "How would you identify a defect in a routed workpiece by touch or sight?"
- "What would happen if we did not follow proper waste disposal procedures in the workshop?"

Elaborate



1. Cleaning and Maintaining the Routing Machine

- Explain the importance of keeping the routing machine clean to ensure smooth operation and longevity.
- Teach the specific cleaning procedures for the machine, such as wiping down components, cleaning the machine bed, and checking for dust accumulation in the motor and air vents.
- Show how to follow the maintenance schedule for the routing machine to prevent malfunctions and maintain operational efficiency.

Key Points:

- Always follow the manufacturer's guidelines for cleaning and maintenance
- Clean the machine after each use to remove dust, debris, or material residue
- · Check and lubricate moving parts to reduce wear and tear
- Ensure that all components are free from obstructions that might affect performance

2. Techniques for Cleaning, Sharpening, or Replacing Cutting Tools

- Discuss the proper techniques for maintaining cutting tools, including cleaning, sharpening, and replacing them when necessary.
- Demonstrate how to sharpen cutting tools to maintain their effectiveness and prevent unnecessary strain on the machine.
- Teach how to replace worn or damaged cutting tools to avoid compromising the quality of routed workpieces.

Key Points:

- Always ensure cutting tools are sharp to achieve precise results
- · Replace tools as needed to avoid damage to the material or machine
- Follow the operator's instructions on when and how to replace tools

3. Organizing and Managing the Workspace

- Emphasize the importance of organizing the workspace to maintain a safe and efficient environment.
- Teach how to store panels, tools, and other materials correctly to avoid damage and ensure easy access during operations.
- Discuss how to implement waste disposal procedures to manage material scraps, dust, and other byproducts generated during routing.

Key Points:

- Store panels on racks or shelves to prevent bending or damage
- Keep tools and materials organized for easy access and to avoid hazards
- Dispose of waste materials following environmental and workplace safety guidelines

4. Inspecting Finished Materials for Defects

- Teach how to visually and tactically inspect routed workpieces for defects, such as incorrect dimensions, rough edges, or tool marks.
- Explain how tactile inspection (feeling for unevenness or roughness) and visual inspection (looking for chips, cracks, or scratches) are both crucial in identifying defects.
- Emphasize the importance of quality control at this stage to prevent defective workpieces from moving to the next phase of production.

Key Points:

- Inspect finished routed workpieces thoroughly before they leave the workstation
- Look for visible imperfections such as scratches, chips, or incorrect shapes
- · Feel for any rough or uneven surfaces that may need further refinement

5. Maintaining Documentation for Quality Control

- Discuss the importance of maintaining accurate records for manufacturing specifications and quality control inspections.
- Teach how to document the outcomes of inspections and any machine maintenance or repairs that were conducted.
- Show how proper documentation helps ensure traceability and accountability in the routing process.

Key Points:

- Keep accurate records of machine maintenance schedules and inspections
- Document any defects found in finished workpieces and corrective actions taken
- Ensure all quality control procedures are recorded for reference in future operations

Activity-1



Cleaning and Maintenance Practice

Objective: To practice the cleaning and maintenance of the routing machine and its components.

Materials Needed: Routing machine, cleaning materials (cloth, brush, lubricants), maintenance tools

Instructions:

- Trainees will clean the routing machine following the specified procedures, ensuring all components are free from dust and debris.
- · They will perform basic maintenance tasks such as lubrication of moving parts and checking for any potential issues.

Expected Outcome: Trainees will demonstrate proper cleaning and maintenance procedures, ensuring the machine is ready for the next operation.

Activity-2



Cutting Tool Maintenance Practice

Objective: To practice cleaning, sharpening, and replacing cutting tools.

Materials Needed: Cutting tools, sharpening equipment, replacement tools

Instructions:

- Trainees will practice sharpening a dull cutting tool following the correct procedures.
- They will replace a worn or damaged cutting tool, following the operator's instructions.

Expected Outcome: Trainees will demonstrate how to properly maintain cutting tools for optimal machine performance.

Activity-3



Inspecting Finished Materials for Defects

Objective: To practice inspecting finished routed workpieces for defects.

Materials Needed: Routed workpieces, defect inspection checklist

Instructions:

- Trainees will inspect routed workpieces for any defects, using both visual and tactile methods.
- They will record any defects found and recommend corrective actions.

Expected Outcome: Trainees will identify defects in routed workpieces and understand the next steps for addressing them.

Activity-4



Workspace Organization and Waste Disposal

Objective: To practice organizing the workspace and following proper waste disposal procedures.

Materials Needed: Storage racks, waste disposal containers, routed materials

Instructions:

- Trainees will organize the workspace by properly storing panels, tools, and materials.
- They will dispose of waste materials, such as dust and offcuts, according to the company's waste disposal procedures.

Expected Outcome: Trainees will maintain a clean, organized workspace and ensure that waste is properly managed.



Ask trainees to:

- Supervised Practice: Clean and maintain the routing machine and its parts.
- Collaborative Practice: Sharpen or replace cutting tools as per the machine operator's instructions.
- Hands-On Practice: Inspect finished routed workpieces for defects and document the findings.
- Organizational Practice: Manage the workspace by storing panels correctly and disposing of waste materials appropriately.

Say



"Regular maintenance of the routing machine, along with proper workspace organization and effective waste disposal, is crucial for ensuring the safety and quality of operations. Let's practice these procedures to ensure we can efficiently manage our workspace and equipment."

Notes for Facilitation



- Always stress the importance of adhering to the manufacturer's instructions for both maintenance and safety protocols.
- Monitor trainees closely during practical activities to ensure they follow proper techniques.
- Offer constructive feedback to help trainees improve their skills, especially in defect identification and documentation practices.

– Notes 🗐 ———————————————————————————————————













20. Assist in Operating Veneer Cutting/Splicing Machines

- Unit 20.1 Assist in Workplace Setup for Veneer Cutting/Splicing Machine
- Unit 20.2 Assist in Veneer Cutting/Splicing Operation
- Unit 20.3 Workplace and Equipment Management for Veneer Cutting/Splicing Machine





Key Learning Outcomes 👸



At the end of this module, you will be able to:

- 1. Discuss the process of efficient stacking and storage of materials and workpieces at designated machine stations, employing proper handling techniques for veneer cutting/splicing machine operation.
- 2. Employ critical thinking skills and understanding of quality standards to evaluate the quality of job work received for veneer cutting/splicing machine operation.
- 3. Assist in perform machine setup process and prepare the machine for required veneer cutting/splicing machining operation.
- 4. Demonstrate accurate and efficient handling and loading of workpieces onto the machine, using appropriate handling techniques.
- 5. Demonstrate the ability to assist in applying the appropriate adhesive or glue to veneer sheets using designated equipment and techniques.
- 6. Demonstrate the skills to assist in operating and monitor the veneer cutting/splicing machine for required job work.
- 7. Discuss the process of configuring the veneer cutting/splicing machine depending on project requirements.
- 8. Demonstrate knowledge and understanding of the cleaning and maintenance procedures for the veneer cutting/splicing machine and its part.
- 9. Apply organizational skills and principles to efficiently manage the workspace, including the proper storage of panels and the appropriate disposal of waste.
- 10. Utilize their knowledge of quality standards and specifications to assist in inspecting veneer materials for defects.
- 11. Utilizing appropriate record-keeping techniques and systems to prepare and maintain process documents.

UNIT 20.1: Assist in Workplace Setup for Veneer Cutting/Splicing Machine

-Unit Objectives | $^{\textcircled{0}}$



At the end of this unit, you will be able to:

- 1. Explain the importance of proper stacking and storage of materials and workpieces for veneer cutting/splicing operations.
- 2. List the key constraints involved in checking the quality of job work received for veneer cutting/splicing machine operation.
- 3. Explain the importance of proper alignment and installation of tools, adhesives, and veneer materials in the veneer cutting/splicing process.
- 4. Explain the components and functions of machine setup, including time, pressure, thickness, etc. to achieve accurate and consistent results.
- 5. Perform stacking and storage of materials and workpieces following the specified procedures and guidelines.
- 6. Employ appropriate quality standards and techniques to assess the quality of job work received for veneer cutting/splicing operation.
- 7. Verify the alignment and installation of tools, adhesives, and veneer materials under the guidance of the machine operator.
- 8. Assist in setting up veneer cutting/splicing machines, including adjusting time, pressure, thickness, etc.

Resources to be Used



Theory:

- Instruction manuals for veneer cutting/splicing machine setup and operation
- Guidelines for material storage and handling specific to veneer cutting/splicing
- Quality control standards for veneer cutting and splicing

Practical:

- Veneer cutting/splicing machine
- Veneer sheets, adhesives, and cutting tools
- Personal protective equipment (PPE)
- Material storage racks and containers
- Job work samples for quality assessment

Say



"In this unit, we will cover the essentials of setting up the veneer cutting/splicing machine and ensuring materials are prepared correctly. Proper stacking, alignment, and machine setup will ensure high-quality, accurate results."

Ask



- "Why is proper stacking and storage of materials so important in veneer cutting and splicing operations?"
- "What challenges might arise if the tools and materials aren't aligned correctly?"
- "How do different machine settings like time, pressure, and thickness affect the final result in veneer cutting/splicing?"

Elaborate



1. Importance of Proper Stacking and Storage of Materials

- Teach how to stack and store veneer sheets and other materials correctly to avoid damage.
- Explain how improper storage can lead to warped materials, misalignment, and inefficient cutting/splicing.
- Demonstrate how to organize materials for easy access, preventing unnecessary handling and ensuring safety.

Key Points:

- Store veneer sheets in a dry, flat, and clean environment
- Keep materials organized and avoid excessive stacking to prevent deformation
- Use appropriate shelving and racks to store the materials securely

2. Quality Constraints for Veneer Cutting/Splicing Job Work

- Discuss the common quality constraints involved in veneer cutting/splicing, including material defects, incorrect measurements, and adhesive bonding issues.
- Teach how to assess job work received for these constraints and the actions to take if they are identified.
- Highlight the importance of quality standards in ensuring a successful operation.

- Check for defects in veneer materials such as cracks, warping, or discoloration
- Measure materials accurately before cutting or splicing
- Verify adhesive bonding to ensure proper adhesion and strength

3. Aligning and Installing Tools, Adhesives, and Veneer Materials

- Demonstrate the proper techniques for aligning tools, adhesives, and veneer materials on the machine.
- Explain how incorrect alignment can lead to miscuts, uneven splicing, or poor adhesive bonding.
- Guide trainees through the process of setting up the tools, ensuring the correct alignment for accurate results.

Key Points:

- Ensure cutting/splicing tools are aligned with the material
- Check that adhesives are applied evenly and correctly
- · Proper alignment is essential for consistent cutting and bonding

4. Components and Functions of Machine Setup

- Explain the components of the veneer cutting/splicing machine, including the time, pressure, and thickness settings.
- Discuss how these components affect the final product and how adjusting these settings can improve the cutting/splicing results.
- Provide practical demonstrations on adjusting the settings to achieve optimal results.

Key Points:

- Time: Adjusts how long the material is pressed or cut
- Pressure: Controls the force applied during cutting or bonding
- Thickness: Ensures that the right cutting depth is achieved
- Proper machine setup is key to consistent and high-quality veneer cutting/splicing

5. Verifying Setup Under Machine Operator Guidance

- Under the machine operator's guidance, assist in verifying the proper setup of the veneer cutting/splicing machine, including the alignment of tools, materials, and machine settings.
- Stress the importance of following machine operator instructions to ensure the setup is correct and safe.

- · Work closely with the machine operator to check all settings before beginning operations
- Ensure that the setup meets the specific requirements for each job
- Double-check material alignment, adhesive application, and machine settings

Activity-1



Material Stacking and Storage Practice

Objective: To practice proper stacking and storage techniques for veneer sheets.

Materials Needed: Veneer sheets, storage racks

Instructions:

- Trainees will stack veneer sheets in the correct orientation, ensuring they are stored safely and efficiently.
- They will organize the materials for easy access and ensure that the storage setup prevents damage or warping.

Expected Outcome: Trainees will demonstrate proper material storage, maintaining the quality of the veneer sheets for later use.

Activity-2



Machine Setup Practice

Objective: To practice setting up the veneer cutting/splicing machine.

Materials Needed: Veneer cutting/splicing machine, cutting tools, adhesives

Instructions:

- Trainees will assist in aligning tools, adhesives, and materials on the machine, adjusting settings for time, pressure, and thickness according to job specifications.
- They will verify the alignment under the guidance of the machine operator.

Expected Outcome: Trainees will set up the machine correctly, ensuring that the machine is ready for cutting/splicing operations.

Activity-3



Job Work Quality Assessment

Objective: To practice assessing the quality of received job work for veneer cutting/splicing.

Materials Needed: Veneer sheets, sample job work

Instructions:

- Trainees will inspect job work samples for defects such as cracks, uneven cuts, or improper adhesive bonding.
- They will measure the material and check for consistency and accuracy in the splicing/cutting process.

Expected Outcome: Trainees will identify quality issues and understand the constraints to watch for in veneer cutting/splicing work.

Do



Ask trainees to:

- Supervised Practice: Stack and store veneer materials properly to prevent damage.
- Collaborative Practice: Assist in setting up the veneer cutting/splicing machine, adjusting machine settings and verifying tool alignment.
- Hands-On Practice: Inspect received job work for quality and consistency.
- Practical Practice: Verify machine settings under the guidance of the machine operator to ensure readiness for the operation.

Say



"Proper setup and maintenance of the workspace are key to achieving high-quality veneer cutting and splicing results. By stacking materials properly, aligning tools correctly, and verifying machine settings, we ensure a smooth and successful operation."

Notes for Facilitation



- Emphasize the importance of following safety procedures when working with machines and materials.
- Monitor trainees closely during hands-on activities to ensure correct handling of tools, materials, and machine settings.
- Offer feedback and corrective guidance during practical activities to ensure competency in all areas.

- Notes	
110105	
	_
	_
	_
	_
	_
	_
	-
	_
	-
	-
	_
	_
	-
	-
	_
	_
	_
	_
	_
	 _
	_
	_
	_
	_
	_
	_
	_
	_
	-
	-
	-
	-
	-
	-

UNIT 20.2: Assist in Veneer Cutting/Splicing Operation

-Unit Objectives | $^{ ilde{ ilde{o}}}$



At the end of this unit, you will be able to:

- 1. Explain the process of proper loading and unloading techniques for safe and efficient machine operations.
- 2. Describe the importance of maintaining a steady and controlled feeding pace to achieve accurate and consistent results.
- 3. Explain the importance of accurate and consistent adhesive application and veneer cutting for quality
- 4. Describe the process and associated tools for tracing desired shapes and sizes on veneer materials.
- 5. Explain the importance of actively monitoring machine operations to ensure quality and identify any irregularities or defects.
- 6. Support the machine operator in loading and unloading workpieces onto and off the machine table or holding fixtures.
- 7. Collaborate with the machine operator to feed workpieces through the veneer cutting/splicing machine, maintaining a steady and controlled pace as instructed.
- 8. Support the machine operator in applying adhesive and cutting veneer materials.
- 9. Assist in tracing the desired shape and size on the veneer, following the specified techniques and guidelines.
- 10. Assist in monitoring machine operations, actively looking for irregularities or defects, and promptly communicating them to the machine operator.

Resources to be Used



Theory:

- Instruction manuals for veneer cutting/splicing machine operation
- Guidelines for veneer handling, adhesive application, and cutting techniques
- Safety and quality standards for veneer cutting and splicing

Practical:

- Veneer cutting/splicing machine
- Veneer sheets, adhesives, and cutting tools
- Measuring tools for tracing shapes and sizes
- Personal protective equipment (PPE)
- Job work samples for quality assessment

Say



"In this unit, we'll focus on assisting with the actual veneer cutting and splicing operation. From loading and unloading to maintaining the correct feeding pace and ensuring high-quality adhesive application, you'll gain hands-on experience working alongside the machine operator to produce high-quality results."

Ask



- "Why is it important to maintain a steady and controlled feeding pace during veneer cutting/splicing?"
- "How does proper adhesive application impact the quality of the finished product?"
- "What are some key factors to monitor during machine operations to ensure the quality of the veneer?"

Elaborate



1. Proper Loading and Unloading Techniques

- Explain the importance of loading and unloading veneer workpieces safely to avoid damage to materials and injury.
- Demonstrate safe loading techniques, ensuring that the workpieces are placed securely on the machine table or holding fixtures.
- Show how to unload materials carefully after cutting/splicing to prevent accidents or mishandling.

Key Points:

- Always ensure the workpieces are securely placed before starting the machine
- Ensure no part of the body is in the danger zone during the loading/unloading process
- Use appropriate handling techniques to protect veneer sheets from warping or breaking

2. Maintaining a Steady and Controlled Feeding Pace

- Teach the importance of feeding the workpieces at a consistent rate to ensure accurate cutting/splicing results.
- Explain how a steady feeding pace prevents errors such as misalignment, uneven cuts, or incomplete splicing.
- Demonstrate how to maintain this pace throughout the operation, adjusting speed as needed depending on the machine settings and material characteristics.

Key Points:

- Consistent feeding ensures uniform cuts and splicing
- Avoid rushing, as it may lead to errors or defects in the veneer
- Adjust feeding speed based on the complexity of the job and machine settings

•

3. Importance of Accurate and Consistent Adhesive Application and Veneer Cutting

- Discuss how the application of adhesive and the cutting process are interdependent.
- Explain the importance of applying adhesive evenly and ensuring it adheres properly to the veneer.
- Demonstrate the correct technique for cutting veneer to the specified size and shape, ensuring that the edges are smooth and precise.

Key Points:

- Adhesive should be applied evenly across the surface to ensure consistent bonding
- Accurate cutting prevents material waste and maintains the integrity of the veneer
- Ensure proper pressure and temperature settings for adhesive curing (if applicable)

4. Tracing Desired Shapes and Sizes on Veneer

- Explain how to trace shapes and sizes onto veneer materials before cutting.
- Discuss the tools used for tracing, such as rulers, templates, and markers, to ensure precise markings.
- Demonstrate how to measure and mark the veneer before cutting to ensure that the final product meets specifications.

Key Points:

- Use accurate measurement tools to trace the exact shape and size on veneer sheets
- Ensure markings are clear and do not interfere with the cutting process
- Double-check measurements before proceeding with the cutting process

5. Monitoring Machine Operations

- Explain the importance of monitoring the veneer cutting/splicing machine continuously during operation to detect any irregularities or defects.
- Teach how to spot potential issues such as uneven cuts, adhesive application failures, or misalignments.
- Guide trainees on what steps to take when defects are identified, including stopping the machine and communicating issues to the operator.

- Regular monitoring prevents defects from escalating into major problems
- Ensure that the machine operates smoothly without unusual noises or vibrations
- Immediate action is necessary if defects are detected to prevent material waste or damage

Activity-1



Loading and Unloading Practice

Objective: To practice loading and unloading veneer materials safely and efficiently.

Materials Needed: Veneer sheets, veneer cutting/splicing machine, work tables

Instructions:

- Trainees will practice loading and unloading veneer sheets onto and off the machine table, ensuring the materials are securely placed and handled correctly.
- Discuss and practice the necessary safety precautions.

Expected Outcome: Trainees will demonstrate safe and efficient loading and unloading techniques, reducing the risk of injury or material damage.

Activity-2



Feeding Pace Practice

Objective: To practice maintaining a steady and controlled feeding pace during veneer cutting/splicing.

Materials Needed: Veneer cutting/splicing machine, veneer sheets

Instructions:

- Trainees will assist in feeding the veneer sheets into the machine, ensuring a steady pace without rushing or causing errors.
- They will adjust the feeding speed according to the machine settings and material characteristics.

Expected Outcome: Trainees will understand the importance of a controlled feeding pace and apply this technique during the operation.

Activity-3



Adhesive Application and Cutting Practice

Objective: To practice applying adhesive evenly and performing accurate cuts on veneer materials.

Materials Needed: Veneer sheets, adhesives, veneer cutting/splicing machine

Instructions:

- Trainees will apply adhesive to the veneer sheets, ensuring an even coating.
- They will then assist in cutting the veneer to the specified shapes and sizes, ensuring smooth edges and precise cuts.

Expected Outcome: Trainees will develop skills in applying adhesive correctly and achieving accurate veneer cuts.

Do



Ask trainees to:

- Supervised Practice: Load and unload veneer sheets, following proper safety procedures.
- Collaborative Practice: Feed veneer sheets into the machine at a controlled pace, collaborating with the machine operator.
- Hands-On Practice: Apply adhesive and assist in cutting veneer to the desired specifications.
- Practical Practice: Monitor machine operations for defects and irregularities, communicating them promptly to the operator.

Say



"Accurate and efficient operation of the veneer cutting/splicing machine relies on consistent feeding, precise adhesive application, and diligent monitoring. By mastering these techniques, you'll help ensure the production of high-quality veneer products."

Notes for Facilitation



- Emphasize the importance of safety at all times when working with machinery and materials.
- Monitor trainees during practical activities to ensure correct handling of materials and equipment.
- Provide feedback and guidance as needed, especially during hands-on activities.

– Notes 🗐 ———————————————————————————————————	
-	

UNIT 20.3: Workplace and Equipment Management for Veneer Cutting/ Splicing Machine

-Unit Objectives | $^{\circlearrowleft}$



At the end of this unit, you will be able to:

- 1. Explain the specific cleaning procedures for the veneer cutting/splicing machine and its components, ensuring proper maintenance.
- 2. Explain the proper techniques for cleaning, sharpening, or replacing cutting tools.
- 3. Describe the principles of organizing and managing the workspace for panels storage and waste disposal procedures.
- 4. List the visual and tactile indicators of defects in finished materials.
- 5. Explain the importance of maintaining accurate documentation of manufacturing specifications and quality control inspections for the veneer cutting/splicing process.
- 6. Assist the operator in cleaning and maintaining the veneer cutting/splicing machine and its parts.
- 7. Employ appropriate techniques while cleaning, sharpening, or replacement of cutting tools, as instructed by the machine operator.
- 8. Organize and manage the workspace effectively, implementing proper storage techniques for panels and adhering to waste disposal procedures.
- 9. Assist in inspecting finished materials for defects following the specified procedures and guidelines.
- 10. Assist in maintaining proper documentation for manufacturing specifications and quality control inspections in the veneer cutting/splicing process.

Resources to be Used



Theory:

- Cleaning and maintenance guidelines for veneer cutting/splicing machines
- Cutting tool maintenance manuals
- Workspace organization and waste disposal protocols
- Quality control procedures and defect identification standard

Practical:

- Veneer cutting/splicing machine and its components
- Cutting tools (blades, knives, etc.)
- Storage materials for panels
- Waste disposal equipment
- Inspection tools for finished materials
- Documentation templates for manufacturing specifications and quality inspections

Say



"In this unit, we will cover how to properly manage the workspace and maintain the equipment used in veneer cutting and splicing operations. This includes cleaning procedures, maintaining cutting tools, organizing storage and waste areas, and inspecting finished materials. All these actions are essential to maintaining a safe and efficient working environment."

Ask



- "What do you think could happen if the veneer cutting/splicing machine isn't cleaned and maintained regularly?"
- "How does proper workspace organization contribute to overall productivity and safety?"
- "Why is it important to maintain accurate documentation for quality control inspections?"

Elaborate



1. Cleaning Procedures for the Veneer Cutting/Splicing Machine

- Discuss the importance of regularly cleaning the machine to ensure its optimal functioning and longevity.
- Explain the cleaning process for various parts of the veneer cutting/splicing machine, including removing dust, resin, and other materials that may build up during operation.
- Highlight the need for thorough cleaning of components like the blade, motor, and material holding areas.
- Demonstrate how to follow safety procedures while cleaning, including switching off power and wearing appropriate protective gear.

Key Points:

- Prevents machine malfunctions and ensures quality cuts
- Reduces wear and tear on components
- Regular maintenance helps prevent downtime due to unexpected breakdowns

2. Techniques for Cleaning, Sharpening, and Replacing Cutting Tools

- Discuss the various tools used in veneer cutting/splicing and how to maintain them.
- Explain how to properly clean the cutting blades and tools after each use to remove any resin or debris.
- Describe the sharpening techniques for cutting tools to maintain cutting efficiency and precision.
- Explain how to identify when cutting tools need to be replaced and how to do so safely and correctly.
- Demonstrate sharpening techniques and replacing worn-out cutting tools under the guidance of the machine operator.

- Key Points:
- Clean tools prevent material buildup and keep the machine running smoothly
- Regularly sharpening tools enhances performance and the quality of cuts
- Replacing worn tools ensures consistent quality and reduces machine stress

3. Organizing and Managing the Workspace

- Explain how to organize the workspace to ensure safe and efficient operation of the veneer cutting/splicing machine.
- Discuss proper storage techniques for veneer panels, ensuring they are easily accessible and wellorganized to prevent damage.
- Describe how to handle waste disposal from veneer cutting and splicing operations, ensuring that scrap materials are disposed of properly and safely.
- Show how to keep the work area free of clutter to allow for smooth machine operations and reduce safety hazards.

Key Points:

- An organized workspace increases operational efficiency and safety
- Proper storage prevents material damage and waste
- Waste disposal procedures ensure environmental compliance and cleanliness

4. Visual and Tactile Indicators of Defects in Finished Materials

- Teach trainees how to visually inspect finished veneer materials for defects such as chips, cracks, uneven edges, or poor adhesive bonding.
- Discuss the tactile methods of identifying defects, such as feeling for rough edges or uneven surfaces.
- Emphasize the importance of conducting thorough inspections before packaging or further processing the veneer
- Demonstrate how to properly mark or discard defective materials according to quality control procedures.

- Early identification of defects prevents further production errors and material waste
- Tactile and visual inspections help maintain quality standards
- Defective materials should be marked or discarded to avoid passing them on to the next stage of production

5. Maintaining Accurate Documentation for Manufacturing Specifications and Quality Control

- Explain the significance of documenting manufacturing specifications to ensure consistency across production batches.
- Discuss the importance of recording quality control inspections to track product performance and ensure adherence to standards.
- Teach the process of maintaining detailed records of machine setups, material specifications, and inspection results.
- Demonstrate how to fill out documentation forms accurately and comprehensively.

Key Points:

- Accurate documentation ensures traceability and consistency in production
- It is essential for tracking quality control performance and addressing any issues that arise
- · Maintaining clear records supports compliance and auditing processes

Activity-1



Cleaning and Maintenance of the Veneer Cutting/Splicing Machine

Objective: To practice cleaning the veneer cutting/splicing machine and its components according to specified procedures.

Materials Needed: Cleaning tools (brushes, cloths, solvents), veneer cutting/splicing machine

Instructions:

- Trainees will assist in cleaning the machine's components, including the blade, motor, and holding areas.
- They will follow safety guidelines and demonstrate proper cleaning techniques to ensure the machine operates smoothly.

Expected Outcome: Trainees will gain hands-on experience in maintaining the veneer cutting/splicing machine, contributing to better performance and machine longevity.

Activity-2 |



Sharpening and Replacing Cutting Tools

Objective: To practice sharpening and replacing cutting tools used in the veneer cutting/splicing machine.

Materials Needed: Veneer cutting tools, sharpening equipment, replacement blades

Instructions:

- Trainees will sharpen cutting tools using the correct methods, ensuring they are ready for use.
- They will also assist in replacing worn or damaged tools following the correct procedures.

Expected Outcome: Trainees will learn how to maintain sharp cutting tools for precise and efficient veneer cutting/splicing operations.

Activity-3



Workspace Organization and Waste Disposal Practice

Objective: To practice organizing the workspace and managing waste disposal effectively.

Materials Needed: Storage containers for panels, waste bins, veneer sheets

Instructions:

- Trainees will organize the workspace by arranging veneer materials in an efficient manner.
- They will implement proper waste disposal procedures for scrap materials generated during the cutting/splicing process.

Expected Outcome: Trainees will gain skills in organizing workspaces for efficiency and safety while adhering to waste disposal protocols.

Do



Ask trainees to:

- Supervised Practice: Clean and maintain the veneer cutting/splicing machine.
- Collaborative Practice: Sharpen and replace cutting tools under supervision.
- Hands-On Practice: Organize the workspace and manage waste disposal.
- Practical Practice: Inspect finished veneer materials for defects and adhere to quality control standards.

Say



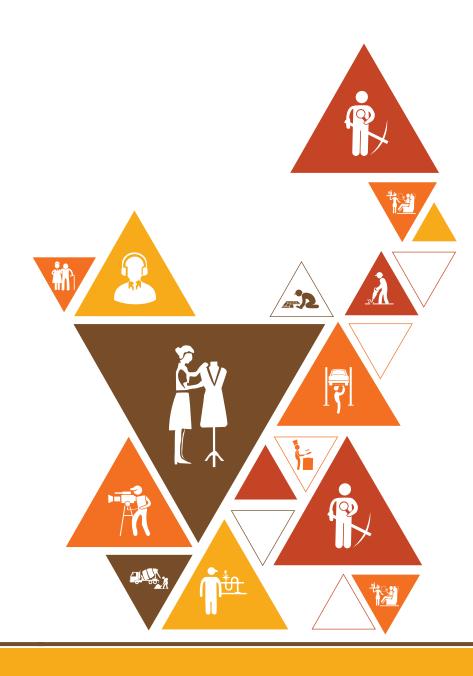
"Maintaining the veneer cutting/splicing machine and keeping the workspace organized is essential for ensuring high-quality products and machine efficiency. By mastering these practices, you help prevent defects and ensure a smooth production process."

Notes for Facilitation |



- Regularly reinforce the importance of safety throughout the cleaning, maintenance, and inspection processes.
- Monitor trainees closely during hands-on activities to ensure proper techniques are being followed.
- Offer guidance and feedback on workspace organization and defect identification as needed.

Notes 🗐 –		
Notes 🖃 –		
	·	













21. Employability Skills (60 Hours)

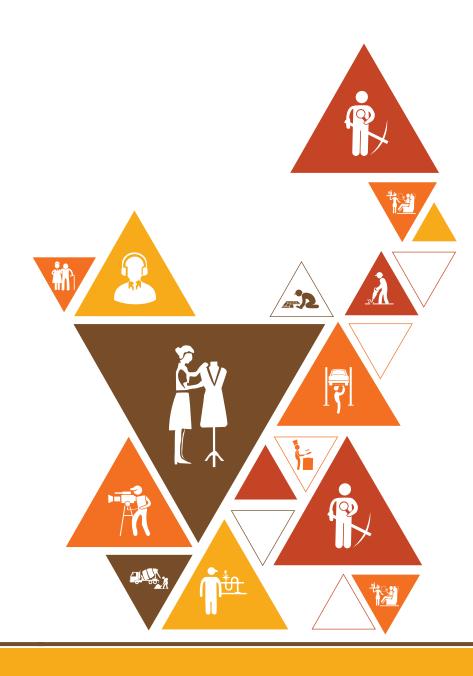
It is recommended that all training include the appropriate. Employability Skills Module. Content for the same can be accessed

https://www.skillindiadigital.gov.in/content/list





DGT/VSQ/N0102













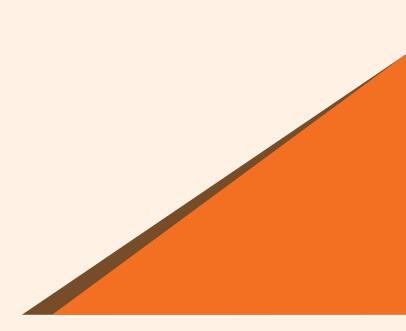
22. Annexure

Annexure I -Training Delivery Plan

Annexure II - Assessment Criteria

Annexure III -QR Codes-Video Links





Annexure-I

Training Delivery Plan

Training Delivery Plan								
Program Name:	Assistant Panelworks Machine Operator							
Qualification Pack	Assistant Panelworks Machine Operator, FFS/Q1001							
Name & Ref. ID								
Version No.	1.0 Version Update Date 29-06-2023							
Pre-requisites to	Grade 12 pass							
Training (if any)	Or							
	Completed 2nd year of 3-year diploma (after 10th)							
	Or							
	Pursuing 2nd year of 3-year regular Diploma (after 10th)							
	Or							
	Grade 10 pass with two years of any combination of NTC/NAC/CITS or							
	equivalent							
	Or							
	Grade 10 pass and pursuing continuous schooling (for 2-year program)							
	Or							
	Grade 11 Pass and pursuing continuous schooling							
	Or							
	Grade 11 Pass with 1 year of relevant experience							
	Or							
	Grade 10 Pass with 2 years of relevant experience							
	Or							
	Previous relevant Qualification of NSQF Level 3 (Multipurpose Assistant-							
	Furniture Production and Installation) with 3 years of relevant experience							
Training Outcomes	By the end of this program, the participants will be able to:							
	 Comprehend the knowledge of the interiors, furniture, and allied industry, including its scope, trends, and key aspects. 							
	 List with the organizational context and workplace policies relevant 							
	to the interiors, furniture, and allied industry, including							
	procedures, protocols, and safety regulations.							
	Display skills required to assist in panelworks machine operations,							
	including job card interpretation, worksite organization, machine							
	 handling, maintenance assistance, and quality control. Interpret job cards accurately, understanding the specifications, 							
	requirements, and sequence of tasks for machine operations.							
	Perform machine operations planning, considering factors such as							
	materials, dimensions, machining processes, and quality standards.							
	Organize the worksite efficiently, ensuring proper layout, tool							
	availability, material positioning, and adherence to safety							
	guidelines.							

- Assist in the machine initiation process, including power-up, calibration, tool loading, and ensuring the machine is ready for operation.
- Handle job work during machine operations, ensuring proper material feeding, alignment, clamping, and monitoring the process for quality and efficiently.
- Assist in performing required machine operations, following instructions, monitoring progress, and addressing any issues that may arise.
- Display skills to clean and maintain the machine, ensuring its proper functioning, cleanliness, and adherence to maintenance schedules.
- Assist in maintenance operations, including routine checks, minor repairs, and upkeep of the machine, contributing to its longevity and performance.
- Make use of the quality control and assurance process by assisting in inspections, measurements, testing, and ensuring compliance with quality standards.
- Demonstrate knowledge and practice of health and safety protocols at the worksite, including personal protective equipment (PPE), hazard identification, and emergency procedures.
- List various greening practices and sustainability initiatives relevant to the interiors, furniture, and allied industry, promoting environmentally friendly practices in the workplace.
- Develop employability skills, including teamwork, communication, problem-solving, time management, and professionalism, enhancing their overall readiness for the job market.
- Assist in setting up the workplace for pasting/pressing machine operations, including material preparation, tool selection, and organizing the work area.
- Assist in pasting operations, following procedures, ensuring proper adhesive application, and achieving desired bonding results.
- Assist in pressing operations, ensuring correct pressure, temperature, and time for optimal bonding and finishing of furniture components.
- Manage the workplace and equipment during pasting/pressing machine operations, maintaining cleanliness, organizing tools, and adhering to safety guidelines.
- Assist in pasting and pressing machine operations during on-thejob training, gaining practical experience, and refining their skills under supervision.
- Assist in setting up the workplace for cutting/sizing machine operations, including material positioning, tool selection, and work area organization.

- Assist in cutting/sizing operations, ensuring accurate measurements, proper tool alignment, and achieving desired dimensions for furniture components.
- Manage the workplace and equipment during cutting/sizing machine operations, maintaining cleanliness, organizing tools, and adhering to safety guidelines.
- Assist in cutting and sizing machine operations during on-the-job training, gaining practical experience and refining their skills under supervision.
- Assist in setting up the workplace for edge banding machine operations, including material preparation, edge band selection, and work area organization.
- Assist in edge banding operations, ensuring proper alignment, adhesive application, and achieving smooth, finished edges for furniture components.
- Manage the workplace and equipment during edge banding machine operations, maintaining cleanliness, organizing tools, and adhering to safety guidelines.
- Assist in edge banding machine operations during on-the-job training, gaining practical experience and refining their skills under supervision.
- Assist in setting up the workplace for veneer drilling machine operations, including material positioning, drill selection, and work area organization.
- Assist in drilling operations, ensuring accurate hole placement, proper drill speed and depth, and achieving desired results for furniture components.
- Manage the workplace and equipment during drilling machine operations, maintaining cleanliness, organizing tools, and adhering to safety guidelines.
- Assist in drilling machine operations during on-the-job training, gaining practical experience and refining their skills under supervision.
- Assist in setting up the workplace for veneer routing machine operations, including material positioning, router selection, and work area organization.
- Assist in routing operations, ensuring accurate routing paths, proper router speed, and achieving desired results for furniture components.
- Manage the workplace and equipment during routing machine operations, maintaining cleanliness, organizing tools, and adhering to safety guidelines.
- Assist in routing machine operations during on-the-job training, gaining practical experience and refining their skills under supervision.

- Assist in setting up the workplace for veneer cutting/splicing machine operations, including material positioning, cutting/splicing parameters, and work area organization.
- Assist in veneer cutting/splicing operations, ensuring precise cutting, proper alignment, and achieving seamless joints for furniture components.
- Manage the workplace and equipment during veneer cutting/splicing machine operations, maintaining cleanliness, organizing tools, and adhering to safety guidelines.
- Assist in veneer cutting and splicing machine operations during onthe-job training, gaining practical experience and refining their skills under supervision.

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
1.	Introduction to the Interiors, Furniture, and Allied industry (Bridge Module) T- 04:00 P- 00:00 (HH:MM)	Unit 1.1: Overview of the Interiors, Furniture, and Allied Sectors	1. Introduction to the Interiors, Furniture, and Allied Industry	i. Describe the scope and significance of the furniture and allied industry. ii. Classify the segments and categories in interiors and furniture sectors.	Bridge Module	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 04:00 P- 00:00
2.	Introduction to the Organization al Context and Workplace Policies (Bridge Module) T- 04:00	Unit 2.1: Organizat ional Framewo rk and Workplac e Guideline s	1: Introduction to Team Goals and Communicati on Tools	i. Explain the importance of team objectives and goals. ii. List the basic parts of a computer and their functions.	Bridge Module	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker,	T- 01:30 P- 06:00
	P- 18:00 (HH:MM)		2: Using Communicati on and Financial Platforms	i. Explain the working of social media and communicatio n platforms.			Projector , Laptop, Video	T- 01:30 P- 06:00
				ii. State the significance of payment methods and transaction steps.				
			3: Organization al Hierarchy and Workplace Guidelines	i. Describe escalation hierarchy, conflict resolution, and effective coordination. Discuss hygiene, sanitation practices, and ways to				T- 01:00 P- 06:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				report breaches.				
3.	Introduction to the Role of an Assistant Panelworks Machine Operator (Bridge Module) T- 04:00 P- 00:00 (HH:MM)	Unit 3.1: Role of a Panelwor ks Machine Operator	1: Introduction to the Role of an Assistant Panelworks Machine Operator	i. Explain the responsibilitie s, skill sets, and communicatio n protocol of the role. ii. Discuss documents, regulations, and career path in the furniture industry.	Bridge Module	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 04:00 P- 00:00
4.	Job Card Interpretatio n (FFS/N1001) T- 04:00 P- 14:00 (HH:MM)	Unit 4.1: Interpreti ng Job Card	1: Introduction to Scope of Work and Job Card Interpretatio n	i. Explain how to interpret the job card and plan resources effectively. ii. Discuss methods to instruct and guide team members based on job cards.	FFS/N1001 PC1, PC2, PC3, PC4 KU1, KU2, KU3, KU7, KU8, KU9, KU10, KU11 GS1, GS2, GS3, GS4, GS5, GS6,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 01:00 P- 04:00
			2: Job Card Completion and Submission	i. Explain the importance of timely completion and submission of job cards. ii. Fill out job cards accurately and completely.	GS7, GS8, GS9, GS10			T- 01:00 P- 04:00
			3: Documentati on and Maintenance Requirement s	i. Explain documentatio n related to maintenance, operation,				T- 01:00 P- 03:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			4: Resource Planning and Team Instruction	and quality check. ii. Assist in preparing and maintaining operational documents effectively. i. Plan and allocate resources as per the job card. ii. Instruct multipurpose assistants for effective job				T- 01:00 P- 03:00
5.	Plan for Machine Operation (FFS/N1001) T- 04:00 P- 24:00 (HH:MM)	Unit 5.1: Planning for Machine Operatio ns	1: Introduction to Drawings and Materials for Machining	i. Explain interpretation of technical drawings and material lists. ii. Assist in interpreting part lists and cutting lists.	FFS/N1001 PC5,PC6, PC7, PC8, PC9, PC10 KU6, KU12, KU13, KU14, KU20	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard,	T- 01:00 P- 06:00
			2: Tools, Consumable s, and Machine Programs	i. Differentiate tools, equipment, and consumables for operations. ii. Explain functions of machine programs and processes.	GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10		Marker, Projector , Laptop, Video	T- 01:00 P- 06:00
			3: Organizing for Machine Operation	i. Organize and maintain tools and components as per SOP.				T- 01:00 P- 06:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				ii. Assist in selecting appropriate tools and consumables.				
			4: Managing Work Health and Safety Requirement s	4: Managing Work Health and Safety Requirements				T- 01:00 P- 06:00
6.	Organize the Worksite (FFS/N1001) T- 04:00 P- 10:00 (HH:MM)	Unit 6.1: Arranging the Worksite	1: Introduction to Worksite Cleanliness and Maintenance 2: Panel Stacking Before and After Machine Operation	i. Explain importance of maintaining a clean and organized worksite. ii. Describe techniques for cleaning and upkeep. i. Arrange and stack panels safely before and after machining. ii. Follow	FFS/N1001 PC1, PC2, PC3, PC4, PC5, PC6 KU4, KU5, KU15, KU16, KU17, KU18, KU19 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 01:30 P- 03:00
				correct procedures for handling panels.				
			3: Material Verification and Worksite Arrangement	i. Assist in verifying material quality and quantity before operations. ii. Ensure worksite readiness and layout for smooth operation.				T- 01:00 P- 04:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
7.	Assist in Machine Initiation Process (FFS/N1002) T- 06:00 P- 14:00 (HH:MM)	Unit 7.1: Supportin g the Machine Start-up Process	1: Introduction to Machine Safety and Pre-start Checks	i. Explain the importance of checking safety equipment before machine start. ii. Check emergency stops, gauges, guards, and controls as per procedures.	FFS/N1002 PC1, PC2, PC3, PC4, PC5, PC6 KU8, KU10, KU11, KU12, KU13, KU17 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 01:00 P- 02:00
			2: Adjusting Machine Tools as per Job Requirement s	i. Describe how to perform adjustments to blades, cutters, and other tools. ii. Assist in setting up the machine tools as per job instructions.	GS9, GS10			T- 01:30 P- 03:00
			3: Introduction to Fundamental Systems in Machine Operations	i. Explain the purpose of air pressure, duct collectors, and stabilizers. ii. Check and maintain these systems as per guidelines.				T- 01:30 P- 03:00
			4: Machine Initiation Process	i. Explain steps involved in starting the machine as per manual. ii. Assist in performing machine initiation				T- 01:00 P- 03:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				following instructions.				
			5: Feeding Consumable s and Trial Run Execution	i. Feed required consumables like glue and adhesives as instructed. ii. Perform trial runs and make adjustments with supervisor guidance.				T- 01:00 P- 03:00
8.	Handling Job Work during Machine Operation (FFS/N1002) T- 02:00 P- 08:00 (HH:MM)	Unit 8.1: Managing Job Work During Machine Operatio n	1: Job Handling and Equipment Operation	i. Explain correct methods for loading/unloa ding job work on machine bed. ii. Operate handling equipment for safe material movement.	FFS/N1002 PC7, PC8, PC9 KU4, KU5, KU6, KU7,KU9, KU14, KU15, KU16 GS1, GS2, GS3, GS4,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 01:00 P- 04:00
			2: Accurate Measureme nt and Marking	i. Explain importance of measurement and marking for job accuracy. ii. Perform marking and measurement as per specifications.	GS5, GS6, GS7, GS8, GS9, GS10		Video	T- 01:00 P- 04:00
9.	Assist in Performing required Machine	Unit 9.1: Support in Executing	1: Introduction to Machine Operation	i. Explain significance of operating machine	FFS/N1002 PC10, PC11	Classroo m lecture, group	Trainer Guide & Participa nt	T- 01:00 P- 06:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
	Operation (FFS/N1002) T- 04:00 P- 26:00 (HH:MM)	the Required Machine Operatio n	Scope and Capacity	within its design limits. ii. Describe functions as per manufacturer 's recommendat ions.	KU1, KU2, KU3, KU18 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10	participa tion, group activity	Handbook, Presentations, Whiteboard, Marker, Projector, Laptop, Video	
			2: Assisting in Machine Operation Execution	i. Assist in running the machine as per operational standards.				T- 01:00 P- 07:00
				ii. Follow all safety and efficiency protocols during operation.				
			3: Material Handling Post Operation	i. Describe storage and movement procedures after machining.				T- 01:00 P- 07:00
				ii. Ensure safety during post- operation material transfer.				
			4: Safe and Organized Material Movement Session	i. Execute material movement as per instructions.				T- 01:00 P- 06:00
			Objectives:	ii. Maintain cleanliness and order at the worksite post-operation.				

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
10.	Clean and Maintain the Machine (FFS/N1003) T- 04:00 P- 10:00 (HH:MM)	Unit 10.1: Maintain and Clean the Machine	1: Introduction to Machine Cleaning and Waste Handling	i. Explain the importance of regular internal cleaning of machines. ii. Classify waste/offcut materials generated during machining.	FFS/N1003 PC1, PC2, PC3, PC4, PC5, PC6 KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop,	T- 01:00 P- 02:30
			2: Machine Condition Checks and Minor Faults	i. List key components to check for machine functionality. ii. Classify common	KU12, KU13, KU14, KU15, KU16, KU17		Video	T- 01:00 P- 02:30
				minor malfunctions using symptoms and signs.	GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10			
			3: Cleaning and Maintenance of Machine Components	i. Describe cleaning requirements of different machine parts.				T- 01:00 P- 02:30
				ii. Assist in routine cleaning and lubrication of machine components.				
			4: Waste Disposal and Safety Protocols	i. Handle and store offcut materials according to guidelines.				T- 01:00 P- 02:30
				ii. Follow safety procedures while performing				

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				machine checks.				
11.	Assist in Maintenance Operation (FFS/N1003) T- 04:00 P- 22:00 (HH:MM)	Unit 11.1: Assisting in Maintena nce Operatio n	1: Tool Maintenance and Sharpening	i. Explain the importance of tool resharpening at intervals. ii. Assist in resharpening tools like bits and saws.	FFS/N1003 PC7, PC8, PC9 KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard,	T- 01:00 P- 05:00
			2: Recognizing Wear and Tear in Consumable s	i. List types of wear in edge bands, veneers, and laminates. ii. Check for damage or degradation in machine consumables.	KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17		Marker, Projector , Laptop, Video	T- 01:00 P- 06:00
			3: Storage of Tools and Materials	i. Describe manufacturer guidelines for tool storage. ii. Store tools under recommende d conditions.	GS7, GS8, GS9, GS10			T- 01:00 P- 06:00
			4: Maintenance Procedures and Documentati on	i. Follow specified maintenance procedures for tools. ii. Maintain tools and materials as per standards				T- 01:00 P- 05:00
12.	Assist in Quality Control and Assurance Process (FFS/N1003)	Unit 12.1: Support the Quality Control and	1: Introduction to Quality Standards and Inspection	i. Explain quality criteria for inspecting finished work. ii. Identify defects in	FFS/N1003 PC10, PC11, PC12 KU1, KU2, KU3, KU4,			T- 01:00 P- 05:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
	T- 04:00 P- 16:00 (HH:MM)	Assuranc e Process		output using inspection methods.	KU5, KU6, KU7, KU8, KU9, KU10,			
			2: Identifying Deviations and Taking Corrective Actions	i. Explain the process of identifying deviations from specifications in machine operations.	KU11, KU12, KU13, KU14, KU15, KU16, KU17			T- 01:30 P- 06:00
				ii. Employ necessary corrective actions to address deviations or non- conformities.	GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10			
			3: Reporting and Communicati ng Quality Concerns	i. Describe the importance of reporting quality issues or non-conformities to the supervisor.				T- 01:30 P- 05:00
				ii. Follow protocols for documenting and communicatin g non-conformities during the production process.				
13.	Health and Safety Practices at the Worksite (FFS/N8201) T- 08:00 P- 12:00 (HH:MM)	Unit 13.1: Worksite Health and Safety Practices	1: Health and Safety Equipment, PPE, and Hygiene	i. List types of cleaning consumables and equipment used at the worksite. ii. Demonstrate the correct	FFS/N8201 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard,	T- 02:00 P- 04:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			2: Worksite Safety Practices and Emergency Procedures	use of Personal Protective Equipment (PPE). iii. Show how to sanitize hands and maintain worksite hygiene. i. Explain fire evacuation and emergency procedures. ii. Demonstrate safe lifting practices and correct body postures. iii. Identify and interpret safety signs and hand signals.	KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU20 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10		Marker, Projector , Laptop, Video	T- 03:00 P- 04:00
			3: Equipment Usage, Waste Managemen t, and Reporting	i. Describe safe equipment usage and maintenance procedures. ii. Demarcate recyclable and non- recyclable waste. iii. Report equipment malfunctions and safety issues.				T- 03:00 P- 04:00
14.	Greening Practices at the Worksite	Unit 14.1: Worksite	1: Efficient Material Utilization	i. Explain efficient material utilization and	FFS/N8201 PC13, PC14,	Classroo m lecture, group	Trainer Guide & Participa nt	T- 02:00 P- 03:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
	(FFS/N8201) T- 04:00 P- 06:00 (HH:MM)	Greening Practices	and Energy Conservation	conservation practices. ii. Describe methods to save energy and water at the worksite.	PC15, PC16 KU18, KU19 GS1, GS2, GS3, GS4, GS5, GS6,	participa tion, group activity	Handboo k, Presentat ions, Whitebo ard, Marker, Projector	
			2: Maintenance of Tools, Equipment, and Reporting Anomalies	i. Demonstrate periodic cleaning of tools and equipment. ii. Check and report any anomalies in equipment functioning.	GS7, GS8, GS9, GS10		Projector , , Laptop, Video	T- 02:00 P- 03:00
15.	Assist in Operating Pasting and Pressing Machines (FFS/N1004) T- 12:00 P- 48:00 (HH:MM)	Unit 15.1: Assist in Workplac e Setup for Pasting/P ressing Machine	1: Material Stacking, Storage, and Quality Assessment	i. Explain the importance of proper material stacking and storage. ii. List key constraints in quality assessment for job work. iii. Assist in stacking and storing materials.	FFS/N1004 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15 KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 01:00 P- 04:00
			2: Machine Setup and Adjustments for Optimal Bonding	i. List components of a pasting/pressi ng machine. ii. Explain the effect of adjusting machine settings. iii. Assist in adjusting machine	KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19, KU20, KU21,			T- 01:00 P- 04:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				settings for optimal bonding.	GS1, GS2, GS3, GS4, GS5, GS6,			
		Unit 15.2: Assist in Pasting Operatio n	1: Adhesive Application Techniques	i. List properties of adhesives used in industry.	GS7, GS8, GS9, GS10			T- 02:00 P- 08:00
				ii. Assist in applying adhesives correctly.				
				iii. Ensure even adhesive distribution.				
			2: Material Alignment and Positioning	i. Explain the process of material alignment.				T- 02:00 P- 08:00
				ii. Assist in positioning materials correctly.				
				iii. Ensure proper material joining.				
		Unit 15.3: Assist in Pressing Operatio	1: Loading, Unloading, and Parameter	i. Explain loading and unloading techniques.				T- 02:00 P- 08:00
		n	Adjustments	ii. Assist in adjusting pressing parameters.				
				iii. Support the operator in following safety procedures.				
			2: Monitoring Machine Operations	i. Explain the importance of monitoring machine operations.				T- 02:00 P- 08:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			and Defect Detection	ii. Assist in detecting defects and irregularities.				
				iii. Report issues to the operator.				
		Unit 15.4: Workplac e and Equipme nt	1: Machine Cleaning and Workspace Organization	i. Explain cleaning procedures for the machine.				T- 01:00 P- 04:00
		Managem ent for Pasting/P ressing Machine		ii. Organize workspace for storage and waste disposal.				
				iii. Assist in machine cleaning and maintenance.				
			2: Quality Control and Documentati on	i. List indicators of defects in finished materials.				T- 01:00 P- 04:00
				ii. Assist in inspecting materials for defects.				
				iii. Help maintain documentatio n for quality control.				
16.	Assist in Operating Cutting and Sizing Machines (FFS/N1005)	Unit 16.1: Assist in Workplac e Setup for Cutting/Si zing	1: Material Stacking, Storage, and Quality Assessment	i. Explain the importance of proper stacking and storage of materials.	FFS/N1005 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10,	Classroo m lecture, group participa tion,	Trainer Guide & Participa nt Handboo k, Presentat	T- 02:00 P- 06:00
	T- 12:00 P- 48:00 (HH:MM)	Machine		ii. List key constraints in quality	PC11, PC12,	group activity	ions, Whitebo	

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				assessment for job work. iii. Assist in stacking and storing materials for cutting/sizing operations.	PC13, PC14 KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10,		ard, Marker, Projector , Laptop, Video	
			2: Machine Setup for Accurate Cutting/Sizin g	i. Explain the components and functions of machine setup. ii. Adjust blade height, alignment, and mitre angles for accurate results. iii. Assist in setting up cutting/sizing machines for consistent operations.	KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU20, KU21 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10			T- 02:00 P- 06:00
		Unit 16.2: Assist in Cutting/Si zing Operatio n	1: Loading, Unloading, and Material Positioning	i. Explain loading and unloading techniques for safe operations. ii. List methods for securing materials on cutting/sizing machines. iii. Assist in positioning and securing materials.				T- 01:30 P- 07:00
			2: Machine Parameters and Measureme	i. Explain the impact of adjusting machine parameters.				T- 01:30 P- 07:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			nt for Accuracy	ii. Describe the importance of measurement and marking for cutting/sizing. iii. Assist in performing measurement s and marking materials.				
			3: Monitoring Operations and Labeling Finished Panels	i. Explain the importance of monitoring machine operations. ii. Apply printed labels on finished panels for identification. iii. Assist in identifying irregularities or defects in the operation.				T- 01:30 P- 07:00
			4: SOPs and Safety Guidelines for Cutting/Sizin g Machine Operation	i. Discuss the importance of following SOPs and safety guidelines. ii. Assist the operator in adhering to procedures and safety protocols. iii. Report issues or defects during cutting/sizing operations.				T- 01:30 P- 07:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
		Unit 16.3: Workplac e and Equipme nt Managem ent for Cutting/Si zing Machine	1: Machine Cleaning and Workspace Organization	i. Explain specific cleaning procedures for the cutting/sizing machine. ii. Organize workspace for panel storage and waste disposal. iii. Assist in maintaining the cutting/sizing				T- 01:00 P- 04:00
			2: Defect Inspection and Documentati on	i. List visual and tactile indicators of defects in finished materials. ii. Assist in inspecting materials for defects. iii. Help maintain documentation for quality control inspections.				T- 01:00 P- 04:00
17.	Assist in Operating Edge Band Machines (FFS/N1006) T- 12:00 P- 48:00 (HH:MM)	Unit 17.1: Assist in Workplac e Setup for Edge Banding Machine	1: Material Stacking, Storage, and Quality Assessment	i. Explain the importance of proper stacking and storage for edge banding operations. ii. List key constraints in checking job	FFS/N1006 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo	T- 02:00 P- 06:00 T- 02:00 P- 06:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			2: Alignment, Installation, and Machine Settings	work for edge banding. iii. Perform stacking and storage of materials as per guidelines. i. Explain the process of aligning and installing edge banding materials and tools. ii. Collaborate with the operator to adjust machine settings for optimal results. iii. Assist in aligning materials, tools, and adhesives following procedures.	PC14, PC15 KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19, KU20, KU21, KU22 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10		ard, Marker, Projector , Laptop, Video	
		Unit 17.2: Assist in Edge Banding Operatio n	1: Machine Configuratio n and Program Selection	i. Explain the importance of configuring the edge banding machine. ii. Describe the significance of selecting the appropriate machine program. iii. Assist in configuring the machine and selecting the program.				T- 01:30 P- 07:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			2: Positioning, Feeding, and Alignment of Panel Materials	i. Describe the correct positioning and feeding of panels into the machine.				T- 01:30 P- 07:00
				ii. Explain the importance of proper edge band material alignment.				
				iii. Assist in feeding and aligning the materials during the operation.				
			3: Machine Functions and Monitoring for Quality	i. Describe machine functions and their significance in edge banding.				T- 01:30 P- 07:00
				ii. Explain the importance of monitoring machine operations.				
				iii. Assist in monitoring machine operations for quality and defects.				
			4: Safety, SOPs, and Manual Operations	i. Describe the importance of following SOPs and safety guidelines.				T- 01:30 P- 07:00
				ii. Assist the operator in performing edge banding manually with tools.				
				iii. Ensure adherence to				

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				safety protocols during the operation.				
		Unit 17.3: Workplac e and Equipme nt Managem	1: Machine Cleaning and Workspace Organization	i. Explain cleaning procedures for the edge banding machine.				T- 01:00 P- 04:00
		ent for Edge Banding Machine		ii. Organize the workspace for panel storage and waste disposal.				
				iii. Assist in cleaning and maintaining the edge banding machine.				
			2: Defect Inspection and Documentati on	i. List visual and tactile indicators of defects in finished materials.				T- 01:00 P- 04:00
				ii. Assist in inspecting materials for defects.				
				iii. Help maintain documentatio n for quality control and specifications.				
18.	Assist in Operating Drilling Machines (FFS/N1007)	Unit 18.1: Assist in Workplac e Setup for Drilling Machine	1: Material Stacking, Storage, and Quality Assessment	i. Explain the importance of proper stacking and storage for drilling operations.	FFS/N1007 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10,	Classroo m lecture, group participa tion,	Trainer Guide & Participa nt Handboo k, Presentat	T- 02:00 P- 06:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
	T- 12:00 P- 48:00 (HH:MM)		2: Machine Settings and Collaboratio n with Operator	ii. List key constraints in checking job work for drilling operations. iii. Perform stacking and storage of materials as per guidelines. i. Describe the responsibilitie s when collaborating with the operator for machine settings. ii. Assist in adjusting machine settings,	PC11, PC12, PC13, PC14 KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU18, KU19, KU20, KU21 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8,	group	ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 02:00 P- 06:00
				including controls and tool installation. iii. Follow specified procedures for machine	GS9, GS10			
		Unit 18.2: Assist in Drilling Operatio n	1: Loading, Unloading, and Feeding Techniques	i. Explain safe and efficient loading and unloading techniques. ii. Describe the				T- 01:30 P- 07:00
				importance of maintaining a steady and controlled feeding pace. iii. Support the operator in loading and				

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				unloading workpieces.				
			2: Labelling, Sorting, and Identifying Routed Workpieces	i. Explain labelling and sorting techniques for routed workpieces.				T- 01:30 P- 07:00
				ii. Assist in applying proper labelling techniques as per project requirements.				
				iii. Collaborate with the operator in ensuring accurate identification of workpieces.				
			3: Machine Adjustment and Safety Compliance	i. Explain techniques for adjusting machine parameters (speed, depth, feed rate).				T- 01:30 P- 07:00
				ii. Describe the importance of following standard operating procedures and safety guidelines.				
				iii. Assist the operator in adjusting machine settings and following safety protocols.				

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			4: Monitoring Operations and Identifying Defects	i. Explain the importance of monitoring machine operations for quality.				T- 01:30 P- 07:00
				ii. Assist in identifying and communicatin g irregularities or defects to the operator.				
				iii. Ensure that the machine operates smoothly and within required parameters.				
		Unit 18.3: Workplac e and Equipme nt Managem ent for	1: Machine Cleaning and Tool Maintenance	i. Explain cleaning procedures for the drilling machine and its components.				T- 01:00 P- 04:00
		Drilling Machine		ii. Describe proper techniques for cleaning, sharpening, or replacing cutting tools.				
				iii. Assist in cleaning and maintaining the drilling machine and its parts.				
			2: Workspace Organization and	i. Organize the workspace effectively for panel storage				T- 01:00 P- 04:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			Documentati	and waste disposal. ii. Assist in inspecting finished materials for defects. iii. Help maintain documentation for manufacturing specifications and quality control inspections.				
19.	Assist in Operating Routing Machines (FFS/N1008) T- 12:00 P- 48:00 (HH:MM)	Unit 19.1: Assist in Workplac e Setup for Routing Machine	1: Material Stacking, Storage, and Quality Assessment	i. Explain the importance of proper stacking and storage for routing operations. ii. List the key constraints in checking job work for routing operations. iii. Perform stacking and storage of materials as per guidelines.	PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector , Laptop, Video	T- 02:00 P- 06:00
		2: Machine Settings and Collaboratio n with Operator	i. Describe the responsibilitie s when collaborating with the operator for machine settings. ii. Assist in adjusting machine settings, including	KU14, KU15, KU16, KU17, KU18, KU19, KU20, KU21 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10			T- 02:00 P- 06:00	

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				controls and tool installation.				
				iii. Follow specified procedures for machine adjustments.				
		Unit 19.2: Assist in Routing Operatio n	1: Loading, Unloading, and Feeding Techniques	i. Explain safe and efficient loading and unloading techniques.				T- 01:30 P- 07:00
				ii. Describe the importance of maintaining a steady and controlled feeding pace.				
				iii. Support the operator in loading and unloading workpieces.				
			2: Labelling, Sorting, and Identifying Routed Workpieces	i. Explain labelling and sorting techniques for routed workpieces.				T- 01:30 P- 07:00
				ii. Assist in applying proper labelling techniques as per project requirements.				
				iii. Collaborate with the operator in ensuring accurate identification of workpieces.				

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			3: Machine Adjustment and Safety Compliance	i. Explain techniques for adjusting machine parameters (speed, depth, feed rate). ii. Describe the importance of following standard operating procedures and safety guidelines.				T- 01:30 P- 07:00
			4: Monitoring Operations and Identifying Defects	i. Explain the importance of monitoring machine operations for quality. ii. Assist in identifying and communicatin g irregularities or defects to the operator. iii. Ensure that the machine operates smoothly and within required parameters.				T- 01:30 P- 07:00
		Unit 19.3: Workplac e and Equipme nt Managem ent for	1: Machine Cleaning and Tool Maintenance	i. Explain cleaning procedures for the routing machine and its components.				T- 01:00 P- 04:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
		Routing Machine		ii. Describe proper techniques for cleaning, sharpening, or replacing cutting tools.				
				iii. Assist in cleaning and maintaining the routing machine and its parts.				
			2: Workspace Organization and Documentati on	i. Organize the workspace effectively for panel storage and waste disposal.				T- 01:00 P- 04:00
				ii. Assist in inspecting finished materials for defects.				
				iii. Help maintain documentatio n for manufacturin g specifications and quality control inspections.				
20.	Assist in Operating Veneer Cutting/Splic ing Machines (FFS/N1009) T- 12:00 P- 48:00 (HH:MM)	Unit 20.1: Assist in Workplac e Setup for Veneer Cutting/S plicing Machine	1: Material Stacking, Storage, and Quality Assessment	i. Explain the importance of proper stacking and storage for veneer cutting/splicin g operations. ii. List the key constraints in checking job work for veneer	FFS/N1009 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14 KU1, KU2, KU3, KU4,	Classroo m lecture, group participa tion, group activity	Trainer Guide & Participa nt Handboo k, Presentat ions, Whitebo ard, Marker, Projector	T- 02:00 P- 06:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				g operations. KU7, KU8, KU9, KU10, iii. Perform KU11, stacking and KU12, storage of KU13, materials as KU14, per specified KU15, guidelines. KU16,		, Laptop, Video		
			2: Machine Setup and Tool Installation	i. Explain the importance of aligning and installing tools, adhesives, and veneer materials. ii. Describe the components and functions of machine setup (time, pressure, thickness, etc.).	KU17, KU18, KU19, KU20, KU21 GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9, GS10			T- 02:00 P- 06:00
		Unit 20.2: Assist in Veneer Cutting/S plicing Operatio n	1: Loading, Unloading, and Feeding Techniques	i. Explain the process for proper loading and unloading for safe machine operations. ii. Describe the importance of maintaining a steady and controlled feeding pace.				T- 01:30 P- 07:00
			2: Adhesive Application and Veneer Cutting	i. Explain the importance of accurate and consistent adhesive application and veneer cutting.				T- 01:30 P- 07:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				ii. Assist in the application of adhesive and cutting veneer materials. iii. Support the operator in ensuring quality results by following guidelines.				
			3: Tracing and Shaping Veneer Materials	i. Describe the process and tools used for tracing desired shapes and sizes on veneer materials. ii. Assist in tracing the desired shape and size accurately.				T- 01:30 P- 07:00
			4: Machine Operation Monitoring and Defect Identificatio n	i. Explain the importance of actively monitoring machine operations for quality. ii. Assist in identifying irregularities or defects during machine operation.				T- 01:30 P- 07:00
		Unit 20.3: Workplac e and Equipme nt Managem ent for Veneer	1: Machine Cleaning, Tool Maintenance , and Workspace Organization	i. Explain the cleaning procedures for the veneer cutting/splicin g machine. ii. Describe proper				T- 01:00 P- 04:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
		Cutting/S plicing Machine		techniques for cleaning, sharpening, or replacing cutting tools.				
			2: Defect Inspection and Documentati on	i. List the visual and tactile indicators of defects in finished veneer materials.				T- 01:00 P- 04:00
				ii. Assist in inspecting finished materials for defects.				
21.	DGT/VSQ/N0 102: Employabilit y Skills (60 Hours)	Unit 21.1: Employab ility Skills	1. Introduction to Employabilit y Skills	Discuss the Employability Skills required for jobs in various industries. List different learning and employability related GOI and private portals and their usage.	DGT/VSQ/ N0102 PC1, PC2, PC3, PC4, PC5, PC6, PC7, PC8, PC9, PC10, PC11, PC12, PC13, PC14, PC15, PC16,	Classroo m lecture, group participa tion, group activity, field visit	Handboo k	T: 00:45 P: 00:45
		2. Explain the constitutional values - Citizenship including civic rights and duties, citizenship, responsibility towards pc2 society and personal pc2 values and ethics such as honesty, integrity, pc3	PC17, PC18, PC19, PC20, PC21, PC22, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC32,	Classroo m lecture, group participa tion, group activity, field visit	Handboo k	T: 00:45 P: 00:45		

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			2 Passwing	are required to become a responsible citizen. Show how to practice different environmenta lly sustainable practices.	KU1, KU2, KU3, KU4, KU5, KU6, KU7, KU8, KU9, KU10, KU11, KU12, KU13, KU14, KU15, KU16, KU17, KU19. GS1, GS2, GS3, GS4, GS5, GS6, GS7, GS8, GS9.	Classes	Handhaa	T. 01 15
			3. Becoming a Professional in the 21st Century	Discuss importance of relevant 21st century skills. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problemsolving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life. Describe the benefits of continuous learning.		Classroo m lecture, group participa tion, group activity, field visit	Handbook	T: 01.15 P: 01:15
			4. Basic English Skills	Show how to use basic English sentences for everyday conversation in different contexts, in person and		Classroo m lecture, group participa tion, group activity, field visit	Handboo k	T: 05:00 P: 05:00

SI. N	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				over the telephone. Read and interpret text written in basic English. Write a short note/paragra ph / letter/e - mail using basic English.				
			5. Career Developmen t & Goal Setting	By the end of this course, participants will have the knowledge and skills to set clear, achievable career goals and develop a structured career development plan, enabling them to advance in their chosen career path and make informed decisions about their professional future.		Classroo m lecture, group participa tion, group activity, field visit	Handboo k	T: 01:00 P: 01:00
			6. Communicati on Skills	Demonstrate how to communicate effectively using verbal and nonverbal communicatio n etiquette. Explain the importance of active listening for effective communicatio n.		Classroo m lecture, group participa tion, group activity, field visit	Handboo k	T: 02:30 P: 02:30

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				Discuss the significance of working collaborativel y with others in a team.				
			7. Diversity & Inclusion	Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD. Discuss the significance of escalating sexual harassment issues as per POSH act.		Classroo m lecture, group participa tion, group activity, field visit	Handboo k	T: 01:15 P: 01:15
			8. Financial and Legal Literacy	Outline the importance of selecting the right financial institution, product, and service. Demonstrate how to carry out offline and online financial transactions, safely and securely. List the common components of salary and compute income, expenditure, taxes, investments etc. Discuss the legal rights,		Classroo m lecture, group participa tion, group activity, field visit	Handbook	T: 02:30 P: 02:30

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
				laws, and aids.				
			9. Essential Digital Skills	Describe the role of digital technology in today's life. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, emails, etc., safely and securely. Create sample word documents, excel sheets and presentations using basic features utilize virtual collaboration tools to work effectively.		Classroo m lecture, group participa tion, group activity, field visit	Handbook	T: 05:00 P: 05:00
			10. Entrepreneu rship	Explain the types of entrepreneur ship and enterprises. Discuss how to identify opportunities		Classroo m lecture, group participa tion, group activity,	Handboo k	T: 03:30 P: 03:30

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			11.	business, sources of funding and associated financial and legal risks with its mitigation plan. Describe the 4Ps of Marketing- Product, Price, Place and Promotion and apply them as per requirement. Create a sample business plan, for the selected business opportunity. Describe the		Classroo	Handboo	T: 02:30
			Customer Service	significance of analysing different types and needs of customers. Explain the significance of identifying customer needs and responding to them in a professional manner. Discuss the significance of maintaining hygiene and dressing appropriately.		m lecture, group participa tion, group activity, field visit	k	P: 02:30
			12. Getting Ready for	Create a professional Curriculum		Classroo m lecture,	Handboo k	T: 04:00 P: 04:00

SI. N o.	Module Name	Unit Name	Session Name	Session Objectives	NOS Reference	Method ology	Training Tools / Aids	Duration (hours)
			apprenticesh ip & Jobs	Vitae (CV). Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively. Discuss the significance of maintaining hygiene and confidence during an interview. Perform a mock interview. List the steps for searching and registering for apprenticeship opportunities.		group participa tion, group activity, field visit		

Annexure - II Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

For updated Assessment criteria please refer to Qualification Pack of this Job role available at https://www.nqr.gov.in/

Assessment Weightage	
Job Role	Assistant Panelworks Machine Operator
Qualification Pack	FFS/Q1001
Sector Skill Council	Furniture & Fittings

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5	In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
7	In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS:

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1001.Prepare the work site for machine operations	22	48	24	6	100	15
FFS/N1002.Assist in setting up and performing machine operations	18	54	22	6	100	20
FFS/N1003.Assist in performing machine maintenance and quality checking	18	50	28	4	100	20
FFS/N8201.Follow health, safety, and greening practices at the worksite	35	40	20	5	100	10
DGT/VSQ/N0102.Empl oyability Skills (60 Hours)	20	30	-	-	50	10
Total	113	222	94	21	550	75

Elective: 1 Pasting and Pressing machines

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1004.Assist in operating pasting and pressing machines	24	40	30	6	100	25
Total	24	40	30	6	100	25

Elective: 2 Cutting and Sizing machines

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1005.Assist in operating cutting and sizing machines	24	40	30	6	100	25
Total	24	40	30	6	100	25

Elective: 3 Edge Band machines

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1006.Assist in	24	46	26	4	100	25
operating edge band						
machines						
Total	24	46	26	4	100	25

Elective: 4 Drilling machines

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1017.Setup and	26	36	34	4	100	25
operate drilling						
machines						
Total	26	36	34	4	100	25

Elective: 5 Routing machines

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1008.Assist in operating routing machines	26	36	34	4	100	25
Total	26	36	34	4	100	25

Elective: 6 Veneer Cutting and Splicing machines

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
FFS/N1009.Assist in operating veneer cutting and splicing machines	24	46	26	4	100	25
Total	24	46	26	4	100	25

Annexure - III

QR Codes –Video Links

Chapter Name	Unit Name	Topic Name	URL	QR Code	Video Duration
Module 1: Introduction to the Interiors, Furniture, and Allied Industry (Bridge Module)	Unit 1.1 – Overview of the Interiors, Furniture, and Allied Sectors	India Furniture Market	https://www.youtube. com/watch?v=Y0t6e2I _mFY		00:01:23
Module 3: Introduction to the Role of an Assistant Panelworks Machine Operator (Bridge Module)	Unit 3.1 – Role of an Assistant Panelworks Machine Operator	Role of Operator in Panelworks	https://www.youtube. com/watch?v=Qr2mk VuclcY		00:06:46
Module 5: Plan for Machine Operation (FFS/N1001)	Unit 5.1 – Planning for Machine Operations	Read the Kitchen Drawing	https://www.youtube. com/watch?v=BqHR5 BVDKhk		00:11:04
Module 7: Assist in Machine Initiation Process (FFS/N1002)	Unit 7.1 – Supporting the Machine Start-up Process	Different Types of Boards used in Modular Furniture	https://www.youtube. com/watch?v=qLtUz- LucV8		00:15:57
Module 8: Handling Job Work during Machine Operation (FFS/N1002)	Unit 8.1 – Managing Job Work During Machine Operation	Modular Kitchen, Wardrobe & Interiors making machines	https://www.youtube. com/watch?v=LZC3P1 aRvMc		00:05:49
Module 9: Assist in Performing required Machine Operation (FFS/N1002)	Unit 9.1 – Support in Executing the Required Machine Operation	Making Minifix Cabinet after Machining Operation	https://www.youtube. com/watch?v=BZuEd ms8yf0		00:10:48

Chapter Name	Unit Name	Topic Name	URL	QR Code	Video Duration
Module 10: Clean and Maintain the Machine (FFS/N1003)	Unit 10.1 – Maintain and Clean the Machine	Panel Saw Maintenanc e	https://www.youtube. com/watch?v=67ZE2X aGsco		00:07:22
Module 15: Assist in Operating Pasting and Pressing Machines (FFS/N1004)	Unit 15.1 – Assist in Workplace Setup for Pasting/Press ing Machine	Cold Press Machine	https://youtu.be/gCEJ cirUYLI?si=Gb_nVMnq mQsyqtG3		00:06:45
	Unit 15.2 – Assist in Pasting Operation	Hot Press Machine	https://youtu.be/dstp OUH6pII?si=7EQovZFv pdenWKNC		00:10:19
Module 16: Assist in Operating Cutting and Sizing Machines (FFS/N1005)	Unit 16.1 – Assist in Workplace Setup for Cutting/Sizin g Machine	Panel Saw Machine	https://youtu.be/ILVS CdOZ_MM?si=i0AzDq 3UgwBOwiF2		00:04:34
	Unit 16.2 – Assist in Cutting/Sizin g Operation	Beam Saw machine	https://youtu.be/nKC9 kM9cLno?si=Slqu8feni y5qnCQQ		00:06:17
Module 17: Assist in Operating Edge Band Machines (FFS/N1006)	Unit 17.1 – Assist in Workplace Setup for Edge Banding Machine	Edgebanding Machine - EVA Type	https://youtu.be/s4pY TrYDFSU?si=JL9g- bnxtidrKi0M		00:21:30

Chapter Name	Unit Name	Topic Name	URL	QR Code	Video Duration
	Unit 17.2 – Assist in Edge Banding Operation	Edgebanding Machine - PUR Type	https://youtu.be/6r3z gX59snM?si=R6Vb9rr m5ws2ipnb		00:06:11
Module 18: Assist in Operating Drilling Machines (FFS/N1007)	Unit 18.2 – Assist in Drilling Operation	CNC Drilling Machines	https://www.youtube. com/watch?v=TVadCp Kyud8		00:05:03
	Unit 18.3 – Workplace and Equipment Management for Drilling Machine	Side Drilling Machine	https://youtu.be/xyU mvkjYiWc?si=zop67SA 4dtrPUTYh		00:01:50
Module 19: Assist in Operating Routing Machines (FFS/N1008)	Unit 19.1 – Assist in Workplace Setup for Routing Machine	Single-Head CNC Routers Machine	https://www.youtube. com/watch?v=mhqZO 7Xtk-g		00:08:54
	Unit 19.2 – Assist in Routing Operation	Multi-Head CNC Routers Machine	https://www.youtube. com/watch?v=YkwzFIr tMPs		00:01:17
Module 20: Assist in Operating Veneer Cutting/Splicing Machines (FFS/N1009)	Unit 20.2 – Assist in Veneer Cutting/Splici ng Operation	Splicing Machine	https://www.youtube. com/watch?v=apkV3G LRY7Y		00:02:06











Furniture & Fittings Skill Council (FFSC)

Address: 407-408, 4th Floor, DLF City Court, Sikanderpur

Gurgaon 122002, Haryana, India

Email: info@ffsc.in Website: www.ffsc.in

Phone: +91 124 4513900