



FINISHER

National Occupational Standard

Canada 

This project is funded by the Government of
Canada's Sectoral Initiatives Program.



WMC CFB

Wood Manufacturing Council
Conseil des fabricants de bois

NATIONAL OCCUPATIONAL STANDARDS	1
ABOUT THE WOOD MANUFACTURING COUNCIL	2
ACKNOWLEDGEMENTS	3
ACKNOWLEDGEMENT NATIONAL PROJECT ADVISORY COMMITTEE.....	3
ACKNOWLEDGEMENT OF INDUSTRY CONTRIBUTORS	3
INTRODUCTION TO NATIONAL OCCUPATIONAL STANDARDS	4
ORGANIZATION OF THE NATIONAL OCCUPATIONAL STANDARD.....	4
OCCUPATIONAL BACKGROUND	6
WORKING ENVIRONMENT	9
PERSONAL ATTRIBUTES	9
OVERALL KNOWLEDGE & ABILITIES.....	11
OCCUPATIONAL HEALTH AND SAFETY	12
PEOPLE	12
EQUIPMENT.....	13
ENVIRONMENT.....	13
MATERIALS	14
PROCESSES	14
OCCUPATIONAL ANALYSIS	16
SECTIONS	16
TASKS	16
SUB-TASKS.....	17
CONTEXTUAL INFORMATION	17
KNOWLEDGE & ABILITIES	18
ESSENTIAL SKILLS.....	18
SECTION A: PREPARATION	19
TASK A1: PLAN FINISHING ACTIVITIES.....	19
TASK A2: PREPARE FINISHING PRODUCT	21
TASK A3A: SET UP MANUAL FINISHING EQUIPMENT.....	24
TASK A3B: SET UP AUTOMATED FINISHING SYSTEM	26
TASK A4: MAINTAIN EQUIPMENT	29
SECTION B: PRODUCT FINISHING	31
TASK B1: PREPARE MATERIAL FOR FINISHING	31
TASK B2A: MANUALLY APPLY FINISHING PRODUCT.....	33
TASK B2B: MACHINE APPLY FINISHING PRODUCT	36
TASK B3: PERFORM QUALITY CHECKS.....	39
APPENDIX A	41
ESSENTIAL SKILLS PROFILE – FINISHERS: WOOD PRODUCT MANUFACTURING	41

ESSENTIAL SKILLS BACKGROUND	41
A. READING	42
B. DOCUMENT USE	43
C. WRITING	44
D. NUMERACY	45
E. ORAL COMMUNICATION	47
F. THINKING SKILLS	48
G. WORKING WITH OTHERS	50
H. DIGITAL TECHNOLOGY	50
I. CONTINUOUS LEARNING.....	51
APPENDIX B.....	52
PROJECT BACKGROUND AND METHODOLOGY	52

National Occupational Standards

This National Occupational Standard (NOS) was developed by the Wood Manufacturing Council (WMC) and industry professionals.

National Occupational Standards (NOS) describe the skills, knowledge and abilities required to perform the duties of an occupation. The *National Occupational Standard for a Finisher* describes what a person who finishes materials used in the wood manufacturing industry needs to know and be able to do to be considered capable of doing his or her job effectively and successfully. Occupational standards can be used for a variety of purposes, including:

- Developing job descriptions
- Conducting performance appraisals
- Informing and assessing training curricula
- Assisting with professional certification
- Identifying ongoing professional development needs
- Managing succession plans

A National Occupational Standard is an extremely valuable resource tool that can be used by a variety of stakeholders, including:

- Owners and employers in the wood manufacturing industry
- Current and future employees
- Human resources personnel
- Managers in the wood manufacturing industry
- Educators and training providers
- Members of the public
- Partner organizations
- Volunteers

About the Wood Manufacturing Council

The Wood Manufacturing Council is a National Sector Council dedicated to addressing the human resource needs of firms involved in the advanced manufacturing of wood products. The mandate of the WMC is to plan, develop and implement human resources strategies that support the long-term growth and competitiveness of Canada's advanced wood products manufacturing industry and meet the developmental needs of its workforce. The Council works to identify and examine the necessary skills and knowledge required to respond to the changing needs of the industry as well as developing an overall strategic plan to address key issues such as the shortage of skilled workers and the need for national standards for worker competencies.

More information on the Council can be obtained online at www.wmc-cfb.ca.

To order additional copies of this standard or to find out about the range of resources the council has available, contact:

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Acknowledgements

Acknowledgement National Project Advisory Committee

The Wood Manufacturing Council would like to commend and acknowledge the members of the National Project Advisory Committee for the Labour Market Information and Standards Project. Their support and guidance of the overall initiative was extensive and very much appreciated. The time, interest and vision of these sector stakeholder volunteers, from industry, education, associations etc. contributed significantly to the project. Without their participation and co-operation, this project could not have been completed.

Acknowledgement of Industry Contributors

The Wood Manufacturing Council also wishes to express its sincere appreciation to the many wood manufacturing professionals and other interested parties who contributed directly or indirectly to the publication of this standard. The participation of the woodworking community in focus groups, surveys and interviews was extensive. We appreciate the significant sharing of information, experiences and perspectives that contributed to and resulted in the completion of this work.

The participating volunteers and contributors to this effort are many, and too numerous to name individually. We sincerely appreciate the interest and expertise that the woodworking community provided on this project. The input from the industry, including the significant number of contributors to the original standards that were updated in this project, is substantial and of importance to the efforts to obtain a common understanding of the skills and competencies needed for a worker to perform competently in the workplace.



This project is funded by the Government of Canada's Sectoral Initiatives Program.

The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

Introduction to National Occupational Standards

National Occupational Standards (NOS) describe the skills and knowledge needed to perform competently in the workplace. The NOS is further supported by Essential Skills, which serve as the foundation of what a worker needs to know to be able to do his/her job. Essential Skills are not technical skills but the core skills people need to acquire knowledge and complete workplace tasks and daily activities. A complete Essential Skills Profile for Finisher is included in Appendix A.

This NOS document is the product of multiple interviews and workshops conducted with industry experts across Canada. The standard was originally developed through a series of industry expert consultations in 2007/8 and has been updated through further consultations in 2015/16 in order to reflect the changes in the industry and occupation over the past eight years. For a description of the development process and stakeholder involvement, see Appendix B.

Organization of the National Occupational Standard

The standard is organized into three main sections: Occupational Background, Occupational Health and Safety and Occupational Analysis.

The **Occupational Background** section provides contextual information about the occupation, such as working environment, personal attributes and tools and equipment required to successfully perform the work required.

Occupational Health and Safety (OH&S) is a foundation of any job. The OH&S section details the knowledge, skills and abilities required to handle hazards in the workplace. The section is organized under five areas of responsibility: people, equipment, environment, materials and process.

The **Occupational Analysis** section provides a detailed breakdown of the tasks that a Finisher needs to be able to do in order to perform his/her job effectively. These tasks are grouped in meaningful sections consisting of tasks and sub-tasks that need to be performed. The tasks and sub-tasks are supported by underlying knowledge, abilities and skills required to perform the tasks.

Contextual Information provides additional information on the *frequency, importance* and *difficulty* of the skills required to perform competently in the occupation. This is useful for educators in identifying where focus should be placed in curriculum design, as well as employers seeking to highlight tasks that are particularly important.

Occupational Background

- Working Environment
- Personal Attributes
- Overall Knowledge & Abilities

Occupational Health & Safety

- People
- Equipment
- Environment
- Materials
- Processes

Occupational Analysis

- Sections
- Tasks
- Sub-Tasks
- Contextual Information
- Knowledge & Abilities
- Essential Skills

How to use the National Occupational Standard - Example

Develop a Job Posting

You need to develop a job posting to hire a Finisher. There is a car manufacturing plant close by that employs finishers. You know that these finishers have many transferable skills. You are confident that if you can just get the person with the right attitude and essential skills, you can teach them the rest. You decide to focus on Personal Attributes, Physical Requirements and Essential Skills in your job posting.

Develop on-the-job training

You need to hire a new Finisher. You have a good Finisher on staff that can train the new person, but you want to make sure that he follows all the proper finishing and health and safety processes. You use the tasks and sub-tasks as a checklist to make sure that he delivers the training properly and does not miss any steps.

Identify issues with the finishing process

You notice that there has been a decrease in quality of the finish lately, but you are not quite sure where the problem is. You talk to your finishers using the tasks and sub-tasks as a checklist to help you pinpoint the issue.

Succeed in a job search

You are a job-seeker searching for new employment as a Finisher. The National Occupational Standard for the Finisher includes information about the knowledge and abilities required for this position. You use this information to develop a résumé that will stand out to employers by highlighting how your skills address all the job requirements.

For more information about using the standard, see the “Wood Manufacturing Council Employer’s Guide to Using National Occupational Standards”.

Occupational Background

The purpose of this analysis is to establish a general profile for the occupation and provide contextual information for the National Occupational Standards. Managers, job incumbents and human resource personnel from various wood manufacturing areas were interviewed for the purpose of gaining an overall understanding of the profile of the typical Finisher. For an in-depth analysis of the wood manufacturing industry as a whole, consult the Labour Market Information (LMI) study (2016) available from the Council.

Finishers finish new wood or metal furniture to specified colour and finish. They may refinish repaired, used or old furniture. Finishers are employed in wood finishing shops or they may be self-employed.¹

Occupational Background

- Working Environment
- Personal Attributes
- Overall Knowledge & Abilities

Example Titles

- Finishing machine operator
- Sprayer, finisher, stainer
- Touch-up person
- Wash-off operator
- Wood finisher

Main Duties

The main purpose of this position is to effectively, consistently and safely apply finishes, as per the provided colour and sheen samples, to all types of wood products to achieve the highest quality of finish. Finishers apply finishes to all types of wood products by using the following processes:

- Sanding
- Staining or solid colour
- Sealing
- Top coat (lacquer)

Finishers prepare surfaces for finishing, either by hand, smoothing surfaces with sandpaper or by machine, using machine sanders. Finishers examine wood and component pieces, fix small defects and ensure that all the dust from sanding has been removed from the surface of the piece that is to be finished. Once the prepared surfaces are ready, the finisher selects the finishing products (colours, stains and sheen) to finish the wood surfaces.

¹ NOC 9534 Furniture finishers and refinishers,
<http://www5.hrsdc.gc.ca/noc/english/noc/2011/Profile.aspx?val=9&val1=9534>

Although some finishers are required to mix products to give clients the colours and sheen they desire on the wood surface, in the majority of cases, finish supply companies will mix the desired finishing product from a sample. To achieve a variety of special effects, finishers use techniques and tools such as brushes, sponges, rags or sprays. Custom and specialty finishers usually possess higher levels of artistic ability, colour matching and new colour development skills as well as being innately precise and uniformly consistent in output.

There are two main types of finishers: manual finisher and automated finisher.

Manual Finisher

- Has knowledge of the preparatory stage of wood finishing
- Sprays sealers, stain and clear top coat
- Shades, stains and colour matches
- Has basic knowledge in custom specialty finishes (e.g., glaze, antiquing, etc.)
- Has versatility to work in various wood manufacturing industries (e.g., kitchen & bath, furniture, office & store fixtures)
- Can do on-site touch-up jobs effectively and efficiently
- Has the requisite skills for the following:
 - Refinishing
 - Touch-up jobs (on site or inside shop)
 - Colour matching
 - Sample making

Automated or Automatic Finishing System (AFS) Finisher

- Sprays stain, sealer, top coat
- Has knowledge of finishing procedures and processes such as sanding, staining and shading
- Uses an AFS to finish wood products

Working Environment

Finishers work in a wide range of types of organizations, ranging from very small locations to large scale production plants. Finishers working in small organizations (2 to 50 employees) may have broader responsibilities while those working in large organizations have very focused finishing tasks. For instance, a Finisher working in a small organization may perform cutting, sanding and assembly operations, while finishers working in large organizations will be tasked solely with finishing. Finishers also work on a large variety of wood manufactured products from windows and doors, cabinets, to store fixtures, etc.

Finishers may be exposed to chemical products used in the finishing process, hence it is important to follow appropriate health and safety practices to protect oneself from chemical inhalation and to follow proper disposal and cleanup practices.

Manufacturing facilities are not usually air conditioned, in order to avoid deterioration of raw products, so finishers may find working conditions to be challenging in hot summer months. For health and safety reasons, workers are often accommodated with increased breaks over the course of their shift or plant closures during periods of extreme high temperatures.

Personal Attributes

Finishers need to have the following personal attributes in order to be able to do their job and work with others effectively:

Working with Others

Most of the interactions occur with co-workers, lead hands and supervisors. Depending on the facility, some Finishers may interact with the suppliers to place orders and seek product information or communicate with customers. Finishers need to:

- Demonstrate mature, respectful, fair and equitable behaviours in all interactions and situations
- Communicate in an honest, respectful and sensitive manner
- Present information/instructions clearly and effectively
- Bring issues to the attention of appropriate personnel, as needed
- Offer ideas or suggest modified approaches to address current situations or issues
- Communicate technical information clearly and concisely
- Provide and receive feedback from others
- Work effectively as a member of a team
- Be willing to assist others, as required
- Behave professionally by being punctual, reliable, understanding personal responsibility, contribution and role
- Handle pressure/stress in getting jobs completed according to a specific time schedule

Personal Qualities

- Have a high attention to detail
- Ability to focus on task at hand
- Excellent hand-eye coordination
- Be organized
- Stay positive when things change
- Adapt to changes in tasks, assignments and changing production priorities
- Learn and apply new knowledge
- Continuously look for ways to improve efficiencies
- Perform work duties in a conscientious, consistent and thorough manner
- Ability to identify problems (e.g., repair or reject a defective product), know how to resolve them and when to escalate to the appropriate person

Physical Requirements

- Distinguish between different colours and hues²
- Meet physical demands of job (e.g., lifting, standing, moving equipment, etc.)
- Manipulate tools of varied weight and size
- Stand, bend over and occasionally work in awkward positions to finish a product

² Some companies may use all or some component of the Farnworth Mansell 100 Hue Test to test hue discrimination ability.

Overall Knowledge & Abilities

Finishers need to have business sense (e.g., understand importance of finishing process to business' success) and they need to understand finishing process flow.

Inventory and Manufacturing Processes

- Knowledge of inventory control processes
- Knowledge of finishing processes
- Knowledge and use of bar codes
- Knowledge of lean inventory concepts and practices

Finishing Material

- Knowledge of wood and wood materials (e.g., softwood, hardwood species and panel products)
- Knowledge of various types of finishing products (e.g., solvent and water-based stain)
- Knowledge of how different finishes and stains interact with different wood and wood components

Finishing Techniques

- Knowledge of finishing concepts and techniques, including special effects
- Ability to use finishing tools (e.g., sanding paper, automated tools, palm sander)
- Knowledge of basic applied math and chemistry
- Knowledge of work methods that avoid waste, considering time, effort, and materials (e.g., minimum number of coats required to obtain the desired finish)

Quality

- Knowledge of quality standards and procedures
- Knowledge of work methods and techniques that ensure the product meets quality standards
- Ability to examine material for defects (e.g., wood cracks, knots, direction of grain, scratches and dents)
- Ability to inspect coats of finishing product for defects such as dry spray, orange peel, foaming, bubbling, runs and sags
- Ability to check for colour quality at each step of the process against the step panel sample

Environmental Sustainability

- Ability to identify ways to reduce, reuse and recycle work materials
- Ability to dispose of waste according to green practices

Occupational Health and Safety

The health and safety section details the knowledge and abilities required by every employee to maintain a safe and healthy workplace. There are five main health and safety areas that need to be considered when identifying the knowledge and abilities required to maintain a safe and healthy workplace: people, equipment, environment, materials and processes.

Occupational Health & Safety

- People
- Equipment
- Environment
- Materials
- Processes

People

People can create hazards in the workplace by their actions or inactions. As such, proper training, administration, leadership and supervision are required to ensure that employees engage in the appropriate workplace behaviours.

Each employee is required to know:	Each employee is required to:
<ul style="list-style-type: none">• Occupational Health and Safety legislation relevant to the workplace• Occupational Health and Safety procedures for controlling hazards/risks in the workplace• Accident and emergency procedures as per company policy• Company's safety training requirements• Safe bending, carrying and lifting procedures• Worker safety legislation and procedures• Legislation on violence and harassment in the workplace	<ul style="list-style-type: none">• Use personal protective equipment (e.g., face masks, gloves, safety glasses, steel-toed boots, hearing protection)• Use personal safety measures when performing work (e.g., no loose clothing, no shoelaces untied)• Request assistance to move heavy loads• Use dollies, lifts or carts when possible• Report safety-related situations or incidents• Report incidents of violence and harassment in the workplace

Equipment

When considering tools, machines and equipment in the workplace that can be hazardous, it is important to identify proper use, maintenance and storage requirements.

Each employee is required to know:	Each employee is required to:
<ul style="list-style-type: none">• Safe use, storage, handling of tools, machines and equipment• Grounding procedures	<ul style="list-style-type: none">• Operate tools and machinery as per manufacturer's recommendations and established company policies• Maintain machines and tools in proper operating condition• Inspect tools and equipment to ensure they meet safety requirements• Use lock out/tag out procedures when repairing/servicing tools and equipment• Ground all equipment before use (e.g., ensure ground straps are in place)

Environment

Some hazards can be created by the work environment and can be either naturally occurring (e.g., weather conditions) or the result of an unsafe condition caused by poorly maintained equipment, tools or facilities.

Each employee is required to know:	Each employee is required to:
<ul style="list-style-type: none">• Hazards and unsafe work conditions• Safety requirements related to ventilation and working in an enclosed space	<ul style="list-style-type: none">• Keep work area clean and free of clutter• Use proper cleaning materials• Return and store materials in their designated area• Label products according to WHMIS standards• Report identified safety hazards to designated personnel in accordance with workplace requirements and relevant workplace Occupational Health and Safety legislation• Identify risks to health and safety in the work area (e.g., torn or frayed cords, dirty clothes, debris on floor, broken equipment or tools, spills, exhaust fumes)

Materials

Materials are any workplace substance, matter or provisions used for production that have the potential to cause harm or loss especially if handled improperly, such as paints, stains or glues.

Each employee is required to know:	Each employee is required to:
<ul style="list-style-type: none">• Environmental effects of chemicals• Cleaning materials to use (e.g., mops, sponges, cloths, cleaning agents)• Proper disposal procedures• Proper storage procedures	<ul style="list-style-type: none">• Use dust collecting equipment• Use cleaning materials properly• Return and store materials in their designated area• Remove unpermitted materials from work area (e.g., fuel, paint)• Control the volume of hazardous materials in work area

Processes

Processes involve the flow of work and include factors such as design, pace and organization of the various types of work via policies, procedures and work processes. For example, a poorly designed work process or an increase in production, without considering the effect it can have on people, objects or equipment, can increase the likelihood of an incident.

Each employee is required to know:	Each employee is required to:
<ul style="list-style-type: none">• Safe work procedures• Workplace Hazardous Materials Information Systems (WHMIS)• Hazardous material (HAZMAT) procedures	<ul style="list-style-type: none">• Use Occupational Health and Safety procedures for controlling hazards/risks in workplace• Identify steps and procedures to reduce risk• Follow accident/incident reporting procedures as per company policy



Occupational Analysis

The Occupational Analysis section consists of: Sections, Tasks, Sub-Tasks, Contextual Information, Knowledge & Abilities and Essential Skills related to each task.

Sections

Sections are the largest divisions or groupings of tasks that reflect distinct operations within the occupation.

Tasks

Tasks are distinct activities that, combined with others, make up the logical and necessary steps the worker is required to perform in order to complete a specific assignment within a Section. There are two Sections for Finisher: Preparation and Product Finishing. Within those Sections are the following tasks:

Occupational Analysis

- Sections
- Tasks
- Sub-Tasks
- Contextual Information
- Knowledge & Abilities
- Essential Skills

Section A: Preparation

Task A1: Plan Finishing Activities	Task A2: Prepare Finishing Product	Task A3a: Set Up Manual Finishing Equipment	Task A4: Maintain Equipment
		Task A3b: Set Up Automated Finishing System	

Section B: Product Finishing

Task B1: Prepare Material for Finishing	Task B2a: Manually Apply Finishing Product	Task B3: Perform Quality Checks
	Task B2b: Machine Apply Finishing Product	

Sub-Tasks

The smallest division into which it is practical to subdivide any work activity, and, combined with others, fully describe all steps within a Task.

Contextual Information

Contextual information provides additional information about a skill or task. It is useful in the development of training materials or in identifying appropriate training tools or methods. It can be used for on-the-job training or as part of a formal educational program.

Contextual information is provided under three headings: Frequency, Importance and Difficulty. A brief description of each of these is provided below.

Frequency: defines how often the task is performed. The question asked is: How often do you do this?

Importance: a rating that indicates the importance of the task to competent performance. The question asked is: How important is it that you know how to do this?

Difficulty: defines the levels of effort, challenge, and complication associated with the performance of the task. The question asked is: How difficult is this to learn?

0. I don't do this (Never)

1. Not very often

2. Sometimes

3. All the time

0. Not important to my job (Not Important)

1. Somewhat important to my job (Somewhat Important)

2. Important to my job (Important)

3. Very important to my job (Very Important)

0. Needs no training or practice (None)

1. Needs minimal training or practice (Low)

2. Needs some training or practice (Moderate)

3. Needs significant training or practice (High)

Knowledge & Abilities

The elements of skill and knowledge an individual must acquire to adequately perform the Sub-Task.

Essential Skills

Essential Skills are foundation skills required for all types of work. They are not technical skills but the core skills people need to acquire knowledge and complete workplace tasks and daily activities. Essential Skills are defined as:

- Reading Text
- Document Use
- Writing
- Numeracy
- Oral Communication
- Thinking Skills (includes: Problem Solving, Decision Making, Critical Thinking, Job Task Planning and Organizing, Finding Information and Significant Use of Memory)
- Digital Technology
- Working with Others
- Continuous Learning

They are included in the Occupational Analysis as guidance for training. They are useful for identifying upgrading needs and to see opportunities where they can be reviewed and learned during orientation, training and on the job.

All these elements build on each other to define the knowledge, skills and abilities required to perform as a Finisher. The following section is a detailed breakdown of the Sections, Tasks, Sub-Tasks, Knowledge and Abilities and Essential Skills for Finishers.

Section A: Preparation

Task A1: Plan Finishing Activities	Task A2: Prepare Finishing Product	Task A3a: Set Up Manual Finishing Equipment	Task A4: Maintain Equipment
		Task A3b: Set Up Automated Finishing System	

Task A1: Plan Finishing Activities

Sub-Tasks

A1.1	Review information on work order and/or specifications (e.g. bill of material)	Frequency: All the time Importance: Important Difficulty: Moderate
A1.2	Organize finishing activities according to production schedule	Frequency: All the time Importance: Very Important Difficulty: Moderate
A1.3	Verify materials provided match work order or bill of materials (e.g. wood product, finishing product)	Frequency: All the time Importance: Very Important Difficulty: Moderate
A1.4	Inform supervisor of discrepancies (e.g. product shortages)	Frequency: All the time Importance: Very Important Difficulty: Moderate
A1.5	Complete required documents	Frequency: All the time Importance: Important Difficulty: Moderate

Knowledge/Abilities

Knowledge of:

- Finishing process and procedures
- Production sequence
- Wood and veneer products
- Finishing products

Ability to:

- Plan finishing process to meet production targets
- Follow coating manufacturer's specification sheets with respect to dry times, sanding times, stacking times or other sensitive requirements

Essential Skills

Reading

- Read notices, bulletins and memos such as daily operating memos to learn about restricted areas

Document use

- Locate product information and usage instructions on product labels
- Complete defect tags to indicate that wood products have defects
- Review work orders to locate details of the job and to verify wood and finishing products on hand match the work order and bill of material
- Scan production schedules to plan their work

Oral communication

- Talk with co-workers to co-ordinate work and sequence jobs when working on multiple orders
- Interact with supervisors to discuss jobs and production problems and to clarify procedures
- Discuss problems and solutions when new products, materials and techniques are being used

Thinking

- Decide how to sequence tasks considering the type of work required

Task A1: Plan Finishing Activities	Task A2: Prepare Finishing Product	Task A3a: Set Up Manual Finishing Equipment	Task A4: Maintain Equipment
		Task A3b: Set Up Automated Finishing Systems	

Task A2: Prepare Finishing Product

Sub-Tasks

A2.1	Obtain product (e.g., stain, paint, primer, topcoat) based on specifications and/or standards	Frequency: All the time Importance: Very Important Difficulty: High
A2.2	Mix product to manufacturer's specification	Frequency: All the time Importance: Very Important Difficulty: High
A2.3	Test sample against specifications (e.g. manufacturer's standards or master sample)	Frequency: All the time Importance: Very Important Difficulty: High
A2.4	Adjust products and equipment to prevent finishing defects such as dry spray, orange peel, foaming, bubbling, runs and sags	Frequency: All the time Importance: Very Important Difficulty: High

Knowledge/Abilities

Knowledge of:

- Finishing terminology
- Viscosity measuring devices
- Air pressure, fluid pressure and volume of air to set up equipment
- Colour
- Sheen/gloss

Ability to:

- Operate laboratory equipment to perform quality checks
- Perform viscosity and wet film tests
- Recognize differences in colour, shades, brightness
- Verify products meet manufacturers specifications (e.g., viscosity, colour)
- Estimate amount of paint or lacquer to have on hand to finish a specific job
- Estimate batch proportions for different-sized jobs
- Apply chart specifications (e.g., viscosity ratio)
- Use gloss meter for measuring gloss

Essential Skills

Reading

- Read pamphlets to brush up on how to use and mix solvents
- Read manufacturers' information sheets to learn about finishes and their properties
- Read Material Safety Data Sheets (MSDS) to follow disposal procedures for products such as paints, stains, etc.

Document use

- Read product labels for instructions on how a product is to be used
- Note changes to mixing ratios on work orders
- Locate mixing ratios on manufacturers mixing charts for finishing product
- Locate colours on colour charts
- Locate information about paints, stains and other finishing products on MSDS

Numeracy

- Measure liquids
- Use formula to mix various finishing products, making adjustments as necessary
- Calculate the amount of finishing products required per job
- Estimate the amount of liquid required for a specific job

Oral communication

- Discuss modifications to finishing mixtures and techniques with co-workers and supervisors

Thinking

- Evaluate the quality of mixed finishing products considering specifications and test samples

Continuous learning

- Read materials, speak with co-workers and participate in workshops to learn about products, finishing techniques and production processes

Task A1: Plan Finishing Activities	Task A2: Prepare Finishing Product	Task A3a: Set Up Manual Finishing Equipment	Task A4: Maintain Equipment
		Task A3b: Set Up Automated Finishing System	

Task A3a: Set Up Manual Finishing Equipment

Sub-Tasks

A3a.1 Clean equipment, as required	Frequency: All the time Importance: Very Important Difficulty: Moderate
A3a.2 Assemble equipment, if required	Frequency: All the time Importance: Important Difficulty: High
A3a.3 Adjust equipment settings to manufacturer's specifications (e.g. spray gun, flat line, roller coat)	Frequency: All the time Importance: Very Important Difficulty: High
A3a.4 Produce sample test to verify its conformance to specifications	Frequency: All the time Importance: Very Important Difficulty: High
A3a.5 Disassemble and flush, as required	Frequency: All the time Importance: Very Important Difficulty: Moderate

Knowledge/Abilities

Knowledge of:

- Finishing equipment (manual and automated)
- Air supply, air pressure, volume of air needed

Ability to:

- Properly assemble finishing equipment
- Interpret and apply manufacturer's specifications
- Operate finishing equipment
- Identify quality issue in the finish that could be related to a misfiring gun

Essential Skills

Reading

- Following manufacturing or Standard Operating Procedure (SOP) for assembling and cleaning finishing equipment

Document Use

- Locate set-up specifications for different types of sprays in specification sheets

Numeracy

- Take readings from pressure gauges on equipment to verify it is functioning correctly

Thinking

- Find finishing equipment is not spraying correctly, making adjustments to correct the problem and informing supervisors of delays and if equipment requires additional maintenance
- Evaluate the quality of test samples to verify that equipment is set up and functioning correctly

Task A1: Plan Finishing Activities	Task A2: Prepare Finishing Product	Task A3a: Set Up Manual Finishing Equipment	Task A4: Maintain Equipment
		Task A3b: Set Up Automated Finishing System	

Task A3b: Set Up Automated Finishing System

Sub-Tasks

A3b.1	Set up machines using work order instructions and Standard Operating Procedures (SOP)	Frequency: Sometimes Importance: Important Difficulty: High
A3b.2	Load stock into machine	Frequency: All the time Importance: Important Difficulty: Moderate
A3b.3	Perform test run on test sample	Frequency: All the time Importance: Very Important Difficulty: Moderate
A3b.4	Compare test pieces against specifications	Frequency: All the time Importance: Very Important Difficulty: High
A3b.5	Make minor adjustments to programming and parts as necessary	Frequency: Sometimes Importance: Very Important Difficulty: Moderate
A3b.6	Identify issues related to machine set-up	Frequency: All the time Importance: Very Important Difficulty: High

A3b.7	Resolve issues when possible	Frequency: Sometimes Importance: Very Important Difficulty: High
A3b.8	Refer outstanding problems to appropriate individuals	Frequency: All the time Importance: Important Difficulty: Moderate

Knowledge/Abilities

Knowledge of:

- Standard Operating Procedures for machines in use
- Machine adjustments
- Tolerances of measurement
- Machinery

Ability to:

- Perform mechanical tasks
- Follow SOP (Standard Operating Procedures) to set up and operate the machine
- Identify problems or defects with machines

Essential Skills

Reading

- Review production specifications to learn about particulars such as requirements for special materials and manufacturing processes
- Read standard operating procedures to set up and maintain finishing equipment

Document use

- Scan production and work orders to locate finishing specifications and instructions
- Enter information about faulty equipment in repair request forms
- Scan equipment assembly drawings to set up equipment and set tolerances

Oral communication

- Talk with other machine operators and/or finishers to discuss problems with finishing equipment and defective wood
- Inform supervisor of equipment defects

Thinking

- Solve problems related to machine operation, materials and products as they occur without waiting and/or deferring to supervisor
- Decide not to use worn and faulty tools, fixtures and equipment
- Decide the best way to set up the machines and arrange materials
- Decide to change knives and other tools and make adjustments to feed and speed rates, considering equipment tolerance levels and the product
- Judge the quality of test run products, considering specifications and quality standards

Numeracy

- Take machine readings to verify machine is operating correctly
- Measure the dimensions and design features of products using tape measures and depth gauges to verify product standards are met
- Take precise measurements of wood products and features, using instruments such as calipers and gauges to verify specifications are met

Computer skills

- Operate machines from a computerized console using the following computer functions:
 - download programs
 - start and run the correct program for the job
 - use of touch screen

Task A1: Plan Finishing Activities	Task A2: Prepare Finishing Product	Task A3a: Set Up Manual Finishing Equipment	Task A4: Maintain Equipment
		Task A3b: Set Up Automated Finishing Systems	

Task A4: Maintain Equipment

Sub-Tasks

A4.1	Inspect equipment	Frequency: All the time Importance: Important Difficulty: Moderate
A4.2	Perform minor repairs (e.g. replace broken and worn parts)	Frequency: Sometimes Importance: Very Important Difficulty: High
A4.3	Clean equipment, as required	Frequency: All the time Importance: Very Important Difficulty: Moderate
A4.4	Perform scheduled maintenance (e.g. lubricate parts drain condensers, replace filters)	Frequency: All the time Importance: Very Important Difficulty: Moderate

Knowledge/Abilities

Knowledge of:

- Finishing equipment and components (e.g., filters, air hoses, fittings)
- Maintenance tasks for finishing equipment

Ability to:

- Maintain equipment as per company and manufacturer's specifications
- Assemble and disassemble finishing equipment
- Be organized
- Keep a neat and tidy workspace

Essential Skills

Reading

- Read assembly and disassembly instructions for spray guns
- Follow manufacturing or SOP for minor repairs and scheduled maintenance

Document Use

- Complete defect tags to indicate that equipment and tools are not in working order
- Locate cleaning steps in maintenance checklists
- Complete inspection and maintenance checklists to verify work completion and to note outstanding issues

Numeracy

- Take readings from pressure gauges on equipment to verify it is functioning correctly

Thinking

- Make adjustments to correct problems such as incorrect spraying
- Inform supervisors of delays and if equipment requires additional maintenance
- Evaluate the quality of test samples to verify that equipment is set up and functioning correctly

Section B: Product Finishing

Task B1: Prepare Material for Finishing	TASK B2a: Manually Apply Finishing Product	TASK B3: Perform Quality Checks
	TASK B2b: Machine Apply Finishing Product	

Task B1: Prepare Material for Finishing

Sub-Tasks		
B1.1	Examine material for defects (e.g. wood cracks, knots, direction of grain, scratches and dents)	Frequency: All the time Importance: Very Important Difficulty: High
B1.2	Identify issues related to product	Frequency: All the time Importance: Important Difficulty: High
B1.3	Repair minor imperfections (e.g. scratches, dents) by sanding, using wood fillers and colour markers	Frequency: All the time Importance: Very Important Difficulty: High
B1.4	Reject parts with major deficiencies	Frequency: All the time Importance: Very Important Difficulty: Moderate
B1.5	Sand wood materials according to specifications	Frequency: Sometimes Importance: Very Important Difficulty: Moderate

B1.6 Notify supervisor of serious defects

Frequency: All the time

Importance: Important

Difficulty: Low

Knowledge/Abilities

Knowledge of:

- Wood species and composite products
- Sanding tools and techniques (e.g. hand sander, Palm Sander, wide-belt sanding machines, brush)
- Sand paper specifications (e.g. grit)
- Properties of abrasives and how they work in the finishing process
- Charts for mixing product
- Differences in colour, shades, brightness

Ability to:

- Operate sanding tools
- Recognize imperfections in wood surface
- Repair minor imperfections by using the proper tools and techniques
- Apply mixing product ratios (e.g. viscosity ratio)

Essential Skills

Document use

- Complete forms such as deficiency reports and quality checklists
- Scan work orders and specifications sheets to verify materials meet requirements and to locate specifications for sanding and other prep prior to finishing

Oral communication

- Speak with supervisors to inform them of higher than normal levels of defects on products

Thinking skills

- Select methods for repairing small defects
- Decide what minor imperfections can be left on a wood product, considering product specifications, company standards and ability to repair defects

Task B1: Prepare Material for Finishing	Task B2a: Manually Apply Finishing Product	Task B3: Perform Quality Checks
	Task B2b: Machine Apply Finishing Product	

Task B2a: Manually Apply Finishing Product

Sub-Tasks

B2a.1	Apply finishing products to wood surfaces according to specifications	Frequency: All the time Importance: Very Important Difficulty: High
B2a.2	Check quality of applied product between coats <ul style="list-style-type: none"> • check colour using step panel, or colour standard • check thickness of paint coat using wet mill gauge 	Frequency: All the time Importance: Very Important Difficulty: Moderate
B2a.3	Apply number of coats as per finishing specifications	Frequency: All the time Importance: Very Important Difficulty: Moderate
B2a.4	Sand between coats as per finishing specifications	Frequency: All the time Importance: Very Important Difficulty: Moderate
B2a.5	Adjust products and equipment to prevent finishing defects such as dry spray, orange peel, foaming, bubbling, runs and sags	Frequency: All the time Importance: Very Important Difficulty: High
B2a.6	Buff final coat, if required	Frequency: Sometimes Importance: Important Difficulty: High ³

³ Achieving high gloss requires significant practice to master.

B2a.7	Apply special effect finishes using a range of techniques and products (e.g. glazing, distressing, antiquing, high gloss)	Frequency: Sometimes Importance: Important Difficulty: High
B2a.8	Reject parts with major deficiencies	Frequency: Sometimes Importance: Important Difficulty: Moderate

Knowledge/Abilities

Knowledge of:

- Sanding tools and techniques (e.g. hand sander, Palm Sander, wide-belt sanding machines, brush)
- Sand paper specifications
- Finishing products (e.g., solvent and water) and finishing processes
- Characteristics of colours and colour batches
- Coating application equipment
- Adhesion properties of the finish on the type of wood or composite being used
- Techniques to meet special effects specifications (e.g. glazing distressing, antiquing)
- Buffing and polishing techniques and materials
- Factors that affect finish quality (e.g. temperature, weather and drying techniques)

Ability to:

- Recognize differences in colour, shades, brightness
- Adjust finishing products and equipment to meet specification (e.g. selecting the appropriate nozzle size of spray gun)
- Apply finish (e.g., distance, surface angle)
- Apply special effects techniques
- Use laboratory devices (e.g. wet mill gauge, viscosity cups, gloss meters, colour matching equipment)
- Apply different sanding techniques (e.g. wet/dry, scuff sand)
- Recognize imperfections
- Repair minor imperfections using appropriate tools
- Correct for factors that affect finish quality

Essential Skills

Reading

- Research and read online resources and manufacturing bulletins to learn about the characteristics of different wood and wood products, stripping and special finishing techniques and about period furniture styles

Document Use

- Scan work orders and specification sheets to locate finishing specifications
- Complete quality inspection checklists to verify work completed, note issues and adjustments made to finishing products and techniques to ensure quality standards were met
- Scan troubleshooting charts to learn about techniques for resolving finishing defects

Thinking

- Select finishing techniques for special effect finishes
- Select methods for preventing defects such as adjusting finishing equipment and finishes

Computer Use

- May use computer-assisted finishing machines
- Use internet searches to research various wood characteristics and products including techniques to achieve desired finishes

Continuous Learning

- Learn about new products and finishing techniques by talking to suppliers and co-workers, using online sources (like Google, Pinterest and Youtube) and participating in workshops

Task B1: Prepare Material for Finishing	TASK B2a: Manually Apply Finishing Product	TASK B3: Perform Quality Checks
	TASK B2b: Machine Apply Finishing Product	

Task B2b: Machine Apply Finishing Product

Sub-Tasks		
B2b.1	Feed/load wood component onto machine	Frequency: Sometimes Importance: Important Difficulty: Low
B2b.2	Load stock into machine	Frequency: Sometimes Importance: Important Difficulty: Low
B2b.3	Operate automated finishing system (AFS) according to specifications	Frequency: Sometimes Importance: Important Difficulty: High
B2b.4	Perform quality inspections (e.g. examine visually)	Frequency: All the time Importance: Very Important Difficulty: Moderate
B2b.5	Monitor AFS to identify deficiencies in product or production (e.g. cracking, bubbling, uneven finishes)	Frequency: Sometimes Importance: Very Important Difficulty: Moderate
B2b.6	Remedy deficiencies (e.g. clogged spray guns, incorrect paint viscosity, etc.), by making adjustments to the AFS using manufacturer's specifications	Frequency: Sometimes Importance: Very Important Difficulty: Moderate
B2b.7	Refer outstanding problems to appropriate individuals	Frequency: Sometimes Importance: Important Difficulty: Moderate

B2b.8 Regularly clean out the machine to keep it clear of debris	Frequency: Sometimes Importance: Important Difficulty: Low
B2b.9 Unload and sort finished product	Frequency: Sometimes Importance: Important Difficulty: Low

Knowledge/Abilities

Knowledge of:

- Finishing products (e.g., solvent and water) and finishing processes
- Characteristics of colours and colour batches
- Coating application equipment
- Adhesion properties of the finish on the type of wood or composite being used
- Computer functionality for computer-assisted machinery
- Factors that affect finish quality (e.g., temperature, weather and drying techniques)

Ability to:

- Optimize the capacity of machines and machine programming
- Repair minor defects using a variety of tools
- Assess the quality of outputs
- Use a hydraulic lift, as required
- Use computer-assisted machine programs
- Correct for factors that affect finish quality

Essential Skills

Document Use

- Record job order numbers and date completed on job orders
- Complete inspection forms to note completed and to document quality issues
- Monitor graphical displays on computer screens to ensure machines are operating within specifications

Oral Communication

- Discuss issues such as equipment breakdowns with co-workers or supervisor
- Speak with helpers to provide instruction and coordinate tasks such as loading and unloading wood products

Thinking

- Solve problems related to machine operation, materials and products as they occur within the scope of skills and knowledge, calling upon another operator and/or finisher to assist and/or inform the supervisor if problem cannot be solved
- Select the order of tasks and process to optimize finishing tasks and avoid bottlenecks and delays
- Decide when to clean equipment and area, considering safety and optimum operation of equipment
- Decide to replace worn equipment components and make adjustments
- Judge the quality of products, considering specifications and quality standards

Numeracy

- Take readings to verify machines are operating correctly
- During production runs, measure and calculate dimensions and design features of products to verify product standards are met

Computer Skills

- Operate machines from a computerized console using the following computer functions:
 - download programs
 - start and run the correct program for the job
 - use functions within program to adjust feed and speed rates

AFS Operators:

- Execute basic programming changes while the existing programs are running

Task B1: Prepare Material for Finishing	Task B2a: Manually Apply Finishing Product	Task B3: Perform Quality Checks
	Task B2b: Machine Apply Finishing Product	

Task B3: Perform Quality Checks

Sub-Tasks		
B3.1	Inspect coats of finishing product for defects such as dry spray, orange peel, foaming, bubbling, runs and sags	Frequency: All the time Importance: Very Important Difficulty: Moderate
B3.2	Check for colour quality at each step of the process against the step panel sample	Frequency: All the time Importance: Very Important Difficulty: High
B3.3	Check gloss level using gloss meter	Frequency: Sometimes Importance: Very Important Difficulty: Moderate
B3.4	Repair minor imperfections	Frequency: Situational Importance: Very Important Difficulty: Moderate
B3.5	Send major imperfections for re-work or repair	Frequency: Sometimes Importance: Very Important Difficulty: Moderate

Knowledge/Abilities

Knowledge of:

- Wood products' standards
- Product specifications
- Why finishing defects occur

Ability to:

- Recognize imperfections
- Use appropriate tools and materials to repair minor imperfections
- Adjust finishing products to meet specifications

Essential Skills

Document use

- Scan work orders and specification sheets to locate finishing specifications
- Complete quality inspection checklists to verify completion
- Note issues and adjustments made to finishing products and techniques to ensure quality standards were met

Numeracy

- Use a variety of measurements tools (e.g., thermometers, humidity and pressure gauges, gloss metres and step panels) to ensure products, equipment and finishes meet specifications

Thinking

- Select methods for resolving finishing issues and evaluate their effectiveness
- Decide to reject/repair minor defects considering specifications and their abilities to perform repairs

Essential Skills Profile – Finishers: Wood Product Manufacturing

Essential Skills Background

Essential Skills are foundation skills required for all types of work. They are not technical skills but the core skills people need to acquire knowledge and complete workplace tasks and daily activities. These skills are considered essential for learning and completing workplace tasks. Therefore, the term “Essential Skills” has been adopted.

Understanding which Essential Skills are required for different occupations and training programs:

- allows individuals to compare their skills to those required
- assists training bodies in developing appropriate academic upgrading materials and programs. Training can be either stand-alone or embedded in other training to ensure individuals have the foundation skills necessary to be successful in training and as Finishers.

Employment and Social Development Canada (ESDC) have defined nine (9) Essential Skills. They are:

Reading	Thinking skills:
Document use	• problem solving
Numeracy	• decision making
Writing	• critical thinking
Oral communication	• job task planning and organizing
Digital technology	• finding information
Working with others	• significant use of memory
Continuous learning	

Definition of an "Example":

Example tasks are tasks generally performed by **most Finishers**. Each Essential Skill area includes a list of Examples to illustrate the use of that skill. While the Examples are not a comprehensive listing of the duties performed in that occupational group, they do provide a picture of the nature and range of tasks performed.

The qualifier – "may":

Some Examples use the qualifier "may". This indicates that the task may not relate to all Finishers or relate to only certain job functions.

Definition of Complexity Levels:

The Essential Skills complexity levels are a tool used to rate the difficulty of a particular task. It is not the Essential Skill itself or the learner that is rated, but the increasing demands that a required task makes upon the person to complete it.

With some exceptions, the Essential Skills are divided into five levels of complexity (1 being least complex and 5 being most complex). For example, level 1 indicates tasks requiring minimal literacy skills and level 5 indicates tasks requiring significantly more time and prior knowledge to interpret dense and complex texts and make high-level inferences, and where the consequences of making mistakes are greater.

For more information on Essential Skills complexity levels please refer to the Readers Guide to Essential Skills Profiles on the in the Employment and Social Development Canada website.

A. Reading

The typical reading tasks of a Finisher are at complexity 1 to 3.

Examples of Reading Tasks

Finishers:

1. read product labels on paints, stains and finishes for application instructions. (1)
2. skim notes in logbooks to learn about events and activities from previous shifts. (1)
3. read pamphlets to learn about new finishing products. (2)
4. read manufacturers' information sheets to learn about finishes and their properties. For example, finishers read information sheets to learn how to mix solvents. They read manufacturers' instructions to learn how to adjust settings for equipment such as spray guns. They read manufacturers' information sheets to learn about various finishes, such as how temperature affects a specific brand of lacquer. (2)
5. read memos. For example, finishers read memos about painting procedures for new wood products. They read daily operating memos about restricted areas. (2)
6. read notices, bulletins and factsheets. For example, finishers read health and safety instruction sheets, such as instructions for wearing a facemask. They read assembly and

disassembly instructions for spray guns. They read instructions for the safe use of finishing products and equipment. (2)

7. read text on forms. For example, they read MSDS to follow disposal procedures for products such as paints, stains, etc. (3)
8. review production orders and specification. For example, they review production orders to verify materials and quantities and locate details about products. They review specifications to learn about particulars such as requirements for special materials and manufacturing processes. (3)
9. read procedures and policies. For example, they read maintenance and operating procedures for finishing equipment. They read hazardous material (HAZMAT) procedures to learn about the properties and safe handling of products. (3)
10. may read books and online resources to scan for specific information, such as the characteristics of a type of wood, to learn technical skills, such as stripping and special finishing techniques and to learn about period furniture styles. (3)
11. read regulations, Acts and collective agreements. For example, they may read Occupational Health and Safety regulations to learn about requirements for personal protective equipment. They may read sections of employment standards Acts to learn about general holidays and exemptions. They may read collective agreements to learn about job classifications, grievance procedures and rules governing discipline and discharge. (3)

B. Document Use

The typical document use tasks of a Finisher are at complexity 1 to 3.

Examples of Document Use Tasks

Finishers:

1. observe safety, warning and regulatory symbols and signs at worksites. They observe signs, which indicate safety procedures before starting equipment and requirements for personal protective equipment such as safety glasses, hard hats and other safety gear. (1)
2. complete tags such as defect tags to indicate that wood products have defects and that equipment and tools are not in working order. (1)
3. read labels on finishes and stains to find out how they work on particular types of wood and/or metal. (1)
4. use colour charts to select the colours that match the original finish of furniture items. (1)
5. locate data in lists, tables and schedules. For example, they scan lists of wood products to finish and to verify that quantities on the bill of materials match those delivered. They scan maintenance lists to see what scheduled maintenance is required. They locate mixing ratios on manufacturers' mixing charts for finishing product. (2)
6. enter data in lists, tables and schedules. For example, they complete quality assurance checklists for every batch of wood products finished. (2)
7. locate data in tracking and other administrative forms. For example, they read work orders and production schedules. They scan work orders and bills of material to verify they have the correct materials on hand. They scan specifications sheets for various wood products to

locate details about spray speeds, dry times, sanding times, stacking times and other sensitive requirements. (2)

8. complete tracking and other administrative forms. For example, they complete quality inspection reports to note that inspections were performed, and to highlight product and safety deficiencies. (2)
9. read and interpret Material Safety Data Sheets (MSDS) and technical data sheets to obtain information on storage, handling, usage and what to do in case of an emergency. For example, they locate data about paints, stains and other finishing products to learn about handling procedures, such as ventilation requirements and reactions with other agents. (3)
10. may locate data on drawings. For example, they may locate assembly steps in assembly drawings in situations where assembly is required during finishing. (3)

Document Use Summary

- Read signs, labels or lists.
- Read completed forms.
- Complete forms by marking check boxes, recording numerical information or entering words, phrases, sentences or texts of a paragraph or more.
- Read completed forms containing check boxes, numerical entries, phrases, addresses, sentences or texts of a paragraph or more.
- Read tables, schedules or other table-like text.
- Enter information on tables, schedules or other table-like text.
- Obtain specific information from graphs or charts.
- Read assembly drawings.

C. Writing

The typical writing tasks of Finishers are at complexity 1 to 2.

Examples of Writing Tasks

Finishers:

1. write reminders and notes. For example, finishers write notes about equipment and tool deficiencies on tags and product defects and shortages in quality inspection forms. They write comments on work orders to indicate if repairs were made to products. (1)
2. may write comments on forms and checklists. For example, they may enter details about a job on work orders to note mixing ratios and techniques applied to achieve a certain finishing look. (1)

3. write descriptions and explanations on forms. For example, finishers write descriptions of events and product or equipment defects in logbooks. They describe equipment defects and write explanations for delays such as problems with tools or products. (2)

D. Numeracy

The numerical calculation tasks of a Finisher involve:

- Measurement and Calculation Math at complexity levels 1-3
- Data Analysis at complexity level 1
- Numerical Estimation at complexity levels 1-2

Examples of Numerical Calculation Tasks

Finishers:

1. count materials to verify the quantity of what was delivered matches the work order or bill of material. (Measurement and Calculation Math), (1)
2. measure liquids such as paints, stains, etc. (Measurement and Calculation Math), (1)
3. take measurements using measuring tools such as rulers and tapes. For example, they use rulers to confirm dimensions of wood products. (Measurement and Calculation Math) (1)
4. take measurements from assembly and scale drawings to verify wood products match specifications. (Measurement and Calculation Math), (2)
5. measure and mix various volumes of finishing products such as paints, lacquer and thinner according to ratios or label instructions. They adjust the viscosity formula according to the particular spray gun they are using and the style of spraying. (Measurement and Calculation Math), (3)
6. may calculate and verify the dimensions of products using measurements from scale drawings. They calculate depths, heights and widths. For example, they calculate measurements of wood products to verify specifications are met. (Measurement and Calculation Math), (3)
7. take readings. For example, they monitor temperatures and humidity levels. They take readings from pressure gauges on equipment, such as air compressors used with spray guns and vacuum pumps used for pressing veneer, to ensure that the equipment is functioning normally. (Data analysis), (1)

Numerical Estimation

Finishers:

1. estimate times needed to perform tasks. For example, they estimate the time to complete a finishing job, considering time to apply finish and drying times. (1)
2. estimate amounts of paint or lacquer to mix for a specific job. (1)
3. estimate batch proportions for different sized jobs. (2)

Math Skills Summary

a. Mathematical Foundations Used

Number Concepts

Whole Numbers	Read and write product codes and material quantities, calculate quantities of materials, calculate hours, order quantities of materials.
Rational Numbers - Fractions	Read, write and calculate dimensions in fractions of inches, calculate distances in fractions of inches and times in fractions of hours.
Rational Numbers - Decimals	Measure dimensions using metres, centimetres and millimetres, calculate dimensions in fractions of inches and weight in fractions of pounds, measure out volumes of paint and stain in millilitres.
Rational Numbers - Percentages	Calculate the volume of thinner to mix with lacquer, based on a percentage of thinner to lacquer.
Convert between fractions, decimals and percentages	Read and write decimal equivalents for materials sized in fractions of inches and to simplify calculations.

Patterns and Relations

Equations and Formulae	Insert volumes to calculate amounts of finishing product to mix.
Use of Rate, Ratio and Proportion	Use ratio to mix finishes for a wood piece, use proportion to calculate how much colour to mix for different-sized batches of stain.

Shape and Spatial Sense

Measurement Conversions	Convert measurements from inches to metres, centimetres and millimetres, convert square inches to square centimetres and square metres, convert cubic inches to cubic feet and metres.
Geometry	Use geometry. For example, studying lines and shapes in sketches of wood products or calculating angles when fitting corner pieces at 90 degrees. Recognize common angles. Draw, sketch and form common forms and figures.

Statistics and Probability

Summary Calculations Calculate rates other than percentages. For example, calculating the rate of production in pieces per hour.
Use tables, schedules or other table-like text.
Use graphical presentations.

b. **How Calculations are Performed**

- In their heads.
- Using a pen and paper.
- Using a calculator.

c. **Measurement Instruments Used**

- Time. For example, using a watch, stopwatch or clock.
- Distance or dimension. For example, using a tape measure or callipers.
- Liquid volume. For example, using a measuring cup, measuring spoon or graduated cylinder.
- Temperature. For example, using a thermometer.
- Pressure. For example, using a gauge.
- Use the SI (metric) measurement system.
- Use the imperial measurement system.

E. **Oral Communication**

The typical oral communication tasks of a Finisher are at complexity 1 to 2.

Examples of Oral Communication Tasks

Finishers:

1. inform lead hand/supervisors about low supplies, component and product defects, and broken equipment and tools. (1)
2. communicate with co-workers and supervisors to clarify schedules and co-ordinate activities. For example, they communicate with co-workers to co-ordinate tasks, such as spraying and moving components. (2)
3. discuss safety concerns with supervisors. For example, they inform supervisors about hazards in the work area. (2)
4. discuss updates and activities that occurred on previous shifts. For example, they discuss completed tasks and outstanding work with other finishers. (2)
5. speak with supervisors. For example, they speak with supervisors to receive work assignments, discuss production problems and clarify finishing procedures. They speak with

supervisors about faulty equipment, tools, and delays that might affect production schedules. (2)

6. participate in safety meetings and training. (2)

Modes of Communication Used

- In person.
- Using a telephone.
- Using specialized communications signals. For example, they may use hand signals to communicate with finishers who are in close proximity to noisy equipment.

Environmental Factors Affecting Communication

Finishers have difficulty communicating with others when working in close proximity to noisy engines and power tools.

F. Thinking Skills

Problem Solving

The typical problem solving tasks of a Finisher are at complexity level 2.

Examples of Problem Solving Tasks

Finishers:

1. encounter defects in wood products, such as dents and blemishes. They either repair the item on site or reject it. (2)
2. encounter faulty finishing supplies. They speak with supervisors to inform them and to discuss solutions. (2)
3. find finishes do not to match specifications. They speak with other finishers and supervisors to determine adjustments to equipment and/or finishing products to achieve required results. (2)

Decision Making

The typical decision-making tasks of a Finisher are at complexity levels 1 to 2.

Examples of Decision-Making Tasks

Finishers:

1. decide not to use worn and faulty tools and equipment. (1)
2. decide whether to accept damaged products. They consider the extent of damage and their ability to fix it. (1)

3. decide what minor imperfections can be left on a wood product, considering product specifications and company standards.(2)
4. decide whether pieces are best finished assembled or partially assembled. (1)
5. decide whether the preparatory work done at earlier stages of production, such as sanding and gluing, is of sufficiently high quality for finishing, rejecting pieces that are substandard. (2)
6. may decide what techniques to use to create special effect finishes. (2)

Critical Thinking

The typical critical thinking tasks of a Finisher are at complexity levels 1 to 2.

Examples of Critical Thinking Tasks

Finishers:

1. assess the quality of finishes by assessing finishes against specifications. (1)
2. assess the safety of work sites and finishing practices. For example, they assess their work area for cleanliness, adequate ventilation, safety barriers, warning signs and availability of safety equipment and supplies. (2)

Job Task Planning and Organizing

Finishers plan and organize their job tasks at complexity level 2.

Description

Many of the tasks performed by finishers are repetitive; however, some variety may occur during the introduction of new wood products and when changes occur to the finishing process. Finishers follow work priorities provided by their supervisors and established by the deadlines associated with work orders or by production schedules. They receive directions from supervisors. However, they are responsible for ensuring materials are on hand when needed. They must take into account timing considerations, such as drying times for glues and finishes as part of their job task planning and organizing. They may work with partners, coordinating schedules as needed. (2)

Significant Use of Memory

Examples of Tasks Involving Memory

Finishers:

1. remember the sequence in which they are working on several items concurrently and at which stage in the finishing process they are with each product line.
2. remember how to modify various finishing techniques when working with different types of wood.

Finding Information

Finishers finding information tasks are at complexity levels 1 to 2.

Examples of Tasks Involving Finding Information

Finishers:

1. clarify the specifications for a particular job by asking their supervisor. (1)
2. refer to catalogues and speak with suppliers to find information about new products or products that may be suitable for a particular job. (2)
3. seek information about finishing techniques and sequencing from more experienced finishers. (2)

G. Working with Others

Finishers work with others at complexity level 2.

Description

Finishers in wood manufacturing may coordinate and integrate job tasks with teams of workers, which includes helpers and other finishers. (2)

Examples of working with others:

1. Participate in formal discussions about work processes or product improvement.
2. Have opportunities to make suggestions on improving work processes.
3. May monitor the work performance of others.
4. May inform other workers or demonstrate to them how tasks are performed.
5. May orient new employees.

H. Digital Technology

Examples of Digital Technology Tasks

Finishers:

1. may use databases. For example, they may access their organizations' databases to locate technical drawings, work orders, production schedules and job specifications.
2. use communications software. For example, they may use intranets and email applications to exchange information and electronic files with coworkers and supervisors.

3. may use computer or computer-controlled machinery or equipment. They require some knowledge of the computer software. For example, they may use computer-controlled spraying machines.

I. Continuous Learning

Description

Continuous learning is required for finishers in wood manufacturing due to the introduction of new products, ongoing regulatory changes, improvements to production systems and advancements in equipment and technology. They participate in training and workshops to enhance safety skills and stay current on regulatory changes. They learn about new products and finishing techniques by talking to suppliers, co-workers and supervisors and reading trade magazines, brochures and bulletins. They take courses and workshops provided by suppliers to learn about new products, equipment and finishing techniques. (2)

How Learning Occurs

Learning may be acquired:

- As part of regular work activity.
- From co-workers.
- Through training offered in the workplace.
- Through reading or other forms of self-study
 - at work.
 - on worker's own time.
 - using materials available through work.
 - using materials obtained on worker's own initiative.
- Through off-site training.

Project Background and Methodology

Project Background

The Wood Manufacturing Council (WMC) is the Human Resources Sector Council for the advanced wood products processing industry in Canada.

The WMC began operation in early 2002. The formation of the Council was the result of a partnership between ESDC, Industry Canada, the National Education Initiative for Furniture and Wood Products Industries (NEI) and other industry leaders.

An independent, non-profit corporation with a Board of Directors drawn from the industry, the WMC serves as a national forum, bringing together employers, workers, educators, governments and other interested parties in a strategic alliance to analyze, identify and address the sector's human resources challenges and to ensure workers have the right mix of skills to compete in the globalized markets that will dominate the 21st century.

In 2007, the WMC undertook the creation of a National Occupational Standard (NOS) for the occupation of Finisher. The objectives of this project were to work with job incumbents and other stakeholders to develop and nationally validate the finisher occupational profile, including a review of the scope of the occupation. In 2015/16, the WMC reviewed and updated the NOS to reflect the changes in the industry over the past eight years.

Occupational standards can be used as the basis for program development, such as the creation of training curriculum and/or competency-based assessment programs. Occupational standards also help inform individuals seeking information for career development or for other labour market information.

Methodology

National Project Advisory Committee

A National Project Advisory Committee (NPAC) comprised of industry experts led by the WMC was assembled to provide vital input and feedback. The NPAC served to provide valuable feedback into updating the standards and ensuring that industry trends and changes to the occupation were accurately reflected in the standards.

The NPAC members were selected to ensure representation from companies of various types and sizes, sub-sector associations and regional representation across Canada.

Subject Matter Experts

WMC staff and stakeholders identified Subject Matter Experts (SMEs) who were invited to participate in the development process of the National Occupational Standards through telephone interviews and site visits. SMEs were selected to ensure representation from companies of various types and sizes, sector associations and regional representation. Job incumbents and Supervisors/Lead hands were asked for their input in the selection process of the SMEs.

National Occupational Standards

NOS describe the skills and knowledge needed to perform competently in the workplace. To create the Finisher NOS, interviews were conducted on-site with Finishers and Supervisors/Lead hands to collect detailed information on the Finisher occupation. Where possible, tours of the manufacturing facility were also provided.

In preparation for the on-site interviews with industry representatives, the consultant reviewed all relevant documentation related to the occupation (e.g. standards developed by other countries, international and territorial / provincial occupational guidelines). This information was used to develop an in-depth understanding of the duties, challenges and key skills required in the occupation. This information was used to help guide the discussion during the interviews.

Validation Survey

After the initial update of the standard was complete, an online validation survey was conducted to validate the frequency, importance and difficulty of each sub-task and identify any sub-tasks that were missing.

Validation of Standards

This document was reviewed and approved by the members of the NPAC. Following the meeting, the consultant updated the standards with agreed-upon revisions and the document was submitted to the NPAC members for a final review.

About HRSG

Since 1989, Human Resource Systems Group (HRSG) has worked with a range of industries to define talent needs, address skill deficiencies and improve individual and organizational performance. Clients include global corporations and small or mid-sized organizations operating in sectors such as logistics, finance, accounting, technology, HSE, HR, manufacturing, sales and marketing and many more.

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WMC CFB

Wood Manufacturing Council
Conseil des fabricants de bois