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OCCUPATIONAL PERFORMANCE STANDARDS for Enhanced Assessment of Challengers

**Shipyard Labourer** 



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# OCCUPATIONAL PERFORMANCE STANDARDS FOR ENHANCED ASSESSMENT OF CHALLENGERS SHIPYARD LABOURER

Developed by SkilledTradesBC Province of British Columbia



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# Section 1 INTRODUCTION

**Shipyard Labourer** 



# **Foreword**

#### Who is this resource for?

This resource is for individuals interested in challenging the Shipyard Labourer certification and for the assessors of those challenging the certification.

It contains the occupational performance standards, defined by industry, which fully describe the knowledge and skills and attributes required for effective performance in the workplace. The units within the occupational performance standards are used as benchmarks for assessing the competence of challengers pursuing certification in an occupation.

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#### Introduction

# Acknowledgements

The Occupational Performance Standards was prepared with the advice and direction of an industry steering committee convened initially by the Resource Training Organization. Members include:

Industry Subject Matter Experts retained to assist in the development of Occupational Performance Standards content:

- Bill Utterson, Seaspan
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#### **Facilitators:**

- Victoria Pazukha, RTO
- Evelyn Taylor, RTO

SkilledTradesBC would like to acknowledge the dedication and hard work of all the industry representatives appointed to identify the training requirements of the Shipyard Labourer occupation.



# How to Use this Document

This resource is primarily for individuals who wish to challenge the certification and for their assessors. However, it is also used by other audiences; the table below describes how each section can be used by each intended audience.

Intended Audience	Use of Occupational Performance Standards
Challengers	<ul> <li>A means of identifying whether they already have the skills and knowledge required for a particular qualification (recognition of prior learning)</li> <li>A framework against which to measure their performance and development needs</li> <li>A reference point to identify 'how' they may be assessed</li> </ul>
	A reference point to identify now they may be assessed
Assessors	A framework for assessing the skills, knowledge, and performance of individuals challenging a certification in a particular occupation
Assessment Agency (ITO)	A framework for informing and guiding challengers through the assessment process
Employers	A frame of reference for how they expect job or work roles to be performed
	A way of measuring whether people are competent at their current job
	A way of assessing whether people have the skills and knowledge required for a new job
	<ul> <li>A professional framework within which to prepare a development plan that ensures competence is maintained and enhances</li> </ul>
Licensing/regulatory bodies	As a basis for the issuance of a certification or license to practice within a certain field

To assist the reader in getting started, the following pages answer some common questions about OPS.

- What are occupational performance standards?
- What is a unit of competency?
- How to read units of competency



# **Introduction to Occupational Performance Standards**

#### What are Occupational Performance Standards?

Occupational performance standards (OPS) are statements accepted by industry that describe effective performance in the workplace. They are used to inform those involved in the occupation of the requirements for certification through the challenge pathway. Occupational performance standards are comprised of a number of *units of competency* which, together, describe the full scope of the occupation.

#### What is a Unit of Competency?

A *unit of competency* is an aspect of work in a particular occupation or industry that is used as a benchmark for assessment of competence. Each unit defines the competencies required to perform a specific work activity or occupational skill, is expressed in terms of outcomes, and follows a standard format.

Each unit of competency describes:

- A specific work task or activity, or occupational skill and what it involves
- The skills and knowledge required to perform the task or activity
- The level of skill and knowledge required for competence
- The conditions under which the task or activity is conducted
- The evidence that may be gathered for an assessor to determine if a person is competent in performing the task or activity
- The type of assessment method that may be used to gather the evidence

#### How to Read Units of Competency

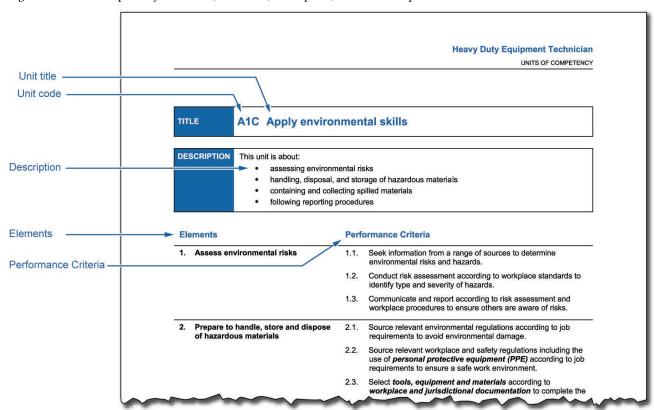
Units of competency follow a standard format and always contain the following components:

- Unit title
- Description
- Elements
- · Performance criteria
- Range of variables
- · Assessment guide

Unit Title	Each unit is unique and describes what the work activity or occupational skill is.
Description	Broadly communicates the scope of the unit and if necessary what is not in the unit. Builds off the title and expands to define the unit.
Elements	Elements are the basic building blocks of a unit. Elements describe in terms of outcomes the major functions of the unit. A work activity or occupational skill may have many tasks which, when clustered together, form an element.
Performance Criteria	Performance criteria are evaluative statements describing what is being assessed and to what standard. They describe the path to demonstrate that the elements have been achieved. Performance criteria are demonstrable, assessable, and measureable. Terms highlighted in <i>bold</i> and <i>italics</i> are further described in the Range of Variables



Figure 2. Unit of Competency - Unit title, unit code, description, elements and performance criteria

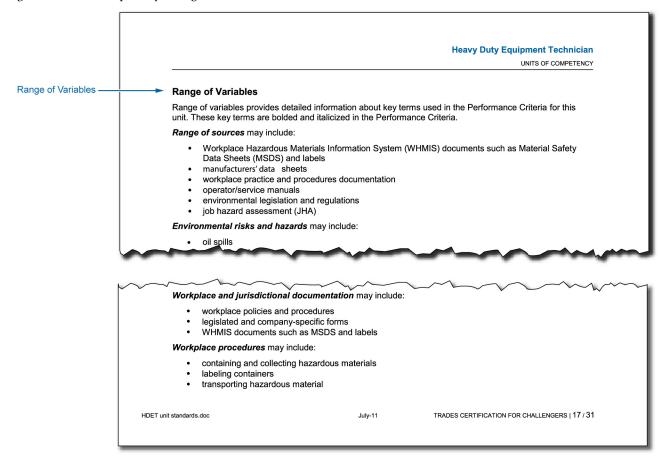




# Range of Variables

Range statements provide the meaning and application of key terms and phrases which are *bolded* in the performance criteria. The list is not exhaustive.

Figure 3. Unit of Competency - Range of variables





**Assessment Guide** Provides critical information about how the unit of competency may be assessed.

Knowledge to be assessed

Knowledge to be assessed identifies what a person needs to know to perform the work in an

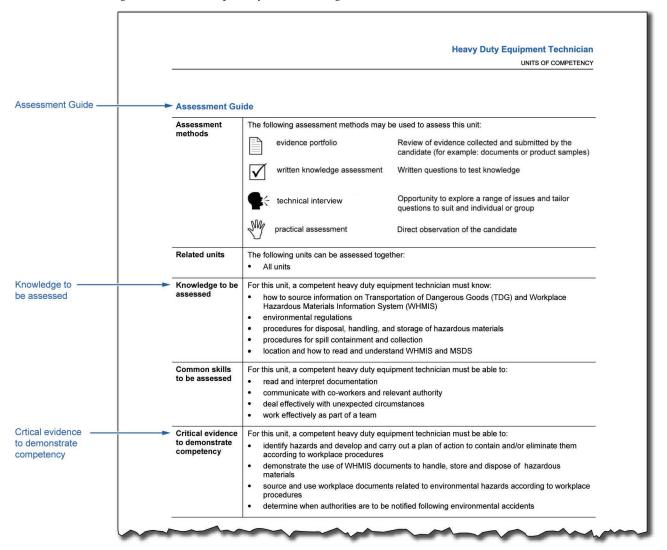
informed and effective manner, in direct relation to the scope of the unit.

Critical evidence to be assessed

Critical evidence to be assessed identifies the evidence that <u>must</u> be collected to demonstrate

the achievement of competency in the unit.

Figure 4. Unit of Competency - assessment guide section



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#### Introduction

#### What is Enhanced Assessment?

In the traditional system, an individual wishing to challenge a certification must first have a requisite number of hours working in the occupation and then must achieve a passing grade on a multiple-choice exam.

In occupations with enhanced assessment for challengers, individuals may challenge the certification when they have the requisite number of hours working in the occupation and sufficient experience to cover the full scope of the OPS. A variety of methods are used in the assessment process, providing a comprehensive view of the challenger's skills and knowledge.

# How is a Challenger Assessed?

A variety of assessments are used to measure the challenger's knowledge and skills (or competence) against industry standards. First, the challenger submits documentary evidence demonstrating their ability to meet the standards, known as a portfolio of evidence. The challenger then participates in the assessment process which involves a review of the evidence submitted, a short written assessment, a technical interview (an oral interview) and a practical assessment.

Trained assessors carry out the assessment and determine whether the challenger is "competent" or "not yet competent." Assessment activities are designed to provide evidence and allow for further development of skills, should the challenger be assessed as having "not yet achieved" one or more units of competency.

Refer to Figure 1 for forms of assessment which may be used for assessing competency in each unit.

Figure 1. Forms of Assessment

#### **Assessment Methods**

	evidence portfolio	The evidence portfolio is a collection of direct, indirect, or third party evidence (such as documents or product samples) submitted by the candidate for review. The evidence helps an assessor make an informed judgment about competence.
$\checkmark$	written knowledge assessment	The written knowledge assessment is presented in question format and tests the underpinning knowledge required to effectively perform the work, as described in the unit.
	technical interview	The technical interview identifies, through conversation and interview, the underpinning knowledge required to effectively perform the work, as described in the unit. It provides the assessor with an opportunity to explore a range of issues and tailor questions to suit the individual.
W.	practical assessment	The practical assessment methods identify, through direct observation of the candidate, the skills, knowledge and attributes required to effectively perform the work, as described in the unit. This may occur in a structured or simulated work activity.

#### What are the Steps in the Process?

- 1. Review the occupational performance standards.
- 2. Based on the occupational performance standards, decide if you have the skills needed to undertake an assessment.
- Complete the challenge application package.
- 4. Submit a hard copy of your application and evidence to the contact person indicated on the last page of the challenger information kit.
- Wait for acknowledgement of receipt of your application and notification of your assessment time(s).
- 6. Participate in the assessment:
  - ☐ If asked, complete a written assessment of your knowledge. ☐ Take part in the oral interview, referred to as the "technical interview." This will be conducted either in person or over the phone. ☐ Attend your practical assessment.

If you achieve all units of competency required for certification you will receive:

A SkilledTradesBC Occupational Certificate

If you do not achieve all units of competency required for certification, you will receive:

recommendations for gap training options from the Assessment Agency responsible for this program



# Section 2 OCCUPATIONAL OVERVIEW



# **Becoming a Certified Shipyard Labourer**

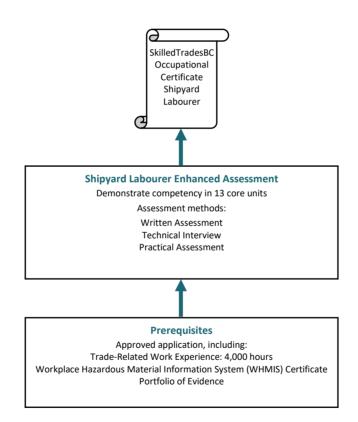
#### **Credentialing Rules**

An individual wishing to obtain their certification as a Shipyard Labourer through the challenge process must first demonstrate that they have 4,000 hours of work experience directly related to the occupation. Their skills, knowledge and ability will then be evaluated by a certified assessor using multiple forms of assessment.

This occupation consists of 13 core units of competency. To receive certification a challenger must demonstrate competence in all 13 core units.

# **Credentialing Model**

Figure 5 Credentialing Model - Challenger Pathway





# **Occupational Overview**

# Units of competency in this occupation

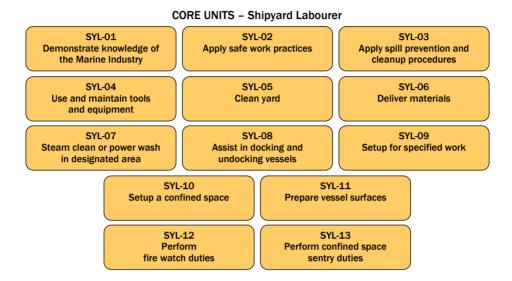
Core Units	Total number core units: 13	
	Units required for certification: ALL	

- SYL-01 Demonstrate knowledge of the Marine Industry
- SYL-02 Apply safe work practices
- SYL-03 Apply spill prevention and cleanup procedures
- SYL-04 Use and maintain tools and equipment
- SYL-05 Clean yard
- SYL-06 Deliver materials
- SYL-07 Steam clean or power wash in designated area
- SYL-08 Assist in docking and undocking vessels
- SYL-09 Setup for specified work
- SYL-10 Setup a confined space
- SYL-11 Prepare vessel surfaces
- SYL-12 Perform fire watch duties
- SYL-13 Perform confined space sentry duties



# **Certification Framework for Challengers**

This diagram illustrates the framework for issuing certification to challengers of the Shipyard Labourer.





# Section 3 UNITS OF COMPETENCY



#### TITLE

# 1 Demonstrate knowledge of the Marine industry

#### DESCRIPTION

#### This unit is about:

- Demonstrating and developing fundamental knowledge of the marine industry.
- Using appropriate terminology.
- Identifying shipyard and vessel features.
- Applying quality standards to daily work activities.

#### **Elements Performance Criteria** Access and develop marine industry Access information from a range of sources to obtain marine 11 knowledge industry business fundamentals. Maintain a *professional approach* and communicate effectively 1.2. with colleagues, supervisors, and others using appropriate marine industry terminology. Obtain information from a range of sources to identify the 1.3. regulations and procedures relevant to the marine industry. Obtain clearances for working in a 2.1. Obtain clearance in accordance with workplace policies and shipyard regulations. Use a variety of *communication tools* to establish and maintain Demonstrate fundamental skills for 3.1. contact with personnel in the shipyard in accordance with working in a shipyard regulations and workplace procedures. 3.2. Read and interpret *documentation* to identify locations relevant to the work activities. 3.3. Demonstrate knowledge of *shipyard features and layout* relevant to the work of a shipyard labour. 3.4. Demonstrate knowledge of the vessel features and layout relevant to the work of a shipyard labourer. Select and use appropriate *personal protective equipment (PPE)* 3.5. based on the job task requirements and in accordance with workplace procedures. Follow quality assurance practices Apply the principles of quality assurance in accordance with 3.6. workplaces policies and procedures. 3.7. Demonstrate an awareness of the quality standards applicable to the work to be performed.



#### Range of Variables

The information below provides additional detail about terms indicated in **bold and italics** in the Performance Criteria.

#### Professional approach may include:

- Teamwork
- Maintain a respectful workplace
- Communicate with others
- Follow timelines and schedules

#### Marine industry terminology may include:

- Port
- Starboard
- Fore
- Aft
- Bulkhead
- Deckhead
- Bilge
- Superstructure
- Void space

#### Regulations and procedures may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BOP)

#### Communication tools may include:

- Radios
- Hand signals
- Horns
- Whistles
- Hammers
- Shipyard telephones

### **Documentation** may include:

- Site map or yard layout
- Vessel layout
- Blueprints and drawings
- Work orders
- Permits
- Labels and tags
- Equipment manuals

# Shipyard features and layout may include:

- Muster stations
- First aid
- Tool crib
- Maintenance area
- Spill kit locations
- Access routes and traffic flow
- Tools and equipment locations
- Waste disposal areas
- Stores

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#### **Units of Competency**

#### Vessel features and layout may include:

- Access and exit routes
- Muster area
- Confined spaces
- Bilges
- Decks
- Deckheads/bulkheads
- Superstructure
- Tanks
- Underwater hull and appendages

### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Level 4 PPE

Scot air packs (SCBA)

#### Fall arrest

#### Quality standards may include:

- International Standards Organization (ISO)
- National Association of Corrosion Engineers (NACE)
- Society for Protective Coating (SSPC)

#### **Assessment Guide**

Assessment methods	The fol	The following assessment methods may be used to assess this unit:			
memous		evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)		
	$\checkmark$	written knowledge assessment	Written questions to test knowledge		
	•	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group		
	W	practical assessment	Direct observation of the candidate		
Related units	The fol	The following units can be assessed together:			
	• Units 1, 2, 3, 4				



Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Marine industry terminology - areas of vessel - parts of the vessel - general shipyard language  Work order processes General industry regulations and procedures Shipyard features and layout	
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Select appropriate communication devices Read and interpret workplace documents	
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Resolve routine problems encountered during completion of job tasks  Follow workplace timelines, policies, and procedures	
Critical evidence to demonstrate competency	For this unit, a Shipyard Labourer must be able to:  Communicate calmly and effectively with all personnel  Interpret site layout and vessel layout from available documentation  Demonstrate site knowledge  Identify areas of the shipyard and parts of the vessel  Use appropriate marine industry terminology	



TITLE	2	Apply safe work practices
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# DESCRIPTION

This unit is about:

Applying safe work practices to daily work activities.

Elements		Performance Criteria		
1. Work safely in a shipyard	1.1.	Identify and apply <i>workplace safety procedures</i> and <i>regulations</i> to daily work activities.		
	1.2.	Follow and apply <i>WHMIS (required-safety training)</i> rules and procedures		
	1.3.	Follow and apply <i>job related safety training</i> rules and procedures as required by work orders and workplace regulations		
	1.4.	Use/operate tools and equipment in a safe manner and according to <i>certification</i> requirements		
Organize and maintain a clean and safe work environment	1.5.	Organize, maintain, and cleanup work area according to workplace procedures and regulations to ensure a clean and safe work environment.		
	1.6.	Clean and store tools and equipment, reporting any damaged or deficient equipment in accordance with workplace procedures.		
	1.7.	Cleanup work area and dispose of waste materials in accordance with workplace procedures and environmental requirements.		
Identify and control hazards	1.8.	Monitor work area and equipment for safety risks and potential hazards. Report safety risks and apply <i>prevention measures</i> as required.		
	1.9.	Apply Workplace Hazardous Materials Information Systems (WHMIS) to identify and minimize the risk of workplace hazards.		
	1.10.	Identify <i>hazardous materials</i> and take appropriate action to maintain a safe work environment according to workplace procedures and regulations.		
Use personal protective equipment and safety equipment	1.11.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.		
	1.12.	Use <i>safety equipment</i> in accordance with manufacturer's specifications and safe workplace procedures.		
Follow emergency procedures	1.13.	Identify and <i>respond to emergency situations</i> in accordance with workplace procedures and regulations.		

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#### **Units of Competency**

#### Range of Variables

The information below provides additional detail about terms indicated in **bold and italics** in the Performance Criteria.

#### Workplace safety procedures may include:

- Walkways
- First aid and emergency procedures
- Emergency signals and alarms
- Mustering
- Evacuation

#### Regulations may include:

- Federal
- Provincial
- Municipal
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)

#### Required safety training includes:

• Workplace Hazardous Information System (WHMIS)

#### Job related safety training may include:

- Confined space
- Lockout procedures
- Fall protection
- Respirator usage
- Fire watch
- Rigging and lifting
- Man aloft
- Asbestos awareness
- Lead abatement

#### Certifications may include:

- WHMIS certificate (mandatory)
- Transportation of Dangerous Goods (TDG)
- First aid
- Forklift
- Manlift
- Zoom boom
- Boat license PCOC

# Prevention measures may include:

- Spill prevention
- Fire prevention
- Accident prevention
- Personal injury prevention
- Wildlife management

# Hazardous materials may include:

- Asbestos
- Lead

# Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

# Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

# Level 3 PPE

Respirators

# Level 4 PPE

- Scot air packs (SCBA)
- Fall arrest

#### Safety equipment may include:

- Rescue gear
- Rescue boat
- **Fall Protection**
- Communications devices
- Fire suppression devices
- Gas monitors
- Spill containment

#### Emergency situations may include:

- Man down
- Fire
- Spills
- Earthquake



#### **Assessment Guide**

Assessment methods	The following assessment methods may be used to assess this unit:				
methods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)			
	written knowledge assessment	Written questions to test knowledge			
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group			
	practical assessment	Direct observation of the candidate			
Related units	The following units can be assessed togeth  • Unit 1	ner:			
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Safe Work Practices (SWP)  Safety regulations  Emergency response procedures  Workplace Hazardous Materials Information System (WHMIS) regulations  Marine industry fundamentals  Regulations (Federal, Provincial, Municipal)				
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  • Demonstrate ability to select and use appropriate PPE  • Demonstrate knowledge of safety equipment  • Describe emergency situations and procedures				
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Resolve routine problems encountered during completion of job tasks  Follow workplace timelines, policies, and procedures				
Critical evidence to demonstrate competency	<ul> <li>Locate and interpret WHMIS information</li> <li>Adhere to safe work practices</li> <li>Follow emergency response procedure</li> <li>Identify appropriate PPE for a variety</li> <li>Describe and/or demonstrate the processor</li> </ul>	d methods used for a variety of situations ation res of situations			



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# Apply spill prevention and cleanup procedures

# DESCRIPTION

This unit is about:

3

- Applying spill prevention measures.
- Responding to spills.
- Disposing of spill materials.

#### **Elements**

#### Performance Criteria

1. Apply spill prevention measures	1.1.	Access information on <i>spill prevention regulations</i> and <i>spill prevention measures</i> to minimize the risk of spills in the shipyard and work areas.
	1.2.	Monitor shipyard and work areas for risk of <i>spills to water, spills to air,</i> and <i>spills to ground</i> and notify appropriate personnel of situations where spill prevention measures may be required.
	1.3.	Implement spill prevention measures according to spill prevention regulations, <i>best management practices (BMPs)</i> and workplace procedures.
Respond to spills	1.4.	Notify <i>appropriate personnel and authorities</i> if a spill occurs at your workplace in accordance with workplace procedures.
	1.5.	Select and use appropriate <i>personal protective equipment(PPE)</i> to ensure your personal safety, based on the type and severity of the spill.
	1.6.	Select and use appropriate <i>containment and cleanup equipment</i> based on the type and severity of the spill.
	1.7.	Clean up spilled substance and the spill area in accordance with workplace procedures.
Dispose of spill materials	1.8.	Label and tag spill materials in accordance with workplace procedures.
	1.9.	Store spill materials in accordance with workplace procedures and regulations.
	1.10.	Deliver spill materials to appropriate <i>disposal locations</i> following workplace procedures and regulations.



#### Range of Variables

The information below provides additional detail about terms indicated in **bold and italics** in the Performance Criteria.

#### Spill prevention regulations may include:

- Provincial
- Federal
- Municipal
- Site specific

#### Spill prevention measures may include:

- Containment booms
- Ventilations systems
- Secondary containment

#### Spills to water may include:

- Hydrocarbons
- Garbage
- Paint and thinners
- Wash water collection
- Chlorine
- Rust
- Sewage/grey water/black water

#### Spills to air may include:

- Dust
- Overspray
- Vapours and gases
- Smoke
- Chemicals
- Noise

#### Spills to ground may include:

- Hydrocarbons
- Garbage
- Paint and thinners
- Chlorine
- Rust
- Sewage/grey water/black water
- Chemicals
- Overspray
- Wash water collection

#### Best Management Practices (BMP) may include:

- Spill prevention and response
- · Hazardous materials management
- Waste management and recycling
- Housekeeping
- Wildlife management

#### Appropriate personnel and authorities may include:

- Provincial Emergency Program (PEP)
- Landlord
- Safety and environment officer
- Queens harbor master
- Charge hand

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#### **Units of Competency**

· Quarter master

# Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Level 4 PPE

Scot air packs (SCBA)

#### Containment and cleanup equipment may include:

- Brooms
- Mops
- Shovels
- Absorbent pads or granules
- Rubber mats (specialized)
- Hoarding
- Air monitoring equipment
- Plug and dike (specialized)
- Vacuums
- Pumps
- · Storage tanks
- HEPA filter equipment
- Boat
- Inshore booms

#### *Disposal locations* may include:

- General waste
- Recyclable waste
- Hazardous waste
- Treatment plant
- Waste management area
- External agencies



# **Assessment Guide**

Assessment methods	The following assessment methods may be	e used to assess this unit:	
	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)	
	written knowledge assessment	Written questions to test knowledge	
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group	
	practical assessment	Direct observation of the candidate	
Related units	The following units can be assessed together:  • Units 2 (1)		
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Environmental protection practices Transportation of Dangerous Goods (TDG) How to read and interpret a site map WHMIS regulations related to cleaning materials Spill response procedures Cleanup procedures Usaste disposal procedures and regulations Marine industry fundamentals Regulations (Federal, Provincial, Municipal) Standard Operating Procedures (SOP) Best Management Practices (BMP)		
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Read and interpret WHMIS procedures  Match PPE required to type of spills  Match tools and equipment required in response to type of spill  Respond to spills		
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Communicate calmly and effectively with all personnel in response to a spill  Resolve routine problems encountered during completion of job tasks  Follow workplace timelines, policies, and procedures		
Critical evidence to demonstrate competency	For this unit, a Shipyard Labourer must be able to:  Identify the location of spill kits Describe the spill response process Describe how to identify the type of spill and asses the risks Describe proper containment and cleanup materials used for spill response Identify appropriate PPE requirements for spill prevention and cleanup Describe the proper procedures for disposing of spill materials		



TITLE

#### Use and maintain tools and equipment 4

# DESCRIPTION

#### This unit is about:

Using and maintaining the tools and equipment required for performing various work activities.

Elements	Perfo	Performance Criteria	
Identify types and uses of tools and equipment	1.1.	Identify the use and capability of tools and equipment including hand tools, power tools, stationary equipment, monitoring equipment and communication devices.	
	1.2.	Obtain information from a range of sources to identify the <i>regulations and procedures</i> relevant to using and maintaining tools and equipment.	
	1.3.	Access training on new tools and equipment in accordance with workplace procedures.	
	1.4.	Access operating instructions (manuals) for tools and equipment.	
Use tools and equipment	1.5.	Set up and inspect tools and equipment to ensure their safe operation before use.	
	1.6.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.	
	1.7.	Operate tools and equipment in accordance with specifications and workplace procedures.	
Clean and maintain tools and equipment	1.8.	Clean tools and equipment using appropriate <i>cleaning and maintenance materials.</i>	
	1.9.	Store tools and equipment in designated areas, reporting any damaged or deficient equipment according to workplace policies and procedures.	
	1.10.	Perform <i>routine maintenance</i> on tools and equipment according to workplace policies and procedures.	



#### Range of Variables

The information below provides additional detail about terms indicated in **bold and italics** in the Performance Criteria.

#### Hand tools may include:

- Scrapers
- Hammers
- Brooms
- Shovels
- Mops
- Buckets and wheelbarrows
- Brushes (wire, paint)
- Sandpaper
- Spark catchers
- Flashlights

# Power tools (pneumatic, electric, gas, diesel) may include:

- Needle guns
- Growlers
- · Chain saws
- Grinders (air, electric, die)
- Impact guns
- Pneumatic tools
- Submersible pumps
- Vacuums
- HEPA vacuums and tool attachments
- Jack hammers
- Drills

#### Stationary equipment may include:

- Power washers
- Steam cleaners
- Slurry vacs
- Wheel abraders
- Vec loaders
- Air compressors
- Ventilation fans
- Heaters
- Sandblast machines
- Sponge blast machines
- Paint pumps (conventional, airless)
- UHP equipment

#### Monitoring equipment may include:

- DFT gauges
- Ambient temperature gauges
- Surface profile gauges
- Chloride ion kits
- Wet film thickness gauges
- Black light

# SKILLED TRADES BC

#### **Units of Competency**

#### Communication devices may include:

- Radios (VHF, UHF)
- Horns
- Hand signals
- Hammers

#### Regulations and procedures may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BOP)

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Cleaning and maintenance materials may include:

- Detergents
- Water / steam
- Air
- Thinners
- Rags

#### Routine maintenance may include:

- Visual checks
- Remove, repair, replace worn attachments/components
- Lubricants
- Battery charging



#### **Assessment Guide**

Assessment methods	The following a	assessment methods may l	be used to assess this unit:	
	evidence portfolio		Review of evidence collected and submitted by the candidate (for example: documents or product samples)	
	writter	n knowledge assessment	Written questions to test knowledge	
	techni techni	cal interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group	
	w practic	cal assessment	Direct observation of the candidate	
Related units	The following units can be assessed together:  • Units 2 (1, 3)			
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Operating instructions found in equipment manuals Receive training and orientation on specific tools Refueling procedures Cable management and hose management Tripping hazards Cleaning and storage procedures for tools and equipment (tool crib) WHMIS procedures related to cleaning materials – training and certification required Waste disposal regulations Marine industry fundamentals Safety regulations (Federal, Provincial, Municipal) for use of tools and equipment Standard Operating Procedures (SOP)			
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Read and interpret tools and equipment manuals  Select and use PPE appropriate for the work activity  Match tools and equipment to job task requirements			
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely Communicate effectively with colleagues, supervisors, and others on the job site Resolve routine problems encountered during completion of job tasks Follow workplace timelines, policies, and procedures for using and maintaining equipment			
Critical evidence to demonstrate competency	For this unit, a Shipyard Labourer must be able to:  Describe safety regulations related to the use and maintenance of tools and equipment  Describe where to find tools and equipment manuals and related SOPs  Select and use appropriate PPE related to the tools and equipment being used  Describe maintenance procedures related to the tools and equipment being used  Provide proof of on-the-job experience (OJE) selecting and using tools and equipment			



rd	Clean yard	5 (	TITLE
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#### DESCRIPTION

#### This unit is about:

- Cleaning areas of the shipyard.
- Collecting, sorting, separating, storing and disposing of materials and products.

Elements	Performance Criteria		
1. Determine cleaning requirements	1.1.	Assess area to be cleaned to determine scope of work and the job task requirements.	
	1.2.	Select <i>cleanup equipment</i> appropriate for the scope of the work to be performed and ensure its safe operation before use.	
	1.3.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.	
Clean the area	1.4.	Sort and separate <i>materials</i> in accordance with workplace regulations.	
	1.5.	Collect any tools and equipment found in the cleanup area and return them to their designated location in accordance with workplace procedures.	
	1.6.	Operate cleanup equipment in accordance with workplace procedures and environmental regulations.	
Finish up	1.7.	Dispose of waste products in accordance with workplace procedures and environmental regulations.	
	1.8.	Clean and store cleanup equipment in designated location in accordance with workplace procedures.	

# Range of Variables

The information below provides additional detail about terms indicated in *bold and italics* in the Performance Criteria.

#### Cleanup equipment may include:

- Power washers
- Vacuums
- Totes / drums / bins
- Power broom
- Brooms
- Shovels
- Snow removal tools
- Dollys
- Forklifts/pallet jacks
- Vehicles
- Sweeper
- **Bobcat**
- Scraper
- Duster (dust pan)

# SKILLED TRADES BC

### **Units of Competency**

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### *Materials* may include:

- Hazardous
- Recyclable
- Disposable
- General waste
- Wood products
- Cardboard
- Metals



Assessment methods	The following assessment methods may be used to assess this unit:				
memods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)			
	written knowledge assessment	Written questions to test knowledge			
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group			
	practical assessment	Direct observation of the candidate			
Related units	The following units can be assessed together:  • Units 2 (1, 3, 4)				
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Shipyard layout  Equipment use, limitations and operating procedures  WHMIS procedures  Cleanup procedures  Material labeling and tagging policies and procedures  Waste disposal regulations and procedures  Marine industry fundamentals  Safety and environmental regulations (Federal, Provincial, Municipal)  Safe Work Practices (SWP)  Standard Operating Procedures (SOP)  Best Management Practices (BMP)				
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Read and interpret work orders and other workplace documents  Identify and use appropriate PPE for the task  Operate equipment commonly required for yard cleanup activities				
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely Communicate effectively with colleagues, supervisors, and others on the job site Resolve routine problems encountered during completion of job tasks Follow workplace timelines, policies, and procedures				
Critical evidence to demonstrate competency	<ul> <li>Describe the appropriate PPE require</li> <li>Describe the proper use and operation</li> <li>Apply WHMIS rules and procedures w</li> </ul>	a variety of yard cleaning tasks cilities associated with yard cleaning activities d for performing various yard cleaning tasks n of cleanup equipment			



TITLE	6	Deliver materials

#### DESCRIPTION

#### This unit is about:

Delivering materials required for work activities on a vessel or in the shipyard.

Elements		Performance Criteria		
Setup and prepare to deliver materials	1.1.	Read and interpret work orders.		
	1.2.	Obtain information from a range of sources to identify the <i>regulations and procedures</i> relevant to the job task.		
	1.3.	Assess materials to be moved to determine if any additional equipment or safety precautions are required.		
	1.4.	Select appropriate <i>equipment</i> for the work to be performed and ensure its safe operation before use.		
	1.5.	Complete <i>documentation</i> prior to operating equipment, if required.		
	1.6.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.		
Deliver materials	1.7.	Load the materials specified in work order.		
	1.8.	Secure the load in accordance with regulations and workplace procedures.		
	1.9.	Operate equipment in accordance with manufacturers' instructions/specifications and following safe workplace procedures.		
	1.10.	Unload materials to the location specified in the work order.		
	1.11.	Complete the paperwork in accordance with workplace procedures.		
	1.12.	Clean and store equipment, reporting any damages or deficiencies in accordance with workplace procedures.		

### Range of Variables

The information below provides additional detail about terms indicated in *bold and italics* in the Performance Criteria.

#### Regulations and procedures may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)
- WHMIS

# SKILLED TRADES<sup>BC</sup>

#### **Units of Competency**

#### Equipment may include:

- Fork lift (certification required)
- Yard Truck (certification required)
- Golf cart
- Jitney and trailer
- Hand dolly

#### **Documentation** may include:

- Pre-trip inspection cards
- Mileage / use logs
- Incident reports
- Point of Work Safety Assessment (POWSA)
- Mobile Point of Work Safety Assessment (MPOWSA)

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)



Assessment methods	The following assessment methods may be used to assess this unit:					
methous		evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)			
	$\checkmark$	written knowledge assessment	Written questions to test knowledge			
	•	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group			
		practical assessment	Direct observation of the candidate			
Related units	The fol	lowing units can be assessed togeth	ner:			
	• Un	nit 2 (3, 1, 4)				
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  • Use and capability of equipment					
	<ul> <li>Rigging and lifting equipment and procedures</li> <li>WHMIS regulations and procedures related to handling materials</li> </ul>					
	Understanding of TDG regulations and procedures					
	<ul> <li>Marine industry fundamentals</li> <li>Safety and environmental regulations (Federal, Provincial, Municipal)</li> </ul>					
	Safe Work Practices (SWP)					
	• Sta	andard Operating Procedures (SOP)	)			
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:					
ussesseu	<ul> <li>Read and interpret work orders</li> <li>Use PPE required for the task</li> </ul>					
	ring materials					
	Forklift operation (training/certification required)					
Common skills to be assessed						
be assessed	<ul> <li>Work safely</li> <li>Communicate effectively with colleagues, supervisors, and others on the job site</li> </ul>					
	Resolve routine problems encountered during completion of job tasks					
	Follow workplace timelines, policies, and procedures for delivering materials					
Critical evidence	For this unit, a Shipyard Labourer must be able to:					
to demonstrate competency	Interpret and execute work orders for handling and delivering materials      Describe standard executing precedures (SORs) related to be adding and delivering materials.					
	<ul> <li>Describe standard operating procedures (SOPs) related to handling and delivering materials</li> <li>Identify the correct equipment used for delivering various types of materials</li> </ul>					
	Demonstrate awareness of Transportation of Dangerous Goods (TDG) regulations					
	Describe safe rigging and lifting techniques for handling and delivering materials					



TITLE

Steam clean or power wash in designated area 7

#### DESCRIPTION

This unit is about:

Steam cleaning and power washing in a designated work area.

Elements	Performance Criteria		
1. Verify work to be completed	1.1.	Review work order and related information on the <i>designated</i> area.	
	1.2.	Obtain information from a range of sources to identify the <i>regulations and procedures</i> relevant to the job task.	
	1.3.	Assess the unit to be cleaned to determine the most effective way to complete the task.	
Setup work area	1.4.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.	
	1.5.	Select appropriate <i>tools and equipment</i> for the work to be performed and ensure their safe operation before use.	
	1.6.	Secure the equipment in accordance with manufacturer's specifications and workplace procedures.	
	1.7.	Install <i>environmental protection</i> in accordance with work place procedures and environmental regulations.	
	1.8.	Install <i>temporary services</i> and protect <i>vessel components</i> based on the job task requirements and in accordance with workplace procedures.	
Steam clean and power wash	1.9.	Steam clean the unit according to the specifications defined in the job task requirements.	
	1.10.	Power wash the unit according to the specifications defined in the job task requirements.	
Cleanup work area	1.11.	Clean and store tools and equipment, reporting any damaged or deficient equipment in accordance with workplace procedures.	
	1.12.	Cleanup work area and dispose of fluids and materials in accordance with workplace procedures and environmental regulations.	

#### Range of Variables

The information below provides additional detail about terms indicated in **bold and italics** in the Performance Criteria.

#### Designated area may include:

- Booth
- Temporary designated area

#### Regulations and procedures may include:



- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Level 4 PPE

Scot air packs (SCBA)

#### Tools and equipment may include:

- Steam cleaner
- Power washer
- Manlift
- Scissor lift
- Forklift
- Staging

#### Environmental protection may include:

- Hoarding
- Containment boom
- · Absorbent pads
- Rags

#### Temporary services may include:

- Environmental protection
- Hoarding
- Lockout
- Ventilation equipment
- Lighting
- Power
- Water
- Steam

#### Vessel components may include:

- Piping
- Valves
- Electrical equipment
- Hatches



Assessment methods	The following assessment methods may be used to assess this unit:				
methods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)			
	written knowledge assessment	Written questions to test knowledge			
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group			
	practical assessment	Direct observation of the candidate			
Related units	The following units can be assessed toget  Unit 2 (3, 4, 1)	her:			
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Society for Protective Coating (SSPC) specifications  Tools and equipment required for the task  On-site equipment operating procedures  Cleanup procedures  Waste disposal regulations  Regulations (Federal, Provincial, Municipal)  Safe Work Practices (SWP)  Standard Operating Procedures (SOP)  Best Management Practices (BMP)				
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Use PPE required for the task  Use steam cleaning and power washing tools and equipment  Match tools and materials to task				
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely Communicate effectively with colleagues, supervisors and others on the job site Resolve routine problems encountered during completion of job tasks Follow workplace timelines, policies and procedures				
Critical evidence to demonstrate competency	<ul> <li>Follow workplace timelines, policies and procedures</li> <li>For this unit, a Shipyard Labourer must be able to:         <ul> <li>Describe safety and environmental regulations related to steam cleaning and power washing</li> <li>Describe the PPE requirements for steam cleaning and power washing</li> <li>Identify tools and equipment associated with steam cleaning and power washing</li> <li>Describe types of vessel components that require protection</li> <li>Describe steam clean and pressure wash process including clean up and disposal</li> <li>Describe tagging procedures</li> <li>Provide proof of on-the-job experience (OJE) using a steam cleaner and power washer</li> </ul> </li> </ul>				



TITLE	8	Assist in docking and undocking vessels

#### DESCRIPTION

#### This unit is about:

Assisting in docking and undocking a vessel.

Elements		Performance Criteria		
1. Set up for incoming or outgoing vessel	1.1.	Attend pre-meeting to obtain job task requirements including information on the <i>type of vessel</i> and <i>docking procedures</i> .		
	1.2.	Obtain information from a range of sources to identify the regulations and procedures relevant to docking and undocking a vessel.		
	1.3.	Select and use <i>personal protective equipment (PPE)</i> based on the job task requirements and workplace procedures.		
	1.4.	Assemble <i>tools and equipment</i> needed for docking and mobilize equipment.		
Clear dock area	1.5.	Clear the area for docking a vessel based on the job task requirements and in accordance with workplace procedures.		
	1.6.	Clear the area for undocking the vessel when the vessel is ready to disembark.		
	1.7.	Clean dock area and store equipment and materials reporting any damages or deficiencies.		

#### Range of Variables

The information below provides additional detail about terms indicated in *bold and italics* in the Performance Criteria.

#### *Type of vessel* may include:

- Cruise ships
- Fish boats
- Coast guard vessels
- Barges
- Combat/non-combat/submarine
- Ferries
- Tankers
- Freighters
- Harbour craft
- Tug boats
- Pleasure crafts
- Drill platforms
- Rocket launcher platforms

#### **Docking procedures** may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)

#### Personal protective equipment (PPE) may include:

Fall harness

Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

# *Tools and equipment* may include:

- Ropes
- Cables
- Heaving lines
- Blocks
- Cradles/blocks
- Wrench
- Pike pole (peavey)

Assessment Guid					
Assessment methods	The following assessment methods may be used to assess this unit:				
methods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)			
	written knowledge assessment	Written questions to test knowledge			
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group			
	practical assessment	Direct observation of the candidate			
Related units	The following units can be assessed together:  • Unit 2 (1, 4, 3)				
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Lines and knots Heaving line characteristics and handing techniques Marine industry fundamentals Safety regulations (Federal, Provincial, Municipal) Safe Work Practices (SWP) Standard Operating Procedures (SOP) Best Management Practices (BMP)				
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Use PPE required for the task  Use equipment and materials required for docking and undocking a vessel				
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely  Communicate effectively with colleagues, supervisors, and others on the job site  Resolve routine problems encountered during completion of job tasks  Follow workplace timelines, policies, and procedures for docking and undocking a vessel				



#### Critical evidence to demonstrate competency

For this unit, a Shipyard Labourer must be able to:

- Describe tools and equipment used for docking and undocking a vessel
- Describe the "bites" associated with docking and undocking a vessel
- Describe communication methods used during docking and undocking a vessel
- Demonstrate the proper use of a lifejacket
- Provide proof of on-the-job experience (OJE) docking and undocking vessels



9 Setup for specified work on a vessel	TITLE	9	Setup for specified work on a vessel
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#### DESCRIPTION

This unit is about:

Setting up a work area on or around a vessel.

This unit is not about:

• Setting up a confined space.

Elements		Performance Criteria		
1. Verify work to be completed	1.1.	Review work orders for the <i>job task requirements</i> .		
	1.2.	Obtain information from a range of sources to identify the <i>regulations and procedures</i> relevant to setting up the work area.		
	1.3.	Ensure that all <i>permits</i> indicated in the work order are in place.		
	1.4.	Assess <i>specified work area</i> and <i>conditions</i> to determine if any additional equipment or safety precautions are required.		
Setup work area	1.5.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.		
	1.6.	Select <i>tools and equipment</i> required for setup in accordance with the job task requirements.		
	1.7.	Install <i>temporary services</i> based on the job task requirements and in accordance with workplace procedures.		
	1.8.	Set up hoarding to minimize environmental impact.		
	1.9.	Set up containment systems as required according to job task requirements.		
	1.10.	Protect components to prevent any damage from occurring during surface preparation.		

#### Range of Variables

The information below provides additional detail about terms indicated in *bold and italics* in the Performance Criteria.

#### Job task requirements may include:

- Pre-work meeting
- Specifications set by survey results
- Area of specified work
- Temporary services requirements
- Environmental protection requirements
- Safety requirements

#### Regulations and procedures may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)



#### Permits may include:

- Lockout
- Confined space
- Hot work

#### Specified work area may include:

- Bilges
- Decks
- Deckheads or bulkheads
- Superstructure
- Underwater hull and appendages
- Confined spaces
  - o Bilges
  - Tanks
  - o Sea bays
  - Coffer dams
  - o Fish holds
  - Chain lockers

#### Conditions may include:

- Weather
- Slips, trips and falls
- Lighting
- Biohazards
- Confined space

### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Level 4 PPE

• Scot air packs (SCBA)

#### Tools and equipment may include:

- Lockout locks
- Environmental protection
- Hoses
- Ventilation
- Lights
- Flash lights
- Radios (UHF, VHF)
- Gas detectors [SP]
- Sound signaling devices

# SKILLED TRADES<sup>BC</sup>

### **Units of Competency**

### *Temporary services* may include:

- Hoarding
- Lockout
- Ventilation equipment
- Power
- Water
- Steam
- Temporary lighting (intrinsically safe/explosion proof)



Assessment	The following assessment methods may be used to assess this unit:						
methods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)					
	written knowledge assessment	Written questions to test knowledge					
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group					
	practical assessment	Direct observation of the candidate					
Related units	The following units can be assessed together	er:					
	• Unit 2 (3, 1, 4)						
Knowledge to be	For this unit, a competent Shipyard Labour	er must know:					
assessed	Tools and equipment required to setup						
	<ul> <li>Confined space regulations, procedures and permits</li> <li>Hole watch duties, responsibilities and procedures</li> <li>Confined space risk factors (low, moderate, high) and match equipment to the application</li> <li>Marine industry fundamentals</li> <li>Safety and environmental regulations (Federal, Provincial, Municipal)</li> <li>Safe Work Practices (SWP)</li> </ul>						
	• Standard Operating Procedures (SOP)						
Skills to be	For this unit, a competent Shipyard Labour	er must be able to:					
assessed	Read and interpret workplace docume	nts and permits					
	Select and use PPE appropriate for the						
	<ul> <li>Use tools and equipment required for</li> <li>Match tools and materials to the task</li> </ul>	setting up work areas					
	Training is required for:						
	<ul> <li>Confined space</li> <li>Hole watch</li> </ul>						
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:						
DC usscoseu	Work safely     Communicate effectively with college	use supervisors and others on the job site					
	<ul> <li>Communicate effectively with colleagues, supervisors, and others on the job site</li> <li>Resolve routine problems encountered during completion of job tasks</li> </ul>						
	_	nd procedures for the setup of work areas					
Critical evidence	For this unit, a Shipyard Labourer must be able to:						
to demonstrate	Describe safety and environmental reg	gulations related to the setup of work areas					
competency	Describe the risk levels (low, medium and high) associated with working in confined spaces and the inherent risks of each						
		ls, equipment and materials used to prepare work areas					
	<ul> <li>Describe hoarding and setup requirer</li> <li>Select appropriate PPE for a variety of</li> </ul>	nents based on the work area being setup					
		work activities d equipment are and why they are important					
		e (OJE) in setting up work areas, including: bilges, decks,					



10 Setup a confined space						
This unit is about:						
Setting up a confined space work area.						
It is not about:						
<ul> <li>Performing work in a confined space.</li> </ul>						
Confined space sentry duties.						

Elements		Performance Criteria		
1. Verify work to be completed	1.1.	Review work order for the <i>job task requirements</i> and special instructions for <i>confined spaces</i> .		
	1.2.	Obtain information from a range of sources to identify the <i>regulations and procedures</i> relevant to setting up the work area.		
	1.3.	Ensure that all <i>permits</i> indicated in the work order are in place.		
	1.4.	Assess <i>confined space work area</i> to determine if any additional equipment or safety precautions are required.		
Set up the work area	1.5.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.		
	1.6.	Select <i>tools and equipment</i> required for setup in accordance with the job task requirements.		
	1.7.	Perform lockout procedures in accordance with safety regulations and procedures.		
	1.8.	Install <i>temporary services</i> and protect <i>vessel components</i> based on the job task requirements and in accordance with workplace procedures.		
	1.9.	Prepare confined space and verify <i>safe entry</i> in accordance with safety regulations and confined space procedures.		

### Range of Variables

The information below provides additional detail about key terms that appear in **bold and italics** in the Performance Criteria.

#### *Job task requirements* may include:

- Pre-work meeting
- Specifications set by survey results
- Area of specified work
- Temporary services
- Environmental protection
- Safety requirements



#### Regulations and procedures may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)

#### Permits may include:

- Lockout
- Confined space

#### Confined space work area may include:

- Bilges
- Tanks
- Sea bays
- Coffer dams
- Fish holds
- Chain lockers
- **Boilers**
- Air receivers

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Level 4 PPE

Scot air packs (SCBA)

#### Tools and equipment may include:

- Lockout locks
- Radios (UHF, VHF)
- Flash lights
- Gas detector
- Sound signaling devices
- Entry/exit system
- Incident board/card system
- Hand tools
- Power tools
- Stationary equipment

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# SKILLED TRADES<sup>BC</sup>

### **Units of Competency**

#### Temporary services may include:

- Hoarding
- Lockout
- Ventilation equipment
- Power
- Water
- Steam
- Temporary lighting (intrinsically safe/explosion proof)

#### Vessel components may include:

- Piping
- Valves
- Electrical equipment
- Hatches

#### Safe entry may include:

- Permit in place
- Lockout complete
- Temporary lighting is installed
- Gas free confined space
- Confined space sentry (hole watch) in place

Assessment methods	The following assessment methods may be used to assess this unit:							
monous	evidence portfolio  written knowledge assessment		Review of evidence collected and submitted by the candidate (for example: documents or product samples)					
			Written questions to test knowledge					
	•	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group					
	<b>M</b>	practical assessment	Direct observation of the candidate					
Related units	The following units can be assessed together:  • Unit 2 (1, 4, 3)							
Knowledge to be	For thi	For this unit, a competent Shipyard Labourer must know:						
assessed	<ul> <li>Confined space regulations, procedures and permits</li> <li>Hole watch duties, responsibilities and procedures</li> <li>Confined space risk factors (low, moderate, high) and match equipment to the application</li> <li>Tools and equipment required to setup a confined space for safe entry</li> <li>Marine industry fundamentals</li> <li>Safety and environmental regulations (Federal, Provincial, Municipal)</li> <li>Safe Work Practices (SWP)</li> <li>Standard Operating Procedures (SOP)</li> </ul>							



Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Read and interpret work orders and other workplace documents  Use PPE required for the setup of confined spaces  Use tools and equipment required for the setup of confined spaces  Match tools and materials to the task  Training is required for:  Confined space  Hole watch  Air monitoring and gas testing
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely Communicate effectively with colleagues, supervisors, and others on the job site Resolve routine problems encountered during completion of job tasks Follow workplace timelines, policies, and procedures for the setup and preparation of a confined space
Critical evidence to demonstrate competency	<ul> <li>For this unit, a Shipyard Labourer must be able to:</li> <li>Interpret and execute work orders to setup a confined space</li> <li>Interpret information on a confined space permit</li> <li>Describe the risk levels (low, medium and high) associated with working in confined spaces and the inherent risks of each</li> <li>Explain what intrinsically safe tools and equipment are and why they are important</li> <li>Select and use appropriate PPE for a variety of work activities</li> <li>Describe monitoring or testing oxygen levels in a confined space</li> <li>Describe and/or demonstrate the proper use of a respirator</li> <li>Identify communication methods and devices used for confined space setup</li> <li>Describe safe entry and exit procedures</li> <li>Demonstrate knowledge of ship structure (marine industry fundamentals)</li> <li>Describe the difference between "safe for entry" and "safe for hot work"</li> <li>Provide proof of on-the-job experience (OJE) in setting up confined spaces for safe entry</li> <li>Follow and apply confined space training rules and procedures</li> </ul>



TITLE	11	Prepare vessel surfaces
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### DESCRIPTION

#### This unit is about:

Preparing surfaces on a vessel for specified work.

Elements	Perfo	ormance Criteria
1. Verify work to be completed	1.1.	Review work order for <i>job task requirements</i> .
	1.2.	Obtain information from a range of sources to identify the <i>regulations and procedures</i> relevant to the job task.
	1.3.	Ensure that all <i>permits</i> indicated in the work order are in place.
Assemble tools and access the work area	1.4.	Select and use appropriate <i>personal protective equipment (PPE)</i> based on the job task requirements and in accordance with workplace procedures.
	1.5.	Select <i>tools and equipment</i> appropriate for the work to be performed and ensure its safe operation before use.
	1.6.	Verify that the <i>specified work area</i> is <i>setup</i> in accordance with job task requirements and protect components if required.
	1.7.	Verify <i>safe entry</i> in accordance with safety regulations and procedures as required.
	1.8.	Verify space has been locked out as required.
Prepare surface for specified work	1.9.	Assess the surface to determine if any additional equipment or safety precautions are required.
	1.10.	<i>Clean the surface area</i> according to the specifications defined in the job task requirements.
	1.11.	<b>Remove water</b> according to the specifications defined in the job task requirements.
	1.12.	<i>Prepare the surface area</i> according to the specifications defined in the job task requirements.
Cleanup work area	1.13.	Clean, maintain, and store tools and equipment, reporting any damaged or deficient equipment according to workplace procedures.
	1.14.	<i>Cleanup</i> work area and dispose of waste products in accordance with workplace procedures and environmental regulations.

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#### **Units of Competency**

#### Range of Variables

The information below provides additional detail about terms indicated in **bold and italics** in the Performance Criteria.

#### Job task requirements may include:

- Pre-work meeting
- Specifications set by work order

#### Regulations and procedures may include:

- Safety regulations (federal, provincial, municipal)
- Environmental regulations (federal, provincial, municipal)
- Safe Work Practices (SWP)
- Standard Operating Procedures (SOP)
- Best Management Practices (BMP)

#### Permits may include:

- Lockout
- Confined space
- Fire watch

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Level 4 PPE

- Scot air packs (SCBA)
- Fall arrest

#### Tools and equipment may include:

- Flash lights
- Sound signaling device
- Skips or dunnage boxes
- Hand tools
- Power tools
- Pneumatic tools
- Stationary equipment
- Steam cleaners
- Power washers
- Sand blasting gear
- Sponge blasting gear
- Ultra-high pressure washer (UHP)

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#### **Units of Competency**

#### Specified work area may include:

- Bilges
- Decks
- Deckheads or bulkheads
- Superstructure
- Confined Spaces
- Underwater hull and appendages

#### Setup may include:

- Lockout
- Environmental protection
- Temporary services
- Deckplates removed

#### Safe entry may include:

- Lockout complete
- Temporary lighting in place
- Confined space permit in place
- Confined space sentry in place confirmed gas free

#### *Clean the surface area* may include:

- Remove barnacles
- Remove debris and residue
- Remove rust
- Remove paint
- Degrease
- Power wash
- Steam clean

#### Remove water may include:

- Vacuum
- Slurry vacuum
- Pump

#### Prepare the surface may include:

- Hand tooling
- Power tooling
- Steam cleaning
- Power washing
- Sandblasting
- Sponge blasting
- Ultra-high pressure washing (UHP)

#### Cleanup may include:

- Sorting
- Separation
- Disposal



Assessment methods	The following assessment methods may be	used to assess this unit:		
methods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)		
	written knowledge assessment	Written questions to test knowledge		
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group		
	practical assessment	Direct observation of the candidate		
Related units	The following units can be assessed togethe  Unit 2 (1, 3, 4)	r:		
Knowledge to be assessed	For this unit, a competent Shipyard Laboure Confined space regulations, procedure Lockout regulations, procedures and poly WHMIS procedures related to cleaning Tools and equipment required for the total Surface preparation standards (survey) Society for Protective Coating (SPCS) space Cleanup procedures Waste disposal regulations and procedure Marine industry fundamentals Safety and environmental regulations ( Safe Work Practices (SWP) Standard Operating Procedures (SOP)	s and permits ermits materials ask pecifications		
Skills to be assessed	<ul> <li>For this unit, a competent Shipyard Laboure</li> <li>Read and interpret work orders and othe</li> <li>Select and use PPE appropriate for the</li> <li>Select and use tools and equipment received</li> <li>Match tools and equipment to job task</li> </ul>	ner workplace documents work activity Juired for surface preparation		
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely  Communicate effectively with colleagues, supervisors, and others on the job site  Resolve routine problems encountered during completion of job tasks  Follow workplace timelines, policies, and procedures for surface preparation			
Critical evidence to demonstrate competency		ulations related to surface preparation urface preparation on a variety of ship surfaces ation of tools and equipment used in surface preparation derations specified vessel surface preparation erent surface preparation activities standards		



TITLE	12	Perform fire watch duties

#### DESCRIPTION

#### This unit is about:

Performing fire watch duties to ensure the performance of hot work is done in a safe manner.

Elements		ormance Criteria
1. Set up work area	1.1.	Read and interpret the work order and <i>hot work permit information</i> and obtain other job task requirements from a <i>range of sources</i> .
	1.2.	Complete <i>required documentation</i> and ensure hot work permits are in place in accordance with workplace procedures.
	1.3.	Assist in setting up <i>fire watch equipment</i> .
	1.4.	Select and use <i>personal protective equipment (PPE)</i> necessary to ensure your personal safety for performing fire watch duties.
	1.5.	Ensure work area is kept free of fire hazards.
	1.6.	Establish communication strategy and <i>devices</i> to be used.
Stand watch	1.7.	Monitor the work area for fire hazards, sparks or signs of fire.
	1.8.	Apply emergency response procedures in the event of a fire in accordance with workplace procedures.
	1.9.	Operate <i>communication devices</i> and communicate with personnel in accordance with site procedures and regulations.
	1.10.	Operate <i>emergency notification devices</i> in accordance with emergency procedures.
	1.11.	Notify <i>appropriate personnel and authorities</i> of emergencies in accordance with workplace procedures.

#### Range of Variables

The information below provides additional detail about terms indicated in *bold and italics* in the Performance Criteria.

#### Hot work permit information may include:

- Date
- Time
- Special considerations
- Special PPE
- Type of extinguisher
- Confined space requirements

#### Range of sources may include:

- Work order
- Site safety department
- MSC office

# **Required documentation** may include:

Point of Work Safety Assessment (POWSA) cards

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#### **Units of Competency**

• Hot work permit

#### Fire watch equipment may include:

- Fire cloth
- White board
- Spark catcher
- Fire extinguisher
  - $\circ$   $CO_2$
  - Water
- Fire hose

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

• Respirators

#### Communication devices may include:

- Radio
- Hand Signals
- Hammer

#### Emergency notification devices may include:

- Air horn
- Whistle

#### Appropriate personnel and authorities may include:

- Safety representative
- Charge hand

Assessment methods	The following assessment methods may be used to assess this unit:					
memoas	evidence portfolio		Review of evidence collected and submitted by the candidate (for example: documents or product samples)			
	written knowledge assessment		Written questions to test knowledge			
	•	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group			
	W.	practical assessment	Direct observation of the candidate			
Related units	The following units can be assessed together:					



	• Unit 2 (4, 1, 3)
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Fire watch regulations, procedures and responsibilities (fire cessation) – training required Hot work permit requirements, policies and procedures WHMIS regulations and procedures related to combustible materials Combustible nature of materials Communication and emergency notification devices and operating procedures Fire extinguisher operating procedures Emergency response procedures Marine industry fundamentals Safety regulations (Federal, Provincial, Municipal) Safe Work Practices (SWP) Standard Operating Procedures (SOP)
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Read and interpret hot work permits  Select and use PPE required for fire watch duties  Select appropriate communication devices required for fire watch  Identify the primary purpose of fire watch
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely  Communicate effectively with colleagues, supervisors, and others on the job site  Resolve routine problems encountered during completion of job tasks  Follow workplace timelines, policies, and procedures to set up and perform fire watch duties
Critical evidence to demonstrate competency	For this unit, a Shipyard Labourer must be able to:  Read and interpret hot work permits (SWP, SOP)  Follow and apply fire watch training rules and procedures  Describe the primary function of a fire watch  Select and use appropriate tools, equipment and materials required for fire watch  Describe the emergency response procedures in the event of a fire



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	TITLE	13	Perform confined space sentry duties	

#### DESCRIPTION

#### This unit is about:

Performing confined space sentry duties (hole watch).

Elements		Performance Criteria
1.	Set up work area	1.1. Read and interpret the work order and confined space permit for details about the <i>confined space</i> to be monitored.
		1.2. Complete <i>required documentation</i> and ensure confined space permit is in place in accordance with safe <i>workplace procedures</i> .
		1.3. Assist in setting up <i>tools and equipment</i> appropriate for the scope of work to be performed and ensure their safe operation before use.
		1.4. Establish <i>communication strategy and devices</i> to be used throughout the confined space sentry duty.
		1.5. Select and use appropriate <i>personal protective equipment</i> ( <i>PPE</i> ) to ensure your personal safety for performing confined space sentry duties.
2.	Stand watch	2.1. <b>Monitor work area</b> to ensure conditions remain safe for all workers in the area.
		2.2. Operate communication devices to ensure the continued safety of workers.
		2.3. Operate emergency notification devices in accordance with workplace procedures.
		2.4. Notify <i>appropriate personnel and authorities</i> of an emergency in accordance with workplace procedures.
		2.5. Keep entry and exit hazard free.

#### Range of Variables

The information below provides additional detail about terms indicated in *bold and italics* in the Performance Criteria.

### **Confined space** may include:

- Tanks
- Restricted bilge areas
- Sea bays
- Coffer dams
- Fish holds
- Chain lockers



#### Required documentation may include:

- POWSA cards (Point of Work Safety Assessment)
- Safe entry permit
- Entry/exit log
- Confined space permit displaying:
  - o Date
  - o Time
  - o Special considerations
  - o Special PPE
  - Lockout requirements

#### Workplace procedures may include:

- Confined space regulations
- Confined space SWPs

#### Tools and equipment may include:

- Radio (VHF, UHF)
- Flash lights
- · Gas detector
- Sound signaling device

#### Communication strategy and devices may include:

- Radio (VHF, UHF)
- Sound signaling devices
- Hand signals
- Entry/exit system
- Incident board/card system

#### Personal protective equipment (PPE) may include:

#### Level 1 PPE

- Hard hat
- Steel-toe boots
- · Safety glasses
- Gloves
- Ear protection
- Life jackets

#### Level 2 PPE

- Dust mask
- Goggles
- Appropriate hand wear
- Ty-vex (coveralls)

#### Level 3 PPE

Respirators

#### Monitor work area may include:

- Maintaining communication with personnel in confined space
- Managing and tracking personnel entering/exiting confined space
- Monitoring air quality

#### Appropriate personnel and authorities may include:

- · Charge hand
- Supervisor
- · Safety officer



Assessment methods	The following assessment methods may be	The following assessment methods may be used to assess this unit:		
methods	evidence portfolio	Review of evidence collected and submitted by the candidate (for example: documents or product samples)		
	written knowledge assessment	Written questions to test knowledge		
	technical interview	Opportunity to explore a range of issues and tailor questions to suit and individual or group		
	practical assessment	Direct observation of the candidate		
Related units	The following units can be assessed together:  • Unit 2 (1, 4, 3)			
Knowledge to be assessed	For this unit, a competent Shipyard Labourer must know:  Hole watch regulations and procedures – confined space training required Confined space permit requirements, policies and procedures – confined space training required Communication strategies and devices, including operating procedures and regulations Emergency response procedures Marine industry fundamentals Safety regulations (Federal, Provincial, Municipal) Safe Work Practices (SWP) Standard Operating Procedures (SOP)			
Skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Read and interpret confined space permits  Use PPE required for hole watch duties  Use tools and equipment required for hole watch duties  Operate communication devices			
Common skills to be assessed	For this unit, a competent Shipyard Labourer must be able to:  Work safely Communicate effectively with colleagues, supervisors, and others on the job site Resolve routine problems encountered during completion of job tasks Follow workplace timelines, policies, and procedures to setup and perform confined space sentry duties			
Critical evidence to demonstrate competency	<ul> <li>For this unit, a Shipyard Labourer must be able to:</li> <li>Read and interpret confined space permits and monitoring equipment</li> <li>Select and use various communication methods and devices</li> <li>Describe emergency response procedures</li> <li>Use PPE and tools required for hole watch duties</li> <li>Describe access and exit procedures</li> <li>Describe monitoring and testing procedures</li> <li>Follow and apply confined space training rules and procedures</li> </ul>			