



More skills ... more opportunities

Professional Skills Record

Welder

NOC 7265

ACKNOWLEDGEMENTS

Materials from the *Trade Essentials Manuals* may be reproduced for individual educational purposes only. No part of this material may be reproduced or used for any commercial purpose or sold by any person other than the owner.

This project is the result of the collaboration of the following dedicated adult educational consultants in Prince Edward Island:

Ruth Rogerson
Karen Chandler
Gaelyne MacAulay
Karen Dempsey.

Our sincere thanks to the *Trade Essentials Advisory Committee* for their suggestions, input and ongoing support.

We also recognize the valuable contribution made by the apprentices and challengers who volunteered to participate in this research project. It is our sincere hope that they have gained as much from their participation as we have. We also hope that their contributions will assist many more tradespeople to reach their goals.

We are grateful to the assessors, tutors and classroom instructors who patiently piloted our materials and who gave back invaluable insights and advice.

All Trade Essentials materials have been validated by teams of tradespeople who hold Certificates of Qualification, Red Seal Endorsement. We gratefully acknowledge the crucial contribution made by the following team members:

Glenn Ellsworth (Automotive Service Technician)
Cecil Banks (Automotive Service Technician)
Scott Bagnall (Automotive Service Technician)
Darcy MacKenzie (Automotive Service Technician)
Elmer MacDougall (Cabinet Maker)
Graham Hicken (Cabinet Maker)
Gerard Lund (Carpenter)
Leo MacDonald (Carpenter)
Ryan Rogerson (Carpenter)
Darren Richards (Construction Electrician)
Mark Seaman (Construction Electrician)
Ken Zakem (Cook)
Rod Lukeman (Cook)

Barry Strongman (Industrial Electrician)
Gregg Francis (Industrial Electrician)
Jake Shaw (Machinist)
Sue LeFort (Machinist)
John Hebert (Metal Fabricator / Welder)
Joe Johnson (Metal Fabricator)
Jim Arsenault (Metal Fabricator)
Kent Mitchell (Oil Burner Mechanic / Steamfitter-Pipefitter)
Rod Arsenault (Oil Burner Mechanic / Refrigeration & Air Conditioning
Mechanic)
Kent Mitchell (Plumber)
Scott Carter (Plumber)
Charlie Redmond (Refrigeration & Air Conditioning Mechanic)
Scott Lacey (Steamfitter-Pipefitter)
Vincent Jenkins (Welder)

Thanks to the Apprenticeship Section of the PEI Department of Innovation and Advanced Learning and to the government of Canada's Pan-Canadian Innovation Initiative for financial assistance and for continuing support to trades and apprentices in Canada.

TABLE OF CONTENTS

1	WHY DO I NEED THIS HANDBOOK?	1
2	BUT WE HAVE LOGBOOKS	1
3	WHAT IS A NATIONAL OCCUPATIONAL ANALYSIS (NOA)?	2
4	IF THERE IS AN NOA, WHY DO WE NEED A PROFESSIONAL SKILLS RECORD (PSR)?.....	3
5	AM I EXPECTED TO TEACH ALL THE SKILLS IN A PSR?	4
6	ARE THERE ANY TIPS ON HOW TO BE A GOOD MENTOR TO MY APPRENTICE?	5
6.1	Tips	6
7	SO HOW DO I USE A PROFESSIONAL SKILLS RECORD (PSR) WITH MY APPRENTICE?	7

This handbook is designed to help skilled trades Journeypersons manage the skills and learning of their Apprentices who are using a Professional Skills Record.

1 Why Do I Need this Handbook?

Eighty percent of all learning in a trade happens on the job. This means the apprentice has the responsibility to learn and you, as their journeyperson, have the responsibility to mentor and teach.

Signing off for the learning an apprentice has completed under your supervision is a huge responsibility. With all the skills needed in a trade, it is important that both you and the apprentice have a tool to help you record and sign off on that learning.

2 But We Have Logbooks

When a tradesperson registers as an apprentice in most provinces or territories in Canada, they are given a Logbook.

A Logbook:

- is issued by the apprenticeship authority within a jurisdiction
- is created from the National Occupational Analysis (NOA) in a trade
- is a list of all the general skill areas (**Blocks and Tasks**) in a trade
- records an apprentice's progress in the general skill areas of a trade
- is signed off by a journeyperson to guarantee that an apprentice is performing these tasks to Industry Standard.

A Logbook lists the Blocks and Tasks from the NOA **but** the Interprovincial Red Seal exam and trades training courses in colleges and trade schools use **all** the information in the NOA. This includes the Blocks, Tasks, **Sub-tasks and the Knowledge and Abilities** listed in the NOA.

Each apprentice needs a tool that lists **all** the skills and learning they need in their trade career. Then, if they have one employer or several employers over their entire term of apprenticeship, both the apprentice and the journeyperson know what learning has been completed:

- the journeyperson knows what skills they are signing off to verify what has been taught; and
- the apprentice knows what they need to learn to be successful in their Red Seal exam.

3 What is a National Occupational Analysis (NOA)?

The Canadian Council of Directors of Apprenticeship, which is made up of managers and directors of apprenticeship from every province and territory in Canada, guides a Human Resources and Skills Development Canada (HRSDC) sponsored program to develop NOAs.

Under this partnership, joint planning committees made up of tradespeople who have a Certificate of Qualification, Red Seal endorsement from each province and territory in Canada, come together in Ottawa every four to five years to review and revise the NOA in all of the 45 skilled trades.

Each NOA is accepted as the national standard in that trade. The NOA is then used to:

- identify and group tasks performed by skilled workers in each trade in every province and territory in Canada
- group these tasks by Blocks, Tasks, Sub-tasks, Knowledge, Skills and Abilities (also called "**competencies**") required in a trade
- give information on the breakdown of questions from all sections of the NOA in the Interprovincial Red Seal exam
- create all the questions for the Red Seal exam
- create curriculum for trade school programs and Block Release/Period/Level* programs in a trade.

* *The in-school portion of apprenticeship has several names across Canada. In some provinces and territories it is called Block Release, in others it is called Period Training or Level.*

4 If there is an NOA, why do we need a Professional Skills Record (PSR)?

The NOA is designed to be used for creating curriculum and for developing test questions for the Red Seal exam.

The PSR is designed to be used by an apprentice and a journeyperson in the workplace. The PSR provides a fair and objective assessment tool to record the apprentice's learning and skills.

The PSR has been developed **with** apprentices during a three-year research project on PEI called Trade Essentials. Recommendations made by the apprentices who tested the tool have been built into the document.

The PSR was then validated by teams of tradespeople who have a Certification of Qualification, Red Seal endorsement in each trade who came together and discussed what an apprentice is expected to learn from their journeyperson in the workplace.

The apprentice has the main responsibility for completing the PSR. It is designed as a self-assessment tool so the apprentice can keep track of his/her skills and learning and make plans to fill any technical skills training gaps.

The PSR takes information from the NOA and:

- lays it out in a chart
- lists the percentage and number of questions for the Red Seal exam from each task on every page
- takes the skills from the NOA and describes them in terms of what a tradesperson does on the job, for example:
 - In the **NOA**, the skill says – “knowledge of blueprints and drawings”
 - In the **PSR**, the skill says – “read and interpret blueprints and drawings”
- has a rating chart so the apprentice can judge his/her level of learning and have it all recorded for you to review
- provides you, the journeyperson, with a tool to discuss details of an apprentice's skill areas that are great and areas that may need to improve
- helps the apprentice make a plan so he/she can improve skills
- helps you know what skills you still have to teach the apprentice.

5 Am I expected to teach all the skills in a PSR?

No. A PSR contains **all** the skills and learning a tradesperson has to learn over all their years as an apprentice. You, as their journey person, can help make this tool useful by completing the sign-off on the learning and skill you know they have. Some of the ways you can assess the skills your apprentice has are:

- **OBSERVATION** – you watch them use their knowledge, skills and abilities or competencies to perform a task or sub-task

For example, you ask them to select a tool for a specific job, then watch them use that tool to do a task.

- **INTERVIEW** – you have a discussion with your apprentice to find out if they can demonstrate an understanding of what they are doing

For example, you ask them to tell you about any safety precautions that have to be followed before they start a certain task.

- **DOCUMENTATION** – an apprentice may have a document that provides proof of skills they already have. You can use the PSR to sign-off on tasks the document covers. The document or certificate could be from:

- another employer,
- a trade school or college,
- an industry training course,
- another province or territory,
- or even from another country.

For example, you need all your employees to be trained in WHMIS. A new apprentice you just hired shows you a WHMIS certificate he/she have from a job they were working on a couple of months ago in northern Canada.

Apprentices will also tell you, through their self-assessments, the best way they think they can prove the skills they have. This can help guide you, as their mentor, to choose a way to assess your apprentice that works best for both of you.

6 Are there any tips on how to be a good mentor to my apprentice?

Mentoring has always been the foundation of apprenticeship. In trades, a mentor is a person who has a great deal of learning and skills from experience in a trade who helps a less experienced person by guiding, teaching and sharing their skills and learning.

Along with having learning and experience in their trade, the most successful mentors are:

- **Patient** - and understand the apprentice needs time to learn and practise their skills to become as good as their mentor.
- **Organized** - and set a schedule to meet regularly with their apprentice to track their learning and make plans for new learning.
- **Positive** - and supportive in helping an apprentice tackle new learning and encourage them to keep working on skills they find difficult to learn.
- **Respectful** - so that other employees in the workplace accept the apprentice and are willing to help and encourage the new apprentice.

As a mentor, you are a role model for your apprentice. To create a successful relationship between you and your apprentice you can:

- **Lead by example.** If you set safety and quality assurance as firsts on your list each and every day, so will your apprentice.
- **Build trust.** If you want your apprentice to trust and respect you, you can show trust in them by assigning them some responsibility as soon as you see an opportunity.
- **Communicate.** Communication is a two-way street. Be willing to listen as you give directions and be available to your apprentice when they need you. Always treat every question seriously. If your apprentice has the confidence to ask, it is important to give a respectful answer.
- **Be reliable.** Your apprentices need to know they can depend on you when they run into a problem. Create supportive relationships with other employees so if you are away from the workplace, your apprentice feels confident in approaching another employee for help.

6.1 Tips

- **Give clear instructions.** When assigning a task and giving direction, give step-by-step instructions, then ask your apprentice to repeat the instructions. This gives them the opportunity to ask questions on things that might not be clear to them.

Checklist for giving instructions:

- ✓ **explain the task**
 - ✓ **show them how it is done**
 - ✓ **answer their questions**
 - ✓ **oversee the work**
 - ✓ **give them time to practise**
 - ✓ **give feedback on how they are doing**
 - ✓ **take time to show them how to do the task better**
- **Give feedback.** Giving feedback often helps your apprentice to have a clear understanding of what you want them to do and how you want them to perform. The PSR helps you to give feedback because each knowledge, skills and ability (competency) statement is clear.

There are three types of feedback that work best in the workplace:

Positive feedback means you want your apprentice to continue what they are doing. People are motivated by hearing they are doing a good job. They usually do more and try harder.

Constructive feedback means you want your apprentice to change how or what they are doing. Offering support and guidance to your apprentice to make the changes you need usually brings the best results.

Direct feedback focuses on what you have seen, not on secondhand information. Focus on how the apprentice is doing and what you have planned for them to do.

- **Give your apprentice experience in many skills.** Sometimes apprentices end up performing the same set of skills over and over again because they are really good at them. They are required to learn the scope of the entire trade during their apprenticeship. If you have the capability, it would be helpful to take advantage of the opportunity to cover a wide range of skills by moving your apprentice from one set of skills to another on a regular basis.
- **Track and Document learning.** Every employer cannot offer an apprentice training in every skill in a trade because each workplace is unique. Some workplaces are specialists in one area of a trade.

As a journeyperson, you have the responsibility to sign off on the skills your apprentice learns under your guidance in your workplace. A PSR can help you identify those skills.

Setting a regular review date once every month or two, and keeping that time just for you and your apprentice, can increase their scope in their trade and increase their knowledge which will be an asset in the workplace.

This meeting time gives you the best opportunity to:

- monitor your apprentice's progress,
- make a plan with him/her to learn more skills, and
- find out if there are any problem areas where he/she may need help.

Regular meeting dates also help your apprentice to be prepared and able to track his/her learning. This can be done by using a Professional Skills Record (PSR).

7 So how do I use a Professional Skills Record (PSR) with my apprentice?

The PSR is laid out in a chart. Each skill your apprentice has to learn has an action word to tell them how they are supposed to perform a skill. It gives you a level you can use to judge whether they are performing that skill properly. **Industry standard** is the term used to describe when your apprentice can complete a task to the level and quality of performance required by industry without assistance or supervision.

When you see the words "demonstrate an understanding of," you may find it easier to ask them questions about the skill to make sure they know what they are doing.

**PROFESSIONAL SKILLS RECORD (PSR)
JOURNEYPERSON'S HANDBOOK**

Your apprentice has the responsibility to complete the "Knowledge, Skills and Abilities – Competencies" section.

When you are sure your apprentice has proven to you they have completed the learning they say they have, you verify it by initialing the sub-task.

Trade Name
IP Exam – 125 Questions
BLOCK A
5% - 6 questions on the IP
<u>Learning Category</u>
OCCUPATIONAL SKILLS
Task 1 – A
3 questions on the IP exam
<u>Learning Outcome</u>
Uses and maintains tools and equipment
Journeyman Sign-off
Task 1
Complete <input style="float: right; width: 30px; height: 15px; border: 1px solid black;" type="checkbox"/>
Incomplete <input style="float: right; width: 30px; height: 15px; border: 1px solid black;" type="checkbox"/>



Knowledge, Skills and Abilities - Competencies

SUB-TASK 1.01	1.01.01 Identify boring tools	1.01.02 Identify hand cutting tools
<u>Learning Objective</u> Uses hand tools	Rating ___ Complete Proof ___ Use ___ <input style="width: 20px; height: 15px; border: 1px solid black;" type="checkbox"/>	Rating ___ Complete Proof ___ Use ___ <input style="width: 20px; height: 15px; border: 1px solid black;" type="checkbox"/>
JP Sign-off ___		



When your apprentice proves to you that he/she has finished enough sub-tasks to have a good grasp of the task, you verify that learning by initialing "complete".



If your apprentice has not completed enough sub-tasks or you do not agree with the ratings they have given themselves, initial "incomplete".

<p>Task I</p> <p>Learning Needs</p> <p>Sub-Tasks</p> <p><u>Learning Objectives</u> to be completed</p> <p>Comments</p>



If you have any sub-tasks you want your apprentice to work on, list them in this section and add any comments you have.

You might

- set a timeframe when you want these skills to improve
- suggest some manuals they could read
- suggest they go to their local college or training school for technical skills help
- suggest they go for help to an adult education facility if they need any academic help, for example, help in math or help in using the code book.

You have now created a learning plan for your apprentice using a PSR.

Your apprentice can then begin working on these sub-tasks or follow up on suggestions you have made to help them be successful in their trade career. By using a PSR, you now have a documented, written performance review that you can use in later sessions with your apprentice.

The PSR can help you give a fair assessment of your apprentice's ability to perform each technical skill task. If you are assigned an apprentice from another employer, province, territory or country, you can use the PSR to review his/her skills so you do not waste your valuable time teaching them skills they already know and can do.

PROFESSIONAL SKILLS RECORD

A tool for recording and recognizing skills and learning of trade apprentices

Welder

NOC 7265

A project of:
The Province of PEI
and
Human Resources and Skills Development Canada



Human Resources and
Skills Development Canada

Ressources humaines et
Développement des compétences Canada

The **Professional Skills Record (PSR)** is a technical skills assessment tool designed to be used in the workplace by an apprentice and a journeyperson. The PSR has taken the content from the National Occupational Analysis (NOA) and arranged it so apprentices can use it to measure their progress in their trade from the time they sign up for apprenticeship through to Red Seal certification.

This PSR has been through a validation process with a team of trade professionals with Certificate of Qualifications, Red Seal endorsement, who reached agreement on the wording of each and every knowledge and skill (*competency*) to make it measurable.

The PSR was originally designed as a tool to help apprentices move through a Recognition for Skills and Learning (RSL) process so they can receive recognition for skills they have, no matter where they learned them. Through completion of a PSR, they can avoid relearning what they already know and can do by entering the apprenticeship Block/Period/Level in-school process at a higher level. For example, move directly into Block/Period/Level three rather than relearning Block/Period/Level One and Two.

Feedback from testing and validation of the PSR has opened many new possibilities for using this tool. The PSR can be used:

- as a tool for valid assessment in a Recognition for Skills and Learning (RSL) process
- as a tool that new Canadians and people planning to emigrate can use, to assess their skills against Canadian standards, receive recognition for skills they already have and, if necessary, make a plan to fill any technical skill gaps they may still have
- in the secondary-school system and in post-secondary trades training so students can know the full scope of the trade they are entering
- as a tool to guide journeypersons while they are mentoring apprentices so they are aware of all the skills apprentices need to learn to be fully competent in their professional trade designation.

INFORMATION SITES:

PROJECT

SITE

CANADIAN

RED SEAL SITE

www.tradeessentials.ca

www.red-seal.ca

TABLE OF CONTENTS

	PAGE
PROFESSIONAL SKILLS RECORD (PSR) Development	i
Where Technical Trade Learning Happens	ii
Document record	iii
Prior Learning Assessment and Recognition (PLAR) Recognition for Skills and Learning (RSL)	iv
Assessment Standards.....	v
Professional Skills Record (PSR) Components	viii
How to Self-assess Skills and Learning Using a PSR	xi
How to Record Skills and Learning in a PSR	xii
Professionals Skills Record (PSR) Assessment Chart	1
APPENDIX A – NOA GLOSSARY	
APPENDIX B – REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES	

Welder Trade Information

Name: _____ Full Address: _____
Email Address: _____
Phone: Home _____ Work _____ Cell _____

Technical Skills Journeyman Assessor/s

Name: _____ Business Name: _____
Phone: Home: _____ Work: _____ Cell: _____ Business Address: _____
Email Address: _____

Name: _____ Business Name: _____
Phone: Home: _____ Work: _____ Cell: _____ Business Address: _____
Email Address: _____

Name: _____ Business Name: _____
Phone: Home: _____ Work: _____ Cell: _____ Business Address: _____
Email Address: _____

Apprenticeship Program Start Date _____ Completion Date: _____ Red Seal Certification Date _____

Apprenticeship Training Officer:

Signature: _____

Provincial/Territorial Apprenticeship Manager:

Signature: _____

Province/Territory: _____

Professional Skills Record (PSR) Development

Professional Skills Record (PSR)

The Professional Skills Record (PSR) is designed as a tool of assessment. Learning and skills are validated through the PSR when they are signed-off by a journeyperson in the trade in which the apprenticeship is being served.

All skills and learning assessed in this PSR are measured against the standards listed in the National Occupational Analysis (NOA). The NOA is recognized by the Canadian Council of Directors of Apprenticeship (CCDA) as the national standard for the occupation of Welder.

PSR Welder Document Validation

To conduct a reliable assessment through a formal recognition process, skills and learning statements must be measurable. To assess skills and learning using a PSR in the trades, the Knowledge, Skills and Abilities listed in the NOA have been made into measurable competency statements by adding an “action word.” This action word describes the skill and learning level which must be reached by an apprentice on the job in order to meet industry standards. Each PSR has been validated by a trades team, all of whom hold a Certificate of Qualification with Red Seal endorsement, and who reached consensus on each action word used in every knowledge, skill and ability statement.

Where Technical Trade Learning Happens

This Professional Skills Record (PSR) records and recognizes directly related trade technical skills and knowledge learned through:

- **Formal Learning** – structured learning that occurs in formal education and training institutions (for example, high school, trades school, apprenticeship programs, registered union and industry training programs)
- **Non-formal Learning** – learning that happens through planned, structured training or education outside the formal education system (for example, workshops, seminars, community school)
- **Informal/Experiential Learning** – learning that results from experience, occurs outside a structured environment, and is controlled by the learner (for examples, experience on-the-job, volunteer work, self-study and life experiences). Informal or experiential learning must be current and essential to the trade.

Definitions: Adopted and/or interpreted from Work-related Informal Learning: Research and Practice in the Canadian Context, CAPLA 2008

Academic Trade Requirement

Trade Designation: Welder National Occupational Classification (NOC) 7265

One of the following prerequisites must be met before writing the Interprovincial Red Seal Exam: an academic Grade 12 certificate or a General Education Diploma (GED) or successful assessment in the following Essential Skills.

Essential Skills common to all trades are listed in Appendix B of this document. Specific Essential Skills for the Welder trade are listed on the Red Seal website: www.red-seal.ca. (Once on that site, you will find the Essential Skills Profiles under "National Occupational Analysis.")

A document can prove valuable learning that is recognized by industry and learning institutions.
Record and save every document earned in industry, trade school or union.

Document Record							
Document Name	Issued By	Place Issued	Date Issued	Evidence of recognition for:			Recognition Awarded
				Block/s <u>Learning Category/s</u> Completed	Task/s <u>Learning Outcome/s</u> Completed	Academic Requirement	

Prior Learning Assessment and Recognition (PLAR). . . Recognition for Skills and Learning (RSL)

PLAR is a formal recognition process in which a variety of tools are used to help people identify, demonstrate and receive recognition for skills and learning they have from the workplace, educational institutions, credentialing organizations or regulatory bodies.

The **Professional Skills Record (PSR)** is a tool designed to assist a trades apprentice to record skills and learning, and then receive recognition for the skills and learning through a PLAR trades process called:

RECOGNITION FOR SKILLS AND LEARNING (RSL)

Traditionally, 80% of learning in a trade happens in the workplace. Through a **Recognition for Skills and Learning (RSL)** process, an apprentice can advance in a trade when they prove they have the required hours, skills and learning for that trade. Proof of skills and learning is **recorded** by the apprentice in a **PSR** and **verified** when signed-off by a journeyman in that trade.

Through the completion of a **PSR**, an apprentice can avoid relearning what they already know and can do. Through an **RSL** process, a trade apprentice can submit a PSR for assessment to:

- advance in Block/Period/Level in-school training by not having to complete a Block/Period/Level in which proof is provided that skills and learning have already been achieved for that Block/Period/Level.
- transfer common skills from one trade to another - **Skills and learning must be transferred prior to writing the Interprovincial Red Seal exam. The same skills and learning cannot be recognized toward certification in two trades.**
- compare skills and learning in a trade from another country to Canadian standards (**as stated in the National Occupational Analysis**) and receive recognition for the skills and learning that meet Canadian standards.

The following assessment indicators (Rating, Proof, Use) have been developed to help record and then assess skills and learning in accordance with the standards of the trade outlined in the National Occupational Analysis (NOA).

Assessment Standard ONE		
Rating: Self-assessment performance rating in the workplace		
Workplace Performance	Rating	Examples of Workplace position/s
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> - to meet or shorten task timelines - beyond the expected level and quality of performance required by industry - can manage, lead and train others to perform this task and series of sub-tasks 	6	Journeyman with a Certificate of Qualification, Red Seal endorsement and/or Gold Seal tradesperson who is an expert in their field <ul style="list-style-type: none"> - Project Manager/Foreman - Highly skilled and experienced Manager/Supervisor - Expert who comes from industry to serve as an instructor in a trades training program
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> - to meet or shorten task timelines - to the highest level and quality of performance required by industry - take the initiative to respond to unexpected situations when they arise and supervise others 	5	Highly skilled and experienced journeyman with a Certificate of Qualification, Red Seal endorsement to whom co-workers turn for direction and help
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> - to meet task timelines - to the highest level and quality required by industry without supervision 	4	Experienced, skilled journeyman with a Certificate of Qualification, Red Seal endorsement
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> - to the level and quality required by industry without assistance or supervision 	3	Newly certified journeyman with a Certificate of Qualification, Red Seal endorsement
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> - to the required level and quality of performance with direction, some assistance and supervision 	2	Apprentice working under the direction of a journeyman with a Certificate of Qualification, Red Seal endorsement
Can perform this task and series of sub-tasks: <ul style="list-style-type: none"> - to the required level and quality of performance with assistance and constant supervision 	1	A helper or new apprentice who must work directly under the constant supervision of a journeyman with a Certificate of Qualification, Red Seal endorsement

Proof: Self-assessment options to prove skills and learning have been achieved

Type of Proof – Observation ... Interview ... Documentation

Observation

When you choose “Observation” to prove that you can perform a task, the person who verifies your work must be Red Seal Certified in the trade in which you are an apprentice.

Interview

When you choose “Interview” to prove that you can perform the task, the person who verifies your work must be Red Seal Certified in the trade in which you are an apprentice. In the case of a panel, at least one person on the panel must be Red Seal Certified in the trade in which you are an apprentice.

Documentation

When you choose “Documentation” to prove that you can perform a task, the document must be from a certified training school or from an industry training course. Course content must be part of the requirements of your trade. If the document is from another country, it must be verified as equivalent to Canadian requirements in the trade.

NOTE: Gather all your documents and keep them with your PSR.

Assessment Standard THREE

Use: Self-assessment rating to help make a plan for additional learning and skill updates needed to be successful in achieving goals in a trade

Use of Knowledge, Skills and Abilities – 1 Daily 2 Often 3 Seldom 4 Never

Show how often you use a skill. This will help you to know:

- ◆ what skills you do well because you do them on a regular basis
- ◆ what skills you have to update if you want to transfer to another employer or move to another province or territory
- ◆ what skills you have to get from a training school, industry program or other employer

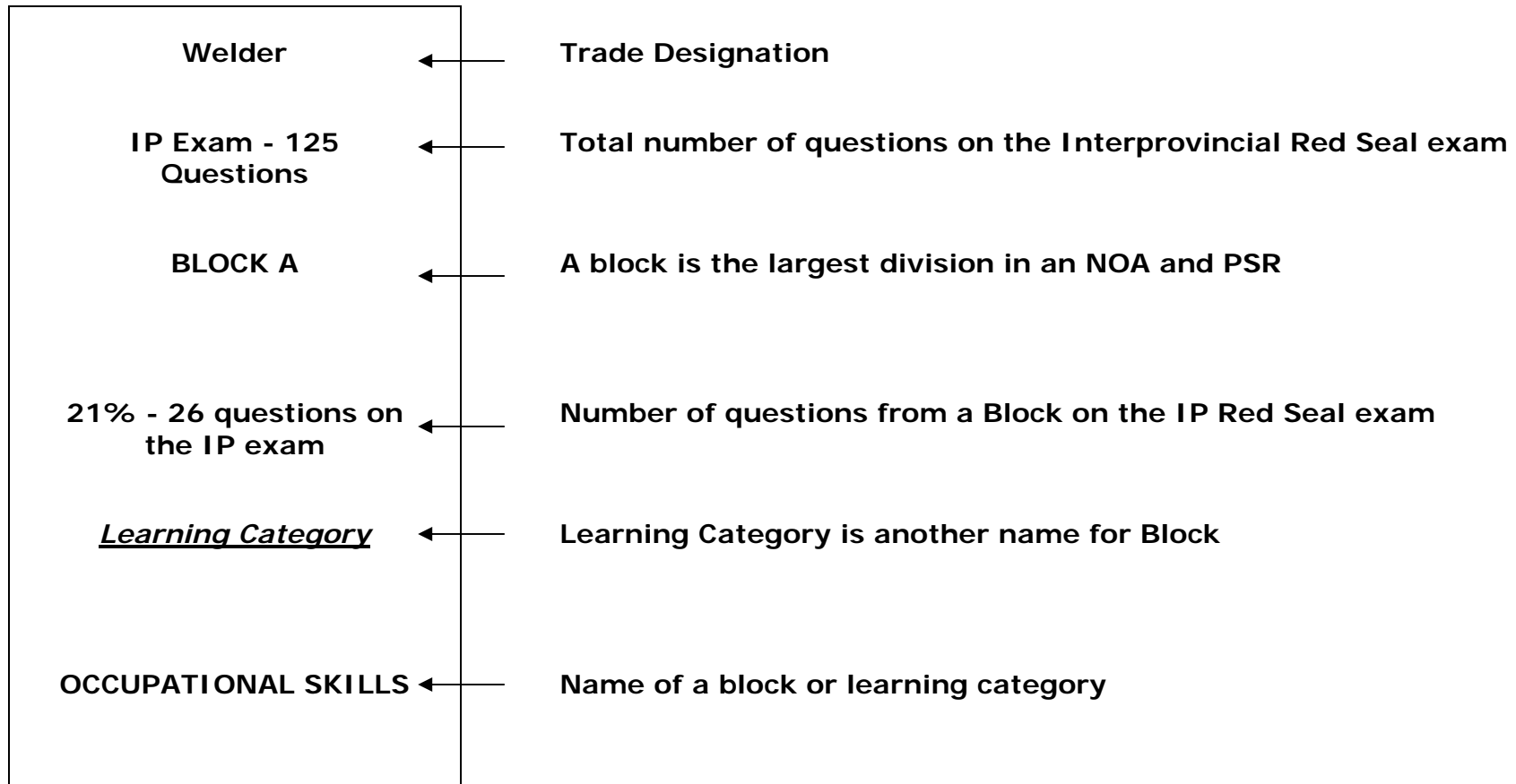
Completing this PSR can help you:

- ◆ know the full scope of your trade by exploring all the technical skills in your trade
- ◆ highlight the skills you already have
- ◆ identify any gaps that you may have to fill so you can be successful in writing your Interprovincial Red Seal Certification exam
- ◆ create a plan you can follow to fill these technical skills gaps

Professional Skills Record (PSR) Components

Information from the National Occupational Analysis (NOA) is the foundation document for the Professional Skills Record (PSR). The PSR has been designed so that information is easily found to help a trade apprentice take control and direct his/her own individual skills and learning path.

Information in the PSR includes:



Professional Skills Record (PSR) Components (cont'd)

Task 1 – A

4 questions on the IP exam

Learning Outcome

Interprets blueprints and drawings

- ← Task Number and Block/Category (letter number)
- ← Number of questions on the IP Red Seal exam from the task
- ← Learning Outcome is another name for a task
- ← Task or learning outcome description

Journeyman Sign-off Task 1

Complete

Incomplete

- ← Journeyman's initials verify that an apprentice can perform the task to industry standards.
- ← Journeyman's initials indicate "incomplete" when the apprentice requires more work because the task is not being performed to industry standards.

Professional Skills Record (PSR) Set-up (cont'd)

Task 1
Learning Needs

Sub-Tasks
Learning Objectives

To be completed _____
 Comments _____

Journeyman lists any Sub-Tasks (Learning Objectives that an apprentice must improve before they can have their Task (Learning Outcome) signed off).



When completed, this column becomes a learning plan for the apprentice.

Sub-Task
1.02

Learning Objective

Identifies work processes _____

JP Sign-off _____

← Sub-Task Number

← Learning Objective is another name for sub-task

← Sub-task or learning objective description

← Journeyman assesses and signs off when the apprentice can perform a sub-task or learning objective to industry standard

How to Self-Assess Skills and Learning Using a PSR

For easier use, the self-assessment charts have been shortened into an assessment key which is located at the top of each two-page section in a PSR. The “3” rating is considered “Industry Standard.”

- RATING:**
- 6 - Expert perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task timelines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

TYPE OF PROOF: O - Observation I - Interview D - Documentation

USE: 1 – Daily 2 – Often 3 – Seldom 4 - Never

How to Record Skills and Learning Using a PSR

Self-assessment takes place where the learning of skills takes place in each of the Knowledge, Skills and Abilities. (Knowledge, Skills and Abilities can also be called Competencies).

1.02.01

Identify welding processes

← Skill and Learning that must meet industry standard.

Rating 5

← Choose and insert a number from the RATING key that best describes your level of performance in the workplace.

Proof I

← Choose and insert a letter from the PROOF key that indicates your best choice to provide proof that you have this knowledge, skill and ability in the trade.

Use 2

← Choose and insert a number from the USE key that indicates how often you use the knowledge, skills and ability (competency).

Complete



← Insert a check mark in the box to indicate completion of the competency to industry standard.

Tips to making sure you get recognition for all your skills and learning:

- take your **time** when you are working on your PSR
- do not try to complete **too much** at any one time
- be **fair and honest** with yourself; remember, this is a **self-assessment** tool
- **focus** on each task (*learning outcome*) and sub-task (*learning objective*)

Welder
IP Exam - 125 Questions

BLOCK A
21% - 26 questions on the IP exam

Learning Category
OCCUPATIONAL SKILLS

Task 1 - A
4 questions on the IP exam

Learning Outcome
Interprets blueprints and drawings

Journeyman
 Sign-off
 Task 1

Complete

Incomplete

Task 1 Learning Needs

Sub-Tasks
 Learning Objectives to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 1.01 <u>Learning Objective</u> Determines required material JP Sign-off ____	1.01.01 Identify blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.02 Recognize lines Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.03 Recognize structural shapes and sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.04 Interpret material specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.05 Read blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	SUB-TASK 1.02 <u>Learning Objective</u> Identifies work processes JP Sign-off ____				
	1.02.01 Identify welding processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.02 Demonstrate an understanding of and use welding process terminology Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.03 Identify welding symbols Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.04 Read and interpret company data sheets Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.05 Read and interpret welding symbols Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	1.02.06 Identify application of processes (when to apply which process) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

**Task 1 - A
(cont'd)**

Learning Outcome
Interprets blueprints and drawings

**Task 1
Learning Needs**

**Sub-Tasks
Learning Objectives
to be completed
Comments**

Knowledge, Skills and Abilities - Competencies

SUB-TASK 1.03 <u>Learning Objective</u> Identifies dimensions and details JP Sign-off ____	1.03.01 Demonstrate an understanding of the metric system Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.03.02 Demonstrate an understanding of the imperial system Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.03.03 Convert fractions and decimals Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.03.04 Demonstrate an understanding of the fundamentals of drafting Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.03.05 Convert scale dimensions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	1.03.06 Convert from one measurement system to another (metric and imperial) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.03.07 Perform trade mathematical computations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			
SUB-TASK 1.04 <u>Learning Objective</u> Sketches details JP Sign-off ____	1.04.01 Identify sketching techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.04.02 Draw in two or three dimensions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.04.03 Interpret two and three dimension drawings in order to perform work to specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.04.04 Extract information from blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

Task 2 - A
2 questions on the IP exam
Learning Outcome
Identifies material

Journeyperson
 Sign-off
 Task 2

Complete

Incomplete

Task 2
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 2.01 <u>Learning Objective</u> Performs basic tests on materials JP Sign-off ____	2.01.01 Demonstrate an understanding of metallurgy Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.01.02 Perform testing methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.01.03 Interpret test results in order to ensure conformity to specifications and requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	SUB-TASK 2.02 <u>Learning Objective</u> Reviews documentation and markings JP Sign-off ____	2.02.01 Read and demonstrate an understanding of mill test reports Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.02.02 Recognize traceability methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.02.03 Determine traceability requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 3 - A
2 questions on the IP exam

Learning Outcome
Sources required information

Journeyperson
 Sign-off
 Task 3

Complete

Incomplete

Task 3 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 3.01 <u>Learning Objective</u> Interprets information related to operation of equipment JP Sign-off ____	3.01.01 Research equipment information sources Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.02 Identify types of equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.03 Determine location of information Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.04 Extract information on special or unique equipment operations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.01.05 Apply information to operation of equipment by work processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	SUB-TASK 3.02 <u>Learning Objective</u> Interprets information related to materials JP Sign-off ____	3.02.01 Research material information sources Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.02 Identify types of materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.03 Determine location of information Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.04 Identify unique or special information on materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.02.05 Apply information on use of materials in work processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	SUB-TASK 3.03 <u>Learning Objective</u> Identifies applicable specifications, codes and standards JP Sign-off ____	3.03.01 Recognize and follow codes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.03.02 Determine specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.03.03 Apply standards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.03.04 Interpret specifications in order to conform to standards and codes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.03.05 Interpret specifications in order to apply them to work processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 4 - A
2 questions on the IP exam
Learning Outcome
Prepares work area

Journeyperson
 Sign-off
 Task 4

Complete

Incomplete

Task 4 Learning Needs

Sub-Tasks Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 4.01 <u>Learning Objective</u> Cleans work area JP Sign-off ____	4.01.01 Follow good housekeeping practices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.02 Identify and select types of cleaning materials and equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.03 Determine cleaning procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.04 Demonstrate an understanding of safety hazards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.05 Comply with Workers' Compensation Board regulations and Occupational Health and Safety Act Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	4.01.06 Identify safety hazards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 4.02 <u>Learning Objective</u> Plans sequence of operation JP Sign-off ____	4.02.01 Determine assembly requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.02 Recognize and follow codes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.03 Interpret and follow weld procedure specifications (WPS) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.04 Determine final product Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.05 Plan welding sequence Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	4.02.06 Determine possible distortion Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.07 Organize sequence of work Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.08 Visualize final components Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

**Task 4 - A
(cont'd)**

Learning Outcome
Prepares work area

Knowledge, Skills and Abilities - Competencies

SUB-TASK 4.03 <u>Learning Objective</u> Gathers work materials and equipment JP Sign-off _____	4.03.01 Prepare work plan	4.03.02 Visualize finished component	4.03.03 Prioritize assembly requirements
	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**Task 4
Learning Needs**

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Task 5 - A
4 questions on the IP exam
Learning Outcome
Lays out materials

Journeyperson
 Sign-off
 Task 5

Complete

Incomplete

Task 5 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 5.01 <u>Learning Objective</u> Develops templates JP Sign-off ____	5.01.01 Select required drawings Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.01.02 Identify geometric functions Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.01.03 Identify and determine proper template materials Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.01.04 Work to required tolerances Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.01.05 Layout patterns Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	5.01.06 Construct templates Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 5.02 <u>Learning Objective</u> Transfers dimensions from drawings to materials JP Sign-off ____	5.02.01 Recognize measurements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.02.02 Identify layout tools Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.02.03 Demonstrate an understanding of and determine transfer methods Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.02.04 Measure Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.02.05 Use layout tools Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 5.03 <u>Learning Objective</u> Confirms material dimensions JP Sign-off ____	5.03.01 Interpret specifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.03.02 Demonstrate an understanding of and determine measuring instruments Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	5.03.03 Use measuring instruments Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____		

Task 6 - A
3 questions on the IP exam

Learning Outcome
Prepares materials

Journeyperson
 Sign-off
 Task 6

Complete

Incomplete

Task 6
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 6.01 <u>Learning Objective</u> Cuts material to specifications JP Sign-off ____	6.01.01 Determine cutting processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.02 Identify base metals Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.03 Plan cutting sequence Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.04 Follow specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.05 Identify tolerances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.01.06 Follow safe work practices specific to cutting (blocking), etc. Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.07 Identify material Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.08 Use cutting equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.01.09 Select tool for cutting specific type of material Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 6.02 <u>Learning Objective</u> Grinds materials JP Sign-off ____	6.02.01 Identify type of base metal Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.02.02 Identify abrasives Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.02.03 Follow safe work practices specific to grinding Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.02.04 Demonstrate an understanding of the fundamentals of grinding Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.02.05 Set up grinding equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.02.06 Complete grinding process Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

**Task 6 - A
(cont'd)**

Learning Outcome
Prepares materials

**Task 6
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 6.03 <u>Learning Objective</u> Cleans weld area JP Sign-off _____	6.03.01 Identify mechanical cleaning methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.02 Identify chemical cleaning methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.03 Identify cleaning equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.04 Identify cleaning materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.05 Determine cleaning tolerances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.03.06 Demonstrate an understanding of the cleaning specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.07 Recognize safety hazards specific to cleaning Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.08 Use cleaning tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.09 Determine required cleaning method Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.10 Clean to specifications and tolerances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 7 - A
5 questions on the IP exam

Learning Outcome
Fabricates components

Journeyperson
 Sign-off
 Task 7

Complete

Incomplete

Task 7
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 7.01 <u>Learning Objective</u> Selects required process JP Sign-off ____	7.01.01 Determine welding processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.01.02 Determine cutting processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.01.03 Determine gouging processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.01.04 Read and interpret blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.01.05 Follow specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	7.01.06 Select base metals Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.01.07 Assess scope of work Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.01.08 Match process to requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 7.02 <u>Learning Objective</u> Assembles components JP Sign-off ____	7.02.01 Select required equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.02.02 Identify consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.02.03 Read blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.02.04 Organize work in sequential order Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.02.05 Match consumables to metals Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 7.03 <u>Learning Objective</u> Preheats weld area (weldments) JP Sign-off ____	7.03.01 Read and follow weld procedure specifications (WPS)/Data Sheet preheat and interpass requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.03.02 Demonstrate an understanding of the preheating effects on materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.03.03 Demonstrate an understanding of preheating procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.03.04 Select preheat equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.03.05 Determine preheat equipment set up Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	7.03.06 Select preheat procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.03.07 Set up preheat equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.03.08 Set up preheat monitoring equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

**Task 7 - A
(cont'd)**

Learning Outcome
Fabricates components

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
- 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
- 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
- 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
- 2 - Complete a task with some assistance and supervision
- 1 - Complete task with assistance and constant supervision

Type of Proof:

- O - Observation
- I - Interview
- D - Documentation

Use:

- 1 - Daily
- 2 - Often
- 3 - Seldom
- 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 7.04 <u>Learning Objective</u> Tacks components JP Sign-off _____	7.04.01 Determine welding processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.04.02 Demonstrate an understanding of tacking techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.04.03 Determine potential distortion Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.04.04 Find and follow codes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.04.05 Read specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	7.04.06 Obtain required welder qualifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.04.07 Tack weld Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.04.08 Follow specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 7.05 <u>Learning Objective</u> Finishes final product JP Sign-off _____	7.05.01 Determine product specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.02 Follow weld procedure specifications (WPS) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.03 Follow drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.04 Re-check dimensional and geometric tolerances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.05 Weld to specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 8 - A
2 questions on the IP exam

Learning Outcome
Maintains equipment

Journeyperson
 Sign-off
 Task 8

Complete

Incomplete

Task 8
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 8.01 <u>Learning Objective</u> Performs visual inspection of equipment JP Sign-off ____	8.01.01 Read and follow manufacturers' specifications and recommendations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.01.02 Demonstrate an understanding of inspection methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.01.03 Recognize types of damage and wear Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.01.04 Evaluate severity of damage and wear Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.01.05 Demonstrate an understanding of and determine lock-out procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	8.01.06 Detect defects in equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.01.07 Document and report defects Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.01.08 Apply lock-out procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 8.02 <u>Learning Objective</u> Checks equipment for leaks JP Sign-off ____	8.02.01 Read and demonstrate an understanding of documentation Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.02.02 Demonstrate an understanding of and determine procedures for leak check Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.02.03 Demonstrate an understanding of and determine leak testing methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.02.04 Follow procedures for leak testing Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.02.05 Perform leak test Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	8.02.06 Repair leaks Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 8.03 <u>Learning Objective</u> Repairs leaks JP Sign-off ____	8.03.01 Determine repair procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.02 Select repair materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.03 Repair within specifications and limits Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.04 Determine severity of leak and limits of repair capabilities Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

**Task 8 - A
(cont'd)**

Learning Outcome
Maintains equipment

**Task 8
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
- 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
- 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
- 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
- 2 - Complete a task with some assistance and supervision
- 1 - Complete task with assistance and constant supervision

Type of Proof:

- O - Observation
- I - Interview
- D - Documentation

Use:

- 1 - Daily
- 2 - Often
- 3 - Seldom
- 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 8.04</p> <p><u>Learning Objective</u> Checks protection devices operation and location</p> <p>JP Sign-off _____</p>	<p>8.04.01 Identify types of protective devices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.02 Demonstrate an understanding of protective device operation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.03 Demonstrate an understanding of flashback arresters</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.04 Locate and demonstrate an understanding of check valves</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.05 Locate and demonstrate an understanding of dead-man (lock-out) switches</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>8.04.06 Follow manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.07 Distinguish between protective devices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.08 Check for non-conformance</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.09 Interpret regulations in order to follow approved procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

Task 9 - A
2 questions on the IP exam

Learning Outcome
Performs basic rigging operations

Journeyperson
 Sign-off
 Task 9

Complete

Incomplete

Task 9 Learning Needs

Sub-Tasks Learning Objectives to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 9.01 <u>Learning Objective</u> Ties knots JP Sign-off ____	9.01.01 Identify types of ropes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.01.02 Demonstrate tying types of knots Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.01.03 Select required knot Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.01.04 Verify security of knots Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
	SUB-TASK 9.02 <u>Learning Objective</u> Selects rigging equipment JP Sign-off ____	9.02.01 Demonstrate an understanding of and determine slings Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.02 Demonstrate an understanding of and determine shackles Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.03 Demonstrate an understanding of and determine lifting devices Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.04 Demonstrate an understanding of and determine rigging hardware Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	9.02.06 Recognize, read and follow identification markings Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.07 Follow manufacturers' specifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.08 Determine safe condition of equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.09 Determine safe capacities Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.02.10 Verify inspection status of equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 9.03 <u>Learning Objective</u> Performs signals JP Sign-off ____	9.03.01 Determine location of signal person Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.03.02 Demonstrate an understanding of and follow international rigging and hoisting hand signals Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.03.03 Determine alternate communication methods Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.03.04 Interpret hand signals in order to perform lifting operations Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.03.05 Communicate signals using audio communication devices Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	9.03.06 Identify signal person Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	9.03.07 Communicate with other personnel Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			

**Task 9 - A
(cont'd)**

Learning Outcome
Performs basic rigging
operations

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

**Task 9
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

SUB-TASK 9.04 <u>Learning Objective</u> Operates basic lifting devices JP Sign-off _____	9.04.01 Demonstrate an understanding of and follow occupational health and safety laws and regulations related to lifting devices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.02 Demonstrate an understanding of and follow provincial acts and regulations governing the performance of lifts Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.03 Demonstrate an understanding of the tolerance of lifting devices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.04 Follow manufacturers' specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.05 Follow lifting procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	9.04.06 Estimate weight of load Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.07 Select proper rigging hardware Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.08 Attach proper rigging hardware Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.04.09 Apply safe operating practices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

Welder

BLOCK B
12% - 15 Questions on the IP exam

Learning Category
QUALITY CONTROL

Task 10 - B
7 questions on the IP exam

Learning Outcome
Complies with codes, specifications and standards

Journeyperson
Sign-off
Task 10

Complete

Incomplete

Task 10 Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 10.01 <u>Learning Objective</u> Complies with weld procedure specifications (WPS) and data sheets JP Sign-off _____	10.01.01 Locate, read and follow applicable codes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.02 Read and follow weld procedure specifications and data sheets Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.03 Demonstrate an understanding of preheating practices Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.04 Demonstrate an understanding of interpass temperature procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.05 Demonstrate an understanding of postheating practices Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	10.01.06 Demonstrate an understanding of heat treatment standards and practices Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.07 Demonstrate an understanding of heating effects on materials Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.08 Interpret weld procedure specifications (WPS) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.09 Check tolerances for conformance Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 10.02 <u>Learning Objective</u> Ensures personal trade qualifications meet requirement JP Sign-off _____	10.02.01 Apply applicable codes or standards Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.02.02 Follow provincial/ territorial regulations Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.02.03 Pass applicable qualification tests Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.02.04 Check personal records Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.02.05 Update qualifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____

Task 11 - B
3 questions on the IP exam
Learning Outcome
Verifies materials

Journeyperson
 Sign-off
 Task 11

Complete

Incomplete

Task 11 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 11.01 <u>Learning Objective</u> Matches heat numbers against markings JP Sign-off ____	11.01.01 Demonstrate an understanding of and determine material traceability methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.01.02 Demonstrate an understanding of and follow material traceability requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.01.03 Demonstrate an understanding of material identification system Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.01.04 Transfer heat numbers Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.01.05 Verify heat numbers with mill test report (MTR) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	SUB-TASK 11.02 <u>Learning Objective</u> Verifies consumables conform to specifications JP Sign-off ____	11.02.01 Read and follow code/ specification requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.02.02 Follow weld procedure specifications (WPS) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.02.03 Recognize consumable identification markings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.02.04 Recognize packaging specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	11.02.06 Demonstrate an understanding of and follow consumables storage requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.02.07 Check storage of consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	11.02.08 Report deficiencies Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

Task 12 - B
5 questions on the IP exam

Learning Outcome
Performs inspections

Journeyperson
 Sign-off
 Task 12

Complete

Incomplete

Task 12
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 12.01 <u>Learning Objective</u> Examines components (fit-up and preparation) prior to assembly JP Sign-off ____	12.01.01 Locate blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.02 Identify and demonstrate an understanding of measuring tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.03 Identify and demonstrate an understanding of measuring instruments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.04 Interpret and follow applicable specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.05 Follow applicable codes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	12.01.06 Apply applicable standards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.07 Read blueprints and drawings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.08 Operate measuring tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.01.09 Operate measuring instruments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 12.02 <u>Learning Objective</u> Examines completed welds JP Sign-off ____	12.02.01 Demonstrate an understanding of and recognize visual defects Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.02 Demonstrate an understanding of relevant/non-relevant indications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.03 Demonstrate an understanding of non-destructive testing methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.04 Demonstrate an understanding of destructive testing methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.05 Demonstrate an understanding of and select required inspection tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	12.02.06 Demonstrate an understanding of and select required inspection materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.07 Identify visual defects Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.08 Identify relevant/non-relevant indications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.09 Use inspection tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	12.02.10 Document inspection findings Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**Task 12 - B
(cont'd)**

Learning Outcome
Performs inspections

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 12.03</p> <p><u>Learning Objective</u> Measures completed welds</p> <p>JP Sign-off _____</p>	<p>12.03.01 Locate blueprints and drawings</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.03.02 Demonstrate an understanding of completed weld specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.03.03 Demonstrate an understanding of weld gauges</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.03.04 Follow applicable codes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.03.05 Meet applicable standards</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>12.03.06 Identify and select proper measuring equipment and tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.03.07 Read blueprints and drawings to determine required dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.03.08 Use measuring equipment and tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		
<p>SUB-TASK 12.04</p> <p><u>Learning Objective</u> Measures final product for compliance to blueprints and drawings</p> <p>JP Sign-off _____</p>	<p>12.04.01 Locate blueprints and drawings</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.04.02 Demonstrate an understanding of potential distortion</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.04.03 Follow specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.04.04 Read blueprints and drawings</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>12.04.05 Identify and detect distortion</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

Welder

BLOCK C
17% - 22 Questions on the IP exam

Learning Category
CUTTING PROCESSES

Task 13 - C
5 questions on the IP exam

Learning Outcome
Cuts with mechanical and power tools

Journey person
Sign-off
Task 13

Complete

Incomplete

Task 13
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 13.01 <u>Learning Objective</u> Selects mechanical and power cutting equipment JP Sign-off ____	13.01.01 Identify hand tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.01.02 Identify power tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.01.03 Identify mechanical tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.01.04 Identify pneumatic equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.01.05 Identify consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	13.01.06 Match consumables to tool and job Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 13.02 <u>Learning Objective</u> Selects operating parameters JP Sign-off ____	13.02.01 Demonstrate an understanding of and determine tool functions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.02.02 Demonstrate an understanding of and determine tool capabilities Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.02.03 Follow manufacturers' recommendations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.02.04 Identify the base metal to be cut Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.02.05 Determine metal preparation requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	13.02.06 Demonstrate an understanding of and determine power tool input requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	13.02.07 Match tool to work requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

**Task 13 - C
(cont'd)**

Learning Outcome
Cuts with mechanical and power tools

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 13.03</p> <p><u>Learning Objective</u> Sets up mechanical and power cutting equipment</p> <p>JP Sign-off _____</p>	<p>13.03.01 Read and follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.03.02 Follow set-up procedures for selected mechanical and power cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.03.03 Determine intended use</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.03.04 Identify the base metal to be cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.03.05 Detect faulty equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>13.03.06 Follow manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 13.04</p> <p><u>Learning Objective</u> Operates mechanical and power cutting equipment</p> <p>JP Sign-off _____</p>	<p>13.04.01 Demonstrate an understanding of mechanical and power cutting equipment operation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.04.02 Demonstrate an understanding of operating techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.04.03 Select required personal protective equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.04.04 Secure workpiece</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.04.05 Determine quality of cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>13.04.06 Detect equipment malfunctions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.04.07 Follow manufacturers' specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>13.04.08 Apply mechanical and power cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

Task 14 - C
8 questions on the IP exam

Learning Outcome
Cuts using oxy-fuel gas cutting process (OFC)

Journey person
 Sign-off
 Task 14

Complete

Incomplete

Task 14 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 14.01 <u>Learning Objective</u> Selects oxy-fuel cutting equipment JP Sign-off ____	14.01.01 Demonstrate an understanding of the fundamentals of oxy-fuel gas cutting process (OFC) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.02 Identify types of regulators Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.03 Demonstrate an understanding of the operation of regulators Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.04 Demonstrate an understanding of flashback arrestors Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.05 Identify types of hoses Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	14.01.06 Identify types of torch bodies Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.07 Demonstrate an understanding of and select torch attachments Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.08 Demonstrate an understanding of manual oxy-fuel cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.09 Demonstrate an understanding of automated oxy-fuel cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.01.10 Demonstrate an understanding of mechanized oxy-fuel cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 14.02 <u>Learning Objective</u> Selects fuel gas JP Sign-off ____	14.02.01 Demonstrate an understanding of and identify characteristics of fuel gases Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.02.02 Demonstrate an understanding of and identify fuel gas delivery systems Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.02.03 Demonstrate an understanding of and follow cylinder and gases handling procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.02.04 Follow cylinder and gases storage requirements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.02.05 Identify and avoid hazards associated with different fuel gases Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	14.02.06 Match fuel gas to type of cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	14.02.07 Identify type of fuel gas from information on label Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			

**Task 14 - C
(cont'd)**

Learning Outcome
Cuts using oxy-fuel gas
cutting process (OFC)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 14.03</p> <p><u>Learning Objective</u> Selects tips</p> <p>JP Sign-off _____</p>	<p>14.03.01 Determine type of base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.03.02 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.03.03 Demonstrate an understanding of and determine tip functions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.03.04 Determine required cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.03.05 Determine types of tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>14.03.06 Match tip to base metal and required cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.03.07 Differentiate between tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 14.04</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>14.04.01 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.04.02 Demonstrate an understanding of and determine tip sizes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.04.03 Demonstrate an understanding of the type of fuel gas used</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.04.04 Determine and follow regulations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.04.05 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>14.04.06 Follow trade related and process related guidelines</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.04.07 Match fuel gas and oxygen pressures to cut specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.04.08 Reference information</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

**Task 14 - C
(cont'd)**

Learning Outcome
Cuts using oxy-fuel gas cutting process (OFC)

**Task 14
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 14.05</p> <p><u>Learning Objective</u> Sets up oxy-fuel cutting equipment</p> <p>JP Sign-off _____</p>	<p>14.05.01 Demonstrate an understanding of types of oxy fuel cutting equipment and their operation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.05.02 Determine set-up procedures for selected oxy-fuel cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.05.03 Determine and follow test procedures for selected oxy-fuel cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.05.04 Follow oxy-fuel gas safe cutting practices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.05.05 Follow safe set-up procedures for selected type of oxy-fuel cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p>14.05.06 Reference manufacturers' instructions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.05.07 Perform set-up tests</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 14.06</p> <p><u>Learning Objective</u> Operates oxy-fuel cutting equipment</p> <p>JP Sign-off _____</p>	<p>14.06.01 Select required task-specific personal protective clothing and equipment for oxy-fuel gas cutting</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.02 Follow safe operating practices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.03 Demonstrate an understanding of metallurgy</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.04 Determine types of flames</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.05 Demonstrate an understanding of flashback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p>14.06.06 Demonstrate an understanding of backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.07 Demonstrate an understanding of cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.08 Recognize flashback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.09 Recognize backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.10 Prevent flashback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.11 Prevent backfire burnback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>14.06.12 Correct flashback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.13 Correct backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.14 Light and adjust torch</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.15 Initiate cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.16 Detect defects in cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>14.06.17 Apply oxy-fuel cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 14 - C
(cont'd)**

Learning Outcome
Cuts using oxy-fuel gas cutting process (OFC)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

Task 14
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

SUB-TASK 14.07	14.07.01	14.07.02	14.07.03
<u>Learning Objective</u> Shuts down oxy-fuel cutting equipment	Demonstrate an understanding of shutdown sequence of selected oxy-fuel cutting equipment	Check regulators	Perform a complete shutdown
JP Sign-off _____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 15 - C
5 questions on the IP exam

Learning Outcome
Cuts using plasma arc cutting process (PAC)

Journeyperson
 Sign-off
 Task 15

Complete

Incomplete

Task 15
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 15.01 <u>Learning Objective</u> Selects plasma arc cutting equipment JP Sign-off ____	15.01.01 Demonstrate an understanding of the fundamentals of plasma arc cutting process (PAC) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.02 Demonstrate an understanding of and determine power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.03 Demonstrate an understanding of manual plasma arc cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.04 Demonstrate an understanding of automated plasma arc cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.05 Demonstrate an understanding of mechanized plasma arc cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	15.01.06 Read and demonstrate an understanding of regulators Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.07 Demonstrate an understanding of torches Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.08 Demonstrate an understanding of and determine quality of finished product Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.01.09 Match equipment to requirements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 15.02 <u>Learning Objective</u> Selects gases JP Sign-off ____	15.02.01 Demonstrate an understanding of the type of base metal and thickness Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.02.02 Demonstrate an understanding of the types of gases Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.02.03 Demonstrate an understanding of gas characteristics Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.02.04 Demonstrate an understanding of compressed air source Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.02.05 Demonstrate an understanding of compressed air characteristics Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	15.02.06 Demonstrate an understanding of filters Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.02.07 Demonstrate an understanding of dryers Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	15.02.08 Match gases to application Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____		

**Task 15 - C
(cont'd)**

Learning Outcome
Cuts using plasma arc
cutting process (PAC)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 15.03</p> <p><u>Learning Objective</u> Selects consumables</p> <p>JP Sign-off _____</p>	<p>15.03.01 Demonstrate an understanding of electrodes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.02 Demonstrate an understanding of cups/shields</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.03 Demonstrate an understanding of tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.04 Demonstrate an understanding of tip/orifice sizes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.05 Visually inspect tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>15.03.06 Visually inspect cups</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.07 Visually check orifice sizes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.08 Determine suitability of tips and electrodes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.09 Determine suitability of cups/shields</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.03.10 Determine suitability of orifices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
<p>SUB-TASK 15.04</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>15.04.01 Follow manufacturers' specifications and recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.04.02 Determine required base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.04.03 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.04.04 Demonstrate an understanding of operating pressure</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.04.05 Interpret information relative to operating parameters</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 15 - C
(cont'd)**

Learning Outcome
**Cuts using plasma arc
cutting process (PAC)**

**Task 15
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 15.05</p> <p><u>Learning Objective</u> Sets up plasma arc cutting equipment</p> <p>JP Sign-off _____</p>	<p>15.05.01 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.05.02 Follow procedures for assembly of plasma components</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.05.03 Determine and demonstrate an understanding of types of plasma arc cutting equipment and their operation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.05.04 Determine set-up procedures for selected plasma arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.05.05 Demonstrate an understanding of and follow required ventilation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>15.05.06 Verify plasma arc cutting equipment operation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.05.07 Follow set-up procedures for selected plasma arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.05.08 Verify operation of ventilation equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		
<p>SUB-TASK 15.06</p> <p><u>Learning Objective</u> Operates plasma arc cutting equipment</p> <p>JP Sign-off _____</p>	<p>15.06.01 Determine metallurgy as it applies to plasma arc cutting</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.02 Follow plasma arc cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.03 Determine and follow cutting sequence</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.04 Select required task-specific personal protective equipment for plasma arc cutting</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.05 Follow shutdown procedures for selected plasma arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>15.06.06 Verify selected plasma arc cutting equipment operation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.07 Detect equipment malfunctions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.08 Identify defects in cuts</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>15.06.09 Apply plasma arc cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

Task 16 - C
2 questions on the IP exam

Learning Outcome
Cuts using air carbon arc cutting process (ACA)

Journeyperson
 Sign-off
 Task 16

Complete

Incomplete

Task 16
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 16.01 <u>Learning Objective</u> Selects air carbon arc cutting equipment JP Sign-off ____	16.01.01 Demonstrate an understanding of fundamentals of air carbon arc cutting (ACA) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.01.02 Demonstrate an understanding of and determine power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.01.03 Demonstrate an understanding of compressed air sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.01.04 Demonstrate an understanding of and determine cable sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.01.05 Demonstrate an understanding of manual air carbon arc cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	16.01.06 Demonstrate an understanding of automated air carbon arc cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.01.07 Demonstrate an understanding of mechanized air carbon arc cutting equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.01.08 Assess requirements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 16.02 <u>Learning Objective</u> Selects consumables JP Sign-off ____	16.02.01 Demonstrate an understanding of and determine types of electrodes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.02.02 Demonstrate an understanding of and determine electrode sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.02.03 Demonstrate an understanding of and determine electrode shapes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.02.04 Demonstrate an understanding of applicable consumables Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	16.02.05 Differentiate between consumables Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____

**Task 16 - C
(cont'd)**

Learning Outcome
Cuts using air carbon arc cutting process (ACA)

**Task 16
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 16.03</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>16.03.01 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.03.02 Demonstrate an understanding of voltage</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.03.03 Demonstrate an understanding of polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.03.04 Demonstrate an understanding of amperage</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.03.05 Determine voltage and amperage related to electrode size</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>16.03.06 Determine required air pressure</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.03.07 Demonstrate an understanding of required compressed air source</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.03.08 Set dials according to requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		
<p>SUB-TASK 16.04</p> <p><u>Learning Objective</u> Sets up air carbon arc cutting equipment</p> <p>JP Sign-off _____</p>	<p>16.04.01 Select air carbon arc equipment components</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.04.02 Demonstrate an understanding of, select and follow ventilation requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.04.03 Follow set-up procedures for selected air carbon arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.04.04 Verify set-up</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p>16.05.01 Perform air carbon arc cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.05.02 Select required task-specific personal protective clothing and equipment for carbon arc cutting</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.05.03 Follow shutdown procedures for selected air carbon arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.05.04 Identify and avoid safety hazards (fires, etc.)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.05.05 Determine quality of cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
<p>SUB-TASK 16.05</p> <p><u>Learning Objective</u> Operates air carbon arc cutting equipment</p> <p>JP Sign-off _____</p>	<p>16.05.06 Detect carbon deposits</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.05.07 Detect equipment malfunctions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>16.05.08 Apply the appropriate cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

Task 17 - C
2 questions on the IP exam

Learning Outcome
Cuts using electric arc cutting process (AC)

Journeyperson
 Sign-off
 Task 17

Complete

Incomplete

Task 17 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 17.01 <u>Learning Objective</u> Selects electric arc cutting equipment JP Sign-off ____	17.01.01 Demonstrate an understanding of the fundamentals of electrical arc cutting process Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.02 Demonstrate an understanding of and determine power sources Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.03 Demonstrate an understanding of types of electrodes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.04 Demonstrate an understanding of electrode sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.05 Demonstrate an understanding of the characteristics of electrode holders Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	17.01.06 Demonstrate an understanding of the characteristics of cables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.07 Demonstrate an understanding of the characteristics of ground clamps Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.08 Assess requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.01.09 Match equipment to requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 17.02 <u>Learning Objective</u> Selects consumables JP Sign-off ____	17.02.01 Determine types of electrodes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.02.02 Determine electrode sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.02.03 Determine electrode shapes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.02.04 Select applicable consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.02.05 Differentiate between consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	17.03.01 Determine type of base metal Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.03.02 Demonstrate an understanding of and determine current and amperage related to electrode size Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.03.03 Demonstrate an understanding of and follow cut specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	17.03.04 Match operating parameters to cut specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

**Task 17 - C
(cont'd)**

Learning Outcome
Cuts using electric
arc cutting process
(AC)

**Task 17
Learning Needs**

**Sub-Tasks
Learning Objectives**
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 17.04</p> <p><u>Learning Objective</u> Sets up electric arc cutting equipment</p> <p>JP Sign-off _____</p>	<p>17.04.01 Read and follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.04.02 Select required task-specific personal protective equipment for electric arc cutting</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.04.03 Demonstrate an understanding of and follow ventilation requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.04.04 Follow set-up procedures for selected electric arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.04.05 Verify set-up of electric arc cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>17.04.06 Change equipment around for a more efficient set-up</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 17.05</p> <p><u>Learning Objective</u> Operates electric arc cutting equipment</p> <p>JP Sign-off _____</p>	<p>17.05.01 Perform electric arc cutting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.05.02 Follow shutdown procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.05.03 Detect equipment malfunctions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.05.04 Make required equipment adjustments</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>17.05.05 Change cutting techniques as required</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>17.05.06 Detect cut defects</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

Welder

BLOCK D
10% - 12 Questions on the IP exam

Learning Category
GOUGING PROCESSES

Task 18 - D
7 questions on the IP exam

Learning Outcome
Gouges using air carbon arc cutting processes (ACA)

Journeyperson
 Sign-off
 Task 18

Complete

Incomplete

Task 18 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 18.01 <u>Learning Objective</u> Selects air carbon arc cutting equipment for gouging JP Sign-off _____	18.01.01 Demonstrate an understanding of fundamentals of air carbon arc cutting process as applied to gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.01.02 Demonstrate an understanding of and determine power sources Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.01.03 Demonstrate an understanding of manual air carbon arc cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.01.04 Demonstrate an understanding of automated air carbon arc cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.01.05 Demonstrate an understanding of mechanized air carbon arc cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	18.01.06 Demonstrate an understanding of and determine cable size Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.01.07 Demonstrate an understanding of compressed air sources Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.01.08 Assess requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			
SUB-TASK 18.02 <u>Learning Objective</u> Selects consumables JP Sign-off _____	18.02.01 Determine sizes and shapes of electrodes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.02.02 Determine application of consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.02.03 Differentiate between consumables Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

**Task 18 - D
(cont'd)**

Learning Outcome
Gouges using air carbon
arc cutting processes
(ACA)

**Task 18
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 18.03 <u>Learning Objective</u> Selects operating parameters JP Sign-off ____	18.03.01 Determine base metal thickness Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.03.02 Determine required depth of gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.03.03 Demonstrate an understanding of voltage Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.03.04 Demonstrate an understanding of polarity Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.03.05 Demonstrate an understanding of amperage Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	18.03.06 Demonstrate an understanding of voltage and amperage related to electrode size Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.03.07 Demonstrate an understanding of required air pressure and volume Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.03.08 Set dials according to requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 18.04 <u>Learning Objective</u> Sets up air carbon arc cutting equipment for gouging JP Sign-off ____	18.04.01 Select air carbon arc cutting components Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.04.02 Follow set-up procedures for air carbon arc cutting equipment used to gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.04.03 Demonstrate an understanding of and follow ventilation procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.04.04 Verify set-up of air carbon arc cutting equipment used to gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	18.05.01 Perform air carbon arc gouging techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.05.02 Follow shutdown procedures for selected air carbon arc cutting equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.05.03 Identify and avoid safety hazards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.05.04 Determine quality of gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.05.05 Detect carbon deposits Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 18.05 <u>Learning Objective</u> Operates air carbon arc cutting equipment for gouging JP Sign-off ____	18.05.06 Detect equipment malfunctions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	18.05.07 Make necessary equipment adjustments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

Task 19 - D
3 questions on the IP exam

Learning Outcome
Gouges using plasma arc cutting process (PAC)

Journeyperson
 Sign-off
 Task 19

Complete

Incomplete

Task 19 Learning Needs

Sub-Tasks Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 19.01 <u>Learning Objective</u> Selects plasma arc cutting equipment for gouging JP Sign-off ____	19.01.01 Demonstrate an understanding of the fundamentals of plasma arc cutting process (PAC) as applied to gouging Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.02 Demonstrate an understanding of and determine the quality of finished product Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.03 Demonstrate an understanding of manual plasma arc cutting equipment used for gouging Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.04 Demonstrate an understanding of automated plasma arc cutting equipment used for gouging Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.05 Demonstrate an understanding of mechanized plasma arc cutting equipment used for gouging Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	19.01.06 Demonstrate an understanding of and determine power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.07 Read and demonstrate an understanding of regulators Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.08 Demonstrate an understanding of torches Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.01.09 Match plasma arc cutting equipment to application Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 19.02 <u>Learning Objective</u> Selects gases JP Sign-off ____	19.02.01 Demonstrate an understanding of and determine base metal to be gouged Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.02.02 Demonstrate an understanding of the characteristics of gases Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.02.03 Demonstrate an understanding of the characteristics of filters Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.02.04 Demonstrate an understanding of the characteristics of dryers Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	19.02.05 Demonstrate an understanding of and determine compressed air sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	19.02.06 Match gases to work requirements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____				

**Task 19 - D
(cont'd)**

Learning Outcome
Gouges using plasma arc cutting process (PAC)

Journeyperson
Sign-off
Task 19

Complete

Incomplete

**Task 19
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 19.03 <u>Learning Objective</u> Selects consumables JP Sign-off ____	19.03.01 Determine characteristics of electrodes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.03.02 Determine characteristics of cups/shields Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.03.03 Determine characteristics of gouging tips Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.03.04 Determine gouging tip orifice sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.03.05 Visually inspect cups/shields Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	19.03.06 Visually inspect gouging tips Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.03.07 Visually check gouging tip/orifice sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			
SUB-TASK 19.04 <u>Learning Objective</u> Selects operating parameters JP Sign-off ____	19.04.01 Read and follow manufacturers' specifications and recommendations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.04.02 Determine base metal thickness Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.04.03 Demonstrate an understanding of and determine operating pressure Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.04.04 Determine depth of gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
	19.05.01 Select manual plasma arc cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.02 Select automated plasma arc cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.03 Select mechanized plasma arc cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.04 Follow manufacturers' recommendations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.05 Determine assembly of plasma components Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 19.05 <u>Learning Objective</u> Sets up plasma arc cutting equipment for gouging JP Sign-off ____	19.05.06 Select amperage Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.07 Demonstrate an understanding of and follow proper ventilation procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.08 Demonstrate an understanding of set-up procedures for selected plasma arc cutting equipment used to gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.09 Follow set-up procedures for selected plasma arc cutting equipment used to gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	19.05.10 Verify set-up of selected plasma arc cutting equipment used to gouge Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**Task 19 - D
(cont'd)**

Learning Outcome
Gouges using plasma arc cutting process (PAC)

Journeyperson
Sign-off
Task 19

Complete

Incomplete

**Task 19
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 19.06</p> <p><u>Learning Objective</u> Operates plasma arc cutting equipment for gouging</p> <p>JP Sign-off _____</p>	<p>19.06.01 Demonstrate an understanding of metallurgy as it relates to gouging using plasma arc process</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.02 Demonstrate plasma gouging techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.03 Perform gouging sequence</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.04 Identify and prevent potential safety hazards</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.05 Select required task-specific personal protective clothing and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>19.06.06 Follow shutdown procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.07 Detect equipment malfunctions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.08 Make necessary equipment adjustments</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.09 Identify defects in gouges</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>19.06.10 Apply appropriate gouging techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

Task 20 - D
2 questions on the IP exam

Learning Outcome
Gouges using oxy-fuel gas cutting process (OFC)

Journeyperson
 Sign-off
 Task 20

Complete

Incomplete

Task 20 Learning Needs

Sub-Tasks Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 20.01 <u>Learning Objective</u> Selects oxy-fuel gas cutting equipment for gouging JP Sign-off ____	20.01.01 Demonstrate an understanding of fundamentals of oxy-fuel gas cutting process (OFC) as applied to gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.02 Read and demonstrate an understanding of regulators Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.03 Demonstrate an understanding of hoses Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.04 Demonstrate an understanding of torch bodies Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.05 Demonstrate an understanding of torch attachments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	20.01.06 Demonstrate an understanding of manual oxy-fuel cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.07 Demonstrate an understanding of automated oxy-fuel cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.08 Demonstrate an understanding of mechanized oxy-fuel cutting equipment used for gouging Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.01.09 Match oxy-fuel cutting equipment to application Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 20.02 <u>Learning Objective</u> Selects fuel gas JP Sign-off ____	20.02.01 Demonstrate an understanding of the characteristics of fuel gases Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.02 Demonstrate an understanding of fuels Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.03 Demonstrate an understanding of fuel systems Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.04 Follow safe handling procedures for cylinders and gases Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.02.05 Follow safe storage procedures for cylinders and gases Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	20.02.06 Identify type of gas by label Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

**Task 20 - D
(cont'd)**

Learning Outcome
Gouges using oxy-fuel
gas cutting process
(OFC)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 20.03</p> <p><u>Learning Objective</u> Selects tips</p> <p>JP Sign-off _____</p>	<p>20.03.01 Determine type of base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.03.02 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.03.03 Identify types of gouging tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.03.04 Demonstrate an understanding of gouging tip functions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.03.05 Determine depth of gouge</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>20.03.06 Differentiate between tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 20.04</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>20.04.01 Determine equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.04.02 Determine fuel characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.04.03 Determine gas characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.04.04 Read and follow regulations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.04.05 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>20.04.06 Follow trade related and other applicable guidelines</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.04.07 Reference information specific to working pressures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			

**Task 20 - D
(cont'd)**

Learning Outcome
Gouges using oxy-fuel
gas cutting process
(OFC)

**Task 20
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 20.05</p> <p><u>Learning Objective</u> Sets up oxy-fuel gas cutting equipment for gouging</p> <p>JP Sign-off _____</p>	<p>20.05.01 Follow oxy-fuel gas cutting process (OFC) safe handling practices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.05.02 Determine set-up procedures for oxy-fuel cutting equipment used to gouge</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.05.03 Perform leak test procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.05.04 Follow safe work procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.05.05 Reference manufacturers' instructions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>20.05.06 Check for equipment leaks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.05.07 Verify set-up</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 20.06</p> <p><u>Learning Objective</u> Operates oxy-fuel gas cutting equipment for gouging</p> <p>Continued next page</p>	<p>20.06.01 Select required task-specific personal protective equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.02 Follow safe operating practices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.03 Perform gouging techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.04 Select types of flames</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.05 Demonstrate an understanding of flashback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>20.06.06 Demonstrate an understanding of backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.07 Recognize flashback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.08 Recognize backfire burnback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.09 Prevent flashback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.10 Prevent backfire burnback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>20.06.11 Correct flashback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.05.12 Correct backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.13 Light and adjust torch</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.14 Initiate gouge</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>20.06.15 Detect defects in gouges</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 20 - D
(cont'd)**

Learning Outcome
Gouges using oxy-fuel
gas cutting process
(OFC)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

**Task 20
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

SUB-TASK 20.06 Continued <u>Learning Objective</u> Operates oxy-fuel gas cutting equipment for gouging JP Sign-off _____	20.06.16 Detect equipment malfunctions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.05.17 Make required equipment adjustments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.06.18 Apply appropriate gouging techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	SUB-TASK 20.07 <u>Learning Objective</u> Shuts-down oxy-fuel gas cutting equipment JP Sign-off _____	20.07.01 Follow shut-down procedures for selected oxy-fuel cutting equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	20.07.02 Check regulators Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Welder

BLOCK E

40% - 50 Questions on the IP exam

Learning Category

WELDING PROCESSES

Task 21 - E

3 questions on the IP exam

Learning Outcome

Welds using oxy-fuel gas welding process (OFW)

Journeyperson

Sign-off

Task 21

Complete

Incomplete

Task 21

Learning Needs

Sub-Tasks

Learning Objectives

to be completed

Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 21.01 <u>Learning Objective</u> Selects oxy-fuel gas welding equipment JP Sign-off ____	21.01.01 Demonstrate an understanding of fundamentals of oxy-fuel gas welding process (OFW) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.01.02 Demonstrate an understanding of types of equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.01.03 Read and demonstrate an understanding of regulators Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.01.04 Demonstrate an understanding of flashback arrestors Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.01.05 Demonstrate an understanding of hoses Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	21.01.06 Demonstrate an understanding of types of torch bodies Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.01.07 Demonstrate an understanding of torch attachments Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.01.08 Match equipment to application Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 21.02 <u>Learning Objective</u> Selects fuel gas JP Sign-off ____	21.02.01 Demonstrate an understanding of the characteristics of fuel gases Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.02.02 Demonstrate an understanding of fuel gas delivery systems Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.02.03 Follow safe cylinder and gases handling procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.02.04 Follow safe cylinder and gases storage requirements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.02.05 Identify and prevent hazards associated with different fuel gases Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	21.02.06 Match fuel gas to type of equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	21.02.07 Identify type of fuel gas from information on label Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			

**Task 21 - E
(cont'd)**

Learning Outcome
Welds using oxy-fuel gas
welding process (OFW)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 21.03</p> <p><u>Learning Objective</u> Selects tips</p> <p>JP Sign-off _____</p>	<p>21.03.01 Determine type of base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.03.02 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.03.03 Demonstrate an understanding of tip functions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.03.04 Determine required weld</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.03.05 Identify types of tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>21.03.06 Match tip to base metal and required weld</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.03.07 Differentiate between tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 21.04</p> <p><u>Learning Objective</u> Selects consumables</p> <p>JP Sign-off _____</p>	<p>21.04.01 Select types of gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.04.02 Identify fuel delivery systems</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.04.03 Follow safe handling procedures for cylinders and gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.04.04 Follow safe storage procedures for cylinders and gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.04.05 Identify fluxes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>21.04.06 Identify filler metals</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.04.07 Identify type of gas by label</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			

**Task 21 - E
(cont'd)**

Learning Outcome
Welds using oxy-fuel gas
welding process (OFW)

**Task 21
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 21.05</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>21.05.01 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.05.02 Determine welding tip sizes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.05.03 Read and demonstrate an understanding of regulations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.05.04 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.05.05 Follow other task specific guidelines</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>21.05.06 Reference information</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 21.06</p> <p><u>Learning Objective</u> Sets up oxy-fuel gas welding equipment</p> <p>JP Sign-off _____</p>	<p>21.06.01 Determine set-up procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.06.02 Follow oxy-fuel gas welding safe practices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.06.03 Perform equipment leak test procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.06.04 Follow safe procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.06.05 Reference manufacturers' instructions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
<p>SUB-TASK 21.07</p> <p><u>Learning Objective</u> Operates oxy-fuel gas welding equipment</p> <p>Continued next page</p>	<p>21.07.01 Select required task-specific personal protective clothing and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.02 Follow safe operating practices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.03 Demonstrate an understanding of flashback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.04 Demonstrate an understanding of backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.05 Demonstrate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>21.07.06 Demonstrate an understanding of metallurgy</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.07 Select types of flames</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.08 Demonstrate braze welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.09 Identify brazing fluxes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.10 Set flame temperatures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 21 - E
(cont'd)**

Learning Outcome
Welds using oxy-fuel gas
welding process (OFW)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 21.07 Continued <u>Learning Objective</u> Operates oxy-fuel gas welding equipment</p> <p>JP Sign-off _____</p>	<p>21.07.11 Demonstrate metal fusion techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.12 Recognize flashback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.13 Recognize backfire burnback</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.14 Prevent flashback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.15 Prevent backfire burnback conditions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>21.07.16 Light and adjust torch</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.17 Apply appropriate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.07.18 Detect defects in weld</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		
<p>SUB-TASK 21.08 <u>Learning Objective</u> Shuts down oxy-fuel gas welding equipment</p> <p>JP Sign-off _____</p>	<p>21.08.01 Follow shutdown sequence</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.08.02 Check regulators</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>21.08.03 Perform complete shutdown</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

Task 22 - E
13 questions on the IP exam

Learning Outcome
Welds using shielded metal arc welding process (SMAW)

Journeyperson
 Sign-off
 Task 22

Complete

Incomplete

Task 22 Learning Needs

Sub-Tasks Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 22.01 <u>Learning Objective</u> Selects shielded metal arc welding equipment JP Sign-off ____	22.01.01 Demonstrate an understanding of the fundamentals of shielded metal arc welding (SMAW) process Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.02 Demonstrate an understanding of power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.03 Identify and determine type and thickness of metal Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.04 Demonstrate an understanding of and determine alternating current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.05 Demonstrate an understanding of and determine direct current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	22.01.06 Demonstrate an understanding of and determine polarity Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.07 Demonstrate an understanding of duty cycle Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.08 Demonstrate an understanding of cable sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.09 Demonstrate an understanding of remote accessories Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.01.10 Determine quality of end product Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	22.01.11 Match shielded metal arc welding equipment to applications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____				

SUB-TASK 22.02 <u>Learning Objective</u> Selects consumables JP Sign-off ____	22.02.01 Determine characteristics of electrodes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.02.02 Demonstrate an understanding of electrode handling procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.02.03 Follow electrode storage requirements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.02.04 Demonstrate an understanding of metallurgy Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.02.05 Determine base metal Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
	22.02.06 Follow manufacturers' specifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.02.07 Determine condition of electrodes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	22.02.08 Follow manufacturers' recommendations related to electrodes, application and storage Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			

**Task 22 - E
(cont'd)**

Learning Outcome
Welds using shielded
metal arc welding
process (SMAW)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 22.03</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>22.03.01 Determine required voltage and amperage related to electrode size</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.03.02 Determine alternating current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.03.03 Determine direct current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.03.04 Determine polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.03.05 Identify current characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>22.03.06 Identify amperage characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.03.07 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 22.04</p> <p><u>Learning Objective</u> Sets up shielded metal arc welding equipment</p> <p>JP Sign-off _____</p>	<p>22.04.01 Select welding cables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.04.02 Determine and follow set-up procedures for shielded metal arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.04.03 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.04.04 Hook up cables to proper polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.04.05 Check cables and connections</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 22 - E
(cont'd)**

Learning Outcome
Welds using shielded
metal arc welding
process (SMAW)

**Task 22
Learning Needs**

**Sub-Tasks
Learning Objectives**
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 22.05</p> <p><u>Learning Objective</u> Operates shielded metal arc welding equipment</p> <p>JP Sign-off _____</p>	<p>22.05.01 Select required task-specific personal protective clothing and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.02 Demonstrate an understanding of and follow ventilation requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.03 Perform selected shielded metal arc welding equipment operating procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.04 Demonstrate an understanding of the characteristics of electrodes during welding process</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.05 Perform welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>22.05.06 Follow shutdown procedures of welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.07 Manipulate electrodes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.08 Detect flaws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.09 Remove slag</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.10 Remove spatter</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>22.05.11 Detect welding equipment malfunctions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.12 Make necessary welding equipment adjustments</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>22.05.13 Apply appropriate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

Task 23 - E
9 questions on the IP exam

Learning Outcome
Welds using flux cored arc welding process (FCAW)

Journeyperson
 Sign-off
 Task 23

Complete

Incomplete

Task 23 Learning Needs

Sub-Tasks Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 23.01</p> <p><u>Learning Objective</u> Selects flux cored arc welding equipment</p> <p>JP Sign-off _____</p>	<p>23.01.01 Demonstrate an understanding of the fundamentals of flux cored arc welding process (FCAW)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.02 Demonstrate an understanding of semi-automated flux cored arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.03 Demonstrate an understanding of mechanized flux cored arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.04 Demonstrate an understanding of power sources</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.05 Determine type and thickness of base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.01.06 Demonstrate an understanding of cable sizes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.07 Demonstrate an understanding of and determine direct current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.08 Demonstrate an understanding of and determine polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.09 Demonstrate an understanding of and determine duty cycle</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.10 Determine the quality of end product</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.01.11 Demonstrate an understanding of wire feeders</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.12 Demonstrate an understanding of drive rolls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.13 Demonstrate an understanding of guns</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.14 Demonstrate an understanding of contact tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.15 Demonstrate an understanding of nozzles</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.01.16 Demonstrate an understanding of gas diffusers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.17 Demonstrate an understanding of cooling systems</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.01.18 Match welding equipment to application</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

**Task 23 - E
(cont'd)**

Learning Outcome
Welds using flux cored
arc welding process
(FCAW)

**Task 23
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 23.02</p> <p><u>Learning Objective</u> Selects consumables</p> <p>JP Sign-off _____</p>	<p>23.02.01 Determine metal cored wires</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.02.02 Determine shielded/ self- shielded electrode wires</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.02.03 Determine the characteristics of shielding gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.02.04 Follow wire handling procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.02.05 Follow wire storage requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.02.06 Detect damage or defects in consumables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.02.07 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 23.03</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>23.03.01 Determine direct current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.02 Determine polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.03 Identify current characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.04 Identify voltage characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.05 Determine wire feed speed (current)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.03.06 Determine filler metal transfer modes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.07 Read and demonstrate an understanding of gas flow rates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.08 Demonstrate an understanding of an identify pulsing techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.09 Demonstrate an understanding of wire stick out</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.03.10 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.03.11 Make required adjustments</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

**Task 23 - E
(cont'd)**

Learning Outcome
Welds using flux cored
arc welding process
(FCAW)

- Rating:**
- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 - 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 - 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
 - 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
 - 2 - Complete a task with some assistance and supervision
 - 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 23.04</p> <p><u>Learning Objective</u> Sets up flux cored arc welding equipment</p> <p>JP Sign-off _____</p>	<p>23.04.01 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.02 Select welding cables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.03 Identify and practice gas cylinder safety</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.04 Perform equipment leak testing procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.05 Follow troubleshooting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.04.06 Follow equipment set-up procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.07 Hook up cables to proper polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.08 Check cables and connections</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.04.09 Check for equipment leaks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 23.05</p> <p><u>Learning Objective</u> Operates flux cored arc welding equipment</p> <p>Continued next page</p>	<p>23.05.01 Select required task-specific personal protective clothing and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.02 Demonstrate an understanding of and follow ventilation requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.03 Demonstrate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.04 Demonstrate an understanding of the characteristics of electrodes during welding process</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.05 Perform pulsing techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>23.05.06 Follow equipment maintenance requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.07 Follow shutdown procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.08 Manipulate guns</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.09 Detect flaws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>23.05.10 Remove spatter</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

Task 23 - E
(cont'd)

Learning Outcome
Welds using flux cored arc welding process (FCAW)

Task 23
Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 23.05 Continued <u>Learning Objective</u> Operates flux cored arc welding equipment JP Sign-off _____	23.05.11 Remove slag Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	23.05.12 Make welding equipment adjustments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	23.05.13 Maintain welding equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	23.05.14 Apply appropriate welding techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 24 - E
9 questions on the IP exam

Learning Outcome
Welds using gas metal arc welding process (GMAW)

Journeyperson
 Sign-off
 Task 24

Complete

Incomplete

Task 24 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 24.01</p> <p><u>Learning Objective</u> Selects gas metal arc welding equipment</p> <p>JP Sign-off _____</p>	<p>24.01.01 Demonstrate an understanding of the fundamentals of gas metal arc welding process (GMAW)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.02 Demonstrate an understanding of semi-automated gas metal arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.03 Demonstrate an understanding of mechanized gas metal arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.04 Determine quality of end product</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.05 Demonstrate an understanding of cooling systems</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>24.01.06 Demonstrate an understanding of and determine direct current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.07 Demonstrate an understanding of and determine polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.08 Demonstrate an understanding of duty cycle</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.09 Demonstrate an understanding of power sources</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.10 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>24.01.11 Demonstrate an understanding of cable size and length</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.12 Demonstrate an understanding of guns</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.13 Demonstrate an understanding of drive rolls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.14 Demonstrate an understanding of contact tips</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.15 Demonstrate an understanding of nozzles</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>24.01.16 Demonstrate an understanding of gas diffusers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.17 Read and demonstrate an understanding of flowmeters</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.18 Read and demonstrate an understanding of regulators</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.19 Demonstrate an understanding of liners</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.01.20 Detect damaged welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 24 - E
(cont'd)**

Learning Outcome
Welds using gas metal
arc welding process
(GMAW)

Knowledge, Skills and Abilities - Competencies

24.01.21
Detect welding equipment
malfunctions

Rating ____ Complete
Proof ____
Use ____

**Task 24
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

<p>SUB-TASK 24.02</p> <p><u>Learning Objective</u> Selects gases</p> <p>JP Sign-off ____</p>	<p>24.02.01 Determine type of base metal and thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.02.02 Determine types of gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.02.03 Identify gas characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.02.04 Match gases to application</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p>SUB-TASK 24.03</p> <p><u>Learning Objective</u> Selects consumables</p> <p>JP Sign-off ____</p>	<p>24.03.01 Demonstrate an understanding of metallurgy</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.03.02 Identify the characteristics of electrode wires</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.03.03 Identify the characteristics of base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.03.04 Identify the characteristics of shielding gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>24.03.06 Follow wire handling procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.03.07 Follow wire storage requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.03.08 Detect damage or defects in consumables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

**Task 24 - E
(cont'd)**

Learning Outcome
Welds using gas metal
arc welding process
(GMAW)

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
- 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
- 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
- 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
- 2 - Complete a task with some assistance and supervision
- 1 - Complete task with assistance and constant supervision

Type of Proof:

- O - Observation
- I - Interview
- D - Documentation

Use:

- 1 - Daily
- 2 - Often
- 3 - Seldom
- 4 - Never

Knowledge, Skills and Abilities - Competencies

**Task 24
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

<p>SUB-TASK 24.04</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>24.04.01 Determine direct current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.02 Determine polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.03 Identify current characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.04 Identify amperage characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.05 Determine wire feed speed (current)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>24.04.06 Determine metal transfer modes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.07 Read and demonstrate an understanding of gas flow rates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.08 Demonstrate pulsing techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.09 Demonstrate an understanding of wire stick out</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.04.10 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>24.04.11 Make required adjustments</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

**Task 24 - E
(cont'd)**

Learning Outcome
Welds using gas metal arc welding process (GMAW)

**Task 24
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 24.05</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>24.05.01 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.05.02 Select welding cables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.05.03 Identify and practice gas cylinder safety</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.05.04 Follow troubleshooting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.05.05 Follow set-up procedures for selected gas metal arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p>24.05.06 Hook up cables to proper polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.05.07 Check cables and connections</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.05.08 Check equipment for leaks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
	<p>SUB-TASK 24.06</p> <p><u>Learning Objective</u> Operates gas metal arc welding equipment</p> <p>JP Sign-off _____</p>	<p>24.06.01 Select required task-specific personal protective clothing and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.02 Follow ventilation requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.03 Follow shutdown procedures for selected gas metal arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.04 Follow equipment maintenance requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.05 Demonstrate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
		<p>24.06.06 Demonstrate an understanding of the characteristics of electrodes during welding process</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.07 Perform pulsing techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.08 Manipulate electrodes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.09 Manipulate guns</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.10 Remove spatter</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
		<p>24.06.11 Detect flaws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.12 Make adjustments to pulsing techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.13 Maintain equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>24.06.14 Apply appropriate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

Task 25 - E
8 questions on the IP exam

Learning Outcome
Welds using gas tungsten arc welding process (GTAW)

Journeyperson
 Sign-off
 Task 25

Complete

Incomplete

Task 25 Learning Needs

Sub-Tasks Learning Objectives
 to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 25.01</p> <p><u>Learning Objective</u> Selects gas tungsten arc welding equipment</p> <p>JP Sign-off _____</p>	<p>25.01.01 Demonstrate an understanding of the fundamentals of gas tungsten metal arc welding process (GTAW)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.02 Determine the quality of end product</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.03 Demonstrate an understanding of manual gas tungsten arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.04 Demonstrate an understanding of automated gas tungsten arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.05 Demonstrate an understanding of mechanized gas tungsten arc welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>25.01.06 Demonstrate an understanding of power sources</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.07 Demonstrate an understanding of duty cycles</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.08 Demonstrate an understanding of remote accessories</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.09 Demonstrate an understanding of cooling systems</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.10 Demonstrate an understanding of high frequency current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>25.01.11 Demonstrate an understanding of and determine direct current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.12 Demonstrate an understanding of and determine polarities</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.13 Demonstrate an understanding of and determine alternating current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.14 Demonstrate an understanding of and determine amperage</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.15 Read and demonstrate an understanding of regulators</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>25.01.16 Read and demonstrate an understanding of flowmeters</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.17 Determine base metal thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.18 Demonstrate an understanding of torches</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.19 Demonstrate an understanding of torch accessories and components</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.01.20 Match equipment to application</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 25 - E
(cont'd)**

Learning Outcome
Welds using gas
tungsten arc welding
process (GTAW)

**Task 25
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 25.02</p> <p><u>Learning Objective</u> Selects gases</p> <p>JP Sign-off _____</p>	<p>25.02.01 Determine type of base metal and thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.02.02 Determine types of gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.02.03 Identify gas characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.02.04 Match gases to application</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
	<p>SUB-TASK 25.03</p> <p><u>Learning Objective</u> Selects consumables</p> <p>JP Sign-off _____</p>	<p>25.03.01 Determine gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.03.02 Determine filler rods</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.03.03 Determine tungsten electrodes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.03.04 Determine base metals</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>25.03.06 Determine shielding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.03.07 Detect damage or defects in consumables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 25.04</p> <p><u>Learning Objective</u> Selects operating parameters</p> <p>JP Sign-off _____</p>	<p>25.04.01 Determine AC/DC current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.02 Identify the characteristics of high frequency current</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.03 Determine voltage</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.04 Determine amperage</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.05 Determine travel speed</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>25.04.06 Read and demonstrate an understanding of gas flow rates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.07 Identify purging requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.08 Follow purging techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.09 Purge equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>25.04.10 Follow manufacturers' recommendations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

**Task 25 - E
(cont'd)**

Learning Outcome
Welds using gas tungsten arc welding process (GTAW)

**Task 25
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Rating:

- 6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
- 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
- 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
- 3 - Complete a task to the level and quality of performance required by industry without assistance or supervision**
- 2 - Complete a task with some assistance and supervision
- 1 - Complete task with assistance and constant supervision

Type of Proof:

- O - Observation
- I - Interview
- D - Documentation

Use:

- 1 - Daily
- 2 - Often
- 3 - Seldom
- 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 25.05	25.05.01 Follow manufacturers' recommendations	25.05.02 Determine scope of work	25.05.03 Select required task-specific personal protective clothing and equipment	25.05.04 Identify and practice gas cylinder safety	25.05.05 Demonstrate an understanding of cooling systems
<u>Learning Objective</u> Sets up gas tungsten arc welding equipment JP Sign-off ____	Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>
	25.05.06 Demonstrate an understanding of remote controls Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	25.05.07 Determine units of high frequency Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	25.05.08 Verify gas flow rates Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	25.05.09 Follow set-up procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____ <input type="checkbox"/>	

Task 26 - E
4 questions on the IP exam
Learning Outcome
Welds using submerged arc welding process (SAW)

Journeyman
 Sign-off
 Task 26

Complete

Incomplete

Task 26 Learning Needs

Sub-Tasks
Learning Objectives
 to be completed
 Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 26.01 <u>Learning Objective</u> Selects submerged arc welding equipment JP Sign-off _____	26.01.01 Demonstrate an understanding of the fundamentals of submerged arc welding process (SAW) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.02 Determine the quality of end product Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.03 Demonstrate an understanding of semi-automated submerged arc welding equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.04 Demonstrate an understanding of automated submerged arc welding equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.05 Demonstrate an understanding of power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	26.01.06 Demonstrate an understanding of cooling systems Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.07 Demonstrate an understanding of and determine direct current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.08 Demonstrate an understanding of and determine alternating current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.09 Demonstrate an understanding of and determine polarity Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.10 Demonstrate an understanding of duty cycle Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	26.01.11 Determine base metal thickness Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.12 Demonstrate an understanding of cable sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.13 Demonstrate an understanding of wire feeders Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.14 Demonstrate an understanding of guns Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.15 Demonstrate an understanding of drive rolls Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	26.01.16 Demonstrate an understanding of contact tips Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.17 Demonstrate an understanding of nozzles Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.18 Demonstrate an understanding of flux hoppers Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.01.19 Match equipment to application Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 26.02 <u>Learning Objective</u> Selects consumables JP Sign-off _____	26.02.01 Determine electrode wires/fluxes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.02.02 Demonstrate an understanding of flux recovery systems Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.02.03 Demonstrate an understanding of storage requirements for flux and electrode wires Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.02.04 Demonstrate an understanding of and determine handling of fluxes and electrode wires Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.02.05 Match consumables to welding process Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____

**Task 26 - E
(cont'd)**

Learning Outcome
Welds using submerged arc welding process (SAW)

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 -Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

Task 26 Learning Needs

Sub-Tasks Learning Objectives
to be completed
Comments

SUB-TASK 26.03 <u>Learning Objective</u> Selects operating parameters JP Sign-off ____	26.03.01 Determine direct current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.02 Determine polarity Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.03 Determine alternating current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.04 Determine wire feed speed (current) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.05 Determine wire stick out Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	26.03.06 Identify current characteristics Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.07 Identify voltage characteristics Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.08 Follow manufacturers' recommendations Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.03.09 Make required adjustments Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 26.04 <u>Learning Objective</u> Sets up submerged arc welding equipment JP Sign-off ____	26.04.01 Select welding cable sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.04.02 Follow manufacturers' recommendations Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.04.03 Follow troubleshooting techniques Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.04.04 Follow set-up procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	26.04.05 Hook up cables to proper polarity Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	26.04.06 Check cables and connections Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____				

**Task 26 - E
(cont'd)**

Learning Outcome
Welds using submerged
arc welding process
(SAW)

**Task 26
Learning Needs**

**Sub-Tasks
Learning Objectives
to be completed**
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 26.05</p> <p><u>Learning Objective</u> Operates submerged arc welding equipment</p> <p>JP Sign-off _____</p>	<p>26.05.01 Select required task-specific personal protective clothing and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.02 Demonstrate an understanding of and follow ventilation requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.03 Follow equipment maintenance requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.04 Follow equipment shutdown procedures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.05 Demonstrate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>26.05.06 Demonstrate an understanding of the characteristics of electrodes and fluxes during welding process</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.07 Manipulate guns</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.08 Detect flaws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.09 Remove slag</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.10 Remove spatter</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>26.05.11 Maintain equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>26.05.12 Apply appropriate welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			

Task 27 - E
2 questions on the IP exam

Learning Outcome
Joins using stud arc welding process (SW)

Journeyperson
 Sign-off
 Task 27

Complete

Incomplete

Task 27 Learning Needs

Sub-Tasks Learning Objectives to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 27.01 <u>Learning Objective</u> Selects stud arc welding equipment JP Sign-off ____	27.01.01 Demonstrate an understanding of the fundamentals of stud arc welding process (SW) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.01.02 Demonstrate an understanding of power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.01.03 Demonstrate an understanding of stud arc welding equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.01.04 Demonstrate an understanding of stud arc welding components Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.01.05 Determine base metal thickness Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	27.01.06 Demonstrate an understanding of stud to gun connection sizes and shapes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.01.07 Match equipment to application Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			
SUB-TASK 27.02 <u>Learning Objective</u> Selects consumables JP Sign-off ____	27.02.01 Determine types of studs and stud to gun connections Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.02.02 Determine stud and stud to gun connection sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.02.03 Determine stud and stud to gun connection shapes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.02.04 Identify types of fastening devices Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.02.05 Identify types of ferrules Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	27.02.06 Identify ferrule sizes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	27.02.07 Match consumables to welding process Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			

**Task 27 - E
(cont'd)**

Learning Outcome
Joins using stud arc
welding process (SW)

Knowledge, Skills and Abilities - Competencies

**Task 27
Learning Needs**

**Sub-Tasks
Learning Objectives
to be completed
Comments**

SUB-TASK 27.03 <u>Learning Objective</u> Selects operating parameters JP Sign-off ____	27.03.01 Follow manufacturers' specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.03.02 Determine lift Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.03.03 Determine plunge time Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.03.04 Determine AC/DC current Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.03.05 Determine voltage/ amperage Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	SUB-TASK 27.04 <u>Learning Objective</u> Sets up stud arc welding equipment JP Sign-off ____	27.04.01 Follow manufacturers' specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.04.02 Follow welding equipment set-up procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.04.03 Test welding equipment set- up Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	
SUB-TASK 27.05 <u>Learning Objective</u> Operates stud arc welding equipment JP Sign-off ____	27.05.01 Follow shutdown procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.05.02 Perform proper set-up Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.05.03 Identify defects in work Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.05.04 Detect equipment malfunctions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	27.05.05 Level and square gun to material Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	27.05.06 Apply appropriate welding techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

Task 28 - E
2 questions on the IP exam
Learning Outcome
Joins using resistance welding process (RW) (RSW - Spot and Seam)

Journeyperson
 Sign-off
 Task 28

Complete

Incomplete

Task 28 Learning Needs

Sub-Tasks Learning Objectives to be completed
 Comments

Rating:

6 - Expert, perform a task beyond expected level and quality of performance, lead and/or teach others
 5 - Highly skilled, perform a task to the highest level and quality of performance, supervise others
 4 - Meet task time lines and perform tasks to the highest level and quality required by industry, without supervision
3 - Complete a task to the level and quality of performance required by industry without assistance or supervision
 2 - Complete a task with some assistance and supervision
 1 - Complete task with assistance and constant supervision

Type of Proof: O - Observation I - Interview D - Documentation

Use: 1 - Daily 2 - Often 3 - Seldom 4 - Never

Knowledge, Skills and Abilities - Competencies

SUB-TASK 28.01 <u>Learning Objective</u> Selects resistance welding equipment JP Sign-off ____	28.01.01 Demonstrate an understanding of the fundamentals of resistance welding process Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.02 Demonstrate an understanding of the characteristics of power sources Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.03 Demonstrate an understanding of cooling systems Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.04 Demonstrate an understanding of the characteristics of electrode tips Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.05 Demonstrate an understanding of characteristics of electrode wheels Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	28.01.06 Demonstrate an understanding of resistance welding equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.07 Determine type and thickness of base metal Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.08 Demonstrate an understanding of the duty cycle Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.09 Demonstrate an understanding of and assess accessibility Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.01.10 Match welding equipment to application Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
SUB-TASK 28.02 <u>Learning Objective</u> Selects operating parameters Continued next page	28.02.01 Determine type and thickness of base metal Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.02 Determine condition of base metals Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.03 Demonstrate an understanding of and determine current Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.04 Demonstrate an understanding of and determine voltage Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.05 Determine time (Spot) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	28.02.06 Determine travel speed (Seam) Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.07 Determine electrode tip pressure Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.08 Demonstrate an understanding of wheel pressure Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.09 Demonstrate an understanding of metallurgy Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	28.02.10 Demonstrate an understanding of weld cycle Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____

**Task 28 - E
(cont'd)**

Learning Outcome
Joins using resistance
welding process (RW)
(RSW - Spot and Seam)

**Task 28
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 28.02 Continued <u>Learning Objective</u> Selects operating parameters JP Sign-off ____	28.02.11 Source information Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.02.12 Determine welding cycle and appropriate parameters Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
--	--	---

SUB-TASK 28.03 <u>Learning Objective</u> Sets up resistance welding equipment JP Sign-off ____	28.03.01 Select current Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.03.02 Set time and pressure Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.03.03 Set cooling systems Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.03.04 Install and adjust electrodes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.03.05 Adjust current Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
---	--	---	---	---	--

28.03.06 Adjust weld time Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.03.07 Adjust pressure Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.03.08 Test welding equipment set- up Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
--	---	---

SUB-TASK 28.04 <u>Learning Objective</u> Operates resistance welding equipment JP Sign-off ____	28.04.01 Follow manufacturers' recommendations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.04.02 Follow and perform shutdown procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.04.03 Check set-up Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.04.04 Identify defects Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	28.04.05 Apply appropriate welding techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
--	--	---	--	--	---

APPENDIX A

WELDER NATIONAL OCCUPATIONAL ANALYSIS GLOSSARY OF TERMS

Air maintenance devices	Equipment used to maintain system air pressure (pressure regulator, compressor)
Ammeter	Meter used to measure amperage within an electrical circuit
Arc welding	Includes air arc, SMAW (Shielded Metal Arc Welding)
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
Back-stepping	Beginning a weld in the field of a joint and progressing towards the edge of the material
Backfire burnback	Condition in which torch flame rapidly burns back into the torch tip making a pronounced popping sound and causing the gases to rapidly re-ignite. Upon re-ignition, the flame re-appears at the end of the torch tip to burn back again into the torch tip. Usually caused by excessively dirty torch tip or low gas pressures
Blanks	Or pipe blanks – used to seal or cap off the ends of pipes
Carbon arc welding (CAW)	A type of welding, now almost totally obsolete, which used flux-coated electrodes and grounding clamps
CGA	Compressed Gas Association
Chalk line	A string coated with chalk used to snap straight chalk lines for the laying out of steel plates

Choker	A type of cable with loops on both ends that is used for rigging and lifting materials and equipment
Consumable guides	Certain types of equipment require guides which assist in feeding material to the operation at hand and which are consumed in the process
Consumables	Filler wire, electrodes, flux, gases, or other materials that are consumed in the course of welding and cutting operations
CSA	Canadian Standards Association
CWB	Canadian Welding Bureau
Deposition	The amount or rate of material placed by a welding operation
Drive rolls	In wire feed equipment that comes in various sizes to drive wire through liner to gun contact tip
Electrodes	Metal filler rods of varying lengths and thicknesses which may be coated with flux or other materials to aid in welding or cutting operations
FCAW	Flux Core Arc Welding
Female/male connector	Connectors used at the end of welding cables or torch hoses to connect cables or hoses together
Filler wire	Material to be melted during the welding process which comes supplied in a continuous roll rather than as a rod or electrode
Fillet gauge	Inspection tool used to measure fillet leg size or the effective throat of a fillet
Flash-arrester check-valve	A combination device that reduces the possibility of flashback

Flashback arrester	A type of equipment that prevents possible explosions due to ignition of gases in the hoses of oxy-fuel or air/fuel equipment
Flow meter	Meter used in conjunction with a regulator to measure the volume of gases used in welding processes
Flux	Chemical preparations which assist in the deposition of materials during operations such as brazing and soldering
Friction lighter	A tool used to ignite the gases at the tip of a welding or cutting torch
Gas diffusers	In Gas Tungsten Arc Welding, a collet body holder that diffuses the gas and grips the tungsten
GMAW	Gas Metal Arc Welding
Ground clamp	Clamp fastened to the end of a welding cable lead that is then fastened onto a workpiece to allow for a completed welding circuit
GTAW	Gas Tungsten Arc Welding
Guns	The part of certain types of welding equipment that is actually held in the hand and is used to control the filler wire or rod
Hard surfacing	Also known as hard facing – applying a hard filler metal to a softer base metal for wear resistance
Heated hoppers	Hoppers that are maintained at a certain temperature in order to produce the best results from the materials that they contain (such as flux)
Heat-treating	Any application of heat to metal assemblies for the purpose of bending, stress relieving, preheating, hardening or tempering
High-low gauge	Inspection device used to measure the alignment or misalignment of steel surfaces

Intermittent welding	Short welds spaced out along a joint
Inverted power sources	Inverters are designed to operate on a high cycle in order to provide high amperage in a smaller unit
Magnesium ribbon	A flammable metal strip used to ignite thermit welding compounds
Magnetic particle test	A test involving magnets and iron filings to determine the existence of defects or cracks in welds
Metallurgy	A branch of science that involves the chemical analysis of metals and alloys
NFPA	National Fire Protection Association
Nozzle	Ceramic or metal cup located at the end of a welding gun or TIG torch which gases flow through before traveling to work surface
OHS	Occupational Health and Safety
Ovens	Ovens that are maintained at a certain temperature in order to produce the best results from the materials that they contain (such as electrodes)
Pipe angle marker	Device with a level for finding or setting angles on pipe
Plasma console	The console used to control the equipment during plasma arc welding
Plumb bob	Precision machined weight tied to the end of a string used for aligning points of different elevations and setting work pieces in proper alignment
Portable rod oven	Small oven designed to be used on field jobs and site projects to heat welding rods
Postheating	Heating assemblies after final welds are complete in order to remove stresses, often involving wrapping the assembly in fire-retardant materials to allow even distribution of heat

Preheating	Heating metals to a desired temperature to aid in the welding process. Normally seen on thick plate sections, alloy metals and cold steels. Generally to a temperature approved by a code or engineer within a QA system
Pressure Vessels Act	A Canadian act that dictates the construction and minimum requirements of vessels under pressure
Puddle	The pool or puddle of molten material that actually forms the bond between pieces that are being welded
Purge gas	A neutral gas used to force other potentially explosive gases from an assembly before welding commences
Reaming	A process in the joining of pipe to restore the pipe to its original inside diameter, usually by removing the internal burr formed by cutting the pipe
Regulator	A piece of equipment that regulates the flow and/or pressure of gases through a hose
Resistance welding	A type of welding that requires the passage of current through the material (usually when bonding sheet materials) at a precise location and which depends on the melting together of the two pieces at that point
Shield gas	The gas used to surround a welding operation and to protect it from the atmosphere
Skip-welding	Placing short welds along a joint in no particular sequence
Slag	Impure or vitrified material produced during some welding operations
Sling	Any metal or synthetic flexible device used to cradle or support a load; slings are attached to the hoist line of the lifting device to complete the lift
Soapstone	Either a flat or round marker made of soft soapstone that is used to temporarily mark steel for layout work

Spray welding	Oxy-fuel or plasma spray involving spraying a filler material onto a rough surface for purposes of build-up
Squeeze time	The amount of time the electrodes welder are activated over the point of the weld
Staggered burning	Often done with an automatic burning machine, this technique
Staggered welding	Placing short welds along a joint while leaving spaces between welds
Stick-out	The amount of filler wire, tungsten or other material protruding from the gun or welding head of the equipment
Temperature stick	Indicating crayon which melts at a certain temperature
Thermit mould	The mould used to contain the molten materials and to give the desired finished shape to a thermit weld
Transformer rectifiers	A type of welding power source that brings in AC power and rectifies it to DC through the use of a diode
Voltage meter	Meter used to measure voltage within an electrical circuit
Welding tip	Tip found at the end of a welding gun in which electricity is transferred from the gun to the consumable wire before the wire enters the weld zone
WHMIS	Workplace Hazardous Materials Information System
Yoke	A U-shaped piece of equipment use to perform magnetic particle tests on welded assemblies

APPENDIX B

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
Technical Reading	<ul style="list-style-type: none"> ➤ Find and use information from one source - e.g., a book, Internet, and work order ➤ Find and use information from many parts of a single source - e.g., a code book ➤ Recognize what is important from several sources of information ➤ Interpret information using more than one source ➤ Apply information to the task
Document Use	<ul style="list-style-type: none"> ➤ Use large or difficult documents which are organized into units, headings, chapters or sub-headings -e.g., a code book ➤ Find information in large or very specialized documents which may have many smaller documents - e.g., operations manuals, safety manuals ➤ Find information from many sources - e.g., code books, blueprints, work manuals ➤ Enter information into pre-set documents and forms - e.g., accident report forms, order forms ➤ Combine information from several sources and use it – e.g., alter a work order using information from code books, manuals and blueprints ➤ Create new documents using information from a variety of sources – e.g., create work orders, material lists, time logs sheets

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
Writing	<ul style="list-style-type: none"> ➤ Write information into a pre-set form – e.g., contract, lease, building permit ➤ Write short messages, explanations, requests or directions – e.g., write a work order, memo or written message for a foreman, supervisor or client ➤ Write longer messages, explanations, requests or directions – e.g., write an accident report or a detailed message to a foreman, supervisor or client ➤ Write a longer article which may need to be organized into headings with a table of contents, e.g., work report, section of a work manual ➤ Write detailed, non-routine articles – e.g., make recommendations; use technical language to give directions to or ask for information from other tradespeople
Math	<ul style="list-style-type: none"> ➤ Perform math calculations using formulas, fractions, decimals and percent ➤ Combine one or more math operations to solve a problem ➤ Estimate numbers ➤ Convert between Imperial and Metric measurement systems ➤ Solve equations ➤ Use trigonometry to solve problems (not a requirement in every trade)

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
Computer Use	<ul style="list-style-type: none"> ➤ Perform basic computer operations needed to produce a document – e.g., a letter ➤ Find information on the Internet ➤ Find information in workplace databases ➤ Send and receive email ➤ Enter data into a set format – e.g., form, spreadsheet, chart ➤ Manage electronic information – e.g., save files ➤ Choose and use the best software program for the task
Oral Communication	<ul style="list-style-type: none"> ➤ Take directions from a supervisor or co-workers on work-related projects ➤ Give directions to co-workers on work-related projects ➤ Exchange information using trade terminology ➤ Provide details on facts ➤ Provide opinions on work-related projects ➤ Organize, present and interpret ideas in a logical manner ➤ Communicate one-on-one or in a group on complex work-related matters

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
Thinking Skills	<ul style="list-style-type: none"> ➤ Identify problems ➤ Apply learning from previous experiences to identify possible solutions to a problem ➤ Find, evaluate and choose appropriate information to solve a problem ➤ Evaluate the best possible solution to a problem ➤ Make decisions ➤ Plan and organize job tasks to set timelines ➤ Ensure quality control standards are met
Working with Others	<ul style="list-style-type: none"> ➤ Complete tasks to industry standard under supervision ➤ Complete tasks to industry standard without supervision ➤ Complete assigned tasks to meet timelines that meet project deadlines ➤ Accept feedback ➤ Give feedback ➤ Evaluate and apply recommendations from co-workers ➤ Resolve conflict ➤ Mentor an Apprentice

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
Continuous Learning	<ul style="list-style-type: none"> ➤ Identify work/career strengths and areas for improvement ➤ Develop a work/career learning plan ➤ Set goals ➤ Participate in learning opportunities to meet workplace goals ➤ Apply new learning in the workplace environment ➤ Revisit, reflect on and revise the learning plan regularly ➤ Engage in learning opportunities to keep skills current and meet career goals

