



More skills ... more opportunities

Professional Skills Record

Metal Fabricator

NOC 7263

ACKNOWLEDGEMENTS

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

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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 journeyman, 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 Learning Needs</p> <p>Sub-Tasks <u>Learning Objectives</u> to be completed 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

Metal Fabricator

NOC 7263

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



Metal Fabricator
NOC 7263

The **Professional Skills Record (PSR)** is a technical skills assessment tool designed to be used in the workplace by an apprentice and a journeyman. 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 journeymen 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

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Metal Fabricator 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 journey person 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 Metal Fabricator.

PSR Metal Fabricator 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 example, 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: Metal Fabricator National Occupational Classification (NOC) 7263

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 Metal Fabricator 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.”)

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 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

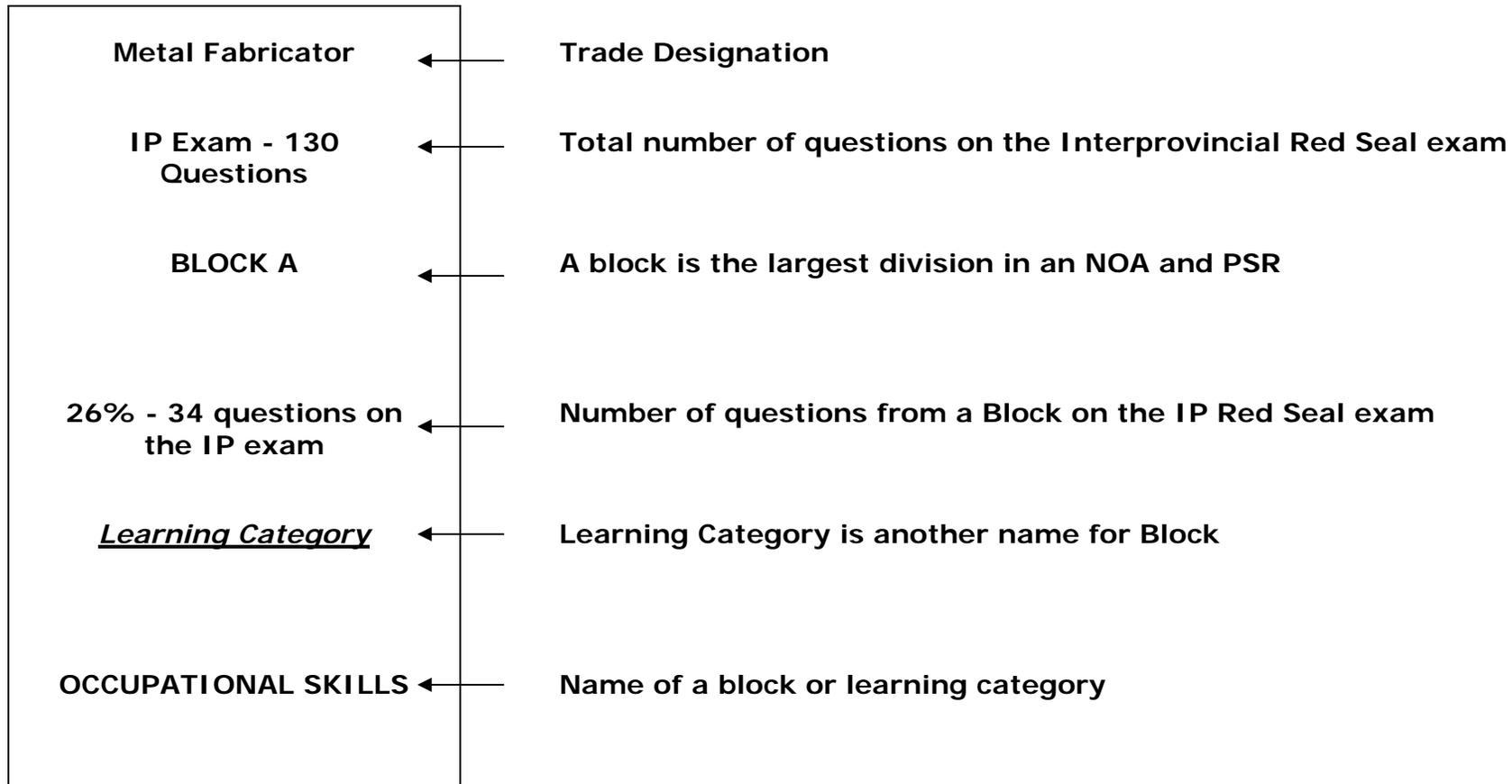
Completing this PSR can help you:

- ◆ 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

8 questions on the IP exam

Learning Outcome

Maintains and uses tools and equipment

- ← 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

Journeyperson Sign-off Task 1

Complete

Incomplete

- ← Journeyperson’s initials verify that an apprentice can perform the task to industry standards.
- ← Journeyperson’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

Maintains power tools

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 electric power tools such as grinders, drills and saws

← 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*)

Metal Fabricator
IP Exam - 130 Questions

BLOCK A
26% - 34 Questions on the IP exam

Learning Category
OCCUPATIONAL SKILLS

Task 1 - A
8 questions on the IP exam

Learning Outcome
Maintains and uses tools and equipment

Journeyperson
 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 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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 1.01 <u>Learning Objective</u> Maintains hand tools JP Sign-off ____	1.01.01 Identify types of hand tools such as hammers, files and clamps Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.02 Determine use of hand tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.03 Sharpen tools such as shipping hammers and centre punches Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.04 Remove mushroom heads from chisels Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.01.05 Handle and store hand tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	1.01.06 Recognize worn, damaged and defective hand tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 1.02 <u>Learning Objective</u> Maintains power tools JP Sign-off ____	1.02.01 Identify electric power tools such as grinders, drills and saws Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.02 Identify pneumatic power tools such as grinders, needle de-scaler and drills Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.03 Identify hydraulic power tools such as punches and rams Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.04 Demonstrate an understanding of rpm rating of power tool and attachments Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.05 Demonstrate an understanding of and determine power tool and attachment required for use Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	1.02.06 Check fluids in hydraulic tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.07 Lubricate pneumatic tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.08 Check cords and switches on electric tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.09 Handle and store power tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.02.10 Recognize worn, damaged and defective power tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

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

Learning Outcome
Maintains and uses tools and equipment

**Task 1
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 1.03</p> <p><u>Learning Objective</u> Maintains stationary machinery</p> <p>JP Sign-off _____</p>	<p>1.03.01 Demonstrate an understanding of and identify types of stationary machinery such as shears, drill presses, brakes and ironworkers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.02 Find the location of lubrication points</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.03 Demonstrate an understanding of and identify types of lubricants such as grease and gear oil</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.04 Demonstrate an understanding of and identify types of coolants</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.05 Demonstrate an understanding of and follow safe operating procedures (SOP) for stationary machinery</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>1.03.06 Clean machinery</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.07 Lubricate machinery</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.08 Check and top up coolant reservoir on drill presses and saws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.09 Inspect dies and blades</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.03.10 Recognize worn, damaged and defective parts in stationary machinery</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>1.03.11 Lock out and tag out stationary machinery</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 1.04</p> <p><u>Learning Objective</u> Maintains layout and measuring tools</p> <p>JP Sign-off _____</p>	<p>1.04.01 Identify and demonstrate an understanding of types of layout tools such as squares, dividers, levels and trammel points</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.04.02 Identify and demonstrate an understanding of types of measuring tools such as calipers, steel gauges and measuring tapes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.04.03 Check accuracy of layout and measuring tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.04.04 Recognize worn, damaged and defective layout and measuring tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.04.05 Handle and store layout and measuring tools</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>

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

Learning Outcome
Demonstrates common trade practices

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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 1.05</p> <p><u>Learning Objective</u> Maintains cutting and welding equipment</p> <p>JP Sign-off _____</p>	<p>1.05.01 Identify types of cutting equipment such as plasma and oxy-fuel</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.02 Identify types of welding equipment such as electrode holders, MIG gun and TIG torch</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.03 Identify components of cutting equipment such as regulators, tips and hoses</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.04 Replace lenses in welding helmets</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.05 Repair hoses</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>1.05.06 Clean and store cutting and welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.07 Change tips, diffusers and nozzles</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.08 Change plasma torch parts</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.05.09 Recognize worn, damaged and defective cutting and welding equipment and remove them from service</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 1.06</p> <p><u>Learning Objective</u> Uses access equipment</p> <p>JP Sign-off _____</p>	<p>1.06.01 Identify types of access equipment such as scissor lifts, scaffolding, ladders and man lifts</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.06.02 Obtain training and certification requirements for using access equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.06.03 Select PPE required for access equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.06.04 Demonstrate an understanding of and follow jurisdictional safety regulations regarding use of access equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.06.05 Inspect equipment and complete check list</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>1.06.06 Operate scissors lifts and man lifts</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>1.06.07 Recognize unsafe, worn, damaged and defective access equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			

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

Learning Outcome
Demonstrates common trade practices

**Task 1
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 1.07 <u>Learning Objective</u> Uses personal protective equipment (PPE) and safety equipment JP Sign-off _____	1.07.01 Determine types of PPE such as respirators, face shields, safety boots and safety glasses Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.02 Determine safety equipment such as fire extinguishers and grinder guards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.03 Site location of safety equipment such as first aid kits and eye wash stations Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.04 Demonstrate an understanding of and follow evacuation plans Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.05 Identify and demonstrate an understanding of shut down devices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	1.07.06 Select PPE and safety equipment according to task Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.07 Maintain PPE and safety equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.08 Store PPE and safety equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	1.07.09 Recognize unsafe, worn, damaged and defective PPE and safety equipment and remove them from service Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	

Task 2 - A
11 questions on the IP exam

Learning Outcome
Organizes work

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 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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 2.01</p> <p><u>Learning Objective</u> Interprets plans, drawings and specifications</p> <p>JP Sign-off _____</p>	<p>2.01.01 Identify, read and demonstrate an understanding of types of drawings such as detail, shop and blueprints</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.02 Differentiate between orthographic and isometric views</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.03 Verify types of specifications such as tolerances and material types</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.04 Recognize and calculate using imperial and metric systems of measurements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.05 Interpret welding symbols and general notes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>2.01.06 Convert between imperial and metric measurements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.07 Interpret types of lines such as broken, hidden, centre and section lines</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.08 Visualize in three dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.01.09 Reference piece marks on drawings and specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 2.02</p> <p><u>Learning Objective</u> Uses documentation and reference material</p> <p>JP Sign-off _____</p>	<p>2.02.01 Demonstrate an understanding of and identify types of documents such as the quality assurance manual, word orders (job numbers), Workplace Hazardous Material Information Systems (WHMIS) materials, steel catalogues and confined space logs</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.02.02 Research information in the quality assurance manuals such as weld map, hydrostatic tests and pre-shipment quality checks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.02.03 Locate documentation</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.02.04 Complete work documents such as time sheets, machinery checklists and progress report sheets</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

**Task 2 - A
(cont'd)**

Learning Outcome
Organizes work

**Task 2
Learning Needs**

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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 2.03</p> <p><u>Learning Objective</u> Communicates with others</p> <p>JP Sign-off _____</p>	<p>2.03.01 Demonstrate an understanding of and use trade terminology</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.02 Demonstrate an understanding of and use effective verbal and written communication</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.03 Use communication equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.04 Communicate with supervisors</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.05 Consult with colleagues</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>2.03.06 Communicate with other tradespeople such as electricians, industrial mechanics (millwrights) and welders</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.07 Use confined space communication methods</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.08 Use hand signals</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.03.09 Mentor apprentices</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 2.04</p> <p><u>Learning Objective</u> Organizes project tasks</p> <p>JP Sign-off _____</p>	<p>2.04.01 Determine task requirements such as work space, materials and supplies</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.04.02 Assess approximate time required to complete project tasks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.04.03 Assess finished project restrictions such as the ability to remove project from the fabrication shop, crane limitations and transportation considerations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.04.04 Determine and organize required equipment and material</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>2.04.05 Coordinate tasks with coworkers and other trades</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>2.04.06 Prepare work area</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

**Task 2 - A
(cont'd)**

Learning Outcome
Organizes work

**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 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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 2.05 <u>Learning Objective</u> Maintains safe work environment JP Sign-off ____	2.05.01 Read, demonstrate an understanding of and follow company safety policies and procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.02 Demonstrate an understanding of and recognize workers' rights and responsibilities Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.03 Obtain site-specific training requirements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.04 Follow housekeeping practices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.05 Follow site-specific emergency procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	2.05.06 Identify on-site safety locations such as first aid stations, eye wash stations, muster points and fire extinguishers Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.07 Follow disposal and recycling procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.08 Apply WHMIS procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.09 Recognize potential hazards such as heights, confined spaces, moving machinery, toxic fumes and hazardous substances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.10 Prevent and report personal injury hazards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	2.05.11 Participate in site orientation and safety training Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.12 Handle and store hazardous materials such as pickling paste, acetone and aerosols Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.13 Install temporary safety protection such as barriers and lockouts Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.14 Inspect tools and equipment for damage Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	2.05.15 Report damaged machinery and accessories Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 3 - A
6 questions on the IP exam

Learning Outcome
Performs quality assurance

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> Performs visual inspections JP Sign-off ____	3.01.01 Recognize types of materials such as mild steel, stainless steel and aluminium Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.01.02 Use tools and equipment such as squares and straight edges Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.01.03 Refer to drawings during visual inspection Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.01.04 Detect surface imperfections such as welding spatter, gouges and sharp edges Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.01.05 Detect material defects such as twists, deformities and scratches in stainless Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	3.01.06 Detect fabrication defects such as heat warpage, improper fit-up and piece alignment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.01.07 Identify location of defect and recommend corrective measures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____			
SUB-TASK 3.02 <u>Learning Objective</u> Verifies measurement JP Sign-off ____	3.02.01 Determine measurements to be verified such as raw material, on-going dimensional checks and final product measurements Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.02.02 Demonstrate an understanding of the causes of changes in dimensions such as heating and cooling Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.02.03 Demonstrate an understanding of types of reference lines such as tangent lines, centre lines and work points Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.02.04 Check raw materials arriving at the shop Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.02.05 Select and use tools and equipment such as measuring tapes, levels, squares, protractors and dividers Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	3.02.06 Check dimensions of components such as stiffeners, gussets and clips Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.02.07 Check dimension and gauge of hold patterns Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	3.02.08 Check square of material using corner-to-corner dimensions and triangulation method Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____		

Task 3 - A
(cont'd)

Learning Outcome
Performs quality assurance

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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 3.03</p> <p><u>Learning Objective</u> Performs post-welding checks</p> <p>JP Sign-off _____</p>	<p>3.03.01 Assess conditions to check for such as changes in dimensions, distortion, squareness and discoloration</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.03.02 Determine sequence of fabrication process</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.03.03 Identify materials such as stainless steel, aluminium and mild steel</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.03.04 Select and use tools and equipment such as fillet gauges, squares, measuring tapes, chalk lines and straight edges</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.03.05 Check for weld size and quality</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>3.03.06 Perform a trial fit of sub-assemblies</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.03.07 Identify location of defect and recommend corrective measures</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 3.04</p> <p><u>Learning Objective</u> Marks materials and parts</p> <p>JP Sign-off _____</p>	<p>3.04.01 Demonstrate an understanding of reasons for marking material and parts such as traceability, and identification for fabrication and erection</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.04.02 Identify mill certifications and heat numbers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.04.03 Interpret company method of assigning piece marks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.04.04 Refer to drawings to obtain piece marks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>3.04.05 Transfer information from parent piece to cutoff and crop pieces</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>3.04.06 Use marking devices such as roller pens, crayon markers and stamps</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

Task 3
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Task 3 - A
(cont'd)
Learning Outcome
Performs quality assurance

Task 3
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 3.05 <u>Learning Objective</u> Verifies layout JP Sign-off ____	3.05.01 Recognize layout method used Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.05.02 Implement company method of checking layout Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.05.03 Determine crucial work points to be verified Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.05.04 Check measurements, angles, orientation and slopes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.05.05 Select and use layout equipment such as measuring tapes, dividers and protractors Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	3.05.06 Refer to drawings when verifying layout Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	3.05.07 Use jigs and templates to verify layout Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

4 - A
9 questions on the IP exam

Learning Outcome
Handles materials

Journeyman
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 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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 4.01 <u>Learning Objective</u> Obtains materials JP Sign-off ____	4.01.01 Recognize and determine types of material such as sheet and bar stock, pipe and tubing Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.02 Determine types of components such as cut-to-size pieces, flanges and elbows Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.03 Recognize grades of material Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.04 Assign storage location Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.01.05 Identify material required according to drawings and specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	4.01.06 Select required amount of materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 4.02 <u>Learning Objective</u> Verifies piece marks JP Sign-off ____	4.02.01 Determine types of material Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.02 Implement company method of assigning piece marks Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.03 Cross-reference piece marks with drawings and specifications Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.04 Locate piece marks on material Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.02.05 Check for piece marks after painting and galvanizing Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

4 - A
(cont'd)

Learning Outcome
Handles materials

Task 4
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 4.03</p> <p><u>Learning Objective</u> Determines weights</p> <p>JP Sign-off _____</p>	<p>4.03.01 Apply mathematics as applicable to this trade</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.02 Identify material shapes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.03 Evaluate material characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.04 Select and use steel catalogues and calculators</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.05 Select and use tools and equipment such as plate gauges, load indicators, micrometers and measuring tapes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>4.03.06 Identify types of material</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.07 Visually estimate material dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.08 Use weight chart</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.03.09 Perform mathematical calculations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 4.04</p> <p><u>Learning Objective</u> Identifies lifting points</p> <p>JP Sign-off _____</p>	<p>4.04.01 Identify types of material</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.04.02 Demonstrate an understanding of and determine types of lifting methods such as chokers and basket hitches</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.04.03 Assess types of rigging devices such as slings, chains and wire ropes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.04.04 Calculate safe lifting angles</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.04.05 Determine centre of gravity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>4.04.06 Balance load</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>4.04.07 Identify weak points and potential hazards in the load</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			

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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 4.05 <u>Learning Objective</u> Operates material handling equipment JP Sign-off _____	4.05.01 Assess material weight, shape and dimension Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.02 Identify types of material handling equipment such as beam clamps, slings, forklifts, carts, conveyor rollers and dollies Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.03 Obtain certification requirements for operating material handling equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.04 Determine safe working load Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.05 Demonstrate an understanding of and follow refuelling procedures Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	4.05.06 Demonstrate an understanding of and recognize lifting device capacity Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.07 Record using log books for cranes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.08 Demonstrate an understanding of and interpret hand signals Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.09 Locate emergency stop buttons or switches Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.10 Select material handling equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	4.05.11 Transfer load using material handling equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.12 Place and use tag lines when required Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.13 Use dunnage and softeners to protect the rigging and load Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.14 Locate and interpret load charts Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	4.05.15 Recognize worn, damaged and defective material handling equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

**Task 4
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Metal Fabricator

BLOCK B

47% - 61 Questions on the IP exam

Learning Category
FABRICATION OF COMPONENTS

5 - B

22 questions on the IP exam

Learning Outcome
Identifies materials

Journeyperson
Sign-off
Task 5

Complete

Incomplete

Task 5 Learning Needs

Sub-Tasks Learning Objectives to be completed

Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 5.01 <u>Learning Objective</u> Performs layout JP Sign-off _____	5.01.01 Determine types of layout methods such as parallel line development, radial line development and triangulation Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.01.02 Select applications for different layout methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.01.03 Interpret CAD produced layouts Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.01.04 Match layout method to job Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
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SUB-TASK 5.02 <u>Learning Objective</u> Performs pattern development JP Sign-off _____	5.02.01 Determine shapes and patterns Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.02.02 Apply pattern development techniques Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.02.03 Use triangulation method of pattern development Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.02.04 Use radial line development Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.02.05 Use parallel line development Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	5.02.06 Use tools such as dividers, compasses and trammel points Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.02.07 Develop patterns to minimize waste Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

SUB-TASK 5.03 <u>Learning Objective</u> Calculates material allowances for various processes Continued next page	5.03.01 Apply mathematics as applicable to this trade Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.02 Calculate bending, rolling and cutting allowances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.03 Demonstrate an understanding of and determine machinery to be used and their limits Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.04 Read bill of materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.05 Perform mathematical calculations and use formulas to determine requirements such as stretch-out length, true length and angular measurements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	5.03.06 Use charts and reference materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.07 Select and use tools and equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.08 Convert inside diameter (ID) or outside diameter (OD) to mean diameter (MD) in order to calculate stretch-out Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.09 Calculate total plate required based on stretch-out diameter and length Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	5.03.10 Pre-bend material before rolling Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

5 - B
(cont'd)

Learning Outcome
Identifies materials

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 timelines and perform tasks to the highest level and quality required by industry, without supervision
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- 2 - Complete a task with some assistance and supervision
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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 5.03 Continued <u>Learning Objective</u> Calculates material allowances for various processes</p> <p>JP Sign-off _____</p>	<p>5.03.11 Allow for excess material necessary for rolling when pre-bending is not possible</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.03.12 Calculate true length of an incline based on rise and run such as used in hopper construction</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.03.13 Verify if plates are square</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		
<p>SUB-TASK 5.04 <u>Learning Objective</u> Determines dimensions</p> <p>JP Sign-off _____</p>	<p>5.04.01 Apply mathematics as applicable to this trade</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.02 Differentiate between running dimensions and incremental dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.03 Demonstrate an understanding of angular dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.04 Extract required information from drawings</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.05 Perform geometric calculations such as $a^2 + b^2 = c^2$, diameter of circles and areas</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>5.04.06 Calculate arc measurements from angular dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.07 Use measuring and layout tools such as bevel squares and measuring tapes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.08 Convert between fractions and decimals</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.04.09 Convert between imperial and metric measurements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

5 - B
(cont'd)

Learning Outcome
Identifies materials

Task 5
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 5.05</p> <p><u>Learning Objective</u> Transfers dimensions</p> <p>JP Sign-off _____</p>	<p>5.05.01 Apply mathematics as applicable to this trade</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.05.02 Convert using both imperial and metric systems of measurements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.05.03 Use measuring and layout tools such as bevel squares, measuring tapes, plumb bobs and soapstones</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.05.04 Perform mathematical calculations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.05.05 Lay out incline using rise and run in both metric and imperial</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>5.05.06 Transfer top dead centre from one end of a cylinder to the other end using tools such as 2-foot square and 2-foot level</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.05.07 Determine chalk line locations such as centre lines and quarter marks</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.05.08 Locate work points</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		
<p>SUB-TASK 5.06</p> <p><u>Learning Objective</u> Makes templates</p> <p>JP Sign-off _____</p>	<p>5.06.01 Identify types of templates such as hole-punching templates, wrap-arounds, cutting templates and arc templates (sweeps)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.06.02 Determine template materials such as wood, cardboard and metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.06.03 Lay out templates using manual drafting</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.06.04 Select and use tools to construct templates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.06.05 Measure to required dimensions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>5.06.06 Mark template with information such as part numbers, layout information and material required</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

5 - B
(cont'd)

Learning Outcome
Identifies materials

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
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- 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 5.07</p> <p><u>Learning Objective</u> Assembles jigs</p> <p>JP Sign-off _____</p>	<p>5.07.01 Demonstrate an understanding of the purpose and applications of jigs</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.07.02 Apply jig construction methods</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.07.03 Determine and follow drawing specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.07.04 Select material to construct jigs for specific purpose</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.07.05 Plan for release of material from jig</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>5.07.06 Select and use tools for assembling jigs</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.07.07 Fasten jig components together</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>5.07.08 Mark jigs with information such as part numbers, material required and previous work orders</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

Task 6 - B
18 questions on the IP exam

Learning Outcome
Cuts 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

<p>SUB-TASK 6.01</p> <p><u>Learning Objective</u> Cuts material using plasma cutting equipment</p> <p>JP Sign-off _____</p>	<p>6.01.01 Select plasma cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.02 Determine pressure settings</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.03 Determine materials that can be cut using plasma cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.04 Demonstrate an understanding of limitations of plasma cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.05 Set up plasma cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>6.01.06 Adjust settings on plasma cutting equipment according to material being cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.07 Select gas to be used for cutting different materials with plasma cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.08 Use jigs and guides during cutting operations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.01.09 Match tip size to thickness of plate</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 6.02</p> <p><u>Learning Objective</u> Cuts material using oxy-fuel cutting equipment</p> <p>JP Sign-off _____</p>	<p>6.02.01 Select oxy-fuel cutting equipment, components and consumables</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.02.02 Determine pressure settings</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.02.03 Demonstrate an understanding of and determine various gases and their properties</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.02.04 Determine materials that can and cannot be cut using oxy-fuel cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.02.05 Set up and take down oxy-fuel cutting equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>6.02.06 Match tip size to thickness of material</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.02.07 Use jigs and guides during cutting operations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.02.08 Recognize dangers of high pressure cylinders</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

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

Learning Outcome
Cuts 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 timelines and perform tasks to the highest level and quality required by industry, without supervision
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 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> Cuts material using shears JP Sign-off _____	6.03.01 Select types of shears such as mechanical and hydraulic Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.02 Demonstrate an understanding of and determine capacity of shears Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.03 Determine types of materials that can and cannot be sheared Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.04 Identify and follow shear safety features Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.05 Select and use measuring tools Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.03.06 Place materials to be cut suing equipment such as magnets and suction cups Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.07 Use manual settings such as back gauges, rake angle and blade clearances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.08 Operate shears using control panels Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.09 Set blade clearances Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.03.10 Utilize hold-down devices Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.03.11 Square plates Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				

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

Learning Outcome
Cuts materials

**Task 6
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 6.04</p> <p><u>Learning Objective</u> Cuts material using saws</p> <p>JP Sign-off _____</p>	<p>6.04.01 Select types of saws such as band saws, chop saws and cold saws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.04.02 Determine materials that can and cannot be cut with saws</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.04.03 Demonstrate an understanding of saw characteristics such as blade types, tooth pitch and blade thickness</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.04.04 Select blade types for material being cut</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.04.05 Select blade speed and feed rate</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>6.04.06 Use jigs, gauges and backstops during cutting operations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.04.07 Select and use coolants where applicable</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			
<p>SUB-TASK 6.05</p> <p><u>Learning Objective</u> Cuts material using ironworkers</p> <p>JP Sign-off _____</p>	<p>6.05.01 Demonstrate an understanding of stations on ironworkers and their functions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.05.02 Demonstrate an understanding of and follow capacities and limitations of machine</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.05.03 Determine materials that can and cannot be cut, punched or notched using ironworkers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.05.04 Demonstrate an understanding of ironworker safety features</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.05.05 Select punch and die</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>6.05.06 Change punch and die</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.05.07 Set up ironworkers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>6.05.08 Use jigs, gauges and backstops during cutting operations</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

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

Learning Outcome
Cuts 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
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 - 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 6.06 <u>Learning Objective</u> Drills holes JP Sign-off ____	6.06.01 Determine types of holes such as blind holes, countersunk holes and pilot holes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.02 Select and use drilling equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.03 Set up magnetic drill Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.04 Use templates Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.06.05 Select speed and feed rates Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.06.06 Select and use lubricants Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____				
SUB-TASK 6.07 <u>Learning Objective</u> Cuts threads JP Sign-off ____	6.07.01 Determine thread profiles such as national Pipe Tapered (NPT), National Coarse (NC) and National Fine (NF) Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.07.02 Identify internal and external threads Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.07.03 Recognize left- and right-handed threads Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.07.04 Determine drill sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.07.05 Differentiate between imperial and metric measurements Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	6.07.06 Select and use lubricants Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.07.07 Select and use threading tools and equipment such as taps, dies and pipe threaders Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.07.08 Select speed and feed rates Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

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

Learning Outcome
Cuts materials

**Task 6
Learning Needs**

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 6.08 <u>Learning Objective</u> Prepares joints JP Sign-off _____	6.08.01 Determine types of joints such as bevels, U-groove and V-groove Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.08.02 Identify the welding requirements of joint preparation Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.08.03 Interpret welding symbols Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.08.04 Select and use equipment for edge bevelling and grooving such as oxy-fuel cutting equipment, plasma cutters and nibblers Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	6.08.05 Maintain dimensional consistency throughout length Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____

Task 7 - B
21 questions on the IP exam

Learning Outcome
Forms materials

Journeyperson
Sign-off
Task 7

Complete

Incomplete

Task 7
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 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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 7.01</p> <p><u>Learning Objective</u> Forms material using plate rollers</p> <p>JP Sign-off _____</p>	<p>7.01.01 Demonstrate an understanding of material's workability</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.01.02 Determine types of plate rollers such as pyramid rollers and initial pinch rollers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.01.03 Demonstrate an understanding of limitations and capacities of plate rollers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.01.04 Select and use templates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.01.05 Operate controls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>7.01.06 Adjust machine settings such as roller spacing, parallelism and speed</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				
<p>SUB-TASK 7.02</p> <p><u>Learning Objective</u> Forms material using shape rollers</p> <p>JP Sign-off _____</p>	<p>7.02.01 Recognize material's workability</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.02.02 Determine types of shape rollers such as angle rollers and tubing rollers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.02.03 Demonstrate an understanding of limitations and capacities of shape rollers</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.02.04 Select and change dies</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.02.05 Select and use templates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>7.02.06 Operate controls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.02.07 Adjust machine settings such as roller spacing and speed</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>			

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

Learning Outcome
Forms materials

**Task 7
Learning Needs**

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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 7.03</p> <p><u>Learning Objective</u> Forms material using brake presses</p> <p>JP Sign-off _____</p>	<p>7.03.01 Determine types of brake presses such as hydraulic and mechanical</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.02 Demonstrate an understanding of capacities and limitations of brake presses</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.03 Demonstrate an understanding of material's workability</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.04 Demonstrate an understanding of and calculate specific minimum bend radius for various materials</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.05 Demonstrate an understanding of the importance of grain direction in plate</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>7.03.06 Select and change dies</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.07 Operate controls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.08 Set back gauges</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.03.09 Select and use templates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	
<p>SUB-TASK 7.04</p> <p><u>Learning Objective</u> Forms material using plate rollers</p> <p>JP Sign-off _____</p>	<p>7.04.01 Select types of benders such as manual benders, pipe benders and mandrel benders</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.04.02 Demonstrate an understanding of material's workability</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.04.03 Demonstrate an understanding of capacities and limitations of benders</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.04.04 Set up machine</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>7.04.05 Select and change dies</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>7.04.06 Operate controls</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

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

Learning Outcome
Forms materials

**Task 7
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 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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 7.05 <u>Learning Objective</u> Applies heat for forming JP Sign-off _____	7.05.01 Recognize materials being formed Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.02 Demonstrate an understanding of and follow heating requirements for forming various materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.03 Recognize indicators of temperature such as colour of heated materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.04 Identify and avoid fire hazards Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.05 Use jigs for forming Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	7.05.06 Select and use heating equipment such as induction heaters, oxy-fuel torches and ovens Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	7.05.07 Measure temperature of heated materials Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

Metal Fabricator

BLOCK C
27% - 35 Questions
on the IP exam

Learning Category
ASSEMBLY OF COMPONENTS

8 - C
14 questions on the IP exam

Learning Outcome
Fits and fastens sub-components and components

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> Determine proper sequence of assembly JP Sign-off ____	8.01.01 Demonstrate an understanding of and determine the importance of interpreting plans and specifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.01.02 Assess available equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.01.03 Determine assembly constraints such as building size and equipment limits Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.01.04 Identify hold points Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.01.05 Demonstrate an understanding of and determine inspection requirements for the components Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	8.01.06 Visualize finished components prior to assembly Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.01.07 Define steps in the process Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.01.08 Coordinate in conjunction with others Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____		
SUB-TASK 8.02 <u>Learning Objective</u> Assembles sub-components and components JP Sign-off ____	8.02.01 Determine and demonstrate an understanding of assembly process Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.02 Identify starting point Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.03 Work to tolerances Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.04 Demonstrate an understanding of materials and their characteristics Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.05 Determine and demonstrate an understanding of types of fastening devices such as pins, rivets bolts and slips, as well as their specifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	8.02.06 Demonstrate an understanding of and follow weld specifications and procedures Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.07 Select and use tools and equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.08 Connect components together Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	8.02.09 Work within tolerance levels Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	

8 - C
(cont'd)

Learning Outcome
Fits and fastens sub-
components and components

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 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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 8.03 <u>Learning Objective</u> Sets fabricated component in place JP Sign-off _____	8.03.01 Interpret and follow site and company policies and procedures such as safety and orientation Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.02 Determine site accessibility and layout Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.03 Determine installation methods Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.04 Evaluate work to be accomplished Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.05 Identify existing components and vessels Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	8.03.06 Identify worksite hazards such as overhead wires and live units Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.07 Foresee possible difficulties and adapt to shifting worksite needs Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.08 Secure work area Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.09 Coordinate work with co-workers and with other trades Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.10 Select and use tools and equipment such as levels and plumb bobs Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	8.03.11 Fit, place and modify component Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.12 Level, plumb, orientate and shim component Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	8.03.13 Verify component placement Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____		

8 - C
(cont'd)

Learning Outcome
Fits and fastens sub-
components and components

Task 8
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 8.04</p> <p><u>Learning Objective</u> Fastens components on site</p> <p>JP Sign-off _____</p>	<p>8.04.01 Evaluate work to be accomplished</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.02 Follow specifications and tolerances for welding and torque</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.03 Determine fastening methods such as bolting and welding</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.04 Demonstrate an understanding of and follow jurisdictional rules and certification requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.05 Determine types of bolts and pins</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>8.04.06 Determine and demonstrate an understanding of tools and equipment capabilities</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.07 Identify worksite hazards and adapt to shifting worksite needs</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.08 Secure work area</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.09 Coordinate work with co-workers and with other trades</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.10 Select and use tools and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>8.04.11 Select and use fasteners</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.12 Torque bolts</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>8.04.13 Ensure that components are welded in place</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>		

9 - C
12 questions on the IP exam

Learning Outcome
Performs welding activities

Journeyperson
Sign-off
Task 9

Complete

Incomplete

Task 9
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 timelines and perform tasks to the highest level and quality required by industry, without supervision
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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 9.01</p> <p><u>Learning Objective</u> Applies heat prior to tack welding</p> <p>JP Sign-off _____</p>	<p>9.01.01 Determine heat sources</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.01.02 Calculate heat input required for task</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.01.03 Identify material to be heated and its characteristics</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.01.04 Recognize indicators of temperature such as colour of heated materials</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.01.05 Identify and avoid fire hazards</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>
	<p>9.01.06 Select and use tools and equipment such as torches, blankets, temperature sticks and digital heat sensors</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.01.07 Measure temperature of heated materials</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>			
<p>SUB-TASK 9.02</p> <p><u>Learning Objective</u> Performs tack welding</p> <p>Continued next page</p>	<p>9.02.01 Identify types of materials</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.02 Read and interpret drawings and specifications referring to the job at hand</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.03 Demonstrate an understanding of and apply jurisdictional rules and certification requirements which limit metal fabricators' tacking</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.04 Determine types and sizes of tacks</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.05 Determine sequence of tacks</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>
	<p>9.02.06 Select welding processes used for tacking such as shielded metal arc welding (SMAW) and wire-feed processes</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.07 Determine welding processes to be used after tacking</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.08 Demonstrate an understanding of the impact of tack welding on the materials</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.09 Select and use welding tools and equipment</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>	<p>9.02.10 Understand the use of the welding process</p> <p>Rating ____ Complete <input type="checkbox"/></p> <p>Proof ____ <input type="checkbox"/></p> <p>Use ____</p>

9 - C
(cont'd)

Learning Outcome
Performs welding activities

Task 9
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

SUB-TASK 9.02 Continued <u>Learning Objective</u> Performs tack welding JP Sign-off ____	9.02.11 Lay out tacks Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.02.12 Choose the welding process appropriate to the job Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.02.13 Recognize common defects in a tack such as cracks, porosity and slag inclusions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.02.14 Remove tacks Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
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SUB-TASK 9.03 <u>Learning Objective</u> Minimizes welding distortions JP Sign-off ____	9.03.01 Determine and demonstrate an understanding of the causes and effects of welding distortions Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.02 Calculate heat input Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.03 Recognize types of metals and their characteristics Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.04 Demonstrate an understanding of latitudinal, longitudinal and transverse directions of pull Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.05 Determine joint design Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	9.03.06 Apply types of welding processes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.07 Recognize the impact of welding on metal Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.08 Demonstrate an understanding of and determine weld sizes Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.09 Demonstrate an understanding of , determine and apply back stepping Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.10 Determine allowances for distortions such as for socket welds Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	9.03.11 Use distortions to help achieve desired result Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.12 Predict how metals will react to the tacking and welding process Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.13 Select and use tools and equipment Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.14 Use restraints such as clamps and strongbacks Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.15 Manipulate welding processes to achieve desired result Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____
	9.03.16 Apply stress removal methods such as penning, cooling and heating Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____	9.03.17 Compensate for future distortion Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____			

**Task 9
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 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

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 9.04</p> <p><u>Learning Objective</u> Welds using wire-feed processes</p> <p>JP Sign-off _____</p>	<p>9.04.01 Demonstrate an understanding of and follow jurisdictional rules and certification requirements</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.02 Demonstrate an understanding of fundamentals of flux core arc welding (FCAW), gas metal arc welding (GMAW) and Metal Core Arc Welding (MCAW)</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.03 Determine type and thickness of base metal</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.04 Select power sources</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.05 Demonstrate an understanding of and determine direct current and polarity</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>9.04.06 Identify and avoid hazards such as toxic fumes associated with welding using wire-feed processes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.07 Identify and practice gas cylinder safety</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.08 Demonstrate an understanding of characteristics of shielding gases</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.09 Demonstrate an understanding of and identify electrodes and their characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.10 Demonstrate an understanding of filler metal transfer modes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>9.04.11 Demonstrate an understanding of amperage (wire feed speed) and voltage (wire stick out) characteristics</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.12 Determine and perform welding techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.13 Determine and perform troubleshooting techniques</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.14 Select, set up and use welding equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.15 Make required adjustments to amperage, voltage and gas flow rates</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>9.04.16 Manipulate guns</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.17 Repair welding defects</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.18 Remove slag and spatter</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.04.19 Select and use ventilation equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

9 - C
(cont'd)

Learning Outcome
Performs welding activities

Task 9
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 9.05</p> <p><u>Learning Objective</u> Corrects welding distortions</p> <p>JP Sign-off _____</p>	<p>9.05.01 Calculate heat input</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.02 Determine types of metals</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.03 Recognize characteristics and properties of metal such as thermal, conductivity, expansion and contraction</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.04 Read and follow drawings and specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.05 Determine mechanical forces required for correction</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>9.05.06 Identify types of distortions such as curved, twisted and peaked</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.07 Determine reaction</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.08 Recognize distortions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.09 Select and use tools and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.10 Measure distortions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>9.05.11 Coordinate corrections with others</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.12 Recognize when problem cannot be corrected</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.13 Recognize when distortions do not need to be corrected</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.14 Improvise by selecting methods and material to help correct distortions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>9.05.15 Use thermal and mechanical processes to correct distortions</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>9.05.16 Work within tolerances</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>				

10 - C
9 questions on the IP exam

Learning Outcome
Prepares products for finishes

Journeyperson
 Sign-off
 Task 10

Complete

Incomplete

Task 10
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 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

Knowledge, Skills and Abilities - Competencies

SUB-TASK 10.01 <u>Learning Objective</u> Completes project JP Sign-off ____	10.01.01 Inspect final product according to specified requirements for job Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.02 Determine types of finishes Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.03 Recognize types of material that do not require additional finishing such as stainless steel and aluminium Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.04 Ensure that welds are profiled as per specifications Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.05 Select and use tools and equipment Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____
	10.01.06 Finish weldments and other pieces by removing burrs and sharp corners Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.07 Chemically or mechanically clean weldments and other pieces, removing oils and undesirable materials Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.08 Fill and blend surface blemishes such as plate clamp gouges, arc splashes and miscellaneous defects Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.09 Ensure that weld spatter and slag are removed Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____	10.01.10 Protect and secure project using methods such as installing protective covers, wrapping in bubble wrap and tarping Rating ____ Complete <input type="checkbox"/> Proof ____ <input type="checkbox"/> Use ____

10 - C
(cont'd)

Learning Outcome
Prepares products for finishes

Task 10
Learning Needs

Sub-Tasks
Learning Objectives
to be completed
Comments

Knowledge, Skills and Abilities - Competencies

<p>SUB-TASK 10.02</p> <p><u>Learning Objective</u> Prepares material for finishing</p> <p>JP Sign-off _____</p>	<p>10.02.01 Inspect final product according to specified requirements for job</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.02 Determine types of finishes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.03 Select finishing processes such as painting, galvanizing and pickling</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.04 Identify specifications for finishes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.05 Ensure that welds are profiled as per specifications</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>10.02.06 Sort assemblies for specific finishes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.07 Select and use tools and equipment</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.08 Prepare weldments and other pieces by removing burrs and sharp corners</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.09 Chemically or mechanically clean weldments and other pieces, removing oils and undesirable materials</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.10 Fill and blend surface blemishes such as plate clamp gouges, arc splashes and miscellaneous defects</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>
	<p>10.02.11 Ensure that weld spatter and slag are removed</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.12 Identify areas not to be finished</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.13 Protect tagging system to ensure traceability</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	<p>10.02.14 Prepare weldments for galvanizing by providing air bleeds and drain holes</p> <p>Rating ____ Complete Proof ____ <input type="checkbox"/> Use ____</p>	

APPENDIX A

METAL FABRICATOR NATIONAL OCCUPATIONAL ANALYSIS GLOSSARY OF TERMS

Arc templates (sweep)	A template used for verifying the inside radius of material being rolled
Back stepping	A welding sequence designed to minimize distortion by welding short distances, from a forward point back to the previous weld
Base metal	The metal that is being welded
Bender	Equipment used to bend tube, pipe or rod; some types include mandrel benders, tube benders and manual benders
Brake press	Stationary equipment used to bend metal sheet plate
Computer Numerical Control (CNC)	A control system in which numerical values corresponding to a desired tool or control positions are generated by a computer/computer program
Detail drawings	The transferring of information from a customer supplied drawing into detailed drawings to simplify the manufacturing of custom steel fabricated components
Dunnage	Wood or other materials used to support or protect components
Ferrous	Containing iron
Filler metal	The metal that is added to the base metal through the welding process

Galvanizing	A metallurgical process done to coat steel with another metal (usually zinc) to prevent corrosion)
Heat numbers	Reference numbers applied to materials at time of manufacture; used for traceability
Induction heater	Type of heating equipment that generates heat by creating an electromagnetic field
Ironworker	Stationary equipment used to perform a number of tasks including plate and bar shearing, coping and mitring of structural shapes, punching, bending and notching operations
Jig	A device used to position and hold parts for assembly and repetitive assemblies
Layout	The process of transferring lines, centres, and other informative markings from the blueprint
Material allowance	Total overall amount of material required to fabricate the part including any extra material required for the process
Mean diameter	The inside diameter plus one material thickness or outside diameter minus one material thickness; also called neutral diameter
Metallurgy	Science of the chemistry and physical properties of metals
Notching	A shearing process done to remove a small notch of material (usually with an ironworker)
Oxy-fuel cutting	Cutting that uses the flame of an oxy-fuel torch and high pressure stream of oxygen
Piece marks	Numbers and letters that identify a sub-component or a component used to locate the piece on the assembly
Plasma cutting equipment	Equipment used to cut ferrous and non-ferrous metals by superheated gas; the heat is generated by an electrical arc, turning the gas into plasma
Plate roller	Stationary equipment used to roll metal sheet plate into cylinders or curved sections
Polarity	The direction in which the direct current is flowing through the arc; either straight or reverse

Quality assurance	System of verifications to ensure that manufactured items conform to standards and specifications
Shape roller	Stationary equipment used to roll metal shapes such as angle iron, tubing and channel
Shears	Stationary equipment used to cut metal sheet plate
Slag	The residue produced when welding or cutting
Softeners	Material used to protect rigging equipment and components from damage caused by contact with each other
Stretch-out	A length of a flat piece of metal prior to forming
Tack weld	A small weld used to hold parts in position prior to final welding
Template	A gauge or pattern used as a guide to replicate a piece being fabricated
Tolerance	A permissible deviation from a specified dimension
Traceability	Part of a quality assurance system that keeps track of the origin of materials by heat numbers or parts numbers
Weld distortion	Change in the shape of the welded material that is being caused by the expansion and contraction of the metals due to the heat input from the welding process
Weldment	A welded assembly or an assembly in the process of being welded
Wire-feed welding process	A family of welding processes including gas metal arc welding (GMAW), flux core arc welding (FCAW), metal core arc welding (MCAW); the common factor in these is that the filler metal is supplied from a wire spool

Metal Fabricator National Occupational Analysis ACRONYMS

CAD Computer-assisted design

CNC Computer numerically controlled

FCAW Flux core arc welding

GMAW Gas metal arc welding

ID Inside diameter

MCAW Metal core arc welding

MD Mean diameter

MIG Metal inert gas

NC National Coarse

NF National Fine

NPT National Pipe Thread

OD Outside Diameter

PPE Personal Protective Equipment

RPM Revolutions per minute

SMAW Shielded metal arc welding

SOP Safe operating procedures

TIG Tungsten inert gas

WHMIS Workplace Hazardous Material Information
Systems

APPENDIX B

REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES

ESSENTIAL SKILL	REQUIRED ESSENTIAL SKILLS TASKS FOR TRADES
Technical Reading	<ul style="list-style-type: none"> ➤ Find and use information from one source - i.e., a book, internet, and work order ➤ Find and use information from many parts of a single source - i.e., 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 -i.e., a code book ➤ Find information in large or very specialized documents which may have many smaller documents - i.e., operations manuals, safety manuals ➤ Find information from many sources - i.e., code books, blueprints, work manuals ➤ Enter information into pre-set documents and forms - i.e., accident report forms, order forms ➤ Combine information from several sources and use it – i.e., alter a work order using information from code books, manuals and blueprints ➤ Create new documents using information from a variety of sources – i.e., 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 – i.e., contract, lease, building permit ➤ Write short messages, explanations, requests or directions – i.e., write a work order, memo, written message for a foreman, supervisor or client ➤ Write longer messages, explanations, requests or directions – i.e., write an accident report, 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, i.e. work report, section of a work manual ➤ Write detailed, non-routine articles – i.e., 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 – i.e., a letter ➤ Find information on the internet ➤ Find information in workplace data bases ➤ Send and receive email ➤ Enter data into a set format – i.e., form, spreadsheet, chart ➤ Manage electronic information – i.e., 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 on 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 time-lines ➤ 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 time-lines that meet project deadlines ➤ Accept feedback ➤ Give feedback ➤ Evaluate then 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, and revise the learning plan regularly ➤ Engage in learning opportunities to keep skills current and meet career goals

