

DOMAIN	Refrigeration and Air Conditioning			
STANDARD	23959	V3	Prepare and purge braze piping for refrigeration and air conditioning	Level 3 4 Credits
ENTRY	There are no pre-requisite unit standards.			

LEARNER TO COMPLETE					
Name		Company			
NSI No.		Email / phone			
Pre-assessment confirmation					
I, the learner , - Understand the assessment process and assessment requirements for this unit. - Understand the appeals and resubmission processes. - Believe I have the skills and knowledge to successfully complete the assessment requirements.					
Assessment Submission: (Tick ✓ appropriate circle)	☐	1st Submission	☐	1st Resubmission	☐ Final Resubmission

ASSESSOR TO COMPLETE	
Name	Company
Email / phone	
Pre-assessment confirmation	
I, the assessor, can confirm the learner has achieved any pre-requisite requirements. ☐	
ASSESSOR: UPDATE RESULTS AND COMPLETE FEEDBACK ONLINE VIA CANVAS	
NOTE TO LEARNER: You will be able to access your results via the Marks section (for this course) in Canvas. You will also see the feedback from your Assessor, and any actions you may need to take if a resubmission is required.	

RESUBMISSIONS:

Under Apprentice Training New Zealand (ATNZ) policy you have a maximum of **two** resubmission opportunities for this assessment. In total you will have three opportunities to meet the unit standard requirements. Information about the ATNZ resubmission process can be found in the Learner Regulations.

APPEALS:

Your Assessor will discuss ATNZ's Assessment Appeals process with you before carrying out this assessment. Information about the Assessment Appeals process can be found in the Learner Regulations.

LEARNER INSTRUCTIONS:

YOU WILL NEED TO BE ABLE TO:

- Demonstrate knowledge of brazing and piping welding safety.
- Prepare for purge brazing of piping.
- Join piping using purge brazing.

IMPORTANT INFORMATION

- Carefully read through this Assessment Guide so you know exactly what is expected.
- All evidence you provide for this assessment must be your own work.
- You must wear personal protection equipment (PPE) throughout the assessment.
- Attach additional supporting evidence which shows you have the required skills and knowledge, e.g.
 - Relevant workplace procedure(s) or records of work carried out;
 - Photos / videos of you completing the task.
- Clearly name and label all attached evidence. Labels for photos must describe the activity being performed in the photo and which job it relates to.

What you need to do		Tick when complete
Question Set	Answer the questions about brazing and piping welding safety. These are available online in Canvas, and also in hard copy if required.	☐
Observation Checklist 1	You must be observed on FIVE (5) separate occasions preparing and purge brazing piping for refrigeration and air conditioning. This will involve: • Preparing for purge brazing of piping • Joining piping using purge brazing	☐
Upload supporting evidence	You must attach supporting evidence material that shows you have the required skills and knowledge, for example, job sheets, work procedures, checklists, work samples, screenshots, and before, during & after photos/ videos.	☐

RESUBMISSIONS:

Under Apprentice Training New Zealand (ATNZ) policy you have a maximum of **two** resubmission opportunities for this assessment. In total you will have three opportunities to meet the unit standard requirements. Information about the ATNZ resubmission process can be found in the Learner Regulations.

APPEALS:

Your Assessor, Observer or Verifier will discuss ATNZ's Assessment Appeals process with you before carrying out this assessment. Information about the Assessment Appeals process can be found in the Learner Regulations.

Observation checklist – Part A

(LEARNER TO COMPLETE THIS SECTION)

YOU MUST BE OBSERVED:

- You must be observed purge brazing piping for refrigeration and air conditioning on FIVE (5) separate occasions. This includes:
 - Preparing for purge brazing of piping.
 - Joining piping using purge brazing.

LEARNER INSTRUCTIONS:

- Carefully read through this Observation Checklist so you know exactly what is expected.
- You the learner must fill in **PART A**
- PART B** will be completed by an observer who must be approved by your Assessor/Account Manager prior to starting this assessment.
- Your assessor may choose an observer from your workplace to observe and/or verify your work.
- You may need to be observed more than once.
- Your Observer may ask you additional questions to check your knowledge and understanding.
- All work must be completed under supervision.
- Follow all safety procedures.
- Gather supporting evidence for the installation job including photos, drawings, and work specifications.

Learner name		Workplace			
Observation	Date completed	Describe the joint	Filler <i>Silfos and Easy-flo must each be used at least once</i>	Torch Type	Supporting evidence attached
1			Silfos ☐ OR Easy-Flo ☐	Oxy ☐ OR MAPP ☐	☐
2			Silfos ☐ OR Easy-Flo ☐	Oxy ☐ OR MAPP ☐	☐
3			Silfos ☐ OR Easy-Flo ☐	Oxy ☐ OR MAPP ☐	☐
4			Silfos ☐ OR Easy-Flo ☐	Oxy ☐ OR MAPP ☐	☐
5			Silfos ☐ OR Easy-Flo ☐	Oxy ☐ OR MAPP ☐	☐

Observation checklist – Part B –

OBSERVER TO COMPLETE THIS SECTION

- Watch the candidate carry out each task.
- Note down any extra questions you ask of the candidate during the observation in the feedback section
- Make sure the candidate has attached any supporting documentation.
- For each statement below, tick if you agree.
- ALL boxes must be ticked for the learner to be successful in completing the requirements of the observation.

Assessment Task		Observation					PC
		1	2	3	4	5	
When preparing for purge brazing of piping, the learner:							
1.	Assessed the work area for hazards.	☐	☐	☐	☐	☐	PC 2.1
2.	Followed workplace safety procedures for purge brazing.	☐	☐	☐	☐	☐	PC 2.1
3.	Assembled and tested torch equipment.	☐	☐	☐	☐	☐	PC 2.2
4.	Cleaned, swaged and aligned piping for brazing in accordance with industry practice.	☐	☐	☐	☐	☐	PC 2.3
5.	Established purging gas flow using oxygen-free nitrogen in the piping.	☐	☐	☐	☐	☐	PC 2.4
When joining piping using purge brazing, the learner:							
6.	Followed workplace safety procedures for purge brazing, including safe lighting up procedure.	☐	☐	☐	☐	☐	PC 1.4 PC 3.1
7.	Wore correct personal protective equipment.	☐	☐	☐	☐	☐	PC 2.1 PC 3.1
8.	Joined piping using purge brazing.	- Distributed filler material by capillary action. - Reinforced the joint with a fillet on outside.		☐	☐	☐	PC 3.2
9.	Extinguished torch flame safely.	☐	☐	☐	☐	☐	PC 1.4
10.	Cleaned completed joints of oxides and flux residue.	☐	☐	☐	☐	☐	PC 3.3
11.	Pressure tested joints.	☐	☐	☐	☐	☐	PC 3.4
12.	Carried out all tasks in accordance with standard industry practice, manufacturer's instructions and safe working practices.	☐	☐	☐	☐	☐	PC 1.4 PC 3.2 PC 3.3 PC 3.4

Observation Checklist – Feedback

OBSERVER TO COMPLETE THIS SECTION

Across Observations 1–5	Feedback from Observer			
Please provide specific comments on the learner's ability to prepare for purge brazing of piping across observations 1 to 5. Include examples of what the learner did and/or said				
Please provide specific comments on the learner's ability to join piping using purge brazing across observations 1–5 Include examples of what the learner did and/or said				
Please provide any other overall comments on the learner's ability to complete the tasks across all observations				
Observer Name		Observer Signature		Date signed:

Question Set

(HARD COPY VERSION – ONLY TO BE COMPLETED BY LEARNER IF ONLINE VERSION IS NOT ACCESSIBLE)

Answer the following questions about purge brazing piping.

- Use your own words.
- You can answer the questions in writing or give your answers verbally to your assessor who will write down what you say. *You may need to arrange this in advance.*
- Your assessor may ask you additional questions to check your knowledge and understanding.

Your name		
Workplace		
Answers written by:	Learner ○	Assessor ○ <i>When using verbal questioning, record key points from the learner's responses as accurately and fully as possible.</i>

QUESTION SET 1

1. You see a workmate carrying out a brazing task in the workshop. They aren't wearing any goggles and don't have anything covering their arms. They have balanced their gas bottles on the bench next to them. PC 1.1
PC 1.2

Name **THREE (3)** hazards associated with this task and briefly describe for each:

- One example of harm the hazard could cause.
- One way to address the hazard to keep people safe.

Hazard		Example of harm caused	Method to address the hazard and keep people safe
1			
2			
3			

2. Your supervisor asks you to carry out some brazing inside a large chemical tank that has a small opening and is not designed for working in. The tank has been purged. The brazing is not close to the opening and the hoses fitted to your gas tanks are not long enough. PC 1.1
PC 1.2

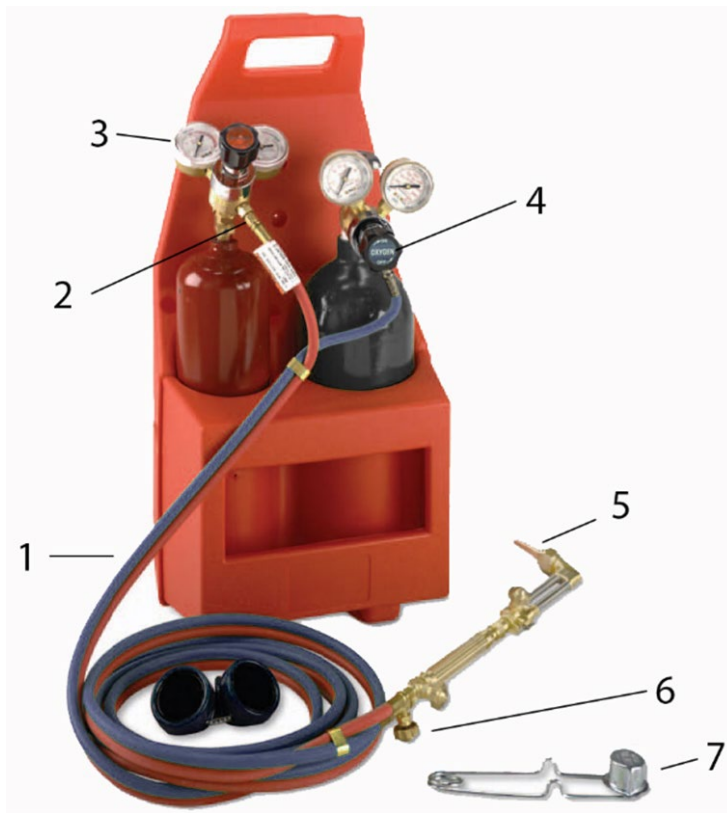
Name **FOUR (4)** hazards associated with this task and briefly describe for each:

- One example of harm the hazard could cause.
- One way to address the hazard to keep people safe.

Hazard		Example of harm caused	Method to address the hazard and keep people safe
1			
2			
3			
4			

3. Identify the brazing equipment components shown below by entering the correct number next to each component name.

PC 1.3



Component Name	Matching number
Fuel bottle valve	
Gas fuel pressure gauge	
Hoses	
Nozzle	
Spark arrestor	
Torch valve	
Welding torch igniter	

4. Identify the function of each component shown below.

PC 1.3

Match the correct function description to the component name.

1. Fuel bottle valve
2. Gas fuel pressure gauge
3. Hoses
4. Nozzle
5. Spark arrestor
6. Torch valve
7. Welding torch igniter

Function Description	Matching number
Connects the torch to the gas regulator. One for acetylene and one for oxygen.	
Controls gas supply to the torch.	
Controls gas supply from the bottle to the hoses / torch.	
Used to light (ignite) the torch.	
Reduces pressure in the gas bottle to the working pressure of the torch.	
Fitted to the torch a different bore is used for different material thickness.	
Stops sparks / flame from reaching the regulators and causing an explosion.	

- 5** List **THREE (3)** safety precautions you should take when using oxyacetylene or MAPP gas torches. PC 1.3

THREE (3) Safety precautions when using oxyacetylene or MAPP gas torches.

1.

2.

3.

- 6.** List **THREE (3)** maintenance requirements of oxyacetylene or MAPP gas torches. PC 1.3

THREE (3) Maintenance requirements of oxyacetylene or MAPP gas torches

1.

2.

3.