

071306T4RAC

REFRIGERATION AND AIR CONDITIONING TECHNICIAN - LEVEL 6

ENG/OS/RAC/CR/03/6

Design Refrigeration System

July/August 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

INSTRUCTIONS TO THE ASSESSOR

1. Assess the candidate as the practical progresses observing the critical areas
2. You are required to mark the practical as the candidate performs the tasks.
3. You are required to take video clips at critical points.
4. Ensure the candidate has a name tag and registration code at the back and front.

OBSERVATION CHECKLIST

Candidate's name			
Registration Code			
Assessor's name			
Registration Code			
Venue of Assessment			
Date of assessment			
Items to be evaluated: <i>Award marks as appropriate. Give a brief comment on your observation.</i>	Marks available	Marks obtained	Comments
Task 1: Prepare the condenser parts as per the specifications in the attached design drawing			
1) Adhered to safety procedures as per SOPs - wore dust coat/overall - wore safety boot or closed shoes - wore gloves - handled tools correctly - handled chemicals correctly <i>Award marks as indicated or zero</i>	1 1 1 1 1 5		
2) Took the design measurement of the unit condenser as per the design drawing. - Measured the tube lengths - Took measurement of fins - Took measurement of end brackets - Marked out the holes <i>Award marks as indicated or zero</i>	1 1 1 1 4		
3) Prepared fins - Cut parts fin parts flat and square - Cut end brackets flat and square - Marked out holes - Drilled holes <i>Award marks as indicated or zero</i>	1 1 1 1 4		
4) Prepared end brackets - Cut out flat and square - Marked out holes - Drilled holes - Bent end brackets <i>Award marks as indicated or zero</i>	1 1 1 1		

5) Prepared condenser tube ends - Bent condenser tube - Reamed condenser tube ends <i>Award marks as indicated or zero</i>	4		
	1		
	1		
Sub-total Task 1	19		
Task 2: Assemble and join the condenser parts.			
6) Assembled condenser - Inserted tube into fins - Inserted end brackets - Distributed fins - Swaged tube ends <i>Award marks as indicated or zero</i>	1		
	1		
	1		
7) Brazed the tube and tube ends - Cleaned the mating parts to be brazed - Brazed the joints - Cleaned the joints after brazing <i>Award marks as indicated or zero</i>	1		
	2		
	3		
Sub-total task 2	2		
	7		
	11		
Task 3: Pressurize condenser and check for leaks			
8) Performed Leak test - Installed charging valve - Flushed and purge the condenser - Sealed condenser - Connected dry nitrogen - Pressurized the condenser - Checked for leaks	2		
	2		
	2		
9) Performed house keeping	2		
	2		
	2		
10) Prepared a report in line with workplace procedure	2		
	12		
	02		
Sub Total task 3	04		
	18		

11) Product Checklist - Assembled as per drawings - Symmetry of parts - Quality of the condenser - Quality of joints - Quality of bends - Quality of workmanship	2 2 2 2 2 2		
Sub-total Product check list	12		
GRAND TOTAL	60 $\% = \frac{x}{60} * 100$		
ASSESSMENT OUTCOME			
The candidate was found to be: Competent ☐ Not yet competent ☐ <i>(Please tick as appropriate)</i> (The candidate is competent if the candidate least 50%)			
Feedback from candidate:			
Feedback to candidate:			
Candidate's Signature		Date	
_____		_____	
Assessor's Signature		Date	
_____		_____	