Topic Skills Practice Cover Sheet

Unit Name:	NAT10809006 Verify compliance, functionality and aspects critical to the safety of electrical installations
Topic Title:	Cable Installations

Skill Practice Number:	9.4.1
Skill Practice Name:	Install Overhead Consumer mains

Student Name:	
Student ID:	
College/Campus:	
Group:	

Results	
Planning:	
Carryout:	
Completion:	
Overall Results:	
Comments:	

Topic Skills Practice 9.4.1

NAT10809006 Verify compliance, functionality and aspects critical to the safety of electrical installations

KE-10809006 Verification of Australian electrical installations principles

Topic 9. Cable Installations

Skills Practice 9.4.1: Install Overhead Consumer mains

Task:

To install and connect unprotected overhead consumer mains in accordance with AS/NZS 3000:2018 and local service and installation rules requirements.

Objectives:

At the completion of this skills practice, you should be able to:

- Identify AS/NZS 3000:2018 and local service and installation rules requirements for the installation and connection of overhead consumer mains.
- Install unprotected overhead consumer mains in accordance with AS/NZS 3000:2018 and local service and installation rules.
- Terminate overhead consumer mains in accordance with AS/NZS 3000:2018 and local service and installation rules.
- Test overhead consumer mains to verify continuity.
- Test overhead consumer mains to verify insulation resistance.
- Test overhead consumer mains to verify correct polarity.

Topic Skills Practice 9.4.1

1. Planning the Skills Practice

1.1 Equipment

- Hand tools
- Service poles/posts
- Consumer mains cabling
- Suitable connectors
- Ladder/EWP

1.2 Suggested Materials

- 16 mm^2 X90-UV ABC
- 16 mm^2 V90 TPS
- Insulation piercing connectors (IPCs)

1.3 Miscellaneous Items

- PPE
- Pens/pencils
- AS/NZS 3000:2018
- Local Service and Installation Rules

1.4 Risk Assessment

Risk assessment procedure:

- Identify any hazards that may exist with this skills practice below
- List the supervision level you will be working under - Direct (D), General (G) or Broad (B)
- List the risk classification – High Risk (H), Medium Risk (M) or Low Risk (L)
- List the control measures required for each identified hazard that you need to implement.

Hazard/s Identified	Supervision Level (D, G or B)	Risk Classification (H, M or L)	Control Measure/s

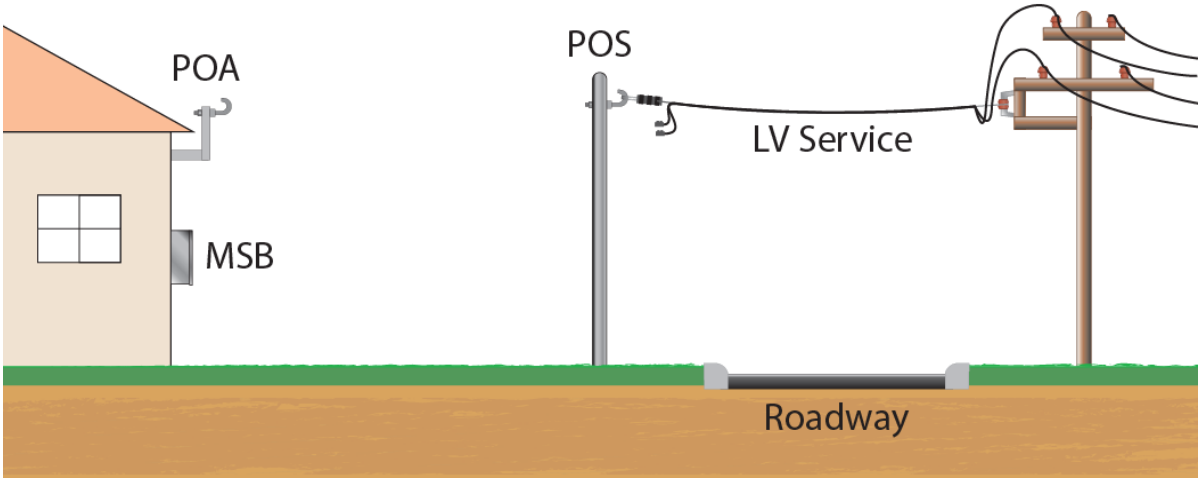
Topic Skills Practice 9.4.1

	 *Feedback*	Have your teacher/trainer check your risk assessment	Teacher/Trainer Initials and Date	✓

2. Carrying Out the Skills Practice

2.1 Overhead Consumer mains Installation Details

2.1.1 Your task is to install aerial consumer mains from the service pole point of supply (POS), to the point of attachment (POA) at the main structure. An indicative diagram is included below:



2.1.2 Select suitable cables for the aerial consumer mains installation and record details in the spaces below, along with minimum ground clearances as required by AS/NZS 3000:2018 and your local service and installation rules.

Consumer Mains Installation Details	
Type of Cable:	
Cable Size:	
Span:	
Ground Clearance:	
AS/NZS 3000:2018 References:	
Service and Installation Rules References:	

Topic Skills Practice 9.4.1

	 *Feedback* Have your teacher/trainer check your work	Teacher/Trainer Initials and Date	✓

2.2 Install and Connect Overhead Consumer mains

2.2.1 Install the overhead consumer mains between the service pole and the point of attachment, ensuring minimum clearances and acceptable sag.

2.2.2 Draw in the consumer mains on the diagram from section 2.1, including as installed dimensions for span, sag, and clearances.

2.2.3 Select an appropriate meter and test the consumer mains to verify continuity of conductors. Record details of the test in the following table:

Continuity			
Meter:		**Range:**	
Test Results			
Line 1:		**Line 2:**	
Line 3:		**Neutral:**	

2.2.4 Select an appropriate meter and test the consumer mains to verify the insulation resistance. Record details of the test in the following table:

Insulation Resistance			
Meter:		**Range:**	
Test Results			
L1 to L2:		**L2 to L3:**	
L1 to L3:		**L2 to N:**	
L1 to N:		**L3 to N:**	

Topic Skills Practice 9.4.1

2.2.5 Select an appropriate meter and test the consumer mains to verify the correct polarity. Record details of the test in the following table:

Polarity			
Meter:		**Range:**	
Test Results			
Line 1:	□ Correct Polarity	**Line 2:**	□ Correct Polarity
Line 3:	□ Correct Polarity	**Neutral:**	□ Correct Polarity

Feedback

Have your teacher/trainer check your work

Teacher/Trainer Initials and Date

3. Completing the Skills Practice

3.1 Skills Practice Review Questions

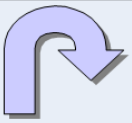
3.1.1 Clean your work area, return all equipment to the correct storage areas as directed by your teacher/trainer, and then complete the following questions using AS/NZS 3000:2018 and your local service and installation rules.

1. Briefly explain the Wiring Rules requirements and your local service and installation rules concerning installation methods for unprotected aerial consumer mains.

2. According to your local service and installation rules, what are the minimum clearances required at the point of attachment?

3. According to your local service and installation rules, what is the maximum span for an overhead service?

4. According to your local service and installation rules, what types of cables are used in your area to provide a single phase 100 A service to an installation?

	 *Feedback*	Have your teacher/trainer check your answers	Teacher/Trainer Initials and Date