

Topic Skills Practice Cover Sheet

Unit Name:	UEEEL0012 Install low voltage wiring, appliances, switchgear and associated accessories
Topic Title:	Aerial Cabling

Skill Practice Number:	6.2
Skill Practice Name:	Install and Connect Aerial Consumer Mains

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

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

Topic Skills Practice 6.2

UEEEL0012 Install low voltage wiring, appliances, switchgear and associated accessories

Topic 6. Aerial Cabling

Skills Practice 6.2: Install and Connect Aerial Consumer Mains

Task:

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

Topic Skills Practice 6.2

1. Planning the Skills Practice

1.1 Equipment

- Hand tools
- Riser bracket(s)
- Aerial cabling
- Service connectors
- Consumer's mains cabling
- Wiring enclosure/support

1.2 Suggested Materials

- 25 mm² LV Al ABC
- 16 mm² X90-UV SDI
- HD PVC corrugated conduit
- HD PVC rigid conduit
- Al-Cu 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
Fall from height	D	H	Use safety gear check ladder
Exposed conductor	D	H	Test the circuit before touching
Live voltage at terminals	D	H	Do Locking/Tagging

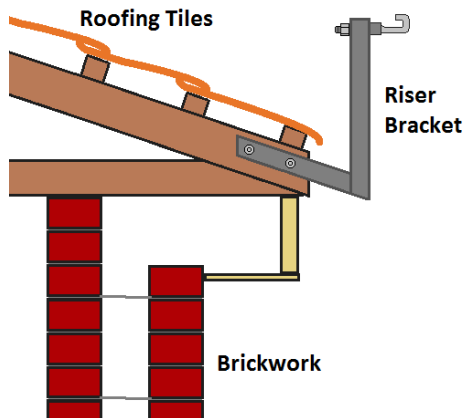
Topic Skills Practice 6.2

	 Feedback	Have your teacher/trainer check your risk assessment	Teacher/Trainer Initials and Date <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
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2. Carrying Out the Skills Practice




2.1 Install and Connect Consumer Mains to an Overhead Service

2.1.1 Install riser bracket(s) to the side of the structure, ensuring compliance with minimum ground clearances as required by AS/NZS 3000:2018 and your local service and installation rules. An indicative diagram is included below:



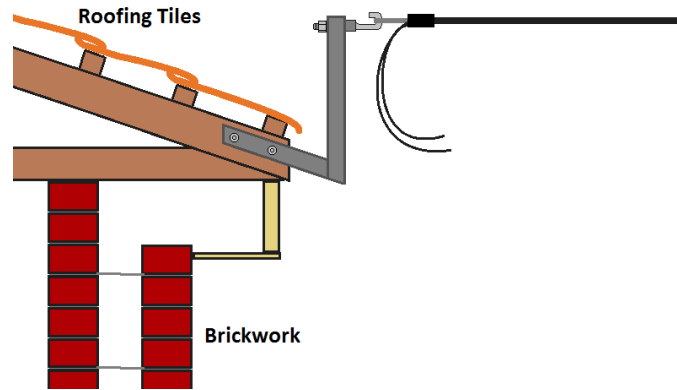
Minimum Ground Clearance: 3m

Reference(s): Table 3.8

	 Feedback	Have your teacher/trainer check your work	Teacher/Trainer Initials and Date <div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
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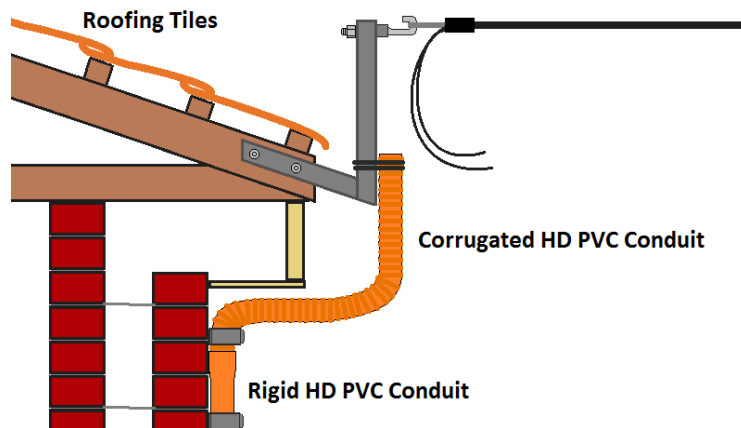
2.1.2 Install the overhead service, terminating at the riser bracket in accordance with AS/NZS 3000:2018 and your local service and installation rules. An indicative diagram is included below:

Topic Skills Practice 6.2



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

2.1.3 Install wiring enclosure/supports for unprotected consumer's mains cabling in accordance with AS/NZS 3000:2018 requirements. An indicative diagram is included below:



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

2.1.4 Draw in the consumer's mains between the installation main switchboard and the point of attachment (POA).

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




Meter		Results	
Type:	Multimeter	Active:	0 Ω

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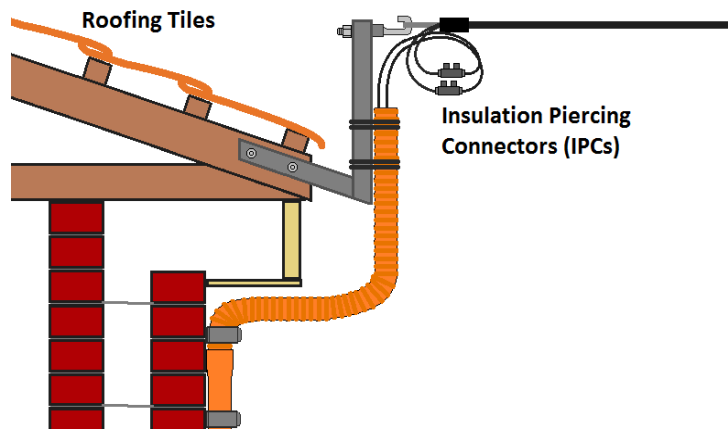
Range:	Ohm Range	Neutral:	0 Ω
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2.1.6 Select an appropriate meter and test the consumer's mains to verify the integrity of the cable insulation. Record details of the test in the following table:

Meter		Results	
Type:	IR Tester	A-E:	$\infty \Omega$
Range:	500 V	N-E:	$\infty \Omega$

	 Feedback Have your teacher/trainer check your work	Teacher/Trainer Initials and Date	
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2.1.7 Terminate the installation consumer's mains to the aerial service conductors using approved service connectors.



	 Feedback Have your teacher/trainer check your work	Teacher/Trainer Initials and Date	
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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, and then complete the following questions, using AS/NZS 3000:2018 and your local service and installation rules.

1. Briefly explain AS/NZS 3000:2018 requirements and your local service and installation rules concerning installation methods for un-protected consumer's mains.

AS 3000/3.12.1 Type of conductor 3.12.2 Arrangement & minimum size 3.12.3 Clearance,
3.12.4 Distance between supports 3.12.5.4 Spacing between conductors 3.13 Cable support
by a category type of cable, catenary support, clearance, 3.15 Bus way including rising main.
System.

NSW Electrical service rule- 3.2 Service to point of attachment 3.2.3 Phase selection

AS 3000 clauses 3.4-Current carrying capacity in accordance with AS 3008

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

3m NSW Electrical Service rule figure 3-4

2. 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?

Compliance with AS/NZS 3560.1 – XLPE

Insulated aerial bundled cable for working voltages up to an including 0.6/1 KV NSW



Electrical Service Rule 3.4.1

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

3.51 (NSW Electrical Service Rule)

Service up to 100 A is 50 m

Service greater than 100A is 30m

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