

**Engineering System Integrity  
Electrical Network Safety Rules**

**Engineering Specification  
Electrical Distribution Unit**

**Working Near or On/Within**

**SP D 79051**

**Temporary Structures around  
Electrical Equipment**

Version 1.0

Date in Force: 1 February 2022

Approved by: Associate Director  
Electrical Distribution Unit  
Engineering System Integrity

Authorised by: Engineering Technical  
Publications Manager  
System Integrity

## Disclaimer

This document was prepared for use by persons in connection with works near or on/within the rail network electricity system operated by Sydney Trains. Sydney Trains makes no warranties, express or implied, that compliance with the contents of this document shall be sufficient to ensure safe systems or work or operation. It is the document user's sole responsibility to ensure that the copy of the document it is viewing is the current version of the document as in use by Sydney Trains. To the extent permitted by law, Sydney Trains excludes any and all liability for any loss or damage, however caused (including through negligence), which may be directly or indirectly suffered in connection with the use of this document.

## Copyright

The information in this document is protected by copyright and no part of this document may be reproduced, altered, stored or transmitted by any person without the prior consent of Sydney Trains.

## Document control

Version	Date	Author/ Prin. Eng.	Summary of change
1.0	1 February 2022	ENSR Project Team	First issue as Sydney Trains document. Extracted from SMS-06-GD-0268 V3.2. Reviewed as part of the ENSR Project.

## Table of Contents

<b>1</b>	<b>Purpose</b> .....	<b>4</b>
<b>2</b>	<b>Definitions</b> .....	<b>4</b>
<b>3</b>	<b>Scope</b> .....	<b>5</b>
<b>4</b>	<b>General requirements</b> .....	<b>5</b>
<b>5</b>	<b>Planning the work</b> .....	<b>6</b>
5.1	Identification of the foreseeable electrical hazards.....	6
5.2	Assessment of the risks.....	7
5.2.1	Electrical Risk Factors.....	7
5.2.2	Safe Approach Distances (SADs).....	9
5.2.3	Requesting information from the Regional Electrical Engineer.....	13
5.3	Requirements to eliminate or control electrical risks.....	13
5.3.1	General.....	13
5.3.2	Temporary structure works that will be required to, or might inadvertently, infringe the SADs of Table A to Live Exposed Electrical Equipment.....	13
5.3.3	Use of Temporary Structures around Live Exposed Electrical Equipment.....	15
5.3.4	Erection and Use of Continuous Rigid Barriers on Temporary Structures.....	16
5.3.5	Temporary Structure Work and Use of Temporary Structures inside a Substation.....	19
5.3.6	Temporary Structure Work adjacent to Substations.....	20
<b>6</b>	<b>Reference documents</b> .....	<b>20</b>

## 1 Purpose

To provide information about the hazards, controls and the additional safety requirements to be complied with specifically associated with temporary structure work, such as scaffolding and scaffolding work, around electrical equipment owned by Transport Asset Holding Entity of New South Wales (TAHE) or Sydney Trains maintained up to and including 132,000 Volt AC and 1500 Volt DC.

Generally, work around electrical equipment using temporary structures must be performed at greater SADs than those described in *SP D 79049 Safe Approach Distances (SADs)* Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold and Table 2: Minimum SADs for non-electrical work around insulated low voltage cables up to 1000 Volt (including low voltage aerial bundled cables) and low voltage aerial lines. This Specification includes the SADs relevant to temporary structure work.

## 2 Definitions

<b>Temporary Structure</b>	includes but is not limited to temporary: access platforms, barriers, catch platforms, cantilever platform bays, framework, formwork, landing platforms, loading platforms, scaffolding, stairways, support members and the like, used for construction works or working platforms. A temporary structure can be fixed, transportable or portable.
<b>Temporary structure work(s)</b>	refers to the erection, alteration, or dismantling of a temporary structure and any associated rigid barriers.

For further definitions, refer to the **Electrical Safety Definitions** page available on the **RailSafe** site.

### 3 Scope

This document sets out Sydney Trains requirements for work around Electrical Assets in accordance with and/or above the NSW industry code of practice SafeWork “Work near overhead power lines”.

It is applicable to all workers undertaking temporary structure work, such as scaffolding, around TAHE owned or Sydney Trains maintained live exposed electrical equipment.

This Specification provides information on the hazards and controls associated with temporary structure work:

- around aerial lines, 1500 Volt DC OHW and associated electrical equipment owned by TAHE or maintained by Sydney Trains, and
- inside electrical substations owned by TAHE or maintained by Sydney Trains.

This Specification does not apply to temporary structures and temporary structure work around electrical equipment owned or maintained by another Electricity Network Operator, which is to be carried out in accordance with that Electricity Network Operator’s safety instructions.

For general information on the hazards and safety requirements associated with working around electrical equipment, refer to the *PR D 78700 Working around Electrical Equipment*.

---

#### NOTE

**Management of non-electrical hazards associated with temporary structure work is addressed by *SMS-06-OP-3026 Work Health and Safety (WHS) Risk Management*.**

**Work that involves a risk of a person falling more than 2 m, construction work carried out near or on/within energised electrical installations or services or other types of construction work as defined in the Regulation are defined as ‘high risk construction work’ (WHS Regulation 2011 Section 291)**

---

### 4 General requirements

This Specification should be implemented in addition to any relevant requirements identified in the documents below or the documents called up within these documents:

- SMS-06-OP-3026 Work Health and Safety (WHS) Risk Management
- SafeWork
- Work Health and Safety Regulation 2011 Section 225
- WorkCover NSW Erecting, altering and dismantling scaffolding
- AS/NZS 1576.1 Scaffolding Part 1: General requirements
- AS/NZS 4576 Guidelines for scaffolding: gives practical guidance for the training and certification of scaffolders, the preparation of sites for scaffolding, and the safe selection, supply, erection, alteration, dismantling, maintenance, inspection and use of scaffolding and scaffolding equipment
- SafeWork NSW Work near Overhead Power Lines: Code of Practice 2006.

## 5 Planning the work

Prior to undertaking any temporary structure works or use of temporary structures around live exposed electrical equipment, planning for this work must be carried out by the person requiring this work to be performed.

This planning must be done in consultation with the persons who will actually be doing the work and must include:

- An identification of the foreseeable hazards involved in performing work around the live exposed aerial line or electrical equipment (refer to Section 5.1).
- An assessment of the risks (refer to Section 5.2).
- Understanding and planning to implement the relevant requirements necessary to eliminate or control the risks (refer to Section 5.3).

### 5.1 Identification of the foreseeable electrical hazards

Workers performing temporary structure works or using temporary structures near or on/within live exposed electrical equipment, 1500 Volt DC OHW, aerial lines and associated electrical equipment are at a substantial risk of death or serious injury.

Accordingly such work process shall be

- controlled to ensure that health and safety risks are eliminated, so far as is reasonably practicable, or
- if it is not reasonably practicable to eliminate those risks, to minimise those risks so far as is reasonably practicable (SFAIRP).

1500 Volt OHW or an aerial line, and associated electrical equipment owned by TAHE or Sydney Trains maintained shall be treated as live by a person unless that person has signed onto an Electrical Permit covering that 1500 Volt OHW, aerial line or equipment and covering the work being performed by that person whilst that Electrical Permit is current.

Contact (or near contact) between either a component member of the temporary structure or a person working on the temporary structure and:

- live exposed electrical equipment, and/or
- a live exposed aerial line, and/or
- live 1500 Volt DC OHW
- or any other conductive object,

can result in:

- Electric shock (possible cardiac arrest)
- Arcing
- A rain of molten metal
- Fire
- Explosion
- Swift, unpredictable aerial line conductor whip lash
- Loss of electrical power supply to the rail network, which may have major implications for rail safety

---

## NOTE

**It is important to remember that the above risks can arise by arcing from close approach as well as from direct contact with live exposed aerial lines, 1500 Volt DC OHW and/or associated electrical equipment.**

---

## 5.2 Assessment of the risks

### 5.2.1 Electrical Risk Factors

In addition to the risk assessment and planning requirements of PR D 78700 Section 7.2 Risk assessment and planning, risk factors which shall be considered include, but are not limited to:

- a. The voltage of the aerial line and/or the associated equipment.

If the aerial line includes multiple feeders erected on the same pole route, then the voltage of each of the individual feeders shall be considered in order to determine the risk.

If the voltage of the aerial line and associated equipment is not known and cannot be definitely determined, then the Electrical Engineering Manager (or their representative) concerned is to be contacted to obtain accurate information. (Refer to Section 5.2.3.)

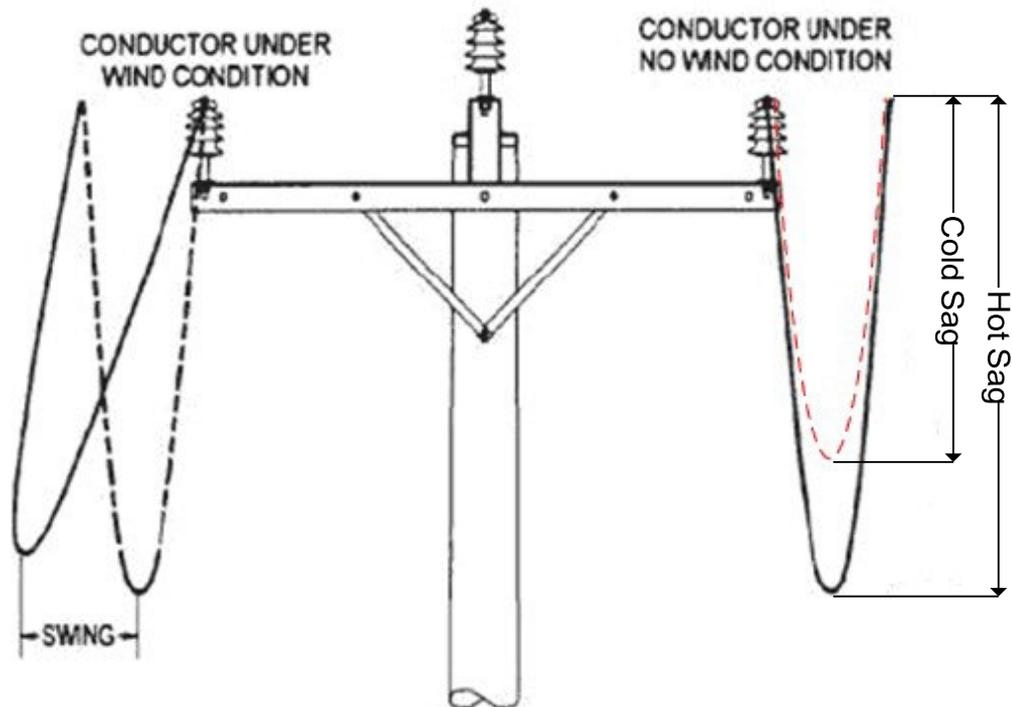
- b. The height of the conductors and horizontal distance to the conductors.

When looking up at conductors it is often difficult to judge distances. This is particularly the case where higher voltages are involved and the distances are large. Where possible the situation is to be viewed from several angles to make sure that the required safe approach distance is not infringed.

### **WARNING**

**Do not attempt to directly measure the height or horizontal position of aerial lines or 1500 Volt OHW with a measuring tape, stave or other physical measuring device. If the distance cannot be determined by sighting or measured with a non contact measuring device, contact the Electrical Engineering Manager (or their representative) concerned to arrange an Authorised Person to perform the measurement**

Aerial conductors are made of metal and can expand and contract when heated and cooled. This can be a result of high ambient air temperature and/or heating caused by load current passing through the conductors. Regardless of the cause, any expansion will result in gravity causing the power lines to sag downwards. Wind can also cause the power lines to swing from side to side. For this reason, the safe approach distances (SAD) shall be increased either vertically or horizontally by the amount of conductor sag or swing possible at the point of work. Refer to Figure 1.



**Figure 1: Illustration of aerial lines 'sag or swing'**

- c. Magnification of movement.

Another important risk factor is the magnification of movement that occurs with tall items of equipment on relatively narrow bases. Any movement due to uneven ground, subsidence or the like may be magnified several times in the resultant movement at the top of the item.

- d. Temporary structure material.

Temporary structure members may be metallic or non-conductive. For example, non-conductive scaffolding comprises long members of non-conductive material such as timber or fibreglass.

A non-conductive temporary structure system may include small metallic components such as couplings, adjustable bases and castors. When used with non-conductive long members, these components are considered non-conductive for safety purposes.

**WARNING**

**Metallic members or components of temporary structures must not be placed on, in contact with or bridge the rails.**

- e. The safe approach distances (SAD) required to be maintained from the temporary structure being used or during temporary structure works. (Refer to Section 5.2.2.)

## 5.2.2 Safe Approach Distances (SADs)

The SAD is the closest distance which any part of the temporary structure or any person, hand held tool, equipment or material being used in connection with temporary structure works or temporary structure usage may come to live exposed electrical equipment such as 1500 Volt OHW, an aerial line (HV or LV) and associated electrical equipment.

The SADs specified in this document are as detailed in Table A and Table B. These are the minimum distances to be maintained. Additional clearance is to be added to these distances to allow for the risk factors relevant to the work such as conductor movement due to the effects of wind and temperature or inadvertent movement or mishandling of material which would infringe on the SAD.

The SADs specified in Table A below define a rectangular area around the aerial line as depicted in Diagram A below. The Table A SADs determines the dimensions of this rectangle which temporary structure work must not impinge unless performed under an Electrical Permit.

The SADs specified in Table B below define a rectangular area around the aerial line as depicted in Diagram B below. The Table B SADs determines the dimensions of this rectangle which must not be impinged when using a temporary structure unless performed under an Electrical Permit.

**Table A: Minimum Safe Approach Distances for a Temporary Structure/Temporary Structure Work and Live Exposed Electrical Equipment unless performed under an Electrical Permit**

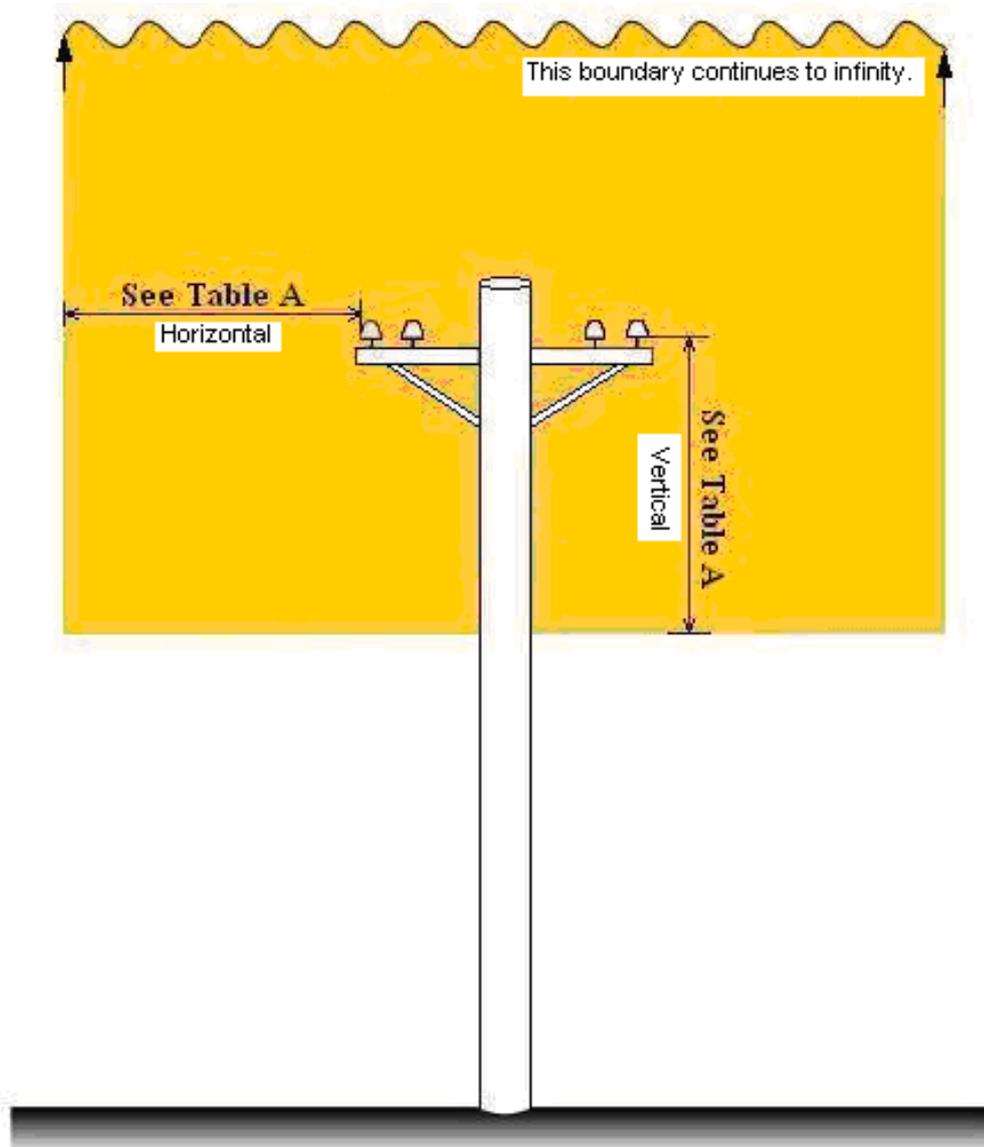
Electrical equipment type	Temporary structure material			
	Conductive		Non-conductive	
	Vertical <sup>1</sup>	Horizontal	Vertical <sup>1</sup>	Horizontal
1500 Volt DC Aerial feeders	4.0m	4.0m	2.7m	1.5m
1500 Volt DC Overhead Wiring (clearance to OHW and extremity of pantographs)	4.0m	Structure gauge <sup>2</sup> + 4.0m	2.7m	Structure gauge <sup>2</sup> + 1.5m
Up to and including 1000 Volt AC	4.0m	4.0m	2.7m	1.5m
Above 1000 Volt AC up to and including 33kV AC	4.0m	4.0m	3.5m	2.1m
Above 33kV AC up to and including 132kV AC	4.0m	4.0m	4.0m	3.0m

### NOTES

1. The vertical distances given are the minimum distances that the highest part of the temporary structure work, including handrails, must remain below the live exposed electrical equipment unless the necessary horizontal SADs are met.
2. Structure Gauge is “a defined envelope around the track, within which no structure is permitted”. Refer to Transport for NSW (TfNSW) standard ESC 215 Transit Space for details. Consult the track discipline representative for values of the Structure Gauge if there is any doubt
3. No temporary structure work is permitted above live exposed electrical equipment.

4. In relation to aerial lines, the abovementioned SAD's are only for aerial lines having a maximum span of 125 m. For aerial lines having a span greater than 125m contact the Professional Head Electrical Engineering. (Refer to AS/NZS 4576 Table 5.4.3 for context.)

**Diagram A – Minimum Safe Approach Distances (SADs) for Temporary Structure Work unless performed under an Electrical Permit (to be used in conjunction with Table A)**



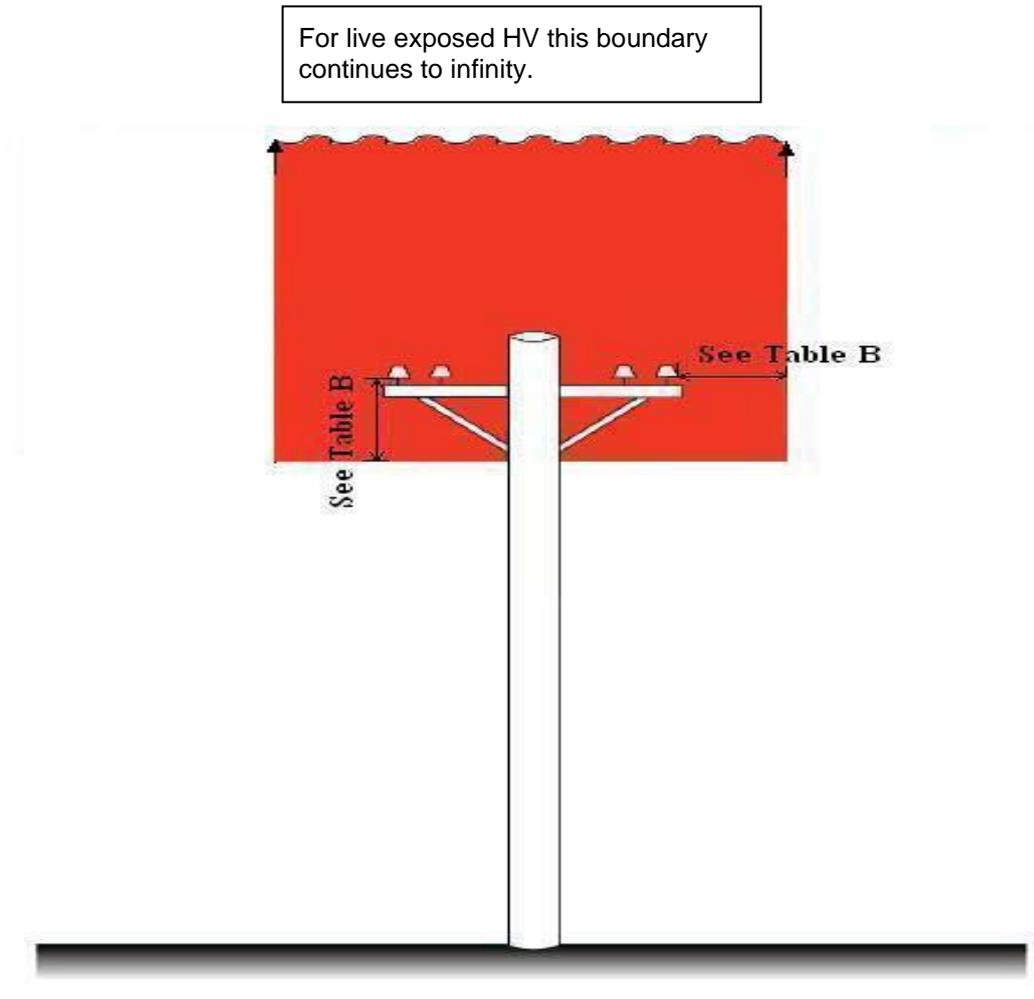
**Table B: Minimum Safe Approach Distances between a Temporary Structure and Live Exposed Electrical Equipment after completion of Temporary Structure Work unless under an Electrical Permit**

Location	Around aerial lines		In substations
	Vertical	Horizontal	Both vertical and horizontal
<b>1500 Volt Equipment</b>			
1500 Volt DC Aerial feeders	2.7m <sup>1</sup>	0.6m	N/A
1500 Volt DC Overhead Wiring (clearance to OHW and extremity of pantographs)	2.7m <sup>1</sup>	Structure Gauge <sup>3</sup> + 0.6m	N/A
Substation equipment	N/A	N/A	0.3m
<b>High Voltage Equipment</b>			
Above 1000 Volt AC up to and including 33kV AC	3.5m <sup>2</sup>	1.5m	0.3m
Above 33kV AC up to and including 66kV AC	4.0m <sup>2</sup>	2.0m	0.6m
Above 66kV AC up to and including 132kV AC	4.0m <sup>2</sup>	2.5m	1.1m
<b>Low Voltage Equipment</b>			
Up to and including 1000 Volt AC	2.7m <sup>1</sup>	0.6m	0.3m

**NOTES**

1. The vertical distances given are the minimum distances that the highest or lowest part of the temporary structure work, including handrails must remain **below** or **above** the live exposed electrical equipment unless the necessary horizontal SAD's are met.
2. The vertical distances given are the minimum distances that the highest part of the temporary structure work, including handrails, must remain **below** the live exposed electrical equipment unless the necessary horizontal SADs are met.
3. Structure Gauge is “a defined envelope around the track, within which no structure is permitted”. Refer to TfNSW standard ESC 215 Transit Space for details. Consult the track discipline representative for values of the Structure Gauge if there is any doubt.

**Diagram B – Minimum Safe Approach Distances between a Temporary Structure and Live Exposed Electrical Equipment after completion of Temporary Structure Work unless under an Electrical Permit (to be used in conjunction with Table B)**



### 5.2.3 Requesting information from the Regional Electrical Engineer.

Where required, any requests for information (e.g. voltage, height, horizontal clearance, etc.) from the Regional Electrical Engineer ([STconstruction@transport.nsw.gov.au](mailto:STconstruction@transport.nsw.gov.au)) shall be made in writing.

Where such a request is made, no work shall commence until a written response has been received from the Regional Electrical Engineer.

Upon receiving a written request for information, the Regional Electrical Engineer shall ensure that an Authorised Person inspects the proposed work location with the worker requesting the information, and understands the work that is being planned.

The Regional Electrical Engineer shall then respond to the request in writing, providing all of the requested information and other advice considered relevant to the proposed work. The written advice shall remind the requestor that the requirements of this Guide shall be complied with.

## 5.3 Requirements to eliminate or control electrical risks

### 5.3.1 General

TAHE does NOT allow work or permit temporary structure work or the use of temporary structures above live exposed HV aerial lines or equipment. Temporary structures fitted with a continuous rigid barrier are NOT exempt from this requirement.

Temporary structure work or the use of temporary structures:

- adjacent to live exposed HV aerial lines or equipment, or
- adjacent, above or below live exposed Low Voltage or 1500 Volt DC overhead wiring or equipment,

is permitted provided the work is to be carried out under an appropriate Electrical Permit, or the:

- a. work is to carried out in accordance with an approved SWMS, and
- b. specific work is to approved by an Authorised Officer (Mains or Substations), and
- c. appropriate requirements of Section 5.3 are complied with.

### 5.3.2 Temporary structure works that will be required to, or might inadvertently, infringe the SADs of Table A to Live Exposed Electrical Equipment

Where the planning assessment concerning the temporary structure work reveals that the work will be required to, or might inadvertently, infringe the SADs of Table A of this document, **the first consideration shall be to eliminate the risk by arranging for an Electrical Permit to be issued covering the temporary structure work around the live exposed electrical equipment prior to work commencement.**

When an Electrical Permit to Work (refer to *PR D 78501 Electrical Permit to Work*) is to be put in place, *PR D 78501 FM01 Request for Electrical Permit to Work* shall be completed and submitted. The work shall then be conducted in accordance with *PR D 78502 Substation Access Permits*.

**WARNING**

**Where an Electrical Permit is used, work shall not commence until the Electrical Permit is issued to the person in charge of the work, all workers have been briefed on the conditions of the Electrical Permit and have signed onto the Electrical Permit.**

Where an Electrical Permit is not reasonably practicable to obtain due to operational factors, the risk assessment shall indicate the reasons why an Electrical Permit is not reasonably practicable and the process within *SP D 79056 Special exception from working to the ENSR* is required to be followed.

Where temporary structure work has been carried out under an Electrical Permit, this Electrical Permit shall only be cancelled under the following conditions:

**EITHER**

The erected temporary structure does not infringe the SADs of Table A of this document and the use of the temporary structure will not infringe the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold and Table 2: Minimum SADs for non-electrical work around insulated low voltage cables up to 1000 Volt (including low voltage aerial bundled cables) and low voltage aerial lines.

**OR**

**All** of the following conditions are met:

- The erected temporary structure, including rigid barriers, does not infringe the SADs of Table B.
- Continuous rigid barriers are installed to prevent workers who will be using the temporary structure, or tools and equipment to be used by these workers, from infringing the SADs specified in SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold and Table 2: Minimum SADs for non-electrical work around insulated low voltage cables up to 1000 Volt (including low voltage aerial bundled cables) and low voltage aerial lines. These SADs shall be achieved as a taut string distance to the top, side and bottom extremities of the barrier. (Refer to Section 5.3.4 for further requirements for erecting and using continuous rigid barriers.)
- The decision is based on a documented risk assessment that considered the nature of the work and the continuous rigid barriers and the responsible manager accepting the risk provides written authorisation for the reduction in SADs from Table A. Use the *SMS-06-FM-4107 WHS Risk Assessment Form* or a Safe Work Method Statement to record the risk assessment.

**NOTE**

**The risk assessment is to be completed, reviewed and accepted prior to the commencement of Temporary Structure works.**

- A competent person has inspected the temporary structure after its erection and before its use, to certify that the temporary structure is fit for its intended purpose and has been erected in compliance with the manufacturer's specifications or the design drawings. A temporary structure handover certificate is to be provided and kept at the site. (Refer to SMS-06-OP-3026 and AS/NZS 4576 for inspection and recording requirements.)

- If the temporary structure comprises metallic members, it is effectively earthed, or in the case of 1500 Volt equipment, is connected through a spark gap to a rail. The proposal to earth/rail connect shall be documented and presented to the Regional Electrical Engineer for review and approval before such work takes place.
- If the aerial line is low voltage, then the low voltage aerial conductors are covered with cable covers (Tiger Tails). These Tiger Tails:
  - are to extend a minimum of five metres beyond the extremities of where the temporary structure has been erected.
  - are to be installed by an Authorised Person (Mains)
  - are not to be regarded as providing mechanical protection or electrical insulation but rather as a visual indication and reminder of the presence of the low voltage conductors
  - are to be inspected by the person in charge of the temporary structure work each day prior to commencing the temporary structure work. This inspection is to ensure that the tiger tails have not moved or been damaged. Should such movement or damage be detected, then an Authorised Person (Mains) shall be contacted to ensure the Tiger Tails are placed in the correct position prior to the temporary structure work re-commencing.
  - require an Authorised Person (Mains) to complete the removal and inspection/certification of fit for service.

### 5.3.3 Use of Temporary Structures around Live Exposed Electrical Equipment

An Electrical Permit to Work (refer to PR D 78501) is not required under any of the following three circumstances:

1. The temporary structure does not infringe the SADs of Table A of this document and the work carried out using the temporary structure will not infringe the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold and Table 2: Minimum SADs for non-electrical work around insulated low voltage cables up to 1000 Volt (including low voltage aerial bundled cables) and low voltage aerial lines, or
2. The temporary structure does not infringe the SADs of Table B and continuous rigid barriers in accordance with Section 5.3.4 have been installed so that the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold and Table 2: Minimum SADs for non-electrical work around insulated low voltage cables up to 1000 Volt (including low voltage aerial bundled cables) and low voltage aerial lines cannot be infringed by workers or tools and equipment being used by them. These SADS shall be achieved as a taut string distance to the top, side and bottom extremities of the barrier.

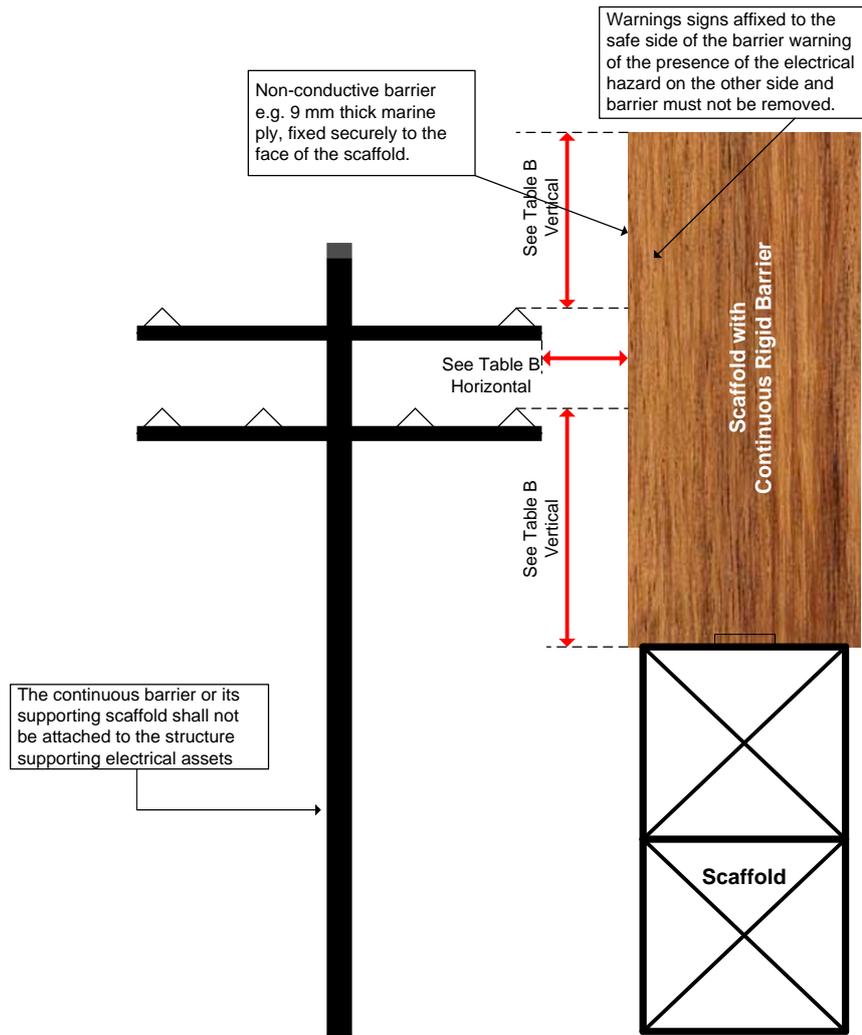
If the aerial line is low voltage, then the LV aerial conductors are covered with tiger tails as per Section 5.3.2 above, or

Otherwise, an Electrical Permit to Work shall be issued to allow the use of the temporary structure.

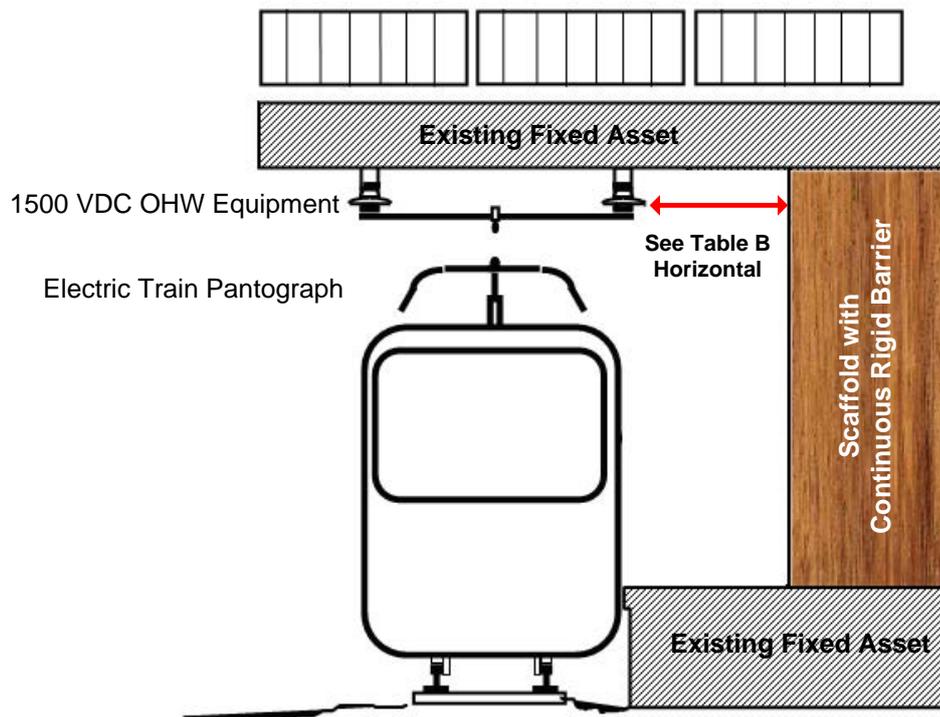
### 5.3.4 Erection and Use of Continuous Rigid Barriers on Temporary Structures

All the following conditions shall be met for the use of continuous rigid barriers on temporary structures:

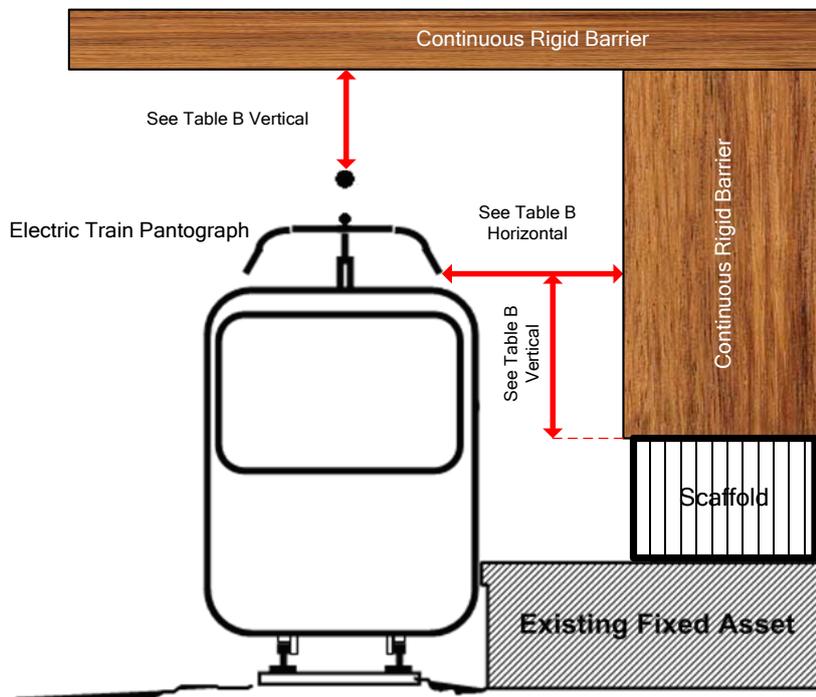
- The material used shall be non-conductive, e.g. sheets of 9mm marine ply.
- The material used shall be designed to be adequately protected against damage that might reasonably be expected due to its expected period of use, environmental and other external influences to which it may be exposed under the conditions of its use. Damages from such influences may include mechanical damage, and damage because of exposure to weather, water, flora, fauna, excessive dampness, corrosive fumes, galvanic action, accumulation of dust, oil, temperature or vibration, etc.
- The continuous rigid barrier or its supporting structure shall not be attached to the structure supporting electrical assets.
- Gaps between fitted sheets of material shall not exceed 3mm.
- No exposed cut or drilled holes are permitted in the sheets of material.
- The continuous rigid barrier shall be so erected that:
  - a. Its horizontal distance (refer to Diagram C, Diagram D or Diagram E) from exposed electrical equipment shall not be less than the minimum horizontal clearance distances of Table B of this document, and
  - b. Its vertical limits (refer Diagram C, Diagram D or Diagram E) shall not be less than the minimum vertical SAD from exposed electrical equipment of Table B for both the upward and downward directions.
- Warning signs shall be affixed to the safe side of the barrier, warning of the presence of the electrical hazard on the other side of the barrier, and warning that the barrier shall not be removed.
- The design and installation of the continuous barrier, being an integral component of the temporary structure, is carried out in accordance with Section 5.
- Written approval shall be provided by the competent person who provides certification of the structural limitations of the proposed barrier to resist the forces that may be imposed during the work process. This certification shall document the work processes and resultant maximum loads to be applied to the barrier. For temporary structure/barrier arrangements to be used inside Substations or above exposed electrical equipment, the designer shall ensure that the same level of care is taken as would be applied to a permanent structure.
- A competent person shall visually inspect the barrier on a daily basis to ensure that the sheets of material are in a satisfactory condition and remain impenetrable. Records of inspection shall be maintained. (Refer to SMS-06-OP-3026 and AS/NZS 4576 for additional inspection and recording requirements, e.g. inspection of scaffold by a competent person at intervals not exceeding 30 days or after repair or modification.)
- If a barrier is used above a temporary structure, and this barrier could be used as an accessible area, the Associate Director EDU is to provide written approval for the arrangements to exclude anyone from the upper surface of this barrier. Refer to SP D 79056.



**Diagram C: Temporary Structure with Continuous Rigid Barrier**



**Diagram D: Temporary Structure with Continuous Rigid Barrier**



**Diagram E: Temporary Structure with Continuous Rigid Barrier**

### 5.3.5 Temporary Structure Work and Use of Temporary Structures inside a Substation

a. Requirements for Temporary Structure Work:

1. A Substation Access Permit (SAP) in accordance with PR D 78502 shall always be issued.
2. Where the planning risk assessment reveals that the SADs of Table A of this document will not be infringed, no equipment needs to be isolated and earthed. In this case, the SAP will define the area in which the work is permitted to be carried out.
3. The SAP shall always define the route along which the temporary structure components are to be moved to and from the work area.
4. Arrangements are to be made with the Authorised Person (Substations) whom will issue the SAP for a metallic temporary structure to be earthed:
  - o as soon as practicable during erection, and
  - o until as late as practicable during dismantling.
5. Where the planning risk assessment reveals that the temporary structure work will be required to, or might inadvertently, infringe the SADs of Table A, this equipment shall be isolated and earthed prior to the issue of the SAP.

The SAP may be cancelled and the equipment re-energised at the completion of the temporary structure work provided that:

- o the temporary structure does not infringe the SADs of Table A of this document, or
- o the erected or altered temporary structure does not infringe the SADs of Table B, and the temporary structure has been fitted with continuous rigid barriers in accordance with Section 5.3.4 above so that the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold cannot be infringed by workers who will use the temporary structure or tools and equipment to be used by them. These SADs shall be achieved as a taut string distance to the top, side and bottom extremities of the barrier , or

b. Requirements for the Use of Temporary Structures

1. A Substation Access Permit (SAP) in accordance with PR D 78502 shall always be issued.
2. If the planning risk assessment concerning the work reveals that:
  - o the temporary structure does not infringe the SADs of Table A, and
  - o the work carried out using the temporary structure will not infringe the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold,then no equipment needs to be isolated and earthed. In this case, the SAP will define the area in which the work is permitted to be carried out.
3. Where the planning risk assessment concerning the work reveals that the work to be carried out will be required to, or might inadvertently, infringe the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold, this exposed equipment shall be isolated and earthed prior to the issue of the SAP, unless:

## EITHER

All of the following conditions are met:

- The erected temporary structure does not infringe the SADs of Table B of this document.
- Continuous rigid barriers in accordance with Section 5.3.3 above have been installed so that the SADs of SP D 79049 Table 1: Minimum SADs to exposed electrical equipment for persons and tools they hold cannot be infringed by workers or tools and equipment being used by them. These SADs shall be achieved as a taut string distance to the top, side and bottom extremities of the barrier.
- The decision is based on a documented risk assessment that considered the nature of the work and the continuous rigid barriers and the Authorised Person (Substations) whom issued the SAP provides written authorisation for the reduction in clearances. Use SMS-06-FM-4107 or a Safe Work Method Statement.
- If the temporary structure comprises metallic members, it is effectively earthed.

### 5.3.6 Temporary Structure Work adjacent to Substations

Temporary structure work is not to be planned or performed within 5 metres of the boundary fence of a substation without approval of the Regional Electrical Engineer.

## 6 Reference documents

AS/NZS 1576.1 Scaffolding Part 1: General requirements

AS/NZS 4576 Guidelines for scaffolding

ESC 215 Transit Space

PR D 78501 Electrical Permit to Work

PR D 78501 FM01 Request for Electrical Permit to Work

PR D 78502 Substation Access Permits

PR D 78700 Working around Electrical Equipment

SafeWork NSW Work near Overhead Power Lines: Code of Practice 2006

SMS-06-OP-3026 Work Health and Safety (WHS) Risk Management

SMS-06-FM-4107 WHS Risk Assessment Form

SP D 79049 Safe Approach Distances (SADs)

SP D 79056 Special exception from working to the ENSR

Work Health and Safety Regulation 2011 Section 225

WorkCover NSW Erecting, altering and dismantling scaffolding