

# Standards Alert

Part of the Energy Queensland Group

Subject:	<b>Conductor Clearances to Free Standing Streetlights</b>	Control Ref No: StdsA507
		Date Issued: 17/09/2019
		Supersedes: N/A
For Policy/Procedure/Manual:	<b>Energex and Ergon Overhead Design/ Construction Manuals Queensland Public Lighting Construction Manual</b>	Expiry Date: 30/06/2020
Originating Dept:	<b>Asset Standards:- Line Standards</b>	
Target Audience:	<b>EQL</b>	

## 1. Amendment Record

Version	Date	Author	Amendments
Initial	17/09/2019	F Zaini	Initial Issue

## 2. Objective

To advise of updated requirements for conductor clearances to all free standing streetlights, regardless of ownership or billing 'rate' type.

A free standing streetlight is any free standing structure that provides lighting as its primary purpose, regardless of material or pole type. It can consist of any material, or any combination of materials, such as a metal streetlight pole, or a wood pole with metal streetlight bracket at the top, etc.

<b>NOTE</b>	This change only affects free standing streetlights. It does <u>not</u> affect streetlight brackets/luminaire arrangements that are attached to electricity distribution poles.
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## 3. Updates & Actions

Conductor clearance requirements to free standing streetlights have been updated. Table 1 outlines the new clearance requirements.

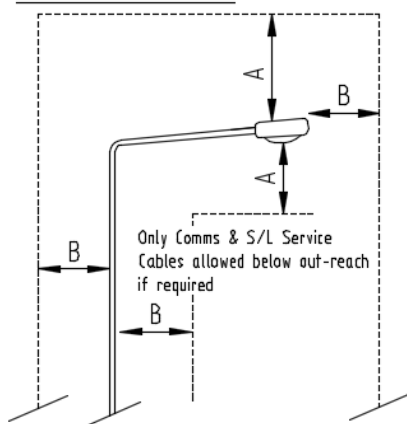
<b>NOTE</b>	Either the Vertical clearance <u>OR</u> the Horizontal clearance requirement needs to be met. It is <u>not</u> a requirement to meet both clearances at the same time.
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The updated clearances are required to be met for all projects that are yet to have the design finalised from the date of this alert.

Where a project has already been scheduled for construction and it is not practical to send back for re-design, then the project can proceed as per the old standards.

**Table 1 – New Clearance Requirements**

**FREE-STANDING STREETLIGHTS  
STATIC CLEARANCES**



CLEARANCE FROM:	MIN. DISTANCE <sup>1</sup>	
	VERTICAL "A"	HORIZONTAL "B"
BARE LV (>1000V)	2.7m	1.5m
BARE >1000V to ≤33kV, or CCT	3.0m	1.5m
BARE >33 to ≤66kV	3.0m	3.0m
BARE >66 to ≤132kV	4.6m	4.6m
BARE >132 to ≤330kV	5.5m	5.5m
INSULATED LV or SCREENED HVABC	0.6m	0.3m
LV SERVICES <sup>2</sup>	1.2m	1.2m
COMMS	0.05m	0.05m

**NOTES:**

- CLEARANCES SHALL BE MAINTAINED UNDER:
  - MAXIMUM & MINIMUM CONDUCTOR TEMPERATURES
  - BLOWOUT CONDITIONS
- CLEARANCE FOR LV SERVICES NOT ATTACHED TO THE STREET LIGHT.

## 4. Legacy Installations

'Legacy' installations will be assessed and prioritised for rectification if required by Asset Management in accordance with the *Standard for Conductor Clearance Prioritisation and Remediation*.

## 5. Update to Manuals

The following drawings/manuals will be updated to reflect the changes:

### Energex Manual

RED 00302 Energex Overhead Design Manual – Drawings 5-5-1 and 5-8-1

### Ergon Manuals

STNW3361 Standard for Distribution Design Overhead – Section 12.5.1  
Overhead Construction Manual – Drawing 1269 Sh 3

### Energy Queensland Manuals

Qld Public Lighting Construction Manual – Drawing 1-3-14-1

These drawings will be included in the next revision of the manuals. Copies of the Manuals are available via the Asset Standards intranet site or via the RED/Process Zone document system for internal staff.

The current manuals are available to external service providers via the internet. The Manuals are uncontrolled documents when printed.

## 6. Further Information

For further information, please contact

- Fabio Zaini, 07 3664 4441, email [fabio.zaini@energyq.com.au](mailto:fabio.zaini@energyq.com.au)
- Adam Bletchly 07 4931 2783, email [adam.bletchly@energyq.com.au](mailto:adam.bletchly@energyq.com.au)

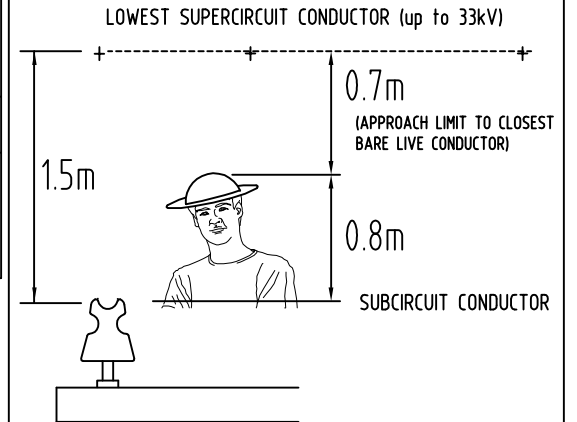
### MIDSPAN INTERCIRCUIT CLEARANCE CRITERIA

Supercircuit Voltage	Conductor Type	Summer Day Design Temp	Winter Night Design Temp	Subcircuit Voltage	Conductor Type	Summer Day Design Temp	Winter Night Design Temp
33kV	Open Wire	110°C	75°C	11kV/LV	All Types	35°C	15°C
11kV	Open Wire	75°C	55°C	LV	All Types	35°C Ambient	15°C Ambient
11kV	CCT	80°C	60°C	LV	All Types	35°C	15°C
11kV	HVABC	50°C (catenary)	25°C (catenary)	LV	All Types	35°C	15°C

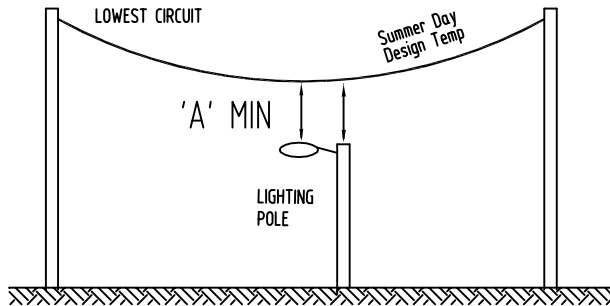
Circuits must be designed to maintain 0.5 metre clearance at both Summer Day supercircuit / Summer Day subcircuit, and Winter Day supercircuit / Winter Day subcircuit design temperature conditions given in the table above.

### LIGHTING & SKIP POLE CLEARANCE CRITERIA

Voltage above	Conductor Type	Summer Day Design Temp
33kV	Open Wire	110°C
11kV	Open Wire	75°C
11kV	CCT	80°C
11kV	HVABC	50°C (catenary)

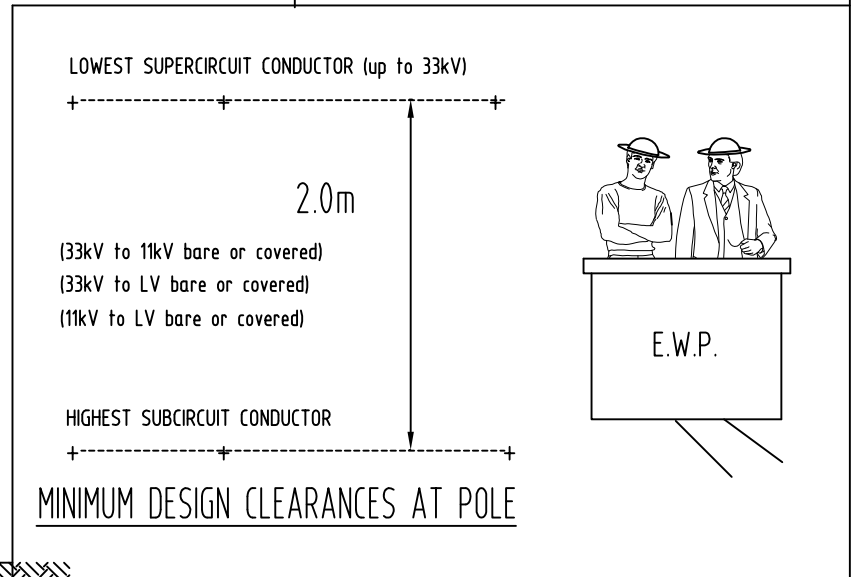
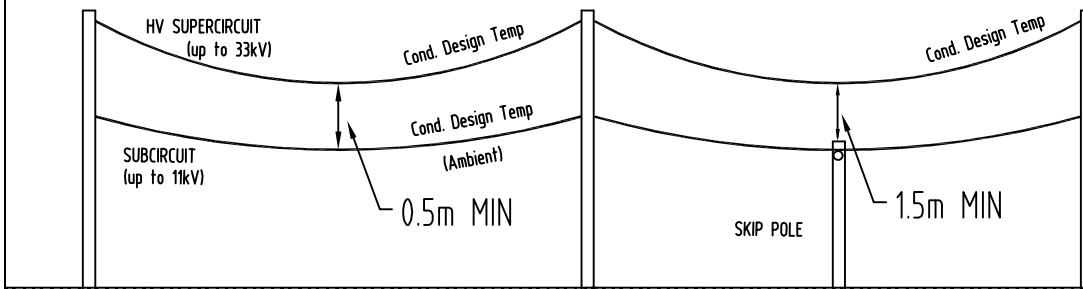


MINIMUM WORKING CLEARANCES AT POLE



Voltage	Conductor	Clearance
LV	Insulated	0.6m
LV	Uninsulated	2.7m
LV Services	Insulated	1.2m
HVABC	Earth Screen	0.6m
11/22/33/66kV	Bare & CCT	3.0m
110/132kV	Bare	4.6m
132kV to 330kV	Bare	5.5m
Comms	Comms	0.05m

### CLEARANCE OVER PUBLIC LIGHTING and SKIP POLES



MINIMUM DESIGN CLEARANCES AT POLE

A	ORIGINAL ISSUE
B	DATE 17/09/2019
	APPD F Zaini
	CKD J Chung
Update Streetlight clearances	
Update format	



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SCALE	NTS
APP'D	F. ZAINI
DATE	20/10/2015
REC'D	
CKD	K. GOSDEN
DRN	W. DE LEON
	CAD

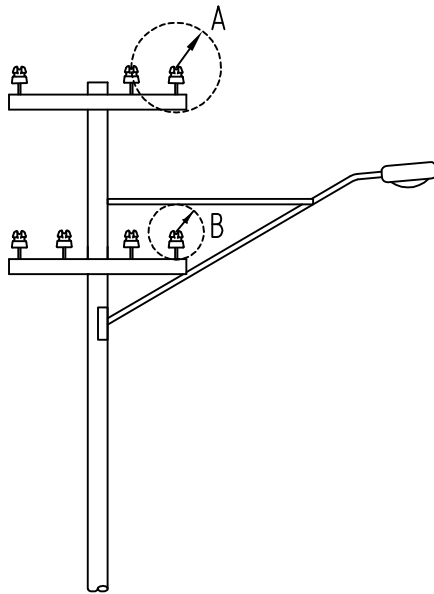
### CLEARANCES DESIGN CLEARANCES

10824-A4

SECT	SUB	SHT	REV
5	5	1	B

**STREETLIGHT ON SAME DISTRIBUTION POLE  
STATIC CLEARANCES**

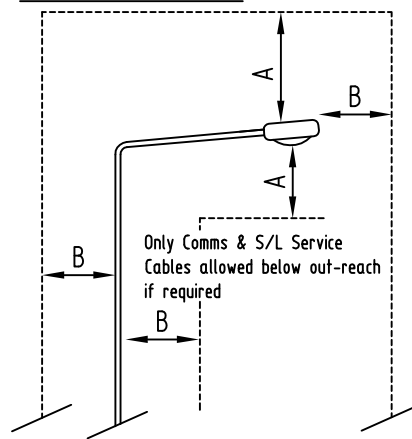
CLEARANCES FROM BARE MAINS OR CCT



A	BARE 1kV - 11kV	1.2m MIN.
B	BARE LV	0.1m MIN.

NOTE:  
FOR OTHER CONFIGURATIONS REFER QUEENSLAND  
PUBLIC LIGHTING AND CONSTRUCTION MANUAL

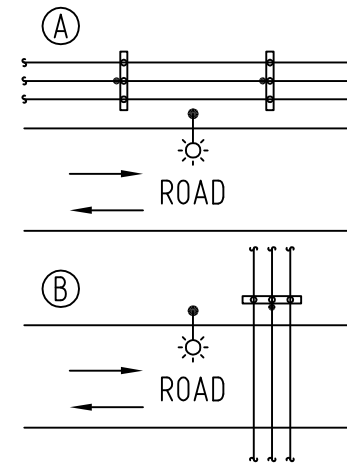
**FREE-STANDING STREETLIGHTS  
STATIC CLEARANCES**



CLEARANCE FROM:	MIN. DISTANCE <sup>1</sup>	
	VERTICAL "A"	HORIZONTAL "B"
BARE LV (>1000V)	2.7m	1.5m
BARE >1000V to ≤33kV, or CCT	3.0m	1.5m
BARE >33 to ≤66kV	3.0m	3.0m
BARE >66 to ≤132kV	4.6m	4.6m
BARE >132 to ≤330kV	5.5m	5.5m
INSULATED LV or SCREENED HVABC	0.6m	0.3m
LV SERVICES <sup>2</sup>	1.2m	1.2m
COMMS	0.05m	0.05m

- NOTES:
- CLEARANCES SHALL BE MAINTAINED UNDER:
    - MAXIMUM & MINIMUM CONDUCTOR TEMPERATURES
    - BLOWOUT CONDITIONS
  - CLEARANCE FOR LV SERVICES NOT ATTACHED TO THE STREET LIGHT.

**STREETLIGHT ON FRANGIBLE COLUMNS  
DYNAMIC CLEARANCES**



DYNAMIC CLEARANCES ARE PREFERRED  
CLEARANCES DEVELOPED IN CONJUNCTION  
WITH DEPARTMENT OF MAIN ROADS.  
THEY ARE NOT MANDATORY BUT SHOULD  
BE IMPLEMENTED WHERE POSSIBLE.

Orientation of Power Line	Column Type	SLIP BASE MOUNTING	IMPACT ABSORBANT BASE
	Clearance Zone between streetlight (S/L) and mains		
A	LINE PARALLEL TO ROAD	0.6xMH	0.6xMH
B	LINE CROSSES ROAD & S/L NEAREST ONCOMING TRAFFIC	1.2xMH	1.2xMH
C	LINE CROSSES ROAD & LINE NEAREST ONCOMING TRAFFIC	1.2xMH (0.6xMH) Note2	1.2xMH (0.6xMH) Note2

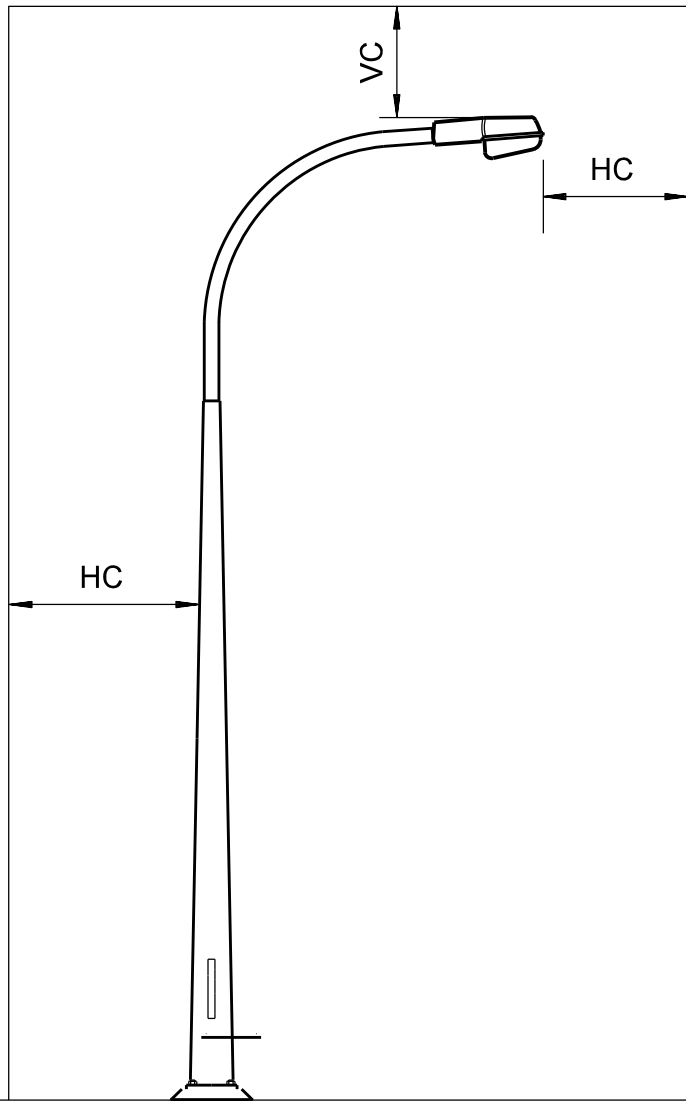
- NOTES:
- 1.2 x MH IS A HEMISPHERICAL RADIUS FROM S/L BASE  
0.6 x MH IS A REDUCED HORIZONTAL CLEARANCE FROM ANY POINT ON S/L.
  - DYNAMIC CLEARANCE MAY BE REDUCED TO 0.6 x MH WHEN:
    - CLEARANCE TO STRUCTURES/SERVICES PREVENTS ACHIEVING 1.2xMH
    - THE LIGHT STANDARD IS BEHIND A BARRIER (E.G. GUARD RAIL)
    - A CENTRE MEDIAN (JERSEY) BARRIER EXISTS
    - TWO-WAY TRAFFIC EXISTS AND AN ERRANT VEHICLE MUST CROSS 2 OR MORE OPPOSING TRAFFIC LANES.

A	ORIGINAL ISSUE
B	DATE 13/09/2019
	APPD F Zaini
	CKD J Chung
Update clearances for free-standing Streetlights	

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SCALE	NTS	CLEARANCES				
APP'D	F. ZAINI	DESIGN CLEARANCES				
DATE	20/10/2015					
REC'D						
CKD	K. GOSDEN					
DRN	W. DE LEON					
	CAD	10824-A4	SECT 5	SUB 8	SHT 1	REV B



# MINIMUM SEPARATION OF LIGHTING STRUCTURE AND OVERHEAD LINE

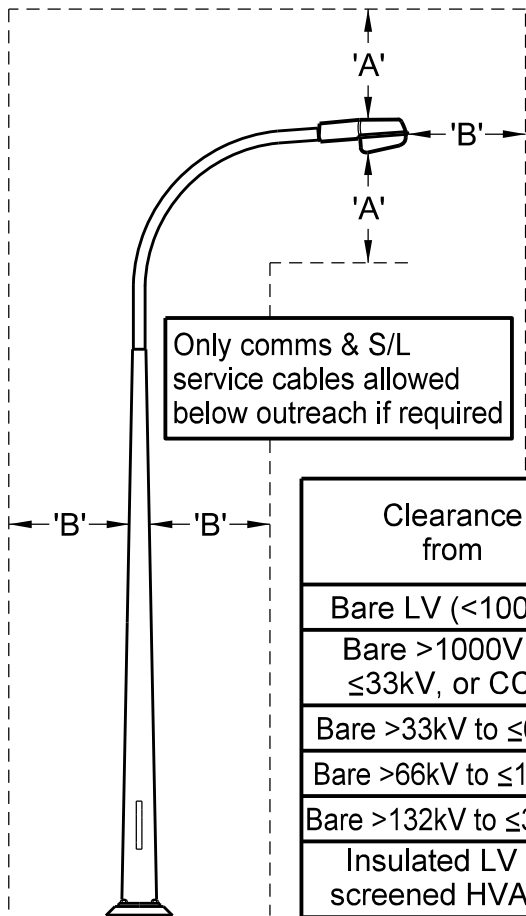


CLEARANCE FROM:	MINIMUM DISTANCE	
	VERTICAL "VC"	HORIZONTAL "HC"
COMMS CABLE	0.05m	0.05m
LV SERVICE	1.2m	1.2m
LV INSULATED	0.6m	0.3m
LV UNINSULATED	2.7m	1.5m
>1000V ≤ 33kV	3.0m	1.5m
>33kV ≤ 66kV	3.0m	3.0m
>66kV ≤ 132kV	4.6m	4.6m
>132kV ≤ 330kV	5.5m	5.5m

**NOTES:**

1. Clearances shall be maintained under the following conditions:-
  - a) maximum conductor design temperature in still air (maximum sag condition)
  - b) conductor temperature of 35° with 500pa wind pressure on the conductor (maximum horizontal swing condition)
  - c) conductor temperature of 0° in still air (minimum sag condition)
2. Clearance for LV service not attached to the street light.

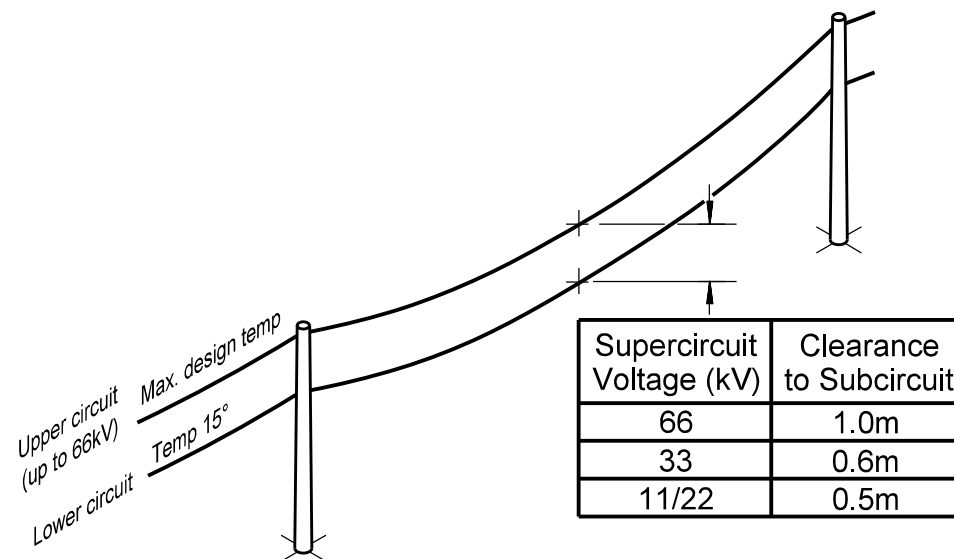
<b>A</b>	ORIGINAL ISSUE	REFERENCE DRAWING ENERGEX NIL	 © COPYRIGHT 2019 ENERGEX ENERGEX Corporation Limited ABN 40 078 849 055	 © COPYRIGHT 2019 ERGOON ENERGY Ergon Energy Corporation Limited ABN 50 087 646 062	Approved Ergon A. Bletchly 09/08/19	<b>LIGHTING CONSTRUCTION PRACTICES CLEARANCE BETWEEN LIGHTING STRUCTURE &amp; OVERHEAD LINE</b>				
<b>B</b>	30.07.14	REFERENCE DRAWING ERGON			Approved Energex A. Bletchly 09/08/19					
<b>C</b>	23.03.18	5 84 8038 2			Checked K. Slater 09/08/19					
<b>D</b>	31.05.19	This document must not be reproduced in part or whole without written permission from ENERGEX or Ergon Energy			Drawn L. Burton / T. Borg 14/10/10					
HARD COPY UNCONTROLLED						EE DRWG NO: 1-3-14-1	VOLUME <b>1</b>	FOLDER <b>3</b>	PAGE <b>14-1</b>	ISSUE <b>0D</b>
						EGX DRWG NO: 10500-A4-1-3-14-1				



Clearance from	Minimum Distance <sup>1</sup>	
	Vert. 'A'	Horiz. 'B'
Bare LV (<1000V)	2.7m	1.5m
Bare >1000V to ≤33kV, or CCT	3.0m	1.5m
Bare >33kV to ≤66kV	3.0m	3.0m
Bare >66kV to ≤132kV	4.6m	4.6m
Bare >132kV to ≤330kV	5.5m	5.5m
Insulated LV or screened HVABC	0.6m	0.3m
LV services <sup>2</sup>	1.2m	1.2m
Comms	0.05m	0.05m

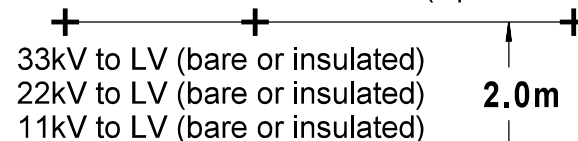
**NOTES:**

- Clearances shall be maintained under:
  - Maximum & minimum conductor temperatures
  - Blowout conditions
- Clearance for LV services not attached to the streetlight.

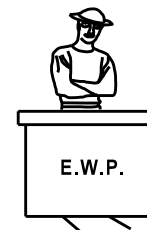


**INTERCIRCUIT CLEARANCES AT MIDSPAN**

LOWEST UPPER CIRCUIT CONDUCTOR (Up to 33kV)



HIGHEST LOWER CIRCUIT CONDUCTOR (LV)



**MINIMUM DESIGN CLEARANCES AT POLE**

(This clearance allows for live line work)

**NOTES:**

- Standard Maximum Design Temperature is 75° C but may vary on some feeders
- Upper circuit Maximum Design Temperature must be verified prior to design of lower circuits.
- Clearances apply to bare or covered conductors.

A	ORIGINAL ISSUE
B	8.1.17
C	21.8.19

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Ergon Energy Corporation Ltd  
ABN 50 087 646 062

APPROVED	C. Noel
DATE	9.4.09
PASSED	C. Avenell
DRAWN	L. Burton

**OVERHEAD DISTRIBUTION  
CONSTRUCTION PRACTICES  
MINIMUM CONDUCTOR SEPARATIONS  
CRITERIA FOR INTERCIRCUIT CLEARANCES**

FILE: 5 10 1269 3

Dwg 1269 sh 3

C

## 12.5 Criteria for Intercircuit Clearances

### 12.5.1 Clearance over Public Lighting

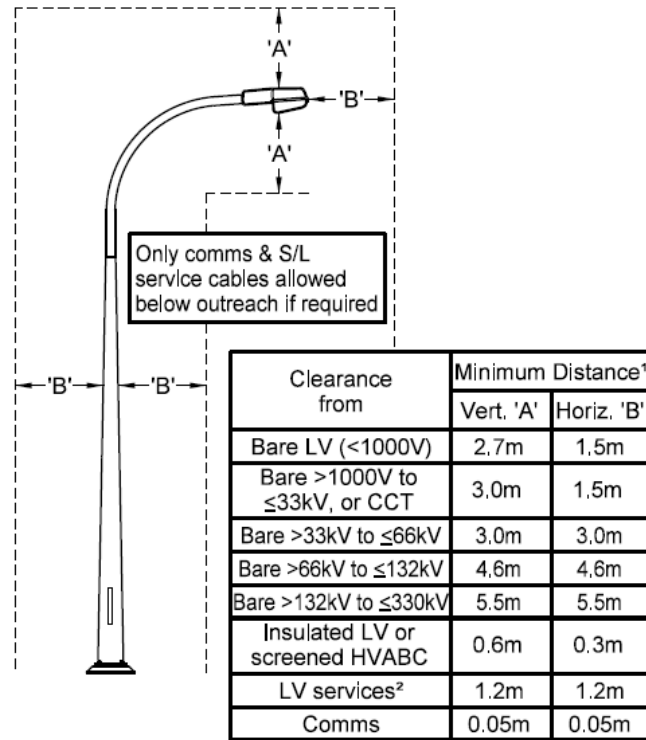


Figure 12-6 – Clearance over Public Lighting

**Notes:**

- Clearances shall be maintained under:
  - Maximum & minimum conductor temperatures
  - Blowout conditions
- Clearance for LV services not attached to the streetlight

### 12.5.2 Intercircuit Clearances at Midspan

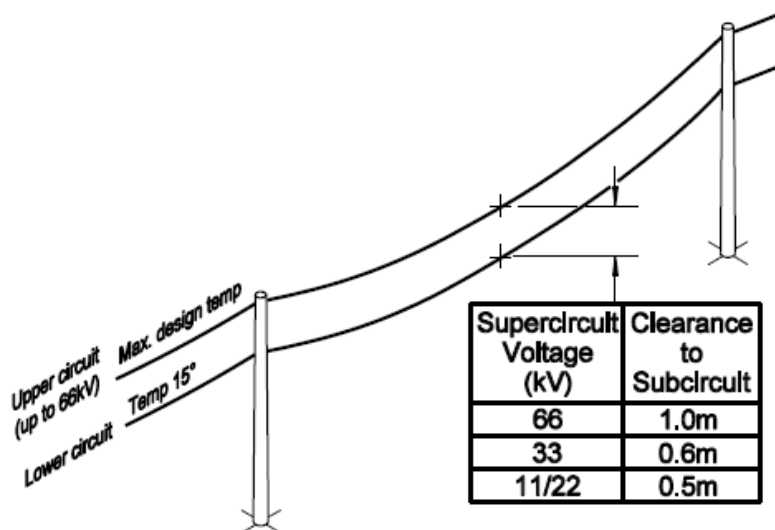


Figure 12-7 – Intercircuit Clearances at Midspan

**Notes:**

- Standard Maximum Design temperature is 75°C but may vary on some feeders
- Upper circuit Maximum Design Temperature must be verified prior to design of lower circuits
- Clearances apply to bare or covered conductors