

# Standards Alert

Part of the Energy Queensland Group

<p>Subject:</p> <p style="text-align: center;"><b>Where Insect Protected Cables Shall Be Used in the EQL North South Region</b></p>		Control Ref No: StdsA611
		Date Issued: 20/01/2021
		Supersedes:
For Policy/Procedure/Manual:	RSD01 - Specification for UDC Design' & 'STNW3369 Standard for Distribution Line Design Underground'.	Expiry Date: 31/12/21
Originating Dept:	<b>Asset Standards: Line Standards</b>	
Target Audience: <b>EQL</b>		

## 1. Objective

This Standards alert is to advise where Insect Protected cables shall be used in the Energy Queensland Limited (EQL) Electrical Distribution North South Region. This alert is NOT retrospective and applies from date of publication.

## 2. Introduction

### 2.1. Background

The Giant Northern Termite (*Mastotermes darwiniensis*) is one Queensland's most serious pest species however, it is [generally] confined to the tropical northern region [Subterranean termites in Queensland, Department of Agriculture and Fisheries, 2019]. Distribution is irregular, for example, it does not occur in areas of cracking clay soils or in rain forests [<http://www.padil.gov.au/pests-and-diseases/Pest/Main/136483> ]

Termite damage to cables is not restricted to *Mastotermes* however this termite is considered the most prevalent and economically important. Termites do not digest the cable material; the damage occurs when they encounter the indigestible items as they search for food.

In December 2020, the Ergon Line Standards Report: '*The Giant Northern Termite (Mastotermes darwiniensis) - Where Insect Protected cables shall be used in the EQL North South Region.*' was endorsed as the basis for this Standards Alert. Clarification of where Insect Protected (IP) cables shall be used is provided in this Standards Alert. Data from 'Atlas of Australian Termites, 1993, Watson J.A.L & Abbey HM, published by CSIRO' was used as the primary source of termite infestation data.

### 2.2. Termite Prevention

Insect protection of cables is achieved via a nylon jacket:

*It is not totally understood why termites eat cables, as they derive no nutritional value from cable materials, however the destruction of cable by subterranean termites has been well documented. A CSIRO study conducted in Darwin in a six year period from June 1996 resulted in the complete destruction of practically all cable samples tested, except those protected by polyamide (nylon).*

*Nylon resists termite destruction due to its surface hardness and smooth texture. Termites are unable to breach the nylon layer as their mandibles are unable to grip the surface or penetrate.*

Page 1 of 3	This Standards Alert will remain in force until either the expiry date is exceeded, or update of the relevant sections of the specified manuals has occurred. <b>stdsa611 - where insect protected cables shall be used in the eql north south region.docx</b>	Dept Head Greg Caldwell
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Because the nylon layer is thin, a sacrificial sheath of HDPE or PVC is further applied to the cable to prevent mechanical damage to the nylon sheath during installation.

Source: <https://www.amplex.com.au/blog/nylon-jacketed-cables/> viewed 1 December 2020

### 2.3. Areas of Infestation

A 1993 map of Mastotermes sampling showed that these termites were mainly confined to north of the Tropic of Capricorn (latitude about 23° 26' 22" south of the terrestrial Equator). There is one sample from further south at Windorah and additional anecdotal evidence of these termites being identified in Queensland's Gold Coast region.

## 3. Where Insect Protected Cable Shall be Used

### 3.1. Areas for LV and 11kV Insect Protected Cables

Distribution cables located in the Herbert (Region 3) and Flinders (Region 4) regions shown below in Figure 1 shall be insect protected. Note that designers may specify LV and 11kV insect protected cables in other areas.

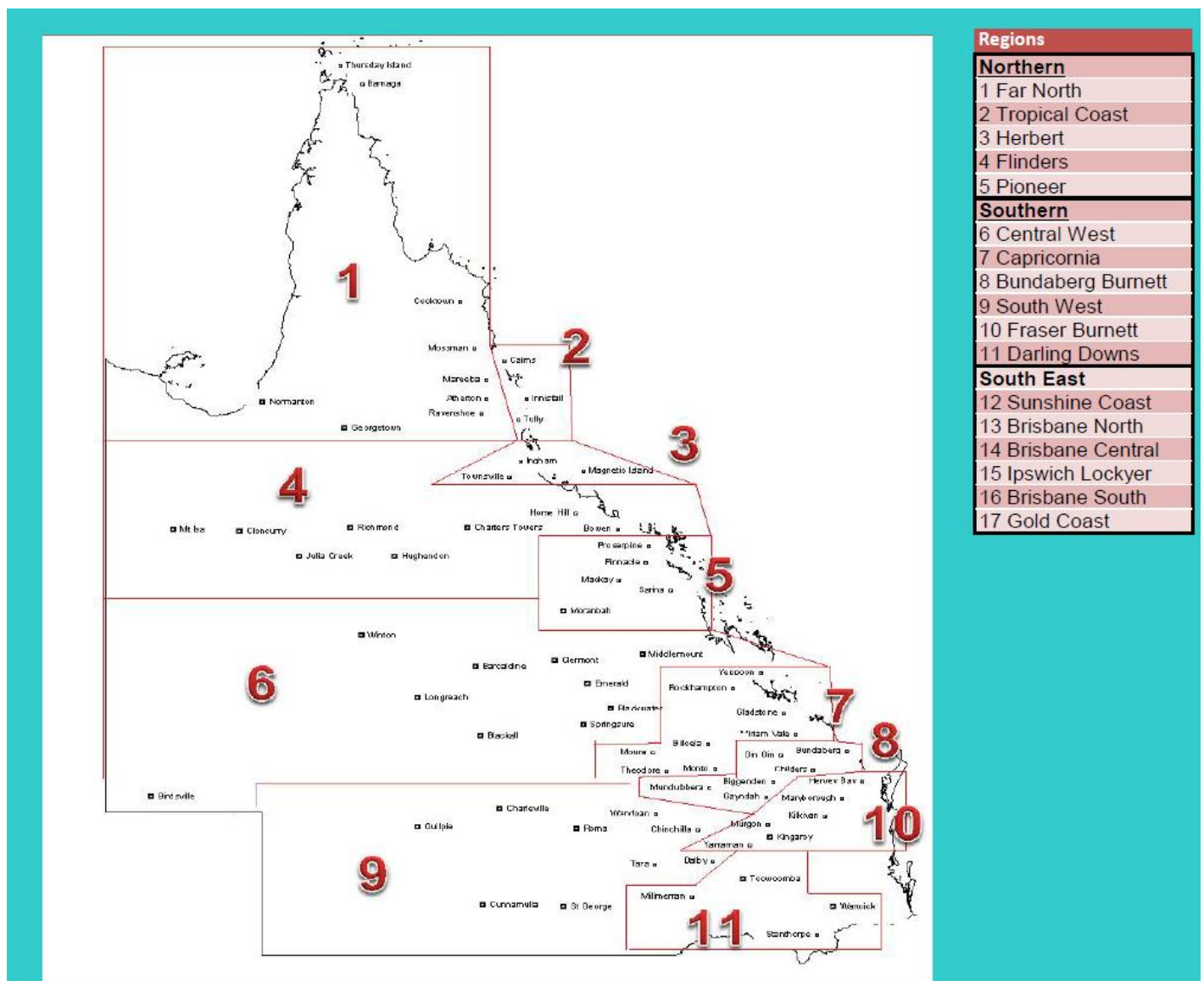


Fig. 1

<https://energyqonline.sharepoint.com/sites/Procurement/Procurement%20Documents/EQL%20Regional%20Maps/EQL%20Area%20Map.pdf>

<b>NOTE</b>	<b>Designers may specify LV and 11kV insect protected cables in other areas.</b>
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**3.2. 22kV Insect Protected cable:**

The only 22kV insect protected cable under contract is the 35mm<sup>2</sup> cable and is only supplied as an insect protected variant. While there is no 22kV voltage in the Herbert & Flinders regions, where 35mm<sup>2</sup> 22kV cable is required to be used (irrespective of region), it shall be insect protected.

**3.3. Areas for Insect Protected cables at voltages 33kV and above:**

Where distribution and sub-transmission cables at voltages of 33kV and above are used, insect protected cables shall be used across all regions. This includes the North, South (and South East regions) of the state. Standard conduits are based on a 1830mm Radius so special consideration may be required if the insect protected cable bending radius exceeds this radius.

**4. Update to Manuals**

This Standards Alert will instigate subsequent changes to ‘RSD01 - Specification for UDC Design’ and the addition of the location information to ‘STNW3369 Standard for Distribution Line Design Underground’.

**5. Further Information**

For further information, please contact

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