



## Titan Newsletter

### "Overheard Lines" from The Reliable Titan

'The Bushfire Proof Titan is the Power Pole of the Century.  
*Titan Reliability is Guaranteed*'

#### **The Passing of our founder Philip Dulhunty OAM**

It is with great sadness that we lead the first edition of the Dulhunty Poles Titan Newsletter with the news that last December, after a short illness, we farewelled our company's founder Philip Dulhunty OAM. Well known to very many ESI members, Philip was for many decades an icon of Australia's lively electricity supply industry.

He was a visionary, an innovator, a risk taker, a shrewd businessman and above all, a loyal and always entertaining friend. Of the many entertaining stories in his 'must read' autobiography "Never a Dull Moment" was his purchase of an elephant to shift pole timbers in deep forests where conventional extraction methods were impossible.

Six decades on - in 2009 - the still innovative Philip introduced the Titan glassfibre reinforced cement concept to Australia, foreseeing the growing need for reliable, lightweight, long life fireproof electricity distribution poles to replace increasingly scarce high maintenance wood poles, especially in challenging situations. His Titan vision, in high fire risk environments, today surpasses all known alternatives for reliability.

Although aged 96 at the time of his death Philip attended both in person and latterly by Zoom almost every monthly meeting of the Dulhunty Poles board. His wisdom, experience and abiding enthusiasm will be much missed by all of us who have been privileged to work closely with him in developing this remarkable product.

The Titan Newsletter is his legacy.

**Philip Dulhunty OAM 1924 – 2020**



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### **Review of Bushfire Proof Design Standards and Tests**

Reliability of electricity supply and continuity in bushfires is paramount. Reliable electricity is critical to life, to essential communications, to property protection and to firefighting. To this end the Dulhunty's fireproof Titan pole has undergone the demanding Energy Networks Association of Australia (ENA) Pole Fire Test, withstanding the two-stage test being exposed to

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consecutive heat sources of 60kW/m<sup>2</sup> and 40kW for 10 minutes. This heat flux equates to excess of well over 1200°C being maximum test equipment measuring temperature, with only surface damage less than 5mm while remaining serviceable. This is the highest known temperature exposure test result for any known power pole, strongly supporting Titan's Bushfire Proof declaration.

The ENA Fire Test is the only performance test specifically designed for power poles in Australian bushfire conditions. Standards Australia advises that no other standards meet its criteria, nor are any understood to be pending.

Some Australian Standards address bushfire impacts on building structures and materials but none address power poles. Thus, Dulhunty Poles will continue to use Titan's ENA Fire Test criteria in all its pole performance specifications.



The above images show a typical Titan undergoing the ENA Pole Fire Test. On the left, 7 minutes into the test, is shown a gas ring burner combined with a radiant heat source. On the right the post-test image shows resulting superficial surface damage. The subsequent strength test proved only insignificant reduction in the Titan's original strength.

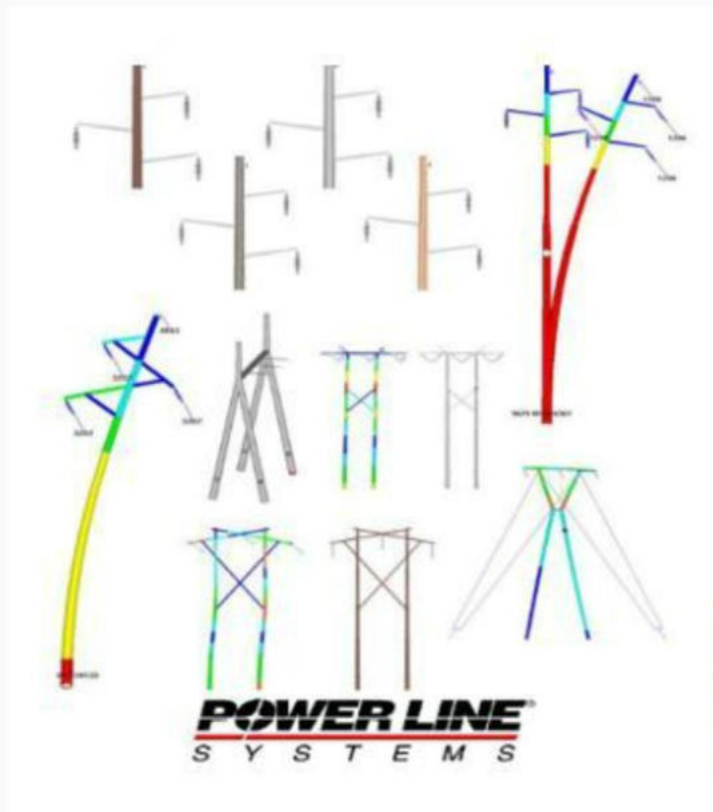
### **Titan Factory Developments**

With fast growing product demand, Dulhunty Poles has significantly upgraded its Moolap, Victoria Titan factory. Extended pole storage and curing facilities provide for a wider range of available stock on hand and faster turnround and loading of client orders.



### **Advanced Titan Overhead Line Design Capabilities**

Titans, being individually purpose designed, engineered and manufactured, employ Finite Element Analysis (FEA) for each specific design. Through our sister company Dulhunty Works, Dulhunty Poles is introducing a comprehensive Titan Pole Library for full overhead powerline design. Power Line Systems (PLS) PLS Poles FRP can be engaged for full transmission, distribution and communication line design and associated structures capability.



### **Client Partnership and Support**

Several Titan clients have sought after sales handling, installation, erection and conductor stringing guidance from Dulhunty Poles. For one major client we are designing a series of Titan face-to-face guidance sessions, including support documentation, focusing on the essential issues of upgrading line staff.

We seek to promote a strong and enduring partnership philosophy with our clients. Accordingly, we are always available for pre and after sales support and advice. All pre-installation hands-on courses for design personnel and installation crews are supported by up-to-date videos and illustrated hand-out guides.

As the Titan is 100% fully engineered, Dulhunty Poles can design and manufacture special one-off or short run products to meet special circumstances or overcome unexpected field problems.



## Pole User Guide

### The Reliable Titan



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FOR AUSTRALIA



### Titan's Lifetime Strength and Durability

Dulhunty Poles Quality Management System<sup>1</sup> provides for the ongoing periodic examination of installed Titans to assess strength and general condition. A recent inspection included Titans installed in 2013 in the NSW Illawarra region, some subjected to bushfire conditions.

Damage due to excessive temperature exposure duration can be tested by checking pole surface hardness using the Impact Rebound Hammer Tester (IRHT) which also gives an indicative value in IRbms.

The IRH test convincingly proved that all Titans tested were still fit for purpose. Moreover,

they had actually increased in strength by a substantial margin due to ongoing curing, indicating that Titans are the only known power pole that does not start to deteriorate the day it is installed.

While too early in Titan's service life to give an overall life span estimate, it seems clear that Titans will long outlast wood and probably other pole materials prone to rot and corrosion.

Based upon experience to date, and with no known decay mechanisms, Dulhunty Poles is prepared to claim a reliable service life of 70 years or more.

<sup>1</sup>*Dulhunty Poles Pty Ltd Quality Management System ISO 9001:2008 was approved by QAS International in June 2015 and then successfully transitioned to ISO 9001:2015 on June the 25<sup>th</sup> 2018 covering the design, manufacture and delivery of engineered cement poles, marine piles, sub-station poles, private property poles, street lighting poles and special application poles.*

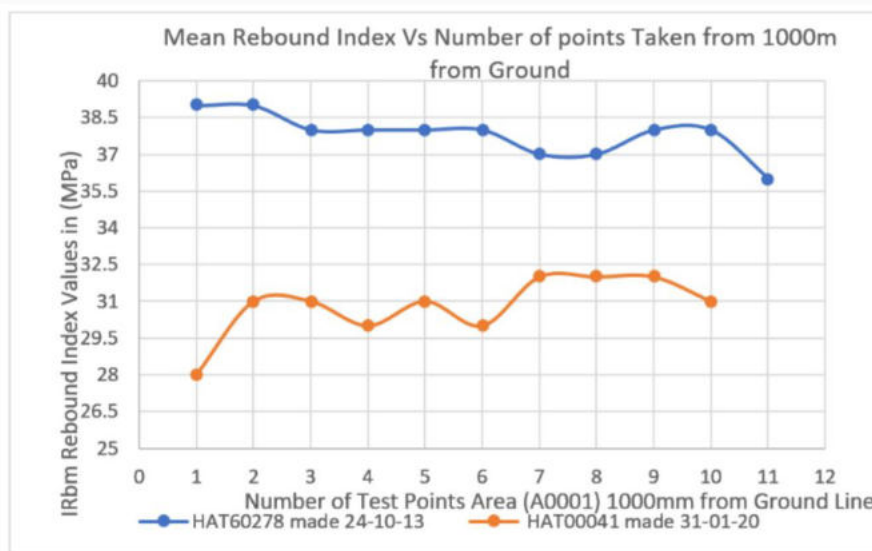


Figure 1: HAT60278-Fire exposed KV Pole & HAT00041 Newly Made Mapped Pole @ Moolap Factory facility. The graph shows an increase range of IRbmd of 4.5Mpa – 10.5Mpa approximately.

## Titans Minimise Lifetime Line Maintenance Costs

The Australian Energy Regulator (AER) strongly promotes cost minimisation for maintenance and repair of electricity network infrastructure for retail customers. This requirement has been uplifted as of special relevance in the aftermath of the eastern states' bushfires, in many of which line destruction and lengthy repair and replacement times delayed overall community electricity supply rehabilitation.

Dulhunty Poles strongly supports this consumer protection role.

Some 16,000 (and rising rapidly) Titan poles are in service in the electricity supply industries of Australasia and French Polynesia. To date no reports of bushfire or any other unserviceability

damage through routine service have been received. Once installed, Titans effectively become reliable permanent infrastructure.

A recent case study on the costs of replacing damaged or unserviceable power poles supporting electrical assets, especially in difficult access locations, showed that the major refurbishment cost lies in replacing the pole itself. The costs of sourcing the new pole, provision of crane borer truck, delivery of poles and crew to site and pole installation are substantial. The costs surrounding the actual electrical works involved are usually much less. Conversely, the initial outlay on the Titan can provide typically 70 years of non-replacement value, enhanced network reliability and continuity of electricity supply when most needed.

Titans are not only bushfire proof, they are effectively non-conductive and will not spall or crack in service; they are impervious to fungal decay, dry and wet rot, rust and termites; they require no initial or on-going toxic preservative treatment; and they are readily disposed of at end of service life. They have the lowest known carbon footprint of any pole, thereby meeting environmental best practice.





A two-part Titan pre-installed for change over from wood, remains unscathed after the December 2019 bush fire. The unserviceable condition of the original wood poles validates the selection of Titans.

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### **Titans for remote Communication Systems**

Remote communication systems call for the utmost in reliability, especially in bushfire prone environments. Titan poles, being fireproof and hollow, provide essential reliability by protecting both pole top equipment and, within the pole, the essential support equipment and cabling from aerials and sensors to control and transmission centres.

Australia's ferocious 2019 and 2020 bushfires not only irreparably damaged much high voltage electricity infrastructure but also essential remote rural telecommunication towers, leaving community and emergency services organisations without essential lifesaving communication capability. System reliability and return to service rapidity would have been greatly enhanced had Titans been deployed in the initial design.



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### **Get a Better Feel for Titans!**

Dulhunty Poles offers Titan samples, formed into attractive desk-top pen holders, free to interested parties. These useful samples demonstrate Titan's lightweight fireproof features, natural robust structure and ready drill-ability.



For further information you can browse our website or send us an email.