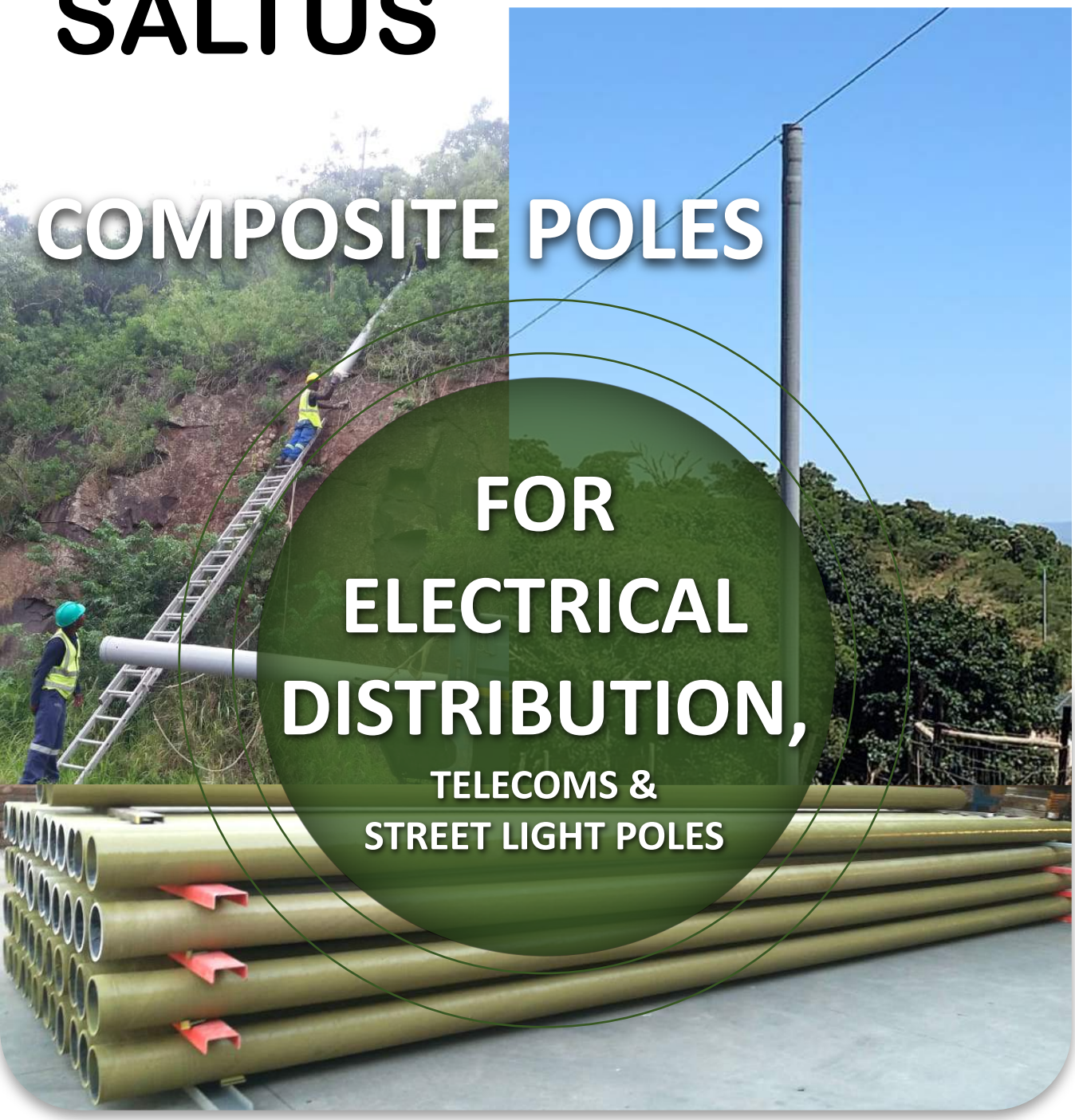
SALTUS™



COMPOSITE POLES

FOR ELECTRICAL DISTRIBUTION,

TELECOMS & STREET LIGHT POLES

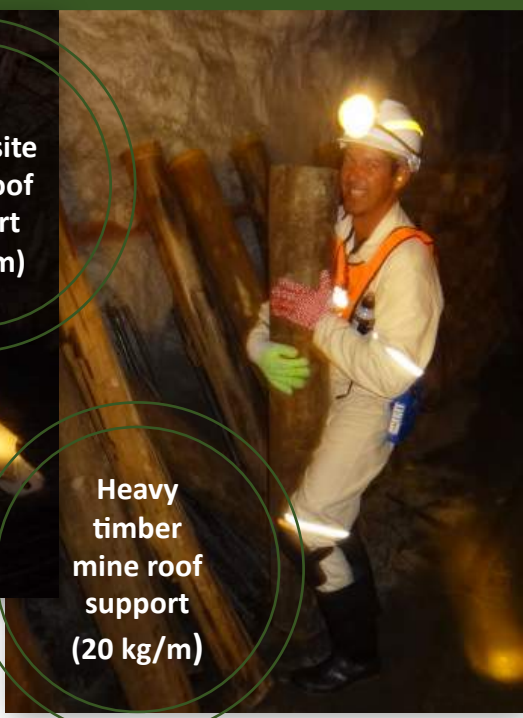
www.saltuspoles.co.za

The SALTUS™ Composite Pole

was developed in co-operation with the industry since 2012. The internationally patented design guarantees the BEST VALUE composite utility pole in the world.

"CARBON FIBRE DESIGN, manufacturer of *WORLD CLASS QUALITY* carbon fibre and glass fibre poles, introduces the *REVOLUTIONARY* and worldwide patented *COMPOSITE SUPPORT POLE"*

SALTUS™ Poles was the **FIRST SUCCESSFULLY** underground tested composite mine roof support pole. The mine roof support pole carry loads up to **40 TONS** and **ONLY WEIGH 6KG** per meter (compared to Timber at 20kg per meter). The composite mine roof support poles are **REVOLUTIONISING** the mine roof support industry by enabling more **EFFICIENT** installation of the poles.



ENVIRONMENTAL SUSTAINABILITY

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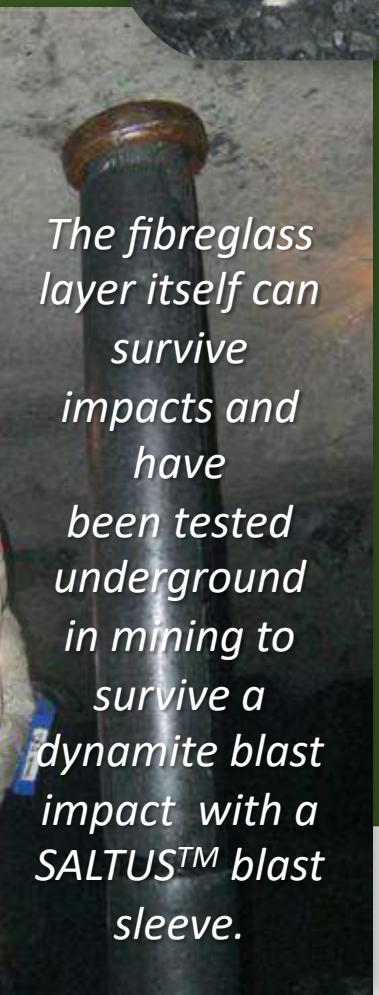
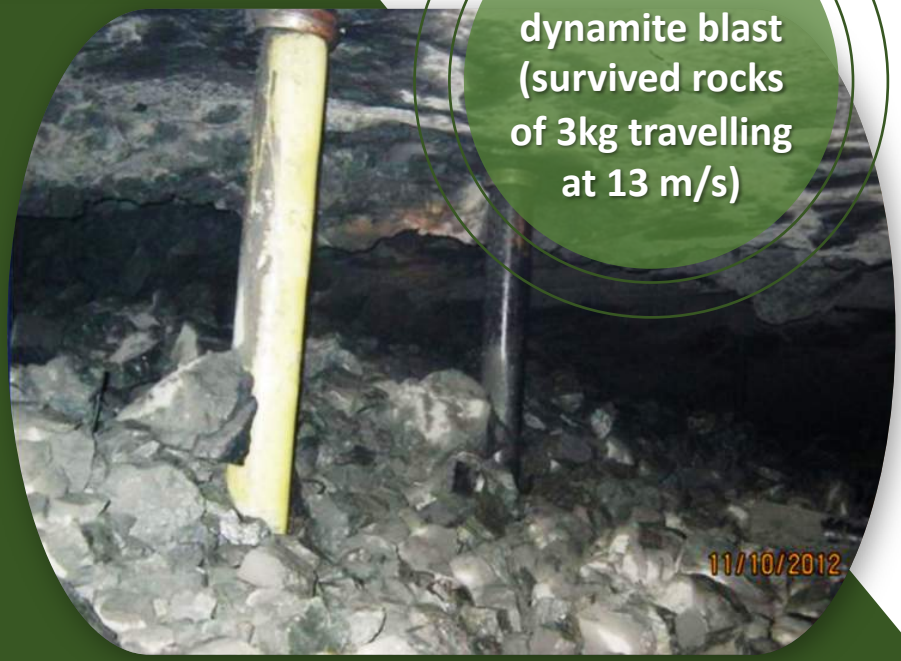
The SALTUS™ Composite Pole Impact Resistance

BEFORE
dynamite blast (1.5m from blast face)

*"Will **SALTUS™** Composite Support Poles survive mechanical impacts?"*



The fibreglass layer itself can survive impacts and have been tested underground in mining to survive a dynamite blast impact with a SALTUS™ blast sleeve.



AFTER
dynamite blast (survived rocks of 3kg travelling at 13 m/s)

HIGH BENDING STRENGTH

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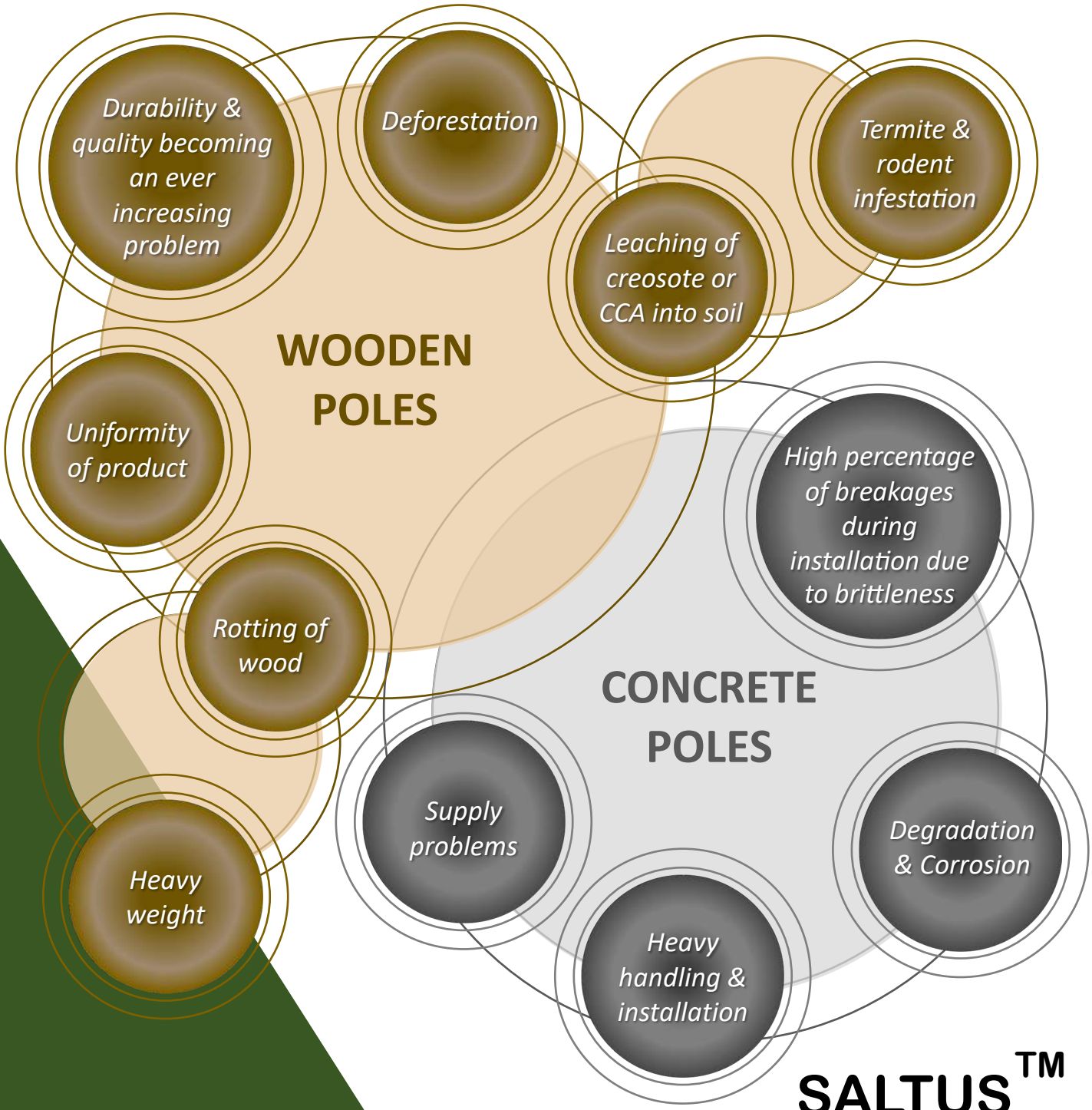
Why consider SALTUS™ Composite Poles?

The internationally patented design aims at low cost to compete with the price of wood and addresses the following problems of wood and concrete poles:



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BENEFITS of the SALTUS™ Composite Pole:

LOWEST LOGISTICS COST

SALTUS™ Poles nests for transport and is **LIGHT WEIGHT**, therefore the transport is usually volume limited and not weight limited as with concrete or timber

FLAME RESISTANT

SALTUS™ Poles has **SUPERIOR FLAME RESISTANCE** due to its unique advanced phenolic resin properties. Phenolic resin is well known for its flame resistant properties and are often used for this reason in the aerospace composite industry

HARDWARE COMPATIBILITY

Smooth surfaced hardware without sharp edges should be used with **SALTUS™** Poles. Hardware for round cross-sectioned steel and concrete poles are commonly available and can be used with **SALTUS™** Poles

SUPERIOR TEMPERATURE PERFORMANCE

SALTUS™ Poles performs well in hot and cold environments. The established temperature range is -60°C to +75°C

LONGEST LIFE

With a 60 years **ENGINEERED** service life, integrated UV protection requiring no scheduled maintenance resulting in lowest lifecycle cost and immunity to rot, corrosion, woodpeckers and termites

FAST INSTALLATION

SALTUS™ Poles is **LIGHT WEIGHT** and therefore installation requires **LESS LABOUR** and will typically be installed at twice the speed compared to concrete or timber poles. This contributes to its competitive initial installation cost compared against alternatives

LOWEST LIABILITY

With a limited 30 year warranty, high dielectric strength providing **IMPROVED SAFETY** for workers and the public, better storm and higher wind reliability and minimum environmental impact

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SALTUS™ Composite Pole Flame Resistance

*"Will **SALTUS™** Composite Support Poles survive a fire?"*

Flame test

The flame resistant composite layer on the outside can survive a gas flame burning for one minute without any smoke. The composite layer on the outside also protects the inner plastic layer and conducts heat away from the plastic layer.

*After flame test of one minute at **1500°C** – no mechanical degradation to fiberglass layer or inner plastic pipe*

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SALTUS™ Composite Pole Easy Installation

LIGHT WEIGHT

For those difficult to reach places

LOWER OVERALL INSTALLATION COST

No crane needed – three people installing a 9m pole easily

LOWER TRANSPORT COSTS

LABOUR SAVING

FASTER INSTALLATION

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TYPICAL MYTHS RELATED TO FIBREGLASS SUPPORT POLES:

"Fibreglass poles whip around in the wind"

Each pole is **engineered to withstand** a wind load of 500 - 700 Pascal which is an internationally accepted design standard for fibreglass luminaires and road signs. This allows for deflection of the tip of the pole up to 5% of its length in stormy winds.

"Fibreglass poles leach chemicals into the ground over time"

Each **SALTUS™** pole is **engineered for a service life** of 60 years (with a limited warranty of 30 years) and the resin which holds the fibres together will not degrade or leach into the ground.

"Fibreglass poles cannot support big headloads"

Each **SALTUS™** pole is **individually engineered** by factoring in wind load and exposed area and support load. Also refer to 40 ton support for mining industry.

"Fibreglass poles are deteriorated by sunlight"

The UV rays of sunlight will only damage unprotected fibreglass. The **SALTUS™** support pole is **protected** by an imbedded layer of UV protection which cannot be scratched or flaked off. **No maintenance** is required.

"Fibreglass poles are made out of plastic"

Only the inner shell is made of plastic and is used for its elastic properties to extend the lifetime of the pole. The support is mainly provided by the fibreglass outer shell which consists of 70% fibreglass and 30% resin.

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The SALTUS™ Composite Street Light Poles

RELEVANT POLE DATA AND OTHER FACTORS			CORRESPONDING CALCULATED KEY VALUES	
Total length of pole m	Height of pole above ground m	Diameter of Saltus™ Pole mm	Load to be applied in pole-top deflection test* N	Maximum permitted deflection in pole-top deflection test* mm
2.5	*2.0*	*66*	*135.4*	*100*
3.1	*2.5*	*66*	*143.4*	*125*
3.6	*3.0*	*66*	*152.0*	*150*
4.1	*3.5*	*78*	*161.0*	*175*
4.6	*4.0*	*78*	*171.6*	*200*
5.2	*4.5*	*113*	*182.3*	*225*
5.7	*5.0*	*113*	*193.6*	*250*
6.3	*5.5*	*113*	*205.4*	*275*
6.9	*6.0*	*128*	*213.7*	*300*
7.4	*6.5*	*128*	*225.9*	*325*
8.0	*7.0*	*128*	*238.6*	*350*
8.6	*7.5*	*168*	*251.8*	*375*
9.2	*8.0*	*168*	*265.5*	*400*
9.8	*8.5*	*168*	*279.7*	*425*
10.4	*9.0*	*168*	*294.3*	*450*
11.0	*9.5*	*183*	*309.4*	*475*
11.6	*10.0*	*183*	*326.8*	*500*
12.2	*10.5*	*183*	*390.4*	*525*
12.8	*11.0*	*183*	*426.0*	*550*
13.4	*11.5*	*208*	*463.4*	*575*
14.0	*12.0*	*208*	*504.0*	*600*

Relevant pole data is based on a shape factor of 0.7 and a calculated wind pressure of 500 Pa

** SALTUS™ Poles successfully passed BEKA specifications*

Corresponding calculated key values are based on a luminaire surface area of 0.2 m2 with a shapefactor of 1

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With SALTUS™ Composite Poles you will prevent the following problems experienced with timber:

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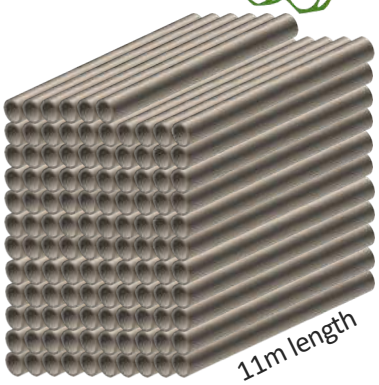
The SALTUS™ Electrical & Telecom Poles

Lengths	Timber equivalent Diameter (mm)	Saltus™ Pole Outside Diameter (mm)	Height above ground for cable pull test (m)	Max force applied (kg) at height of 4.8m above ground (while anchor cable pulls at 45° in opposite direction towards ground level)
2.5m to 3.9m	*75-100*	*66*	*NA*	*NA*
4m to 4.9m	*100-125*	*78*	*NA*	*NA*
5m to 5.9m	*125-150*	*113*	*4.8*	*800*
6m to 8m	*150-175*	*128 LD* *130 MD*	*4.8*	*1200* *1500*
8.1m to 10m	*175-200*	*168*	*4.8*	*2000*
10.1m to 11m	*200-225*	*183*	*NA*	*NA*
11.1m to 13m	*225-250*	*208*	*NA*	*NA*
13m to 15m	*225-250*	*233*	*NA*	*NA*

Relevant pole data is based on a shape factor of 0.7 and a calculated wind pressure of 365-700 Pa depending on application

Truckload Quantity Comparison

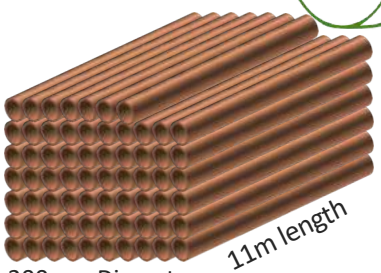
# of poles by 12m truck



220mm Diameter

SALTUS™

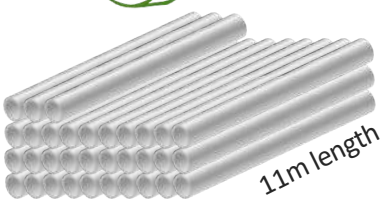
116 Poles



200mm Diameter

Timber

67 Poles



195mm by 330mm Diameter

Concrete

32 Poles

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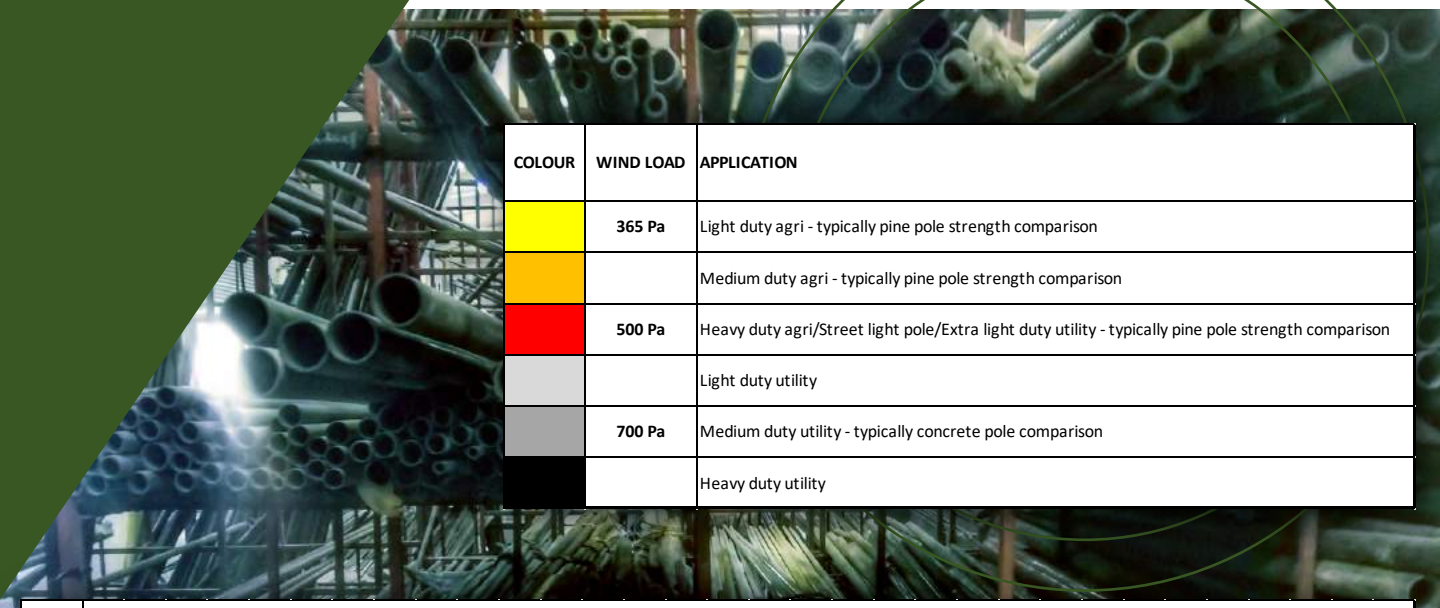
The SALTUS™ Range of Poles



COLOUR	WIND LOAD	APPLICATION
	365 Pa	Light duty agri - typically pine pole strength comparison
		Medium duty agri - typically pine pole strength comparison
	500 Pa	Heavy duty agri/Street light pole/Extra light duty utility - typically pine pole strength comparison
		Light duty utility
	700 Pa	Medium duty utility - typically concrete pole comparison
		Heavy duty utility

POLE OD (mm)	LENGTH (m)																													
	2.5	3.1	3.6	4.1	4.2	4.6	4.8	5.0	5.2	5.4	5.7	6.0	6.3	6.9	7.0	7.4	8.0	8.6	9.0	9.2	9.8	10.0	10.4	11.0	11.6	12.0	12.2	12.8	13.4	14.0	14.6	15.2
66																																
78																																
113																																
128																																
130																																
133																																
165																																
168																																
183																																
208																																
233																																
236																																

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The SALTUS™ Composite Pole Quality Control

QUALITY CONTROL BEND TESTING ACCORDING TO INTERNATIONAL STANDARDS

Street light poles – BEKA specs

Telecoms and electrical distribution poles – SABS, ACMA standards and ASCE guidelines

ACMA - Standard Specification for FRP Composite utility Poles - supported by ANSI

ASCE – Recommended practice for FRP products overhead utility line structures

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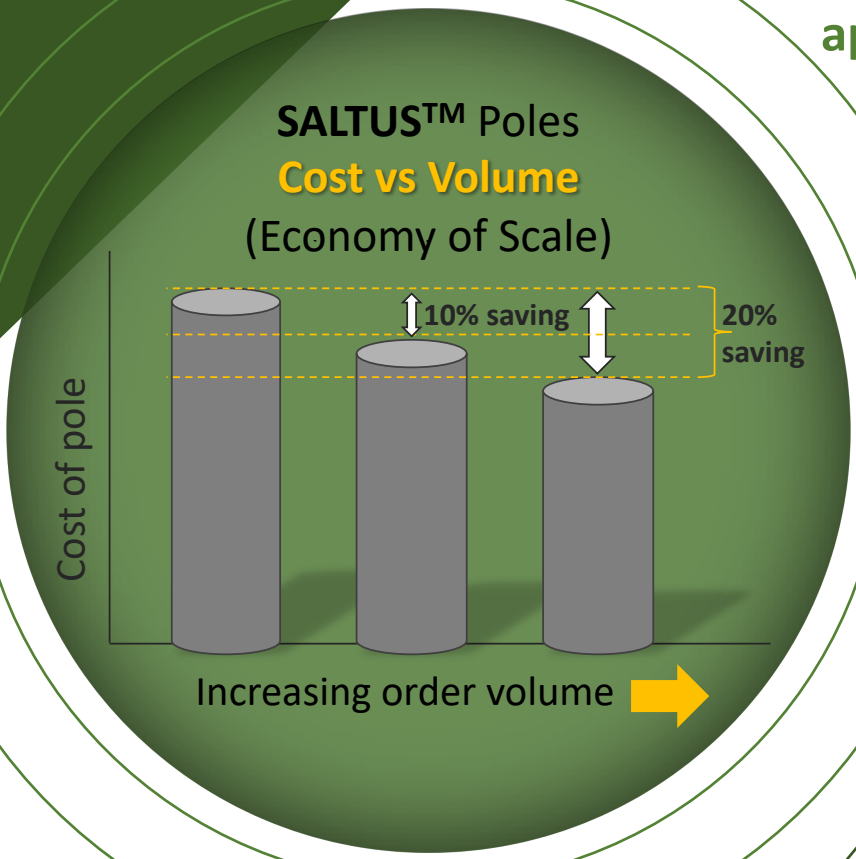
SALTUS™ Poles Applications

The poles can be recycled and used in other applications after its service life of 60 years



"Inner plastic tube recycle"

The plastic inner layer can be recycled via the standard plastic recycle route. This is a closed loop cycle and no plastic is wasted.

"Chopped fibre filler for green plastic wood products"

Each **SALTUS™** pole has a fibreglass outer layer. This layer can be chopped into short fibres and the fibres can be mixed into green plastic wood products. It has been shown that extruded plastic profiles can be strengthened using up to 50% (by volume) chopped fibre.

DURABLE

"Chopped fibre filler for geopolymers or concrete"

Each **SALTUS™** pole has a fibreglass outer layer. This layer can be chopped into short fibres and the fibres can be mixed into geopolymer or concrete. It has been shown that geopolymer and concrete can be strengthened using up to 40% (by volume) chopped fibre.

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Satisfied SALTUS™ Composite Poles Clients:

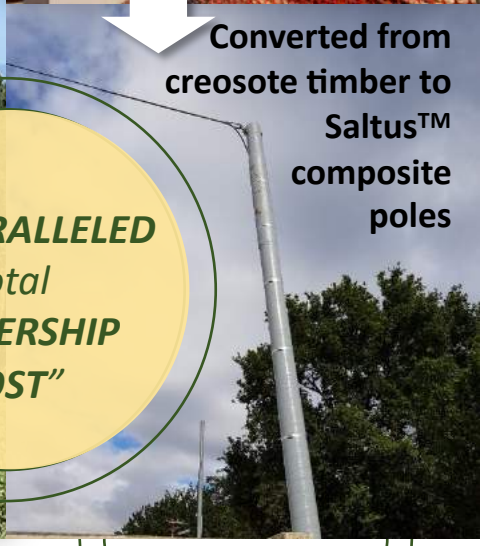
Supported by an international patent and a dedicated engineering team

open serve
South Africa

VULATEL
South Africa

vodacom
South Africa

Converted from creosote timber to Saltus™ composite poles



*"**BEST VALUE** composite pole in the world"*

*"**UNPARALLELED** total **OWNERSHIP COST**"*

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