

SALTUS™

COMPOSITE POLES

FOR
ELECTRICAL
DISTRIBUTION,
TELECOMS &
STREET LIGHT POLES

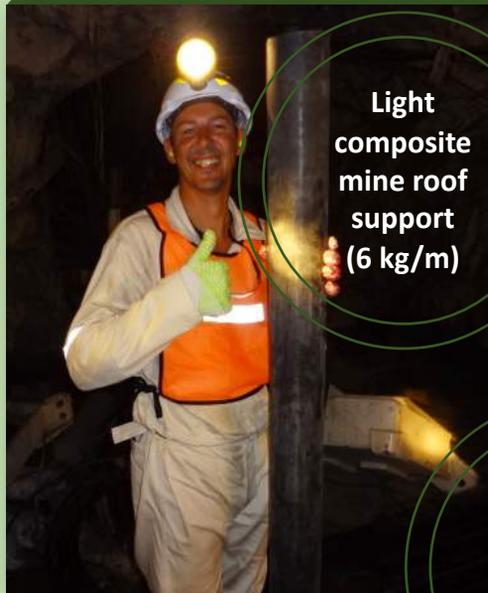


The SALTUS™ Composite Pole

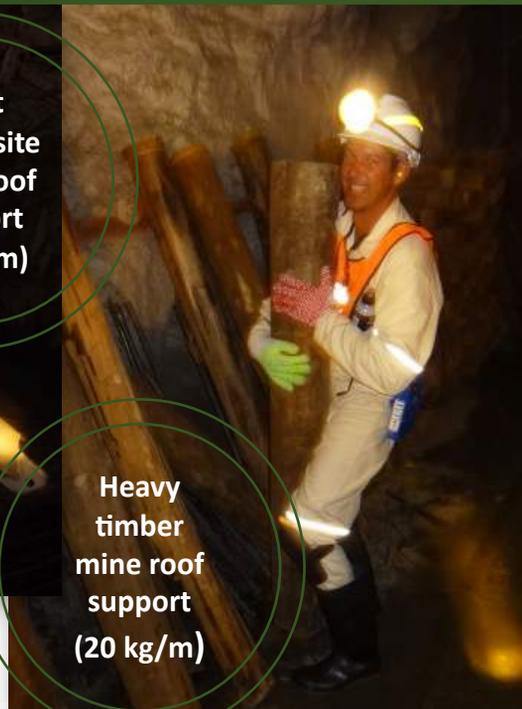
has been developed in co-operation with the industry since 2012. The internationally patented design guarantees the **BEST VALUE** composite utility pole in the world.

“ **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 carries loads up to **40 TONS** and **ONLY WEIGHS 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.



Light composite mine roof support (6 kg/m)



Heavy timber mine roof support (20 kg/m)

ENVIRONMENTAL SUSTAINABILITY

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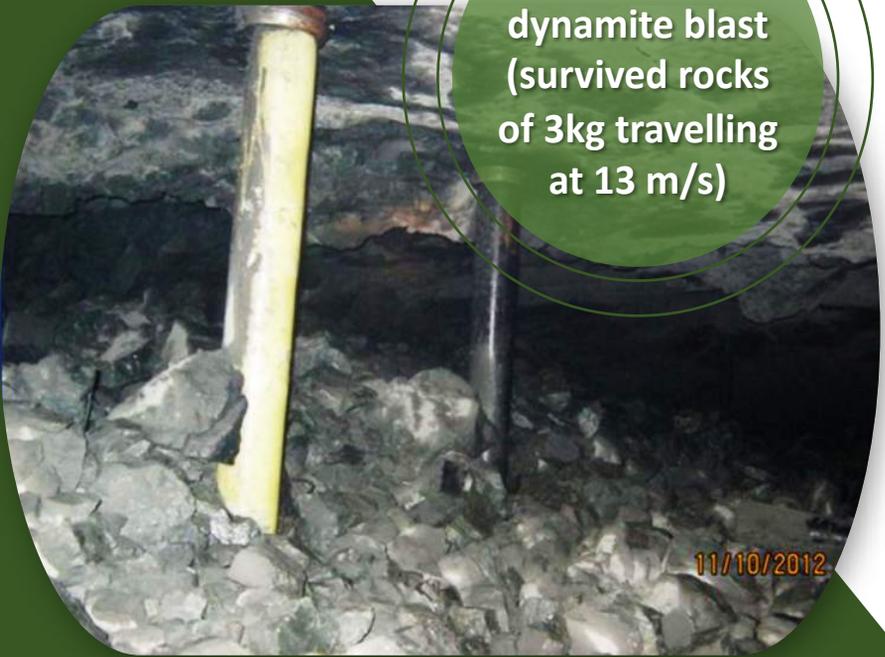
The SALTUS™ Composite Pole

Impact Resistance



BEFORE
dynamite blast
(1.5m from
blast face)

*“Will SALTUS™
Composite
Support Poles
survive mechanical
impacts?”*



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

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

**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:

WOODEN POLES

Durability & quality becoming an ever increasing problem

Deforestation

Termite & rodent infestation

Leaching of creosote or CCA into soil

Uniformity of product

Rotting of wood

Heavy weight

CONCRETE POLES

High percentage of breakages during installation due to brittleness

Supply problems

Heavy handling & installation

Degradation & Corrosion

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BENEFITS of the SALTUS™ Composite Pole:

LOWEST LOGISTICS COST

SALTUS™ Poles nest 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 flame resistant composite properties. The special flame resistant resin is well known for its flame resistant properties and is 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 is 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

MAINTENANCE FREE



NON-CORROSIVE

All products are manufactured **PROUDLY SOUTH AFRICAN** with focus on quality & sustainability

LONGEST LIFE

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

FAST INSTALLATION

SALTUS™ Poles are **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 with 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?”*

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*

Flame test

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SALTUS™ Composite Pole Easy Installation

LIGHT WEIGHT



LOWER OVERALL
INSTALLATION
COST



*For those
difficult to reach places*

*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 vineyard support pole is **engineered to withstand** a wind load of 365 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 strong 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



Broken timber pole fixed with concrete filled plastic container

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



Broken timber pole fixed with concrete filled metal drum



Broken timber pole fixed with concrete filled metal drums

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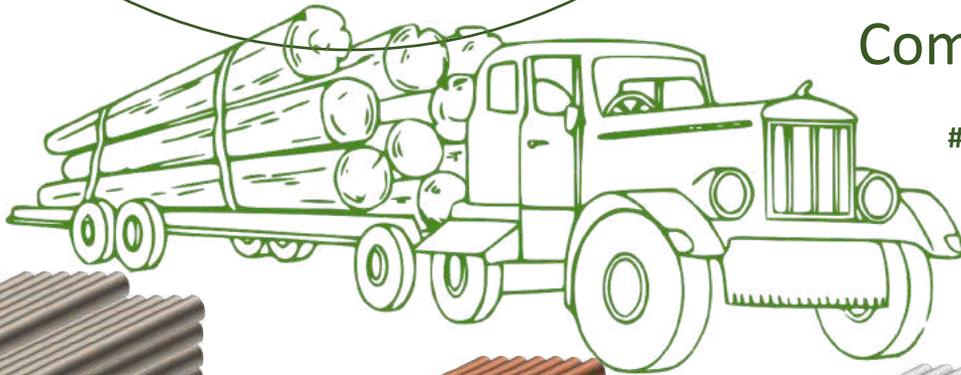
The SALTUS™

Electrical & Telecom Poles

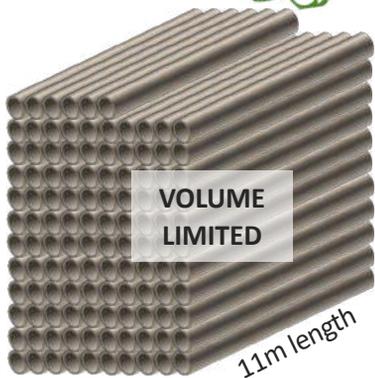
Lengths	Timber equivalent Diameter (mm)	Saltus™ Pole Outside Diameter (mm)	Height above ground for cable pull test (m)	Max force applied (kg) at height of 4.8m above ground (while anchor cable pulls at 45° in opposite direction towards ground level)
2.5m to 3.9m	75-100	66	NA	NA
4m to 4.9m	100-125	78	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

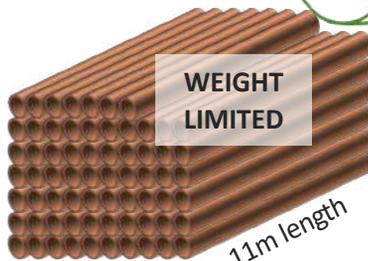
Truckload Quantity Comparison



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
Yellow	365 Pa	Light duty agri - typically pine pole strength comparison
Orange		Medium duty agri - typically pine pole strength comparison
Red	500 Pa	Heavy duty agri/Street light pole/Extra light duty utility - typically pine pole strength comparison
Grey		Light duty utility
Dark Grey	700 Pa	Medium duty utility - typically concrete pole comparison
Black		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	Yellow	Yellow	Yellow	Yellow	Yellow																																
78	Orange	Orange	Orange	Orange	Orange	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow																										
113	Red	Red	Red	Red	Red	Orange	Orange	Orange	Orange	Orange	Orange																										
128	Grey	Grey	Grey	Grey	Grey	Red	Red	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow																						
130	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Orange	Orange	Orange	Orange																						
133	Black	Black	Black	Black	Black	Grey	Grey	Grey	Grey	Grey	Grey	Red	Red	Red	Red	Yellow																					
165						Black	Black	Black	Black	Black	Black	Grey	Grey	Grey	Grey	Orange	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow															
168												Grey	Grey	Grey	Grey	Red	Orange	Orange	Orange	Orange	Orange																
183												Black	Black	Black	Black	Black	Grey	Red	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow											
208																	Grey	Orange	Orange	Orange	Orange																
233																																				Red	Red
236																																					

The SALTUS™ Composite Pole Quality Control

Street
light poles
– BEKA specs

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

**QUALITY
CONTROL BEND
TESTING ACCORDING TO
INTERNATIONAL STANDARDS**



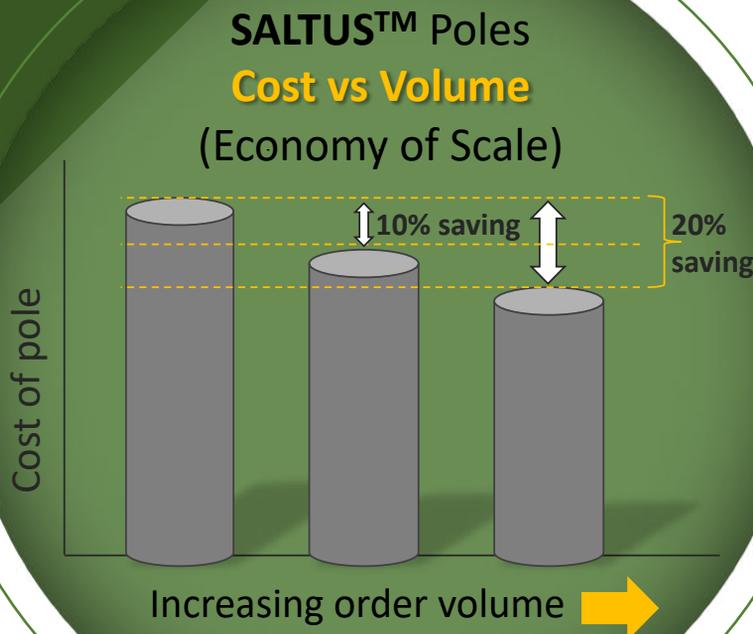
**ACMA - Standard Specification for
FRP Composite utility Poles -
supported by ANSI**



**ASCE –
Recommended
practice for FRP
products
overhead utility
line structures**

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.

“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.

DURABLE

Satisfied SALTUS™ Composite Poles Clients:

Supported by an international patent and a dedicated engineering team



South Africa



South Africa



vodafone

South Africa



Converted from creosote timber to SALTUS™ composite poles

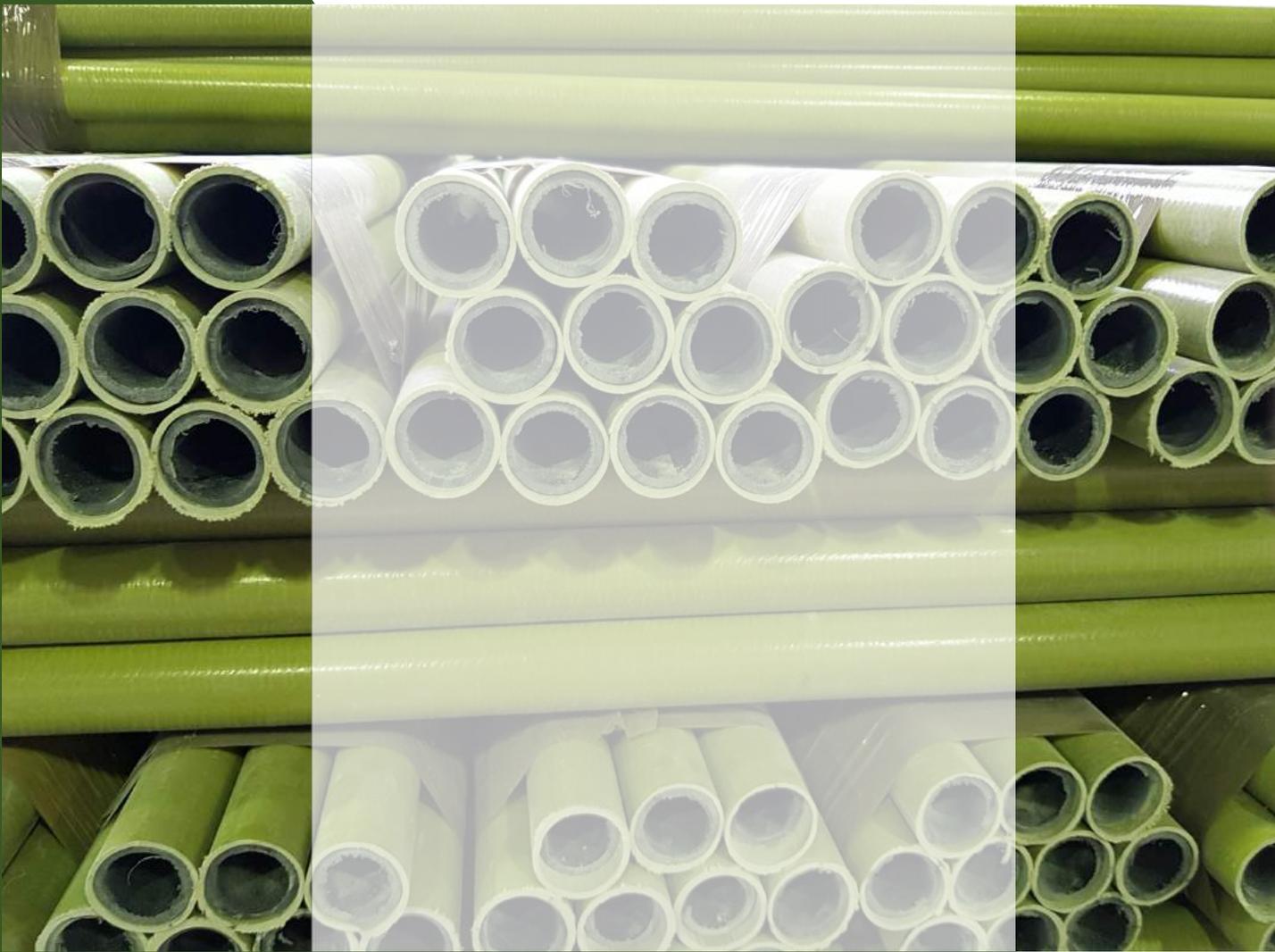
**“UNPARALLELED
total
OWNERSHIP
COST”**

**“BEST VALUE
composite pole in
the world”**

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INTERNATIONAL PATENT
WO2015/196219 A1