

KEMROCK[®]
Industries and Exports Limited

Kemrock FRP / GRP Lighting Poles

The World's most integrated composites manufacturer



Global Composite Village™

Company Introduction

Kemrock Industries & Exports Ltd. (KIEL) is World's leading Fiber Reinforced Plastic (FRP) manufacturer. Established in 1981, Kemrock manufactures and delivers standard as well as customized solutions that are ideal replacements for conventional metals particularly those prone to corrosion. Kemrock's *Global Composite Village*[™] located close to Vadodara provides high quality engineered advanced composite solution and reliable services to major industrial sectors like Chemical processing, Oil and gas, metals & mining, Power, Railways, etc. to name few.

Moreover, Kemrock is the most integrated composite manufacturing company in India having in-house raw material manufacturing facility like resins & glass fabrics assuring consistent product quality.

Lighting Poles & Flag Poles

- Kemrock Composite poles are high tech and innovative, manufactured by centrifugal casting or pultrusion.
- Kemrock products are manufactured as per quality standard ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007 .
- FRP poles complies with Euro Norms 40 (EN 40).
- Kemrock composite poles offer a solution to traditional problems & are suited to be used in places where poles of other material face serious corrosion problems (e.g. Coastal Area, Chemical zones, marshlands & areas with high temperature fluctuations.)
- Non Polluting & have a long life, can be reused in different locations.
- No surface treatment required as mandatory with traditional poles.
- Composite poles installation works out to be economical due to their light weight, they can be hand carried to inaccessible places, no surface treatments, grounding, servicing or painting is required.

FRP/GRP Lighting Poles

Features	Benefits
Light Weight	Low Transportation cost with ease of Installation at lower cost.
Fire Retardant	Self Extinguishing property makes it ideally suitable for electrical installations.
Extensive Mechanical Properties	Durable & Long lasting.
Dimensional Stability	Better Aesthetics.
Corrosion Resistance	Long life with no maintenance costs, ideally suited for chemical zones & coastal areas.
Aesthetics	Inherent colour eliminates the need for the painting.
Frangible	Controlled impact failure - saves human life in case of road accidents.
Jointless	Improved strength.
Low thermal conductivity	User friendly.

Features	Benefits
Long Life	Value for product, can be reused in different locations.
Electrically insulated	Safe / No need for earthing. Human Safety
Low installation cost	Economical, since no heavy concrete foundation or lifting equipment required.
Economical	No deterioration with time, Nil maintenance / frequent replacement, reusable & does not require periodic painting.
Versatile	<ul style="list-style-type: none"> • Lighting Applications, • Telephone lines • Traffic light • Flag Poles • Signal Systems • Others

Technical Specifications

EDETAILS	UNITS	TEST METHODS
Specific Gravity	1.30-1.80 Kg/cm ³	ASTM D 792
Glass content (% by weight)	45 To 55%	ASTM D 2584
Water absorption	<0.5%	ASTM D 570
Tensile strength	200 +/-50 MPa	ASTM D 638
Flexural strength	250 +/-50 MPa	ASTM D 790
Compressive strength	200 +/-50 MPa	ASTM D 695
Yeild strength	250 +/-50 MPa	ASTM D 638
Elasticity of Modular	1500mpa/25000mpa	ASTM D 638

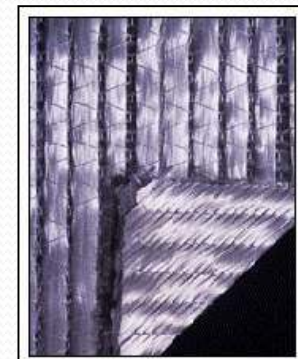
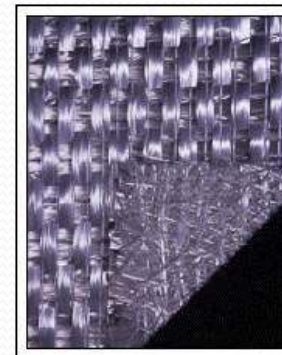
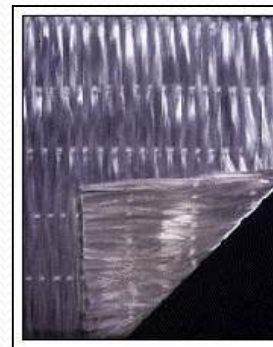
Raw Materials

- The raw materials are selected to guarantee the pole strength in a stressed situation.

Polyester Resin



Technical Fabrics



Pole Production – Centrifugal Casting



Types of Poles

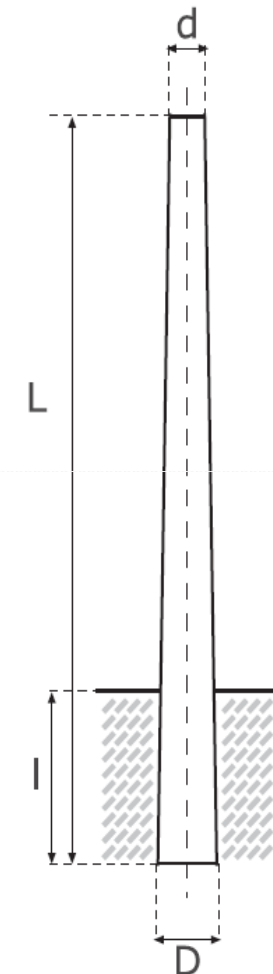


Technical Details

Sr No	Pole Type	Pole Length	Top Dia	Bottom Dia	Av. Thickness	Weight	Planting Depth	Actual Height Above Ground	Max Wind Speed	Equivalent Bending Load on the top
		(m)	(mm)	(mm)	(mm)	(Kg)	(mm)	(m)	(Km/Hr)	(daN)★
1	Cylindrical	3	76	76	5	7.5	750	2250	155	20
2	Cylindrical	4	76	76	5	12	750	3250	155	27
3	Cylindrical	5	76	76	5	20	850	4150	155	36
4	Conical	3	76	143	6	10	750	2250	155	20
5	Conical	4	76	143	6	15	750	3250	155	27
6	Conical	5	76	143	6	23	850	4150	155	36
7	Conical	6	76	176	6	27	850	5150	155	45
8	Conical	7	76	193	6	34	1000	6000	155	55
9	Conical	8	76	210	6	42	1000	7000	155	67
10	Conical	9	76	227	6	50	1000	8000	155	81
11	Conical	10	76	243	8	60	1200	8800	155	97
12	Conical	11	76	260	8	68	1600	9400	155	113
13	Conical	12	76	277	10	80	1600	10400	155	131
14	Conical	13	76	293	10	85	1600	11400	155	151

Remarks: ★ deca Newton

- The Bending load Calculation are considered on basis of wind speed at km/hr
- GRP Pole can be designed to withstand Wind Speed of over 250 kms/hr
- The above specifications can be altered at the sole discretion of manufacturer for any improvement



Installation Types:

- Base Bracket:

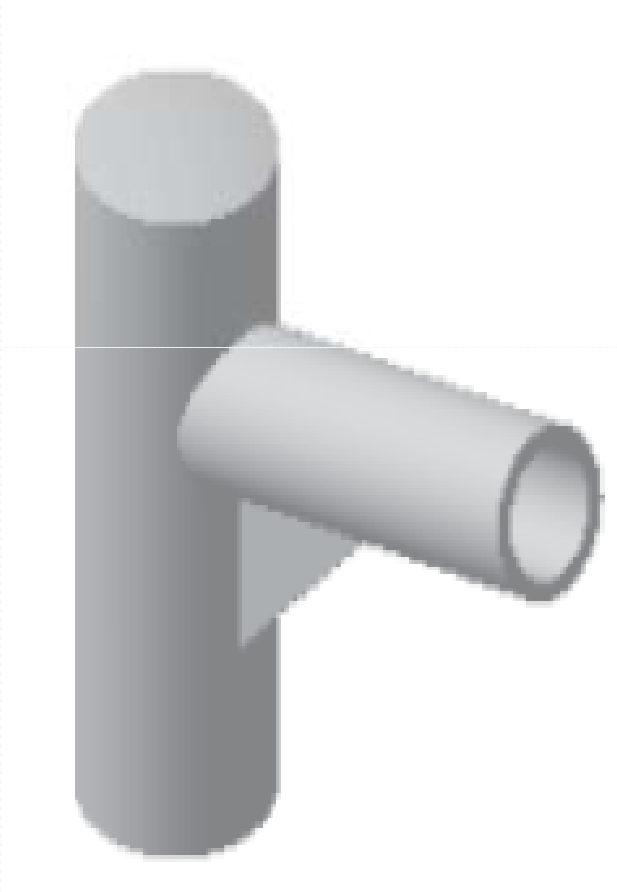


- Direct Burial Type:



Accessories

- Single Arm Bracket:



- Double Arm Bracket:



Accessories

External Junction Box



Internal Junction Box



Junction Box Cover



Comparison - GRP v/s Metal Poles

Features	GRP	Metal
Mounting	Foundation required/Optional	Concrete foundation is compulsory
Relocation	Easy & hard carried	Difficult
Aesthetics	Good	Adequate
Joints	Jointless	Many joints
Earthing	Not required	Required
Design life	25 Years	Depends upon maintenance schedule.
Corrosion	Highly non-corrosive in most environments	Highly corrosive in certain environments
Construction	Single	Multiple
Maintenance	Maintenance free	On going maintenance required.
Weight	Light	Heavy

Features	GRP	Metal
Installation cost	Low	High
Environmentally	Eco friendly	Legacy for future generation
Colour	Colour pigmentation included.	Painting to be done externally
Transportation cost	Low	High
Electrical properties	Shock proof; Electric insulator & Non - conductive	Conductive
Periodic painting	Not required	Frequent painting required

Rusted steel pole with
required grounding



Weak Base of
Steel Pole



Kemrock Composite Poles stay
perfectly intact in any situation

