

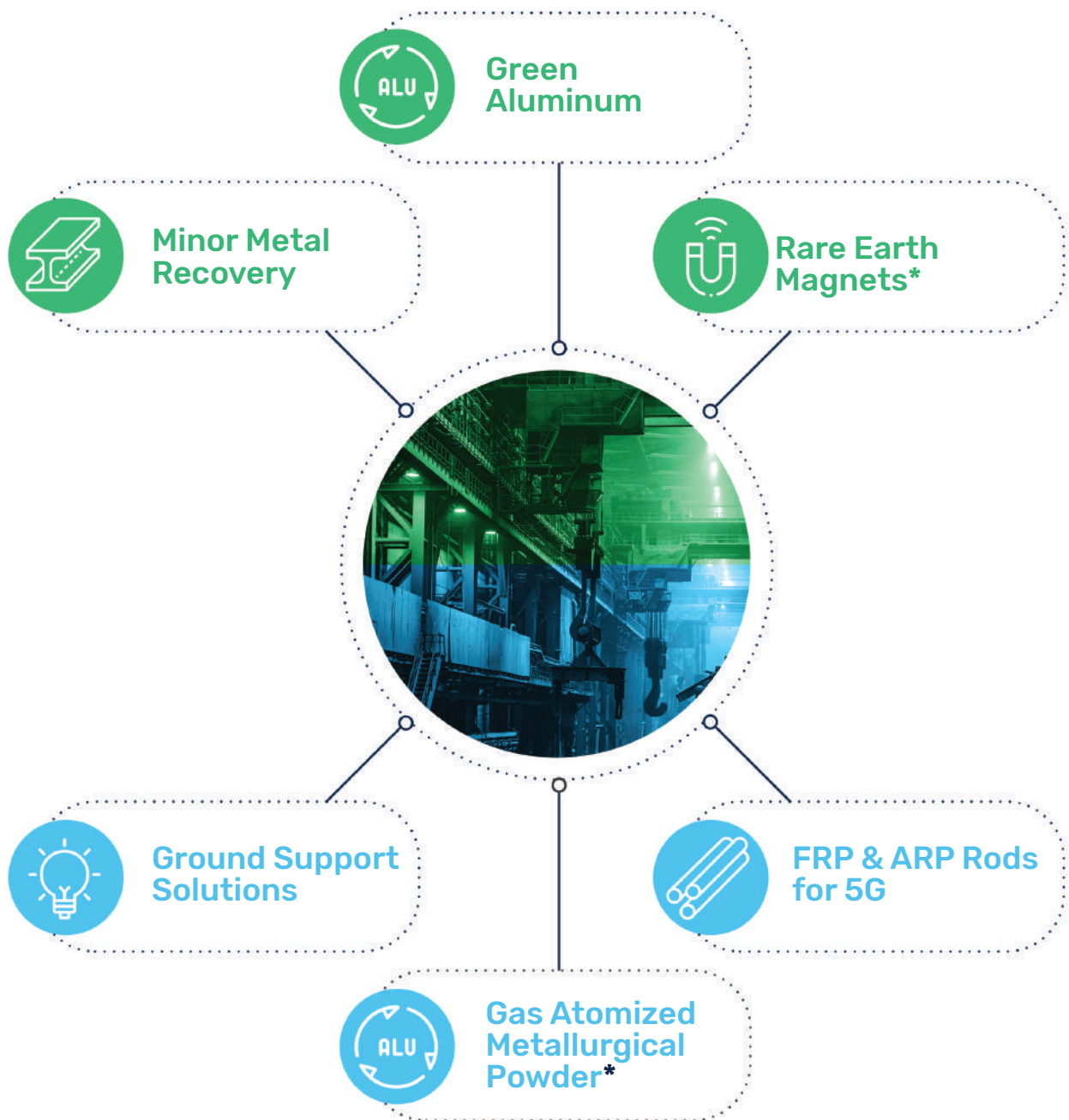


**runaya**   
BUILD FUTURE POSITIVE

**TELECOM GRADE FRP & ARP RODS BUSINESS**

# Runaya

The fastest growing manufacturing venture with a focus on **sustainability** and **cutting-edge innovations**



\*under implementation

# About us

The company was founded with the vision to provide advanced manufacturing and technology-based sustainability solutions for India's manufacturing landscape.

We aim to improve the quality of life across the country every day through sustainable remediation of industrial residues.

We have diversified business portfolios across two major segments – **sustainability and technology solutions.**

Our technology business segment encapsulates the **Telecom Grade FRP & ARP Rods Business.**

Our vision is to be the **'factory of the world'** in manufacturing of strength elements for the Telecom industry and have an operating capacity of **2 million km at our plant in Silvassa- UT of Dadra & Nagar Haveli.**

Our products are manufactured through the latest environment friendly pultrusion process with a strong focus on Quality.

We focus on enabling a circular economy and promote the concept of waste to wealth through various initiatives.



We plan to set up a world-class innovation centre with the goal of making India the leader in technological innovation in the resources industry.

The Group is led by young entrepreneurs who are supported by experienced stalwarts. Its stated policy of employing 80% women workforce is symbolic of its commitment to a wholesome future with a diverse and sustainable outlook while offering a wide range of products customized to specific requirements.

# Our business at a glance

The group has two main verticals - sustainability solutions and niche manufacturing.

## Green technology

Providing sustainable solutions for the resources sector with a focus on zero waste mining and circular economy.

- **Green aluminium**
- **Minor metal recovery**
- **Rare earth magnets**



## Technology-enabled manufacturing for the future

Niche manufacturing products for safe mining, aerospace, defence, 5G telecom, etc.

- **Ground support solutions for the mining and infrastructure industries**
- **FRP and ARP rod manufacturing**
- **Gas atomized metallurgical powder**



# Company highlights

## Values



### Sustainability solutions company

with operations based on its licensed proprietary patented technology



### Addressing biggest challenge

of resources sector by processing mineral waste and protecting the planet with sustainable solutions and recovering 90% available aluminum from dross



### Diversified end-to-end green solution

Zero waste technology for recovery of aluminium, cadmium, zinc and various other metals.



### Unique business vs. global players

High end technology and exclusive licenses and ability to expand globally.



### Demonstrated track record

of successful operations in aluminium dross processing.



### Supplier of niche raw material

to the steel industry.



### Significant upside potential

by increasing the sustainable technology solutions covering the entire resources sector.



### Waste management

opportunity catering and addressing of waste challenges of resource sector.



### Unique zero waste

Zero discharge solution and multiple levels of growth and value creation.

## Core strengths

Niche manufacturing products for safe mining, aerospace, defense, 5G telecom, etc.

- **State of art UV technology plant with plans to manufacture 2 Mn kms.**
- **Focus on automation and digitization to ensure high-quality & defect-free products.**
- **Highly skilled manpower with product expertise & industry experience to ensure quality excellence.**
- **Continuous product improvement & innovation through the in-house innovation centre.**
- **The capacity of 36,000 MT of dross processing**

## OUR CERTIFICATIONS

ISO 9001:2015

ROHS

ISO 14001:2015

REACH

ISO 45001:2018

CACT

# Our 3 pillars of focus

We are a new-age resources technology company with sustainability as a core value

Runaya is a new-age company with environmental and social consciousness at the core of all the processes and businesses, focused on green materials, decarbonization & circular waste management

Runaya uses technology not only to improve efficiency and productivity but also to work towards a sustainable world



Sustainability



Technology



Resources

Runaya fills the gap of a new-age resources company focused on emerging mining technologies and the material requirements for emerging businesses



# Mission, Vision, Values



## Mission

Be the leading partner in the manufacturing sector facilitating new-age technology, sustainable practices, and an inclusive work culture.

## Vision

To be global thought leaders responsible for changing the status quo of the resources industry by building a future positive narrative.

## Values



**Purposeful innovations:** We create new-age technological solutions that deliver beyond profitability. We are partnering with businesses in building the future now.



**Sustainable practices:** We enable the circular economy and a zero-waste policy. Our processes do more than prevent waste; they create value from it.



**Diverse workforce:** We value talent and ambition above all else. We empower all genders to be a part of this ever-growing industry through equal work opportunities.



**High safety standards:** We preserve and safeguard our most valuable assets – people. Our processes and safety protocols ensure efficiency.



**Visionary outlook:** We practice foresight around new and emerging industries and their specialized requirements. We stay a step ahead by knowing the needs of tomorrow, today.

# Our management



**Naivedya Agarwal**  
Co-Founder &  
CEO - Technology

Previously worked at JP Morgan, BCG and Vedanta  
MBA from LBS, London



**Annanya Agarwal**  
Co-Founder &  
CEO - Sustainability

Previously worked with McKinsey and BCG  
B.S. degree from Emory University, Atlanta

Supported by a rich management team with  
decades of sector experience



**Amit Pradhan**  
Group Vice Chairman

35+ years of experience in Resources & Manufacturing  
M.S. in Physics, IIT Delhi



**Neha Bhandari**  
Group CFO

17+ years of Finance and Commercial experience  
Qualified Chartered Accountant



**Aniruddha Joshi**  
Group Marketing President

30+ years of experience in metals & mining sector  
B.Tech from IIT Kharagpur



**Vivek Raj**  
CEO- Telecom Grade FRP  
& ARP Rods Business

20+ years of industry experience  
PGDBM in Operations & Strategy from IIM Lucknow



**Devkumar Lalla**  
Dy CEO- Telecom Grade FRP  
& ARP Rods Business

20+ Years of Industry Experience  
B.Tech from Laxmi Narayan College of Technology

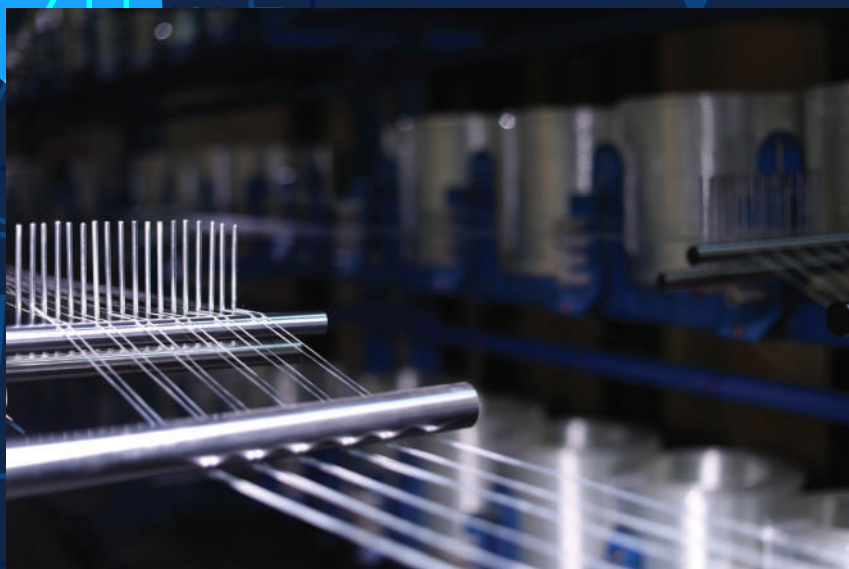


**Kavita Singh**  
Group HR Head

9+ years of experience in HR domain  
MBA in HR from ICFAI Business School, Hyderabad



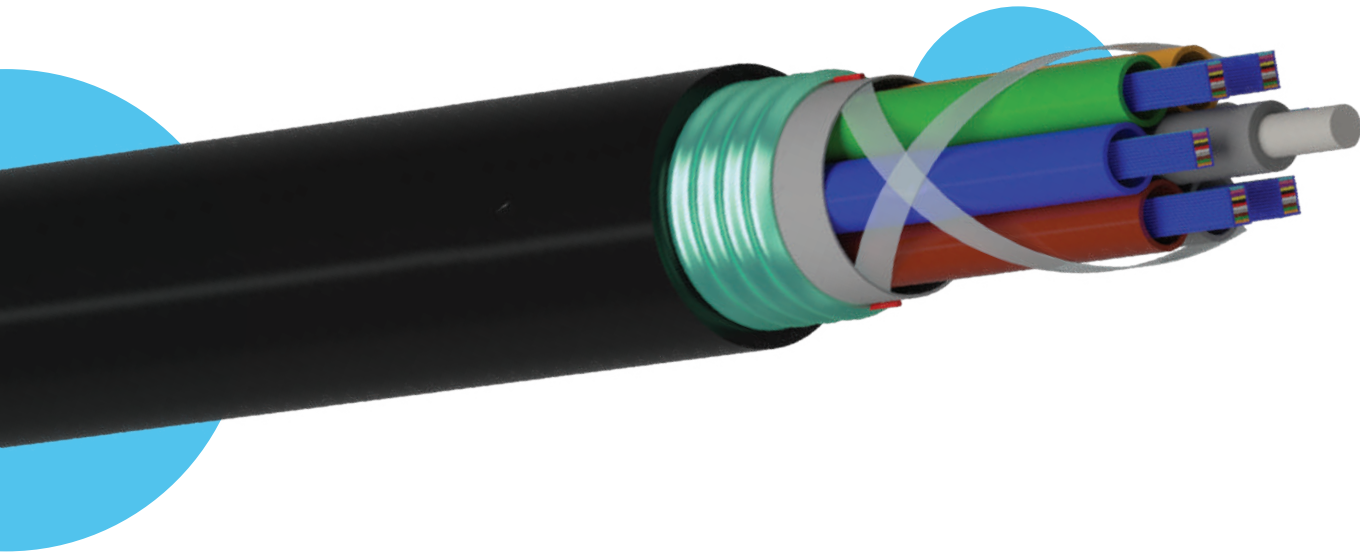
# Telecom Grade FRP & ARP Rods Plant



# Introduction to FRP & its Types

## FIBER REINFORCED PLASTIC (FRP) RODS

Runaya manufactures FRP and ARP rods using glass fibre, high proprietary resin system, latest UV & Thermal curing technology with higher line speeds. Latest technology enables longer life of the rod and good quality material increases the lase value of the rod.



## Product Application

Our FRP rods produced are designed to provide strength while remaining lightweight. They prevent cables from buckling by retaining a high degree of stiffness throughout its service life. The product can manage extremely high manufacturing speeds and can be produced in continuous length.

Runaya produces majorly EAA coated, uncoated rods and Value-Added Products (VAP).

Uncoated rods are used as central strength members whereas EAA coated FRP rods are used in the periphery and provide good adhesion with PE sheath of the cable that facilitates easy bending. It is available in different diameters starting from 0.5mm to 4.0mm diameter. We also customize our rods according to customers' requirements.

# 1. UNCOATED UV FRP ROD

**Product Description:** Designed to provide great strength while remaining light weight, that prevent cables from buckling by retaining a high degree of stiffness throughout its service life.

## Special Properties:



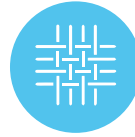
Excellent strength & modulus



Great range of diameter



Considerable stiffness



Uniform Fibre-resin distribution



Smooth & glossy surface



Greenish in colour

**Application:** Used as central strength member and can be embedded on 2 sides of the cable providing lateral rigidity & longitudinal flexibility to the cables.

# 2. EAA COATED FRP ROD

**Product Description:** These are composite rods with EAA polymer (Ethyle Acrylic Acid) coverage, usually embedded as peripheral constituent for a better mutual adhesion with jacketing material, ensuring protection from external stress.

## Special Properties:



High strength & flexibility



Low shrinkage with jacketing polymers



Better coverage of polymer



Better adhesion to PE & PP compounds

**Application:** Used as peripheral embedded constituent of the cable for easy handling during application.

### 3. WATER SWELLABLE FRP ROD

**Product Description:** Our water swellable FRP is a strength member with super absorbent entity that swells instantly on contact with water, fills the gap between the components of cable making itself as water ingression preventing phase.

**Special Properties:**



Instant swelling property



Excellent water blocking property



Matte surface

**Application:** Used as central constituent of an optic fibre cable.

### 4. WATER SWELLABLE COATED FRP ROD

**Product Description:** Water swellable, EAA covered FRP for low shrinkage with different types of polyethylene matrix and zero water penetration in cables which are applied in the peripheral region.

**Special Properties:**



Better adhesion



Instant water swellable property



Easy unsheathing of PE jacketing.



Low shrinkage with PE compound



High tensile strength



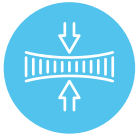
Matte surface

**Application:** Used for the FTTH type cables & cables that require water blocking properties, with polymer over coat that enables better interlocking of FRP rods with sheathing material.

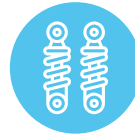
## 5. THERMAL CURED FRP ROD

**Product Description:** Our thermal FRPs are made of high temperature curing thermoset resin and with large glass content through carefully curated production technique, superior in terms of durability, strength, and their use is more flexible.

### Special Properties:



Excellent strength & modulus



Considerable stiffness



High fibre content



Smooth surface



Milky White in colour

**Application:** Our thermal FRPs are better recommended for up jacketing due to good adhesion with PE compounds. Alongside, they can also be used as central strength member.

## 6. FLAT FRP RODS

**Product Description:** Runaya's dielectric rectangular shaped FRP rod is manufactured using E-glass fibre providing peripheral protection as lateral strength member.

### Special Properties:



Dielectric rectangular shaped FRP rod



High heat resistant and tensile strength



Helps in protection from rodents and insects underground

**Application:** The flat FRPs are present at the periphery, protecting the cable from rodents & insects. They are also used as lateral element in direct burial cable and submarine cable. These are generally applied helically on the cable, providing high degree of flexibility with reduced thickness and high tensile modulus without adding bulk.

## 7. ROUGH SURFACE FRP

**Product Description:** FRP rods made by structurally specified resin will have rough surface finish, thus helping in the mechanical bonding or interlocking of FRP with polymer. Further, no coating is needed

### Special Properties:



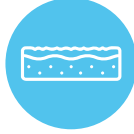
Excellent mechanical properties



Excellent FRP interlocking with polymer.



Considerable flexibility

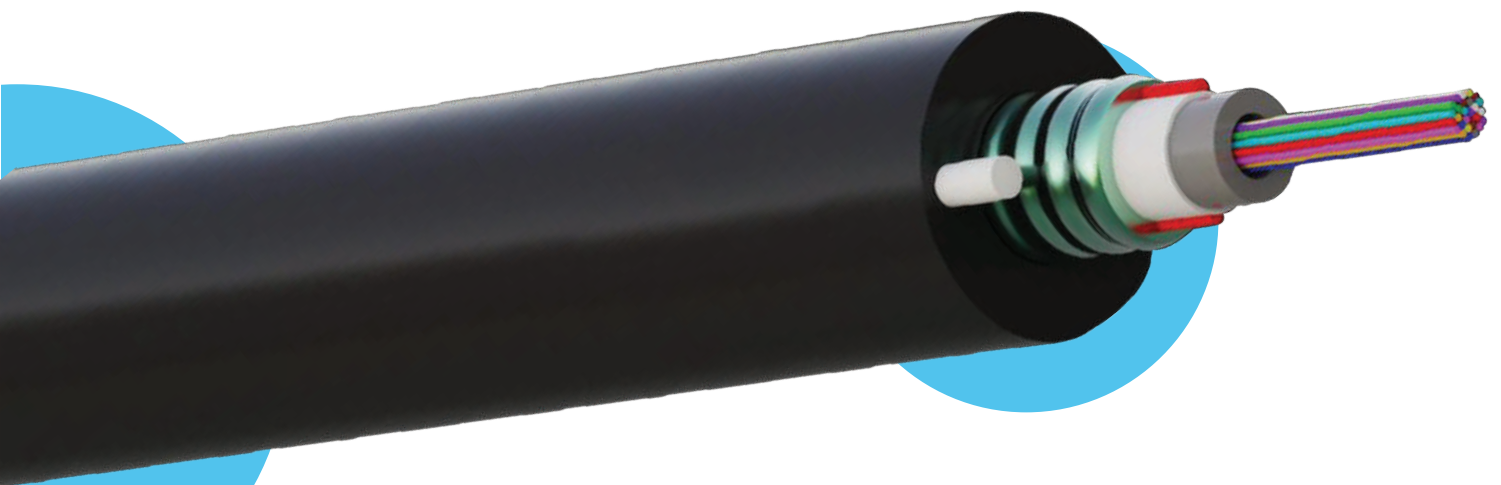


Rough surface finish



Yellowish white

**Application:** In order to avoid the difficulties during cable installation due to very high adhesion of EAA with jacketing material, this **Uncoated Rough Surface FRP** introduced to increase the mechanical interlocking and at the same time are easily accessible during the cable installation.





# TECHNICAL PARAMETERS OF FRP RODS

S/N	Parameters	units	Test Method	Values					Rough Surface FRP
				FRP Coated	FRP Uncoated	WS FRP	WS FRP	Flat FRP (UV)	
1	Diameter of Uncoated Rod	mm	RPL/QA/WI/001	± 0.05	± 0.05	± 0.1	± 0.1	± 0.1	± 0.05
2	Maximum Diameter of Coated Rod	mm	RPL/QA/WI/001	+0.1	NA	+0.1	NA	NA	NA
3	Coating Thickness	mm	RPL/QA/WI/0002	≥ 10µm – 30 µm for ≤1mm FRP Rod ≥ 20µm-40 µm for >1mm FRP Rod	NA	≥ 10µm – 30 µm for ≤1mm FRP Rod ≥ 20µm-40 µm for >1mm FRP Rod	NA	NA	NA
4	Ovality	mm	RPL/QA/WI/001	≤ 0.05	≤ 0.05	<5% of the Nominal Diameter	<5% of the Nominal Diameter	NA	NA
5	Minimum Bend Diameter (< 25D for ≤ 3.5mm FRP Rod ≤30D for > 3.5mm FRP Rod) at 25°C (D is the diameter of the rod)	mm	RPL/QA/WI/003	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination
6	Tensile strength at break	Kg/mm <sup>2</sup>	RPL/QA/WI/0013 ASTM D 3916	≥ 140	≥ 140	≥ 140	≥ 140	≥ 120	≥ 140
7	Tensile Modulus	Kg/mm <sup>2</sup>	RPL/QA/WI/0013 ASTM D 638	≥ 5000	≥ 5000	≥ 5000	≥ 5000	≥ 5000	≥ 5000
8	Flexural strength	Kg/mm <sup>2</sup>	RPL/QA/WI/0016 ASTM D 790	≥ 70	≥ 70	≥ 70	≥ 70	NA	≥ 70
9	Flexural Modulus	Kg/mm <sup>2</sup>	RPL/QA/WI/0016 ASTM D 790	≥ 5000	≥ 5000	≥ 5000	≥ 5000	NA	≥ 5000
10	Coefficient of thermal expansion	cm/°c	ASTM D 696	< 6.6E - 6	< 6.6E - 6	NA	NA	NA	NA
11	Elongation at break	%	RPL/QA/WI/0013 ASTM D 3916	2.5 - 4	2.5 - 4	2.5 - 4	2.5 - 4	≥ 2.5	≥ 2.5
12	Water absorption after 24 Hrs.	%	RPL/QA/WI/0010 ASTM D 570	≤ 0.1 % for ≤1 mm FRP rod, ≤ 0.2 % for ≥ 1mm FRP rod	≤ 0.1 % for ≤1 mm FRP rod, ≤ 0.2 % for ≥ 1mm FRP rod	NA	NA	NA	≤ 0.1 % for ≤1 mm FRP rod, ≤ 0.2 % for ≥ 1mm FRP rod
13	Water absorption after 1 min swell.	gm/min	RPL/QA/WI/0014	NA	NA	≥2	≥2	NA	NA
14	Increase in diameter after 1 min swell	mm	RPL/QA/WI/0014	NA	NA	>0.2	>0.2	NA	NA
15	Heat Stress @ 85°C,24 hrs, 50 x D	-	RPL/QA/WI/0004	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination	No Decomposition/ No delamination
16	Thermal Resistance @ 100°C,5 Days, 60xD	-	RPL/QA/WI/0011	No Decomposition/ No delamination	No Decomposition/ No delamination	NA	NA	No Decomposition/ No delamination	No Decomposition/ No delamination
17	Water Resistance @ 80°C,5 Days, 80xD	-	RPL/QA/WI/0012	No Decomposition/ No delamination	No Decomposition/ No delamination	NA	NA	No Decomposition/ No delamination	No Decomposition/ No delamination
18	Surface	-	RPL/QA/WI/0020	Smooth	Smooth	Matte	Matte	Smooth	Smooth

**Disclaimer :** Aforementioned properties of the products cannot be altered without prior notification from customers.

# ARAMID REINFORCED PLASTIC (ARP) RODS

Manufactured from Aramid Yarns, our ARP rod is highly flexible which provides lower bending radius and good anti-buckling property with high modulus.

ARP Rods find application in Fiber to the Home (FTTH), Micro-duct cable & Aerial drop cable. We are manufacturing various types of Aramid Reinforced Plastic (ARP) composite rods.

**Product Description:** As peripheral strength member, it ensures best performance and attenuation reduction in the Optical Fibre Cable application due to adverse mechanical & humid conditions.

ARP rods are designed as a strength member which acts as a safeguard against mechanical stresses to ensure their better performances which applied in the periphery of the cable, helps provide the necessary protection.

## Special Properties:



It limits the strain on the cables when tension is applied on the cables



Known for their flexibility & high modulus



Provide high strength & better bending properties with minimum weight

## 1. UNCOATED ARP RODS

**Product Description :** Aramid reinforced polymer composite rods are designed as a strength member which acts as a safeguard against mechanical stresses to ensure their better performances.

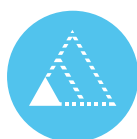
## Special Properties:



Provide high strength



Better bending properties



Minimum weight



High modulus

**Application:** ARP as peripheral embedded constituent helps to provide the necessary protection. It limits the strain on the cables when tension is applied on the cables and are used in Fibre to the FTTH, Micro-duct cable & aerial drop cable.

## 2. COATED ARP RODS

**Product Description:** ARP composite rod with EAA polymer coverage for the better mutual adhesion with PE & also ensuring protection from external stress.

### Special Properties:



Better adhesion



Considerable strength & flexibility



Easy to handle



Easy installation even in very small bends

**Application:** The coated ARP rods are ideal for FTTH application where the cable is subjected to sharp bends, which enables the cable to be compact, aesthetic & flexible, especially for indoor layouts. They are ideal for all dielectric cable configurations where placement close to power lines are common.

## 3. WATER BLOCKING ARP RODS

**Product Description:** Aramid based composite rod with superabsorbent polymer entity at the surface which swells on contact with humid/moisture atmosphere & prevent further penetration of water.

### Special Properties:



Excellent water prevention capacity



High tensile strength



Hydrophobic in nature

**Application:** It is most suited for loose tube, uni-tube, ribbon cable, & typically used as peripheral reinforcement in optic fibre cables.

## 4. WATER BLOCKING COATED ARP ROD

**Product Description:** Aramid yarn with resin combination, having unique water preventing surface with extra polymer coating provide high adhesion with PE, mainly used as peripheral strengthening application and zero moisture ingress.

### Special Properties:



Better adhesion



Excellent water blocking capacity



High tensile strength, better bending properties



Hydrophobic in nature



Sufficient anti-buckling property

**Application:** They are mainly used in peripheral strengthening, with zero moisture ingress quality needed. In addition to being very easy to handle, it also has a smooth & even surface.



# TECHNICAL PARAMETERS OF ARP RODS

Results						
S/N	Parameters	units	ARP Uncoated (Thermal)	ARP Coated (Thermal)	WS ARP Uncoated (Thermal)	WS ARP Coated (Thermal)
1	Physical Dimension of Uncoated Rod	mm	Nominal Diameter $\pm 0.05$	NA	Nominal Diameter $\pm 0.05$	NA
2	Physical Dimension of coated Rod	mm	NA	Nominal Diameter + 0.05	NA	Nominal Diameter $\pm 0.05$
3	Coating Thickness	mm	NA	$\geq 20$	NA	$\geq 20$
4	Tensile strength at break	Kg/mm <sup>2</sup>	$\geq 170$	$\geq 170$	$\geq 170$	$\geq 170$
5	Tensile Modulus	Kg/mm <sup>2</sup>	$\geq 6500$	$\geq 6500$	$\geq 6500$	$\geq 6500$
6	Elongation respectively.	%	$\leq 3$	$\leq 3$	$\leq 3$	$\leq 3$
7	Minimum Bend Diameter (< 16 D) at 25°C (D is the diameter of the rod)	mm	No Decomposition /No delamination	No Decomposition /No delamination	No Decomposition /No delamination	No Decomposition /No delamination
8	Water absorption after 1 min swell	%	NA	NA	$\leq 5$	$\leq 5$
9	Appearance	-	Smooth and Even Surface	Smooth and Even Surface	Smooth and Even Surface	Smooth and Even Surface

**Disclaimer :** Aforementioned properties of the products cannot be altered without prior notification from customers.



For queries/details,  
please write to us at  
**rplsales@runaya.com**

**MINOVA RUNAYA PVT. LTD.**  
**Ground support solutions**  
Bhilwara, Rajasthan

**RUNAYA ALUMINUM PVT. LTD.**  
**Gas Atomised Powder**  
Jharsuguda, Odisha

**RUNAYA PRIVATE LTD.**  
**FRP & ARP Rods**  
Silvassa,  
Dadra and Nagar Haveli

**RUNAYA REFINING**  
**Green Aluminum**  
Jharsuguda, Odisha  
& Korba, Chhattisgarh

**RUNAYA GREENTECH**  
**PVT. LTD.**  
**Minor Metals**  
Chandera, Rajasthan

