

Built to last:
Arvind FRP
Ladders



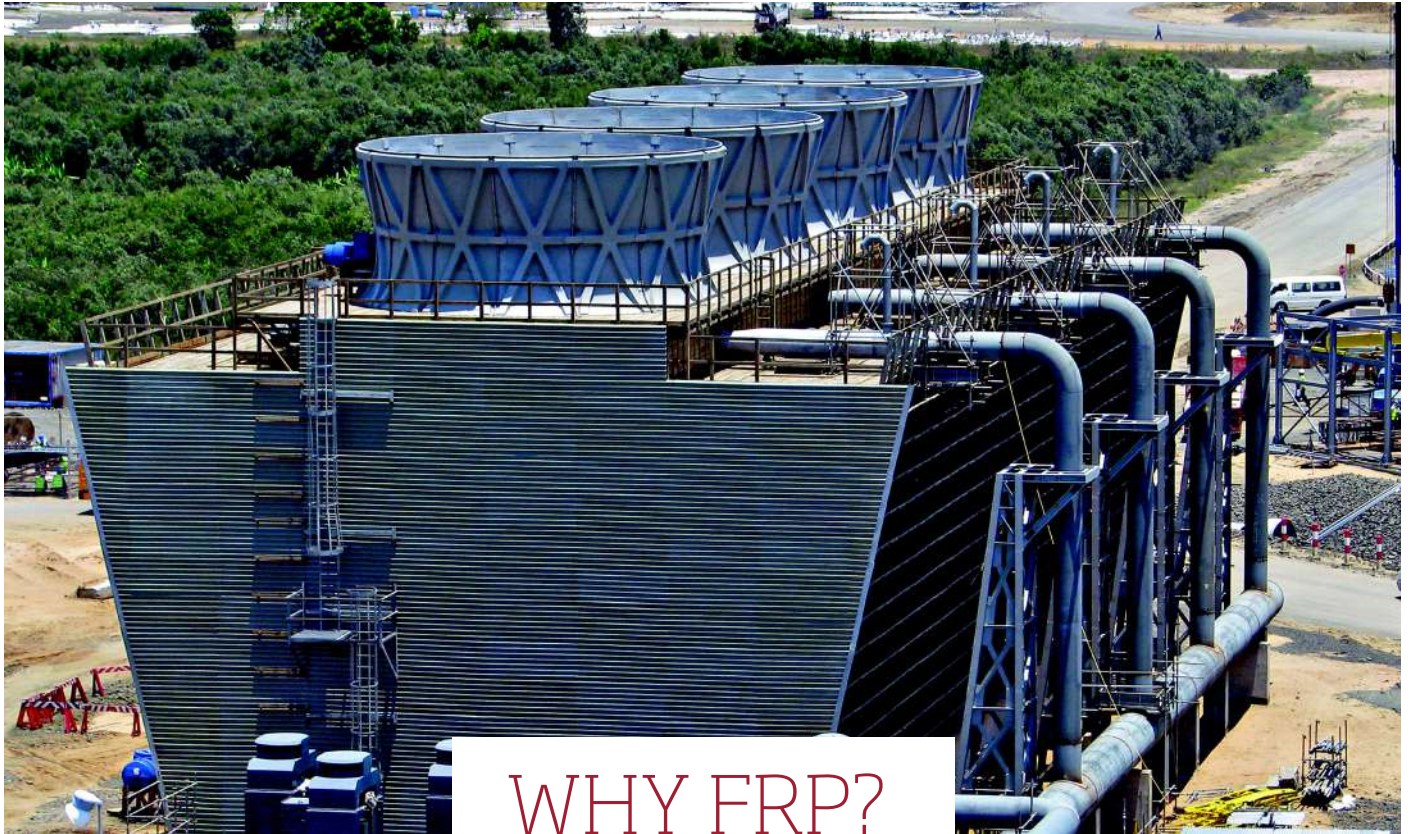
Arvind Composites Division



Founded in 1931, Arvind is one of India's largest integrated textile-to-retail conglomerates with successful forays in advanced materials, environmental solutions and real estate. A pioneer of denim in India, Arvind is a \$1.5 bn company with an unmatched portfolio of owned, licensed brands and retail formats. Arvind is a supplier of fabrics to global brands such as Levi's, Gap, VF Corp, Tommy Hilfiger, Zara, H&M and others.

Known for its commitment to innovation and quality, Arvind manufactures high performance protective and industrial fabrics through its Advanced Materials Division, using world-class technology and researched processes.

Arvind started its Composites Division in 2014 producing structural profiles and hand-laminated products. With a monthly production capacity exceeding 500 MT, Arvind has been able to serve global customers with high standards of quality and delivery. Arvind provides complete solutions for all structural needs, including gratings, poles and hand-laminated products. Arvind's FRP products are sold in more than 30 countries to 40 countries.



WHY FRP?

FRP (Fibre-reinforced plastics) is a composite material made from a polymer resin matrix reinforced by glass fibres and fabrics. Also known as GRP (Glass reinforced plastic) or fibreglass, it is a lightweight, strong and durable material, used as a superior alternative to steel, aluminum, wood or concrete.

High strength and low weight

Durable and maintenance-free

Non-conductive

Rapid installation

Fire retardance

Design Flexibility



Steel Rusts



Wood Rots



FRP Lasts



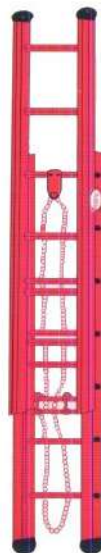
Ladders

Arvind's FRP ladders are light-weight, safe and last much longer than aluminium or steel ladders. Due to its electrical insulation properties, FRP ladders are ideal for any applications where contact with electricity may be a danger. Furthermore, due to its non-corrosive properties, these ladders can last for decades even in highly corrosive environments. Lastly, FRP ladders are light can be easily carried by a single person. Arvind's FRP ladders are available in various shapes and forms and can be used for a variety of industrial and residential purposes.

TRESTLE LADDER



STEP LADDER



EXTENSION LADDER

Types of ladders

- ✓ Step Ladders
- ✓ Extension Ladders
- ✓ Trestle Ladders
- ✓ Platform Ladders
- ✓ Shelf Ladders
- ✓ Mobile Platform Ladder
- ✓ Industrial Step Stand



SHELF LADDER



PLATFORM LADDER



MOBILE PLATFORM LADDER



INDUSTRIAL STEP STAND

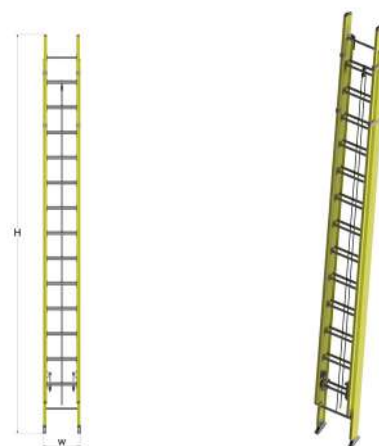
Advantages of FRP Ladders

- ✓ **Resistance to Electricity:**
FRP material is inherently non-conductive to electricity and can be used for any jobs where exposure to electric current is a risk
- ✓ **Resistance to Corrosion:**
FRP is corrosion resistant and can be used in a variety of environments with exposure to weathering or chemicals
- ✓ **Strength:**
FRP ladders are stronger compared to the ladders made of conventional materials; they offer firm support and can withstand heavy weight and pressure as well
- ✓ **Lightweight:**
FRP ladders are light-weight and can be easily carried by even 1 person



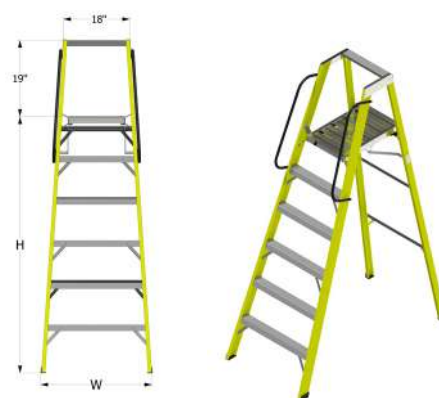
Extension Ladder

LADDER SIZE	EXTENDED HEIGHT	WIDTH (W)
16'	13'	17"
20'	17'	17"
24'	21'	17"
28'	25'	17"
32'	29'	17"
36'	32'	17"
40'	35'	17"



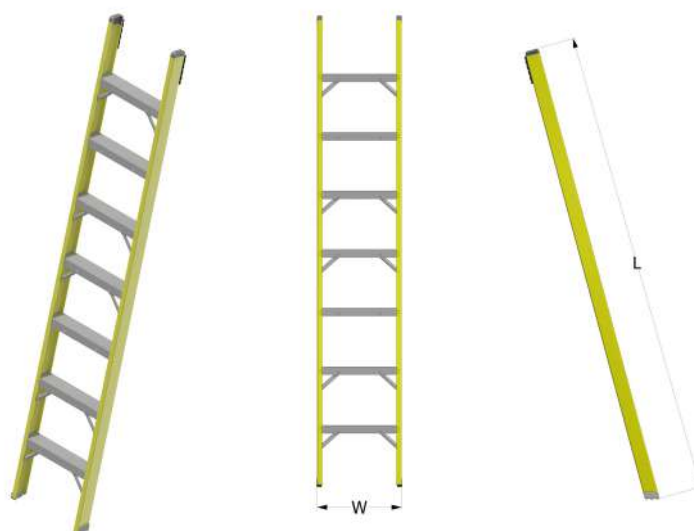
Platform Ladder

LADDER SIZE	EXTENDED HEIGHT	WIDTH (W)
4'	26"	45"
5'	28"	52"
6'	29.5"	58"
8'	33"	71"
10'	36"	84"
12'	39"	97"



Shelf Ladder

LENGTH (L)	WIDTH (W)
4'	17"
5'	17"
6'	17"
7'	17"
8'	17"
10'	17"
12'	17"
14'	17"
16'	17"
18'	17"
20'	17"



Step Ladder

H	W	L
3'	18-1/8"	23-1/8"
4'	19-7/8"	29"
5'	21-5/8"	35-1/8"
6'	23-3/8"	41-1/4"
7'	25-1/8"	47-1/2"
8'	26-7/8"	53-5/8"
10'	30-3/8"	65-7/8"
12'	33-7/8"	78-1/4"



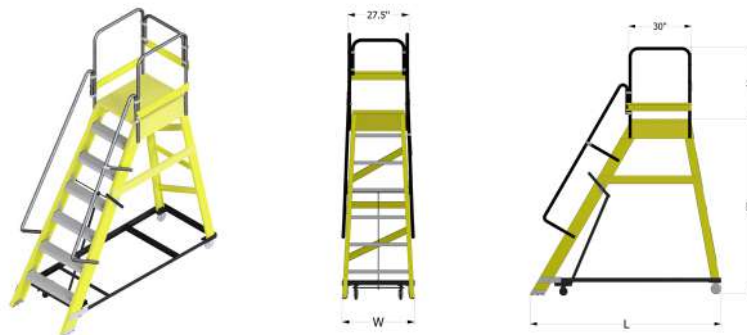
Trestle Ladder

H	W	L
3'	18-1/8"	29"
4'	19-7/8"	35-1/8"
5'	21-5/8"	41-1/4"
6'	23-3/8"	47-1/2"
7'	25-1/8"	53-5/8"
8'	26-7/8"	65-7/8"
10'	30-3/8"	78-1/4"
12'	33-7/8"	90-5/8"



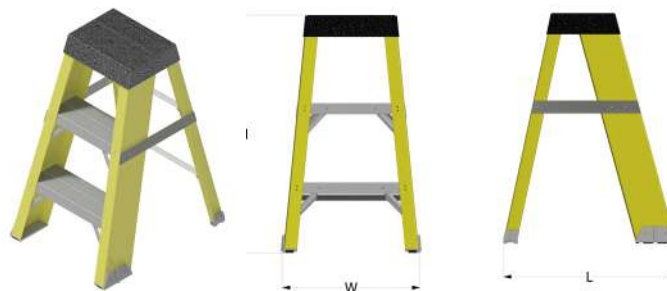
Mobile Platform Ladder

H	W	L
5'	31"	82"
6'	32"	89"
7'	33"	96"
8'	34"	103"
9'	35"	110"
10'	36"	117"
11'	37"	124"



Industrial Step Stand

H	W	L
2'	18"	21"
3'	20"	26"
4'	22.7"	32"



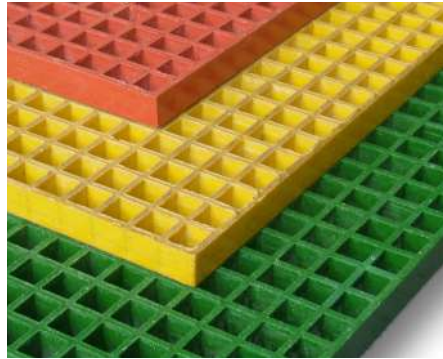
PROPERTIES OF FRP

Mechanical Properties	ASTM	UNITS	VALUE
Tensile Strength, LW	D-638	psi	30,000
Tensile Strength, CW	D-638	psi	7,000
Tensile Modulus, LW	D-638	10 ⁶ psi	2.5
Tensile Modulus, CW	D-638	10 ⁶ psi	0.8
Compressive Strength, LW	D-695	psi	30,000
Compressive Strength, CW	D-695	psi	15,000
Compressive Modulus, LW	D-695	10 ⁶ psi	2.5
Compressive Modulus, CW	D-695	10 ⁶ psi	1
Flexural Strength, LW	D-790	psi	30,000
Flexural Strength, CW	D-790	psi	10,000
Flexural Modulus, LW	D-790	10 ⁶ psi	1.8
Flexural Modulus, CW	D-790	10 ⁶ psi	0.8
Modulus of Elasticity, E	Full Section	10 ⁶ psi	2.8
Shear Modulus	-----	10 ⁶ psi	0.45
Short Beam Shear	D-2344	psi	4,500
Punch Shear	D-732	psi	10,000
Bearing Strength, LW	D-953	psi	30,000
Notched Izod Impact, LW	D-256	ft-lbs/in	25
Notched Izod Impact, CW	D-256	ft-lbs/in	4
Physical Properties	ASTM	UNITS	VALUE
Barcol Hardness	D-2583	-----	45
24 Hour Water Absorption	D-570	% max	0.45
Density	D-792	lbs/in ³	.062-0.70
Coefficient of Thermal Expansion, LW	D-696	10 ⁻⁶ in/in/°C	8
UV	G53		
Electrical Properties	ASTM	UNITS	VALUE
Arc Resistance, LW	D-495	seconds	120
Dielectric Strength, LW	D-149	kv/in	35
Dielectric Strength, PF	D-149	volts/mil	200
Dielectric Constant, PF	D-150	Q60hz	5
Flammability Properties	ASTM	UNITS	VALUE
Tunnel Test	E-84	Flame Spread	25 max
Flammability	D-635	-----	Nonburning
NBS Smoke Chamber	E-662	Smoke Density	

Product Offering



Cable trays



Gratings



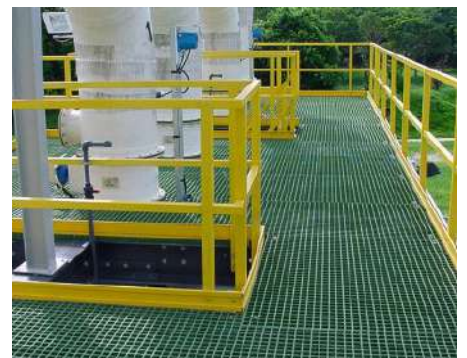
Poles



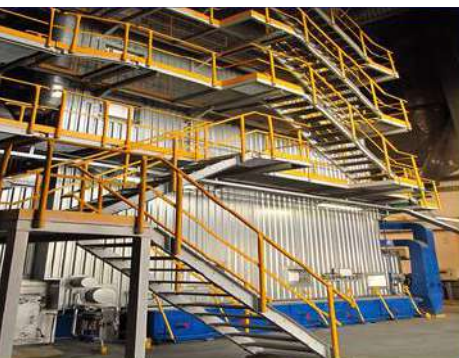
Ladder



Platforms



Handrails / Walkways



Staircases



Monkey ladders



Toilets



Why Arvind?

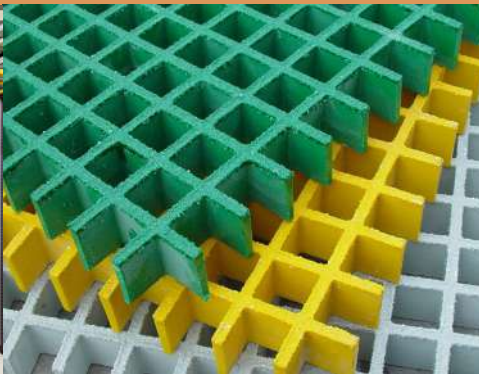
Arvind lineage: 100+ year-old financially strong publicly listed corporate with experience of delivering high quality products to global customers

Scale: 500T+ pultrusion production capacity per month with sufficient resources to expand, working across a range of products and solutions

Systems and processes: Strong in-house processes for production planning, export logistics support and quality control to ensure total customer satisfaction

Best cost structure: Backward integration of glass fabrics, scale for glass and resin purchase, export logistics advantage

Team capabilities: All round-capabilities across team supported by expertise across various areas by broader Arvind team



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