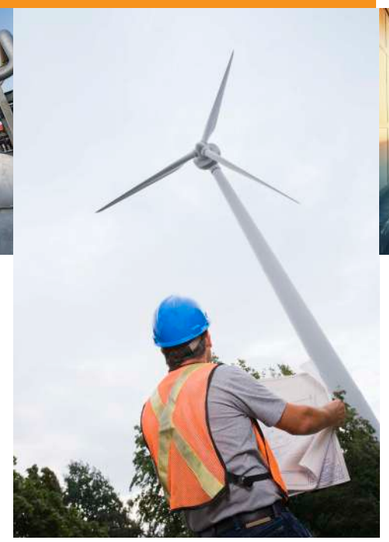
Arvind
COMPOSITES

Built to Last:
Arvind FRP
Industrial products



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Arvind. We are one. Yet, we are many.

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 research-led 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.

Welcome to Arvind.
Welcome to a world of fashioning possibilities.

Who
we are

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

Key attributes:

High strength and low weight

FRP's strength to weight ratio is significantly higher than that of metal. High tensile strength, combined with a low density (<2 compared to ~8 for steel) leads to upto 70% reduction in weight compared to steel. This makes it an ideal material for application requiring where lower weight structures, low transportation costs and high strength is required.

Durable and maintenance-free

FRP is inherently inert and doesn't corrode due to weathering, chemicals, insects or other corrosive environments. This makes it an ideal material for structures in corrosive environments such as industrial facilities, off-shore structures, coasts etc. The longevity of FRP pays over multiple times in terms of lifecycle costs compared to metal alternatives.

Non-conductive

FRP is electrically non-conductive leading to increased safety compared to conductive materials (i.e., metal). FRP also has low thermal conductivity resulting in natural insulation which reduces energy costs wherever FRP structures are used.

Rapid installation

FRP materials can be installed easily due to lighter weight, and are easily fabricated with simple tools and by using bolts and clips (expensive processes such as welding can be avoided). This reduces installation time and manpower costs.

Fire retardance

Arvind's FRP materials are designed to be fire-retardant and meet strict FST norms such as ASTM E84, UL 94 V0 etc.

In summary, FRP material are superior in several ways to traditional materials and provide significant benefits in terms of lifecycle maintenance costs and installation costs, thereby providing a superior total cost of ownership across several applications.

Range of products

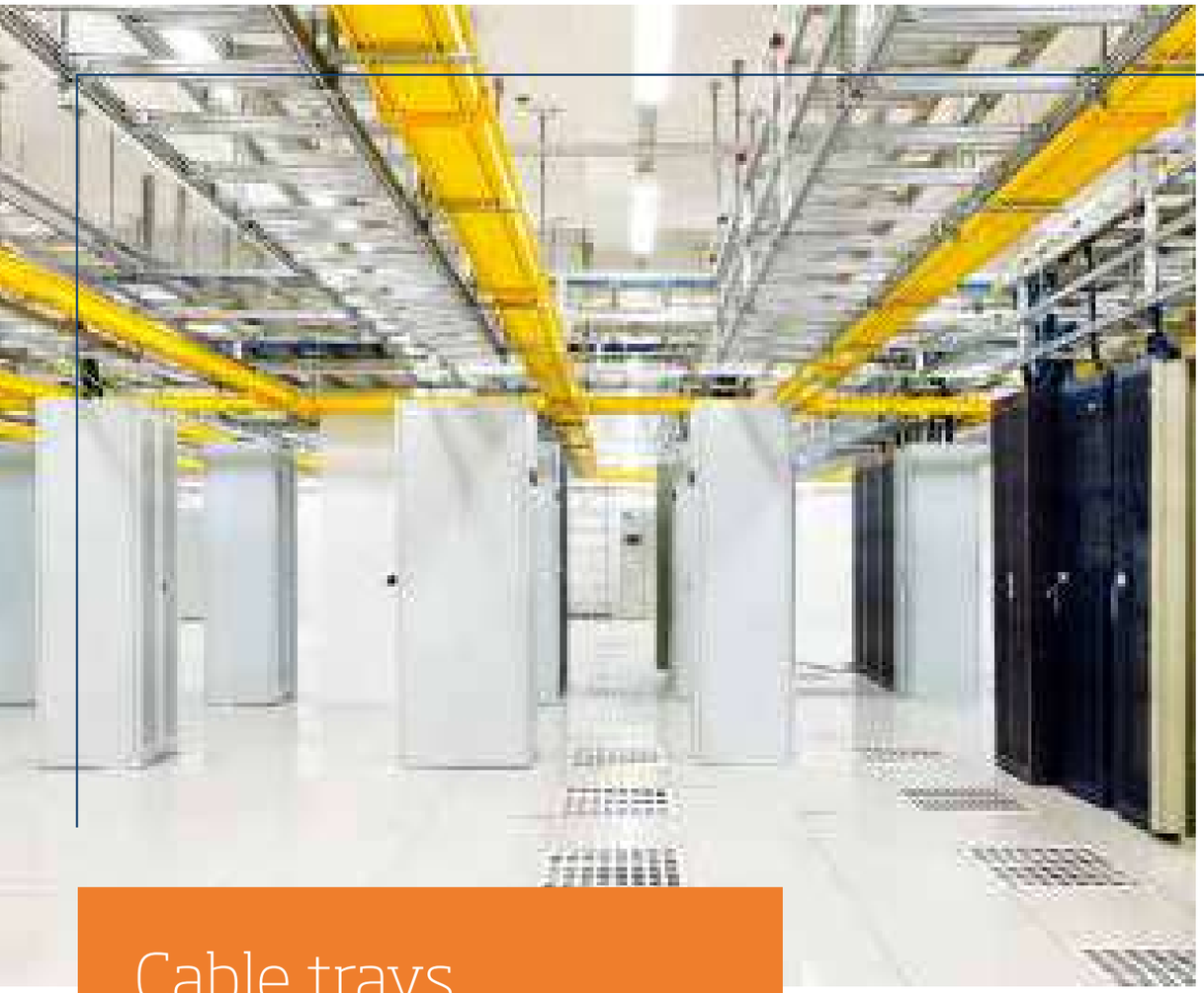
Cable Trays

Ladders

Gratings

Poles

Custom Solutions



Cable trays

Arvind's FRP cable trays are designed to be light-weight, robust and durable. Due to the lower weight, FRP cable trays allow a higher loading span thus reducing the overall support structure and the initial cost. Furthermore, our cable trays are virtually maintenance free and can survive for decades in presence of weathering and corrosive elements. Thus, they are both an economical and a long-term superior product compared to alternatives.

Arvind's cable trays are available with all accessories and are electrically insulated, UV protected and fire-retardant making them the material of choice for your cable management systems.

Arvind offers full range of Cable Trays

FRP Cable Support System

Type	Ladder Type	Perforated Type	Solid Bottom/Trough Type
Features	Made by assembling C channel and rungs.	Made with channel C with pre drilled holes.	Same as Perforated type but has solid bottoms.
Pictorial Representation			
Applications	Suitable for power cables/ large cables	Suitable for small loads,instrument or data cables.	Suitable for small loads,instrument or data cables.
Usage	Power Plants, chemical Plants, large scale industries, high rise and commercial complexes.	Telecommunication, for light cable loads, high rise commercial buildings	Telecommunication, for light cable loads, high rise commercial buildings

Gratings

Arvind offers a range of pultruded and molded gratings designed to meet the load requirements for a variety of industrial purposes. FRP gratings are lightweight which allow them to be an economic replacement for conventional gratings, and its anti-corrosive properties allows it to be applicable for a range of industrial and extreme environments. FRP gratings perform reliably for many years, even in heavy duty conditions.

Arvind's FRP gratings are available in a wide variety of dimensions, alongwith slip resistant options such as anti-skid coatings, chequered plates etc.

(DATA TABLE) TYPES OF GRATING

Applications

FRP Grating is often used when there are safety concerns due to liquids or oils on the floor and more corrosive environments needing chemical resistance.

Many different applications can benefit from FRP Grating, such as: Walkways, Platforms, Protective Shielding, Machinery Housings, Raised Floors and Stairways

In addition, Industries that use Moulded FRP Grating can include bottling lines, food processing plants, lift stations, commercial aquariums, lube oil facilities, plating shops, beverage canning facilities, chemical plants and pulp and paper plants

Several applications in Effluent Treatment Plants and Water Treatment Plants

Lifetime cost benefit analysis

Life cycle cost of FRP gratings much lower than MS gratings
Moulded gratings more economical than pultruded gratings

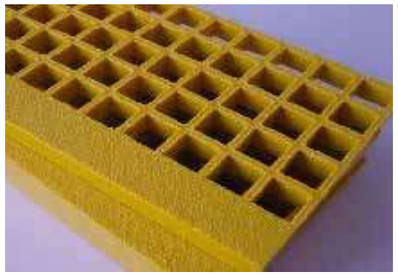
Parameters for 1 square meter of Grating	FRP (Moulded) Mesh size 38 mm*38 mm	FRP (Pultruded) Mesh Size 25.4 mm*152.4 mm height of 25.4	MS Mesh Size 30 mm *100mm height of 30 mm
Weight (kgs)	18.3	20	50
UDL at support span of 1000 mm (kgs)	360	min 1,000	min 1,000
Zero Maintenance life (years)	15	15	2
Structural Approx. price (Rs.)	2,379	3,000	4,000
Clips/Welding approx. price (Rs.)	130	130	
Installation+ transport Approx. price (Rs.)	95	95	
(Rs.)	2,604	3,225	4,000
Total cost	0	0	7.5
Recurring cycles (no.)	0	0	14
Colouring+Labour approx price (Rs.)	0	0	91
Total Recurring cost (Rs.)	2,604	3,225	4,091
Total Lifecycle Cost (Rs.)			

Product offering – Moulded Gratings 38 mm Grating

Sr No	Clear Span	Height of Grating	Mesh size in	Deflection as per	Uniform Distribution Load	Maximum Recommended
1	300	38.1	38.1 x 38.1	1.5	8,230	18,715
2	400	38.1	38.1 x 38.1	2.0	3,490	10,480
3	500	38.1	38.1 x 38.1	2.5	2,050	6,160
4	600	38.1	38.1 x 38.1	3.0	1,508	4,525
5	700	38.1	38.1 x 38.1	3.5	930	2,792
6	800	38.1	38.1 x 38.1	4.0	731	2,198
7	900	38.1	38.1 x 38.1	4.5	550	1,651
8	1000	38.1	38.1 x 38.1	5.0	405	1,216

30 mm Grating

Sr No	Clear Span (L) mm	Height of Grating in mm	Mesh size in mm	Deflection as per L/200 in mm	Uniform Distribution Load (Kg/m²)	Maximum Recommended Load (Kg/m²)
1	300	30	38.1 x 38.1	1.5	7,066	16,959
2	400	30	38.1 x 38.1	2.0	2,650	7,955
3	500	30	38.1 x 38.1	2.5	1,110	3,332
4	600	30	38.1 x 38.1	3.0	550	1,651
5	700	30	38.1 x 38.1	3.5	425	1,277
6	800	30	38.1 x 38.1	4.0	331	994
7	900	30	38.1 x 38.1	4.5	289	866
8	1000	30	38.1 x 38.1	5.0	240	721



Product offering – Pultruded Grating

Sr No	Series	Load Bar Spacing (mm)	Grating Depth (mm)	Support Bars Spacing (mm)
1	I-2530	30.48	25.4	152.4
2	I-2538	38.1	25.4	152.4
3	I-3830	30.48	38.1	152.4
4	I-3838	38.1	38.1	152.4
5	I-5050	50.8	50.8	152.4

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 are can be used for a variety of industrial and residential purposes.

Types of ladders

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

Step Ladder

Extension Ladder

Trestle Ladder

Platform Ladder

Shelf Ladder

Industrial Step Stand

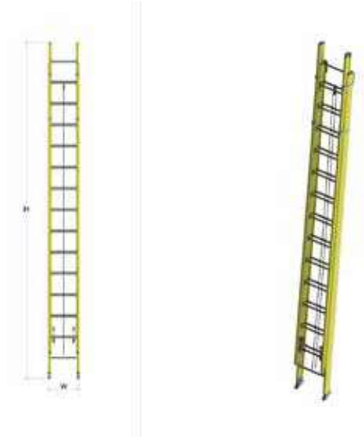
Mobile Platformladder

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

1. 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"

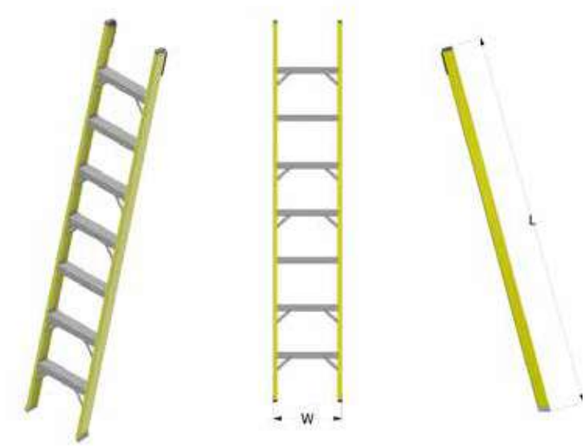


2. Platform Ladder

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"

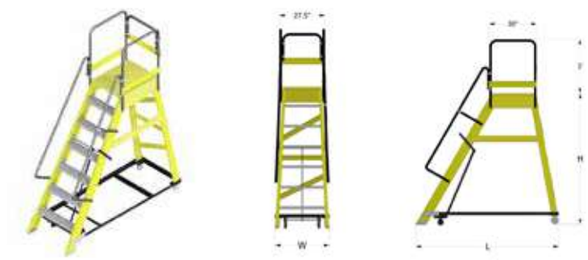
3. Shelf Ladder

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"



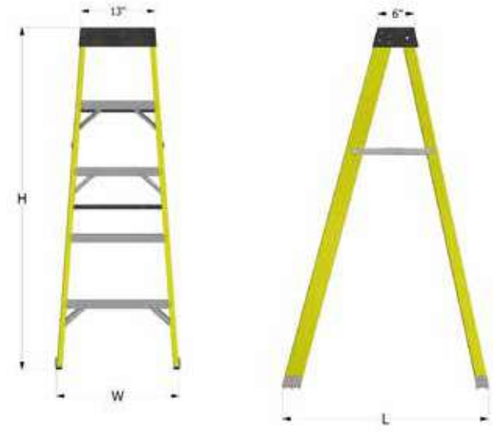
4. Mobile Platform Ladder

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



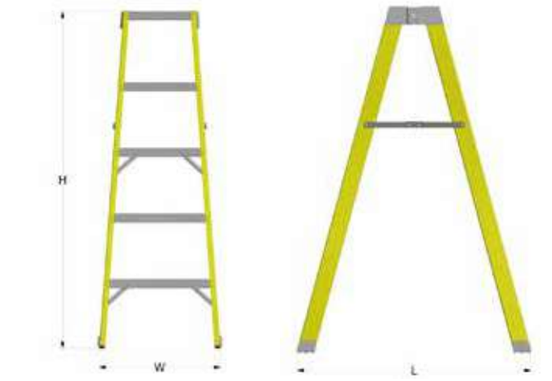
5. Step Ladder

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"



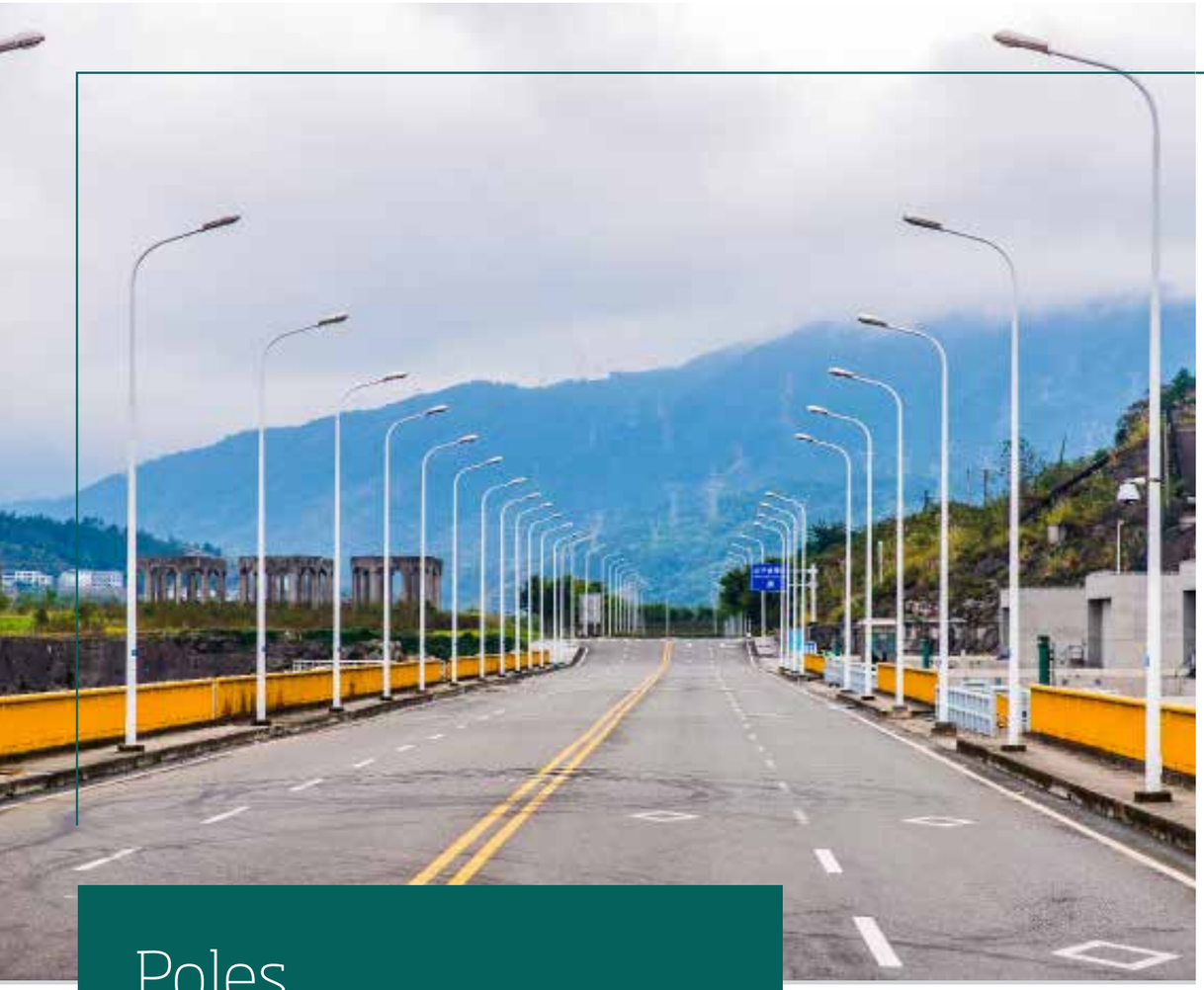
5. Trestle Ladder

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"



7. Industrial Step Stand

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



Poles

Arvind's FRP poles provides solutions to the perennial challenges of corrosion and high maintenance costs for conventional MS, GI or concrete poles. Being insulated, these poles don't require earthing. Furthermore, they are lighter and easier to install. These poles have a longer life span especially in corrosive environments. Arvind's poles are made through centrifugal casting which provides strong mechanical properties as well as a sharp, glossy finish which is ideal for

Arvind's FRP poles are available alongwith a variety of accessories such as junction boxes, arms, base brackets etc.

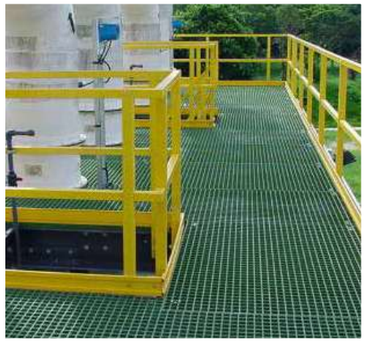
Data Table

Length of Pole (MM)	Top Diameter (MM)	Bottom Diameter (MM)
6000	76	176
7000	76	193
8000	76	210
9000	76	227
10000	76	243
11000	76	260
12000	76	277

Custom Solutions

Staircases

Walkways



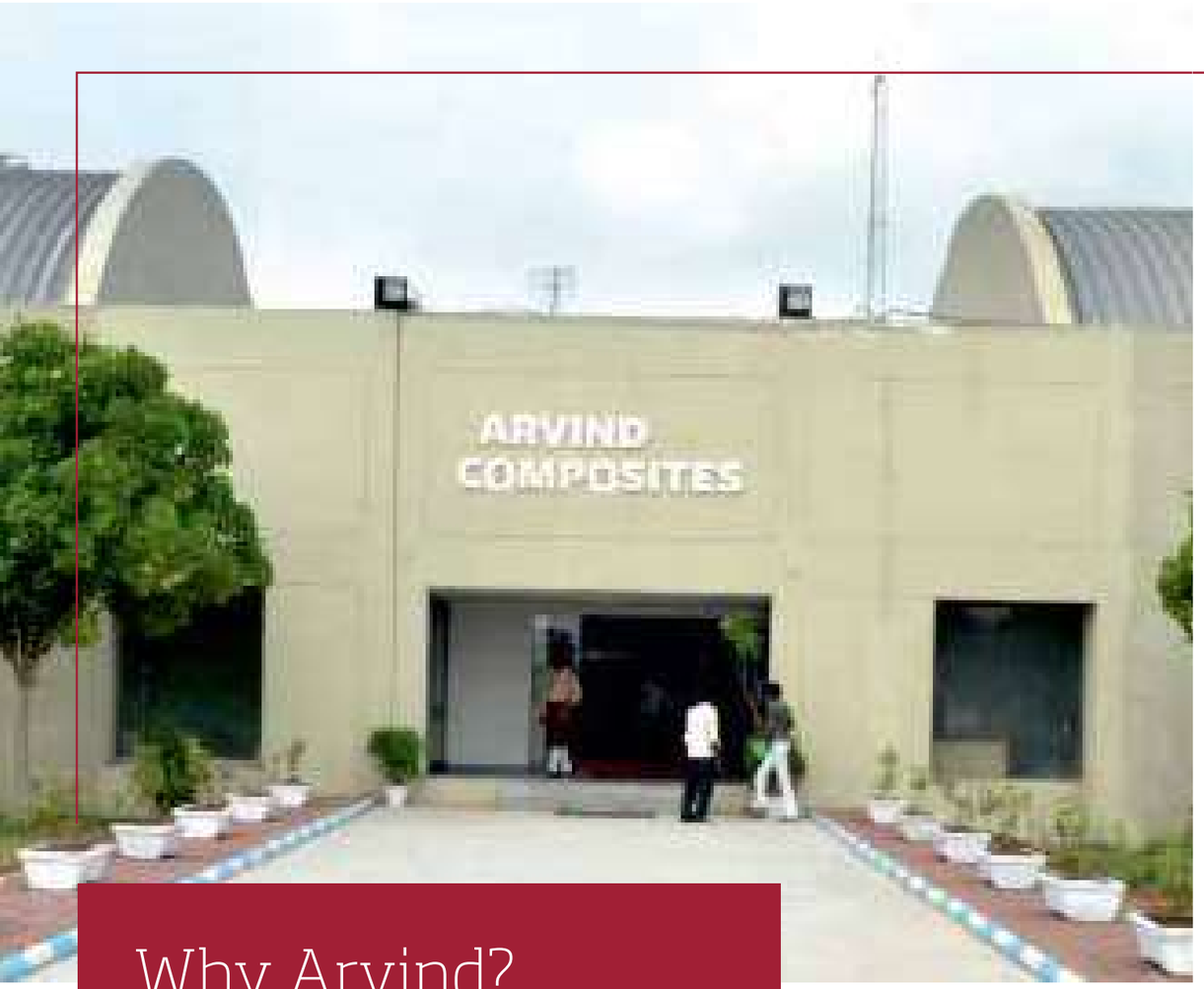
Platform with Handrails

Scaffolding

Fencing

Monkey ladders

Modular infrastructure



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