

Welcome and thank you for joining the Webinar

Composites Manufacturing: Filament Winding Process and its Applications in various sectors

Speaker: Mr Rahul Bandaru

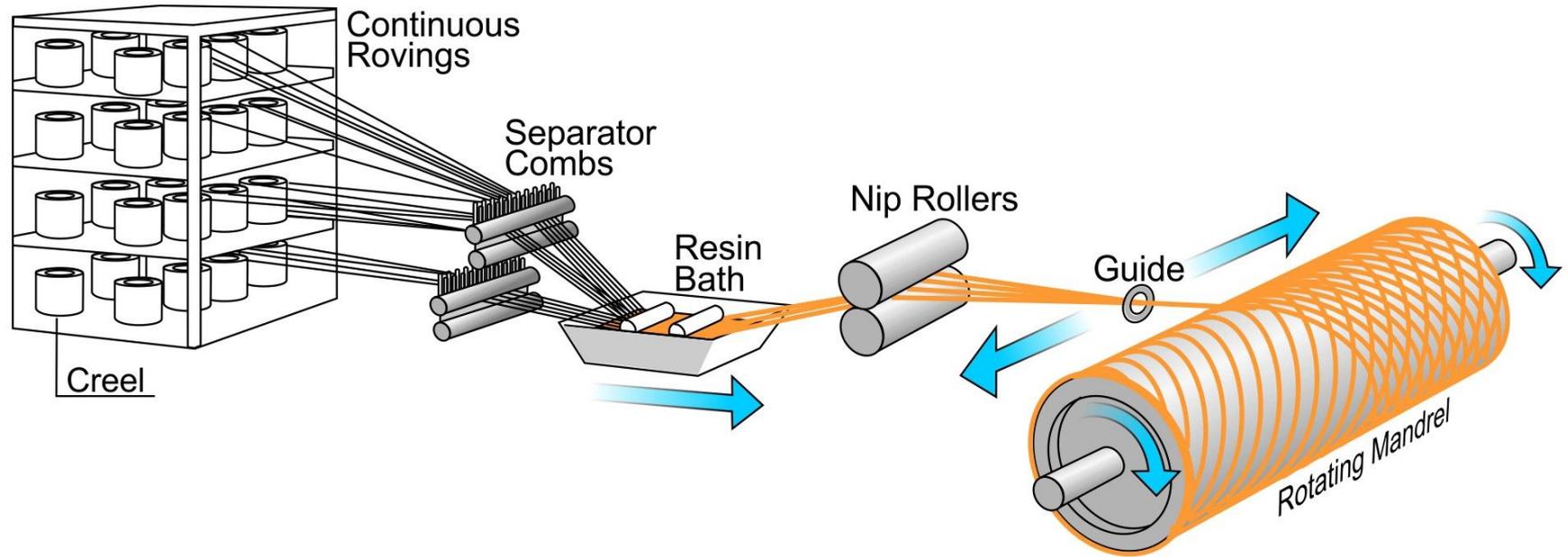
Director,

CNC Technics Pvt Ltd, Hyderabad

- **Kindly mute your Microphone and keep the Video in off mode**
- Keep your mobile in silent mode
- **Type your Questions in the chat box:** Type the question so that we can reply at the end of session . (If time does not permit it will be replied even after the webinar)
- **Questions and Answers Session:** At the End of the session, after the Speaker completes his presentation

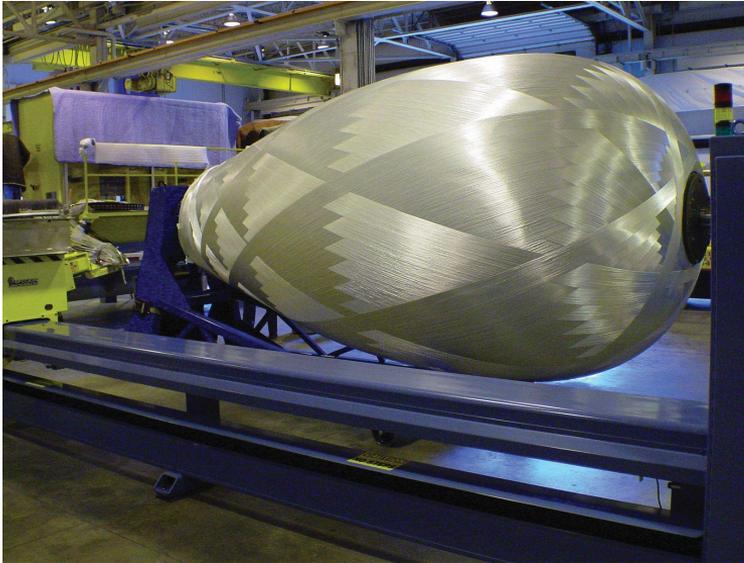


What is Filament winding



Types of filament winding

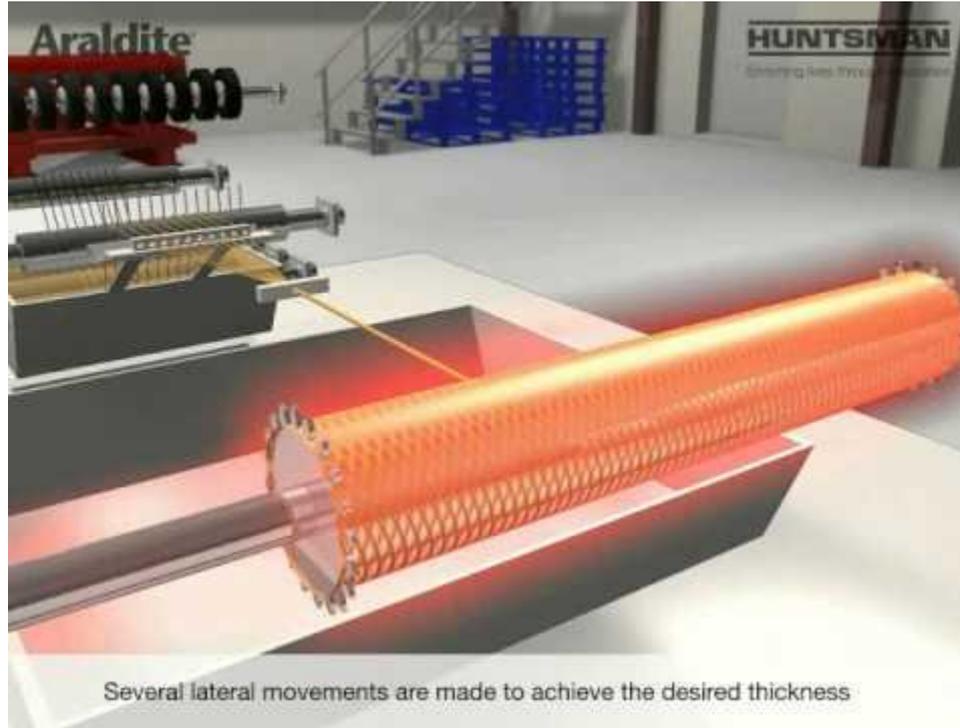
Discontinuous filament winding



Continuous filament winding



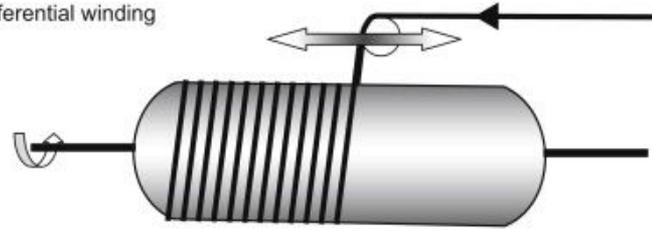
The Filament winding Process



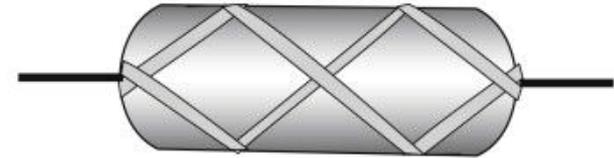
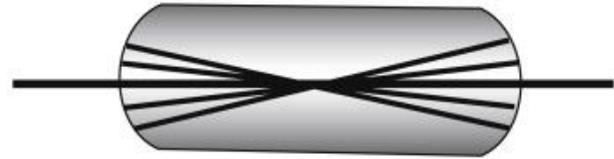
Video Credit: Huntsman

Types of winding

Circumferential winding



Helical winding



0° filament winding



Benefits of Filament Winding

Continuous Fiber over Entire Part

Large Components made economically

Winding Pattern flexibility, orient fibers in load direction

Easily Repeatable and scalable

High fiber Volume possible.



Applications

2 Axes winders (PIPES)

- Oil pipes
- High pressure pipes
- Water pipes
- Sewage pipes
- Rollers
- Pneumatic props for the mining industry
- Propeller shafts

4 Axes winders (VESSELS)

- Storage vessels
- CNG tanks
- Hydrogen Gas tanks
- Pneumatic brake reservoirs
- Portable water storage tanks
- Oxygen tanks
- Gas tanks
- Chemical tanks
- Underground petroleum tanks

OTHERS/ 2 to 6 axes winders

- Light pole
- Electrical products
- Space applications
- Space products
- Ra-domes
- Fittings
- Rocket motor casings
- Ducts
- Masts for sailboats
- Lightning arrestors
- Silos
- Transmission shafts

Oil and Gas pipes



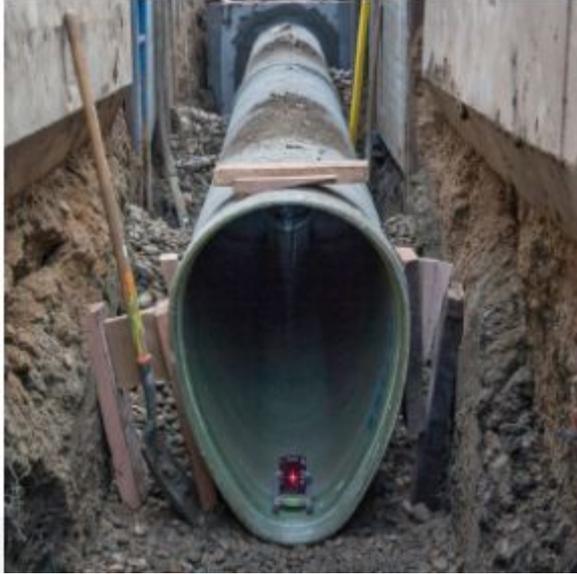
Pipes for Water Transportation



Chemical Pipes



Non Circular Pipes for Sewage



RO pressure Vessels for Water Filtration



LPG Cylinders



CNG Cylinders



Hydrogen Pressure Vessels



Underground Petroleum Tanks



Fuel Pipes for Passenger Planes



Structural components for Aircraft

Composite Tie Rods and Struts

CTG's tie rods and struts transfer load in several different conditions. Depending upon the application, these components are structurally designed to resist compression, tension, bending and torque loads. Different end fittings can be added including clevis, forks and rod end to attach to the aircraft structure.



Composite Insulators



Composite poles



Lighting



Communication



Distribution

Oil Fracking Industry

Plugs for the fracking industry

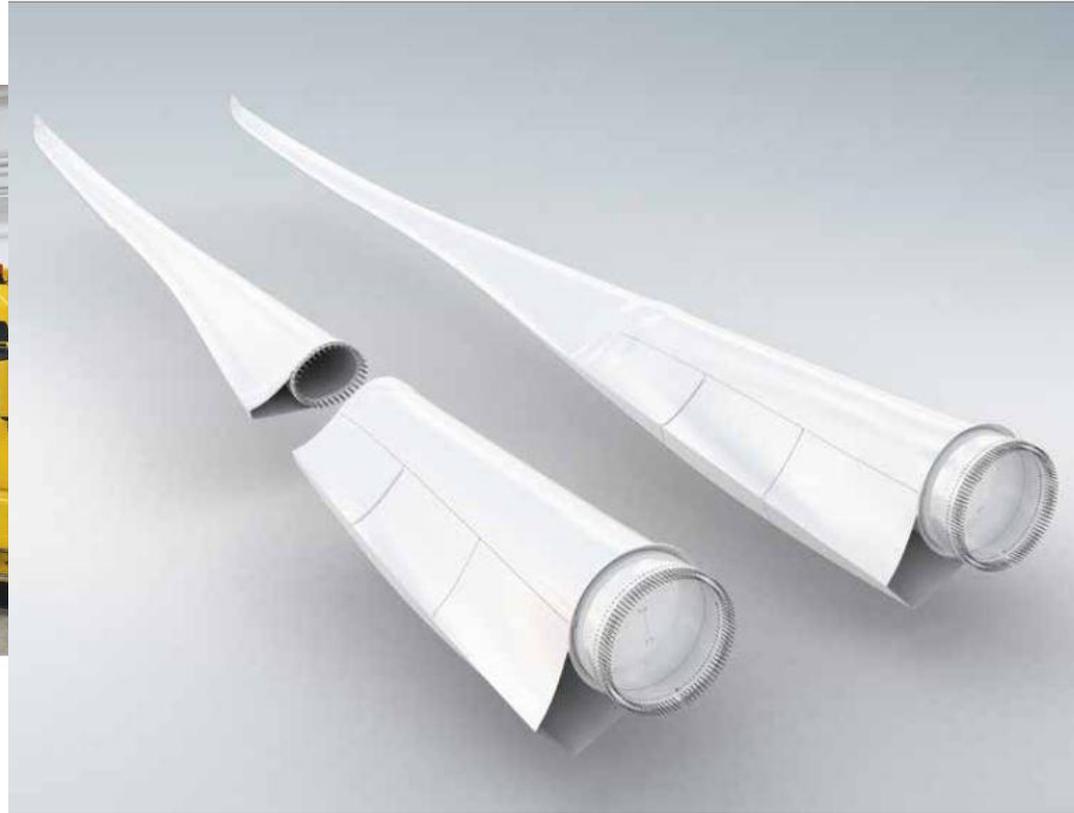


This composite Boss Hog frac plug, shown with frac ball, is made by Downhole Technology.

Wind Power



Transport optimised blade concept:



Sports goods



Large Storage Tanks



Truck Mounted Tanks



Space Related Applications

Rocket Motor Casings

Fuel Cylinders

Pipes





Thank You.