



SOLUTIONS WITH ENGINEERING PLASTICS

## INTRODUCTION

RAANK is one of the largest engineering and high performance plastic finished parts producer with a tradition of quality and remains committed to engineering excellence and customer service. Our record of successful applications with engineering plastics is a long one, and we are ready to put this expertise to work for you.

Our fleet of equipments includes Compression Moulding Presses, Ram Extruders, Screw Extruder, CNC Routers, Sintering Press, Turning Centers, Planners, Spindle Moulders, etc.

## UHMWPE

ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE is the densest, toughest thermoplastic available today. No other material, not even stainless steel, stands up as well to severe abrasion, corrosion and abusive impact. It's not just tough, with a molecular weight of over 4.2 million, has slippery, frictionless surface that virtually eliminates the gradual wear that occurs with metal parts.

### SHEETS .....

2000 x 1000 x 10-200mm

3000 x 1250 x 10-70mm

4000 x 2000 x 10-70mm

6000 x 2000 x 10-70mm

### RODS .....

DIA 25 - 200 x 1000mm

### PROFILES .....

Profiles are ram extruded as per the required shape like Z, L, T, C, U sections etc,

### STANDARD COLOR .....

White, Green, Black, Blue, Yellow

### ADVANTAGES .....

Food grade

High impact strength

No water absorption

Low coefficient of friction

Self-lubricating properties

Resists high dynamic stresses

High abrasion and wear resistance

Suitable for deep freeze applications

Resistant to corrosion and chemicals

Excellent resistance to stress cracks

### APPLICATIONS .....

Food | Mines | Pharma | Conveyor

Automobile | Material handling | Packaging industry

General engineering | Chain and cam guidance





## HDPE

HIGH DENSITY POLYETHYLENE offers excellent sliding properties and abrasion/wear resistance due to its low coefficient of friction. HDPE is a rough and impact resistant, even at low temperature, it is light weight, easy to weld.

### SHEETS .....

2000 x 1000 x 1-100mm

### RODS

DIA 25 - 250 x 1000mm

### STANDARD COLOR

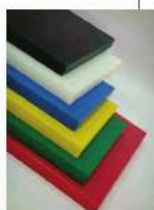
White, Green, Black, Multicolour

### APPLICATIONS .....

Wheels  
Gaskets  
Bushings  
Gear, Roller  
Sliding profiles  
Medical applications  
Parts for tank  
Lining for chute  
Pumps and valve parts

### ADVANTAGES .....

Food grade  
Low density  
High toughness  
High elongation  
Chemical resistant  
Low steam permeability  
High chemical resistance  
Low coefficient of friction  
Very low water absorption



## PP

POLYPROPYLENE is an economical material that offers a combination of outstanding physical, chemical, mechanical, thermal and electrical properties not found in any other thermoplastic. Compared to low or high density polyethylene, it has a lower Impact strength, but superior working temperature and tensile strength.

### SHEETS .....

2000 x 1000 x 1.100mm

### RODS .....

DIA 25 - 250 x 1000mm

### STANDARD COLOURS .....

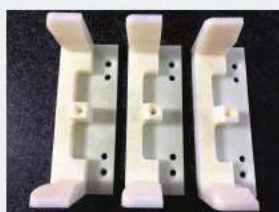
White, Grey, Black

### APPLICATIONS .....

Chemical resistant Tanks & Linings  
Electroplating barrels and Tanks  
Pumps | Gears | Valves  
Gaskets | Separator  
Pickling tanks | Clicking board  
Absorption duet

### ADVANTAGES .....

Light weight  
High heat resistance  
High tensile strength  
High surface strength  
Inert to most chemicals  
High chemical resistance  
Unique cracking resistance  
Good electrical properties



## CAST NYLON

CAST NYLON available in a variety of grades offers a combination of good mechanical properties, excellent bearing and wear characteristics, and the large size capabilities of the casting process. Its fatigue resistance, and light weight make ideal for metal replacement applications, such as bearings, gears, sheaves and sprockets. At 1/8th the weight, cast nylon is easier to handle than metals, have good wear resistance, high tensile strength and high modulus of elasticity.

### SHEETS .....

2500 x 1250 x 6 - 150mm

### STANDARD COLOURS .....

Natural, Black, Blue

### RODS .....

DIA 50 - 300 x 1000mm

### APPLICATIONS .....

Gear | Wipers | Bushes | Rollers  
Bearings | Cam disks | Sprocket  
Chain guide | Sliding parts  
Rope pulley | Conveyor stars

### ADVANTAGES .....

Low abrasion  
Reduces noise  
Good at dampening  
Good glide characters  
Good chemical stability  
Low coefficient of friction  
High strength and stiffness  
High heat deflection temperature  
High impact and notch impact strength  
Good sliding properties vs. Steel and POM



## POM

POLY OXY METHYLENE is a semi crystalline engineering plastic that is manufactured by the polymerization of formaldehyde is an excellent material for machining, has excellent dimensional stability to help intricate products remain stable and accurate.



### STANDARD COLOURS .....

White & Black

### RODS .....

Dia 5 - 200 x 1000mm

### SHEETS .....

2000 x 1000 x 5- 60mm  
2000 x 620 x 8 - 100mm  
1000 x 620 x 110 - 150mm

### APPLICATIONS .....

Seals | Wipers | Rollers | Bearings  
Housings | Sprockets | Insulators  
Chain guide | Sliding rails | Gear  
wheels | Dough elements

### ADVANTAGES .....

Good machinability  
Good UV-resistance  
Low creep tendency  
High thermal stability  
High abrasion resistance  
High dimensional stability  
Resistant to stress cracks  
Low absorption of moisture  
Good electrical properties  
High resistance to solvents  
Outstanding sliding properties



## PET

POLYESTER POLYETHYLENE TEREPHTHALATE (PET) is an excellent dimensionally stable engineering plastic with optimum electrical insulating properties. On exposure to heat, PET shows only low thermal expansion

### SHEETS .....

3000 x 620 x 8.60mm  
2000 x 620 x 70-100mm

### RODS .....

DIA 25 - 200 x 1000mm

### APPLICATIONS .....

Seals  
Carriers  
Bearings  
Insulators  
Connectors  
Housings  
Sliding rails  
Gear wheels  
Dough elements

### STANDARD COLOURS .....

White & Grey

### ADVANTAGES .....

Wear resistant  
Chemical resistant  
Good machinability  
High tensile strength  
Dimensionally stable  
High surface strength  
Low thermal expansion  
Good sliding properties  
Excellent creep behavior  
Good electrical properties  
Very low water absorption



## PEEK

POLYETHERETHERKETONE is a unique semi-crystalline, high temperature engineering thermoplastic that is an excellent material for a wide spectrum of applications where thermal, chemical, and combustion properties are critical to performance. Especially significant in this regard is PEEK's ability to retain its flexural and tensile properties at very high temperatures in excess of 250 °C [482 °F).



### SHEETS .....

3000 x 620 x 5-60mm

### RODS .....

DIA 10 200 x 1000mm

### STANDARD COLOURS ...

Natural & Black

### APPLICATIONS .....

Seals  
Gears  
Fittings  
Aviation  
Pump vanes  
Valve Seats  
Piston rings  
Wafer Carriers

### ADVANTAGES .....

Good weldability | Resistant to chemicals  
Excellent sliding properties | Excellent dimensional stability  
Resistant to high-energy radiation | High abrasion and wear resistant  
Good electrical insulator even at high voltages  
Low coefficient of linear thermal expansion  
Outstanding mechanical properties even at high temperatures  
Optimized balance of stiffness, tensile strength and Impact strength

## PU

POLYURETHANE is a unique material that affects the elasticity of rubber combined with toughness and durability of metal due to broad range of hardness it allows to replace rubber, plastic and metal. In many applications PU cut down-time and cost of parts. Urethanes have better abrasion and tear resistance than rubbers, while offering higher load bearing capacity

### SHEETS .....

1000 x 1000 x 3-50mm

### RODS .....

DIA 10 - 150 x 1000mm

Tubes & Bushes available

### WHEELS .....

Dia 50 - 500 x Width 10 - 300mm

Variety of Hub Materials :

Cast Iron, Cast Steel, Aluminium,

Mild Steel, SG Iron

### STANDARD COLOURS .....

Natural, Red, Yellow, Blue, Green

### APPLICATIONS .....

Seals | Gears | Rollers | Bellows

Roller covers | Cutting Surfaces

Sandblast curtains | Machinery moun

Metal forming pads

Sound Dampening pads

Chute and hopper liners

Prototype machined parts

### ADVANTAGES .....

Excellent Abrasion Resistance

Strong Adhesion with Metal Core

High Cut & Tear Resistance

Wide Temperature Stability

(-40° C to 80° C)

High Load-bearing Capacity

Avoids Damages to Floor

Low Rolling & Starting Resistance

Low Noise Level

Hydrolysis Resistance



## PTFE

PTFE can be used to make a variety of articles having a combination of mechanical, electrical, chemical, temperature and friction-resisting properties unmatched by articles made of any other material. PTFE usually fabricated by cold forming and sintering techniques. PTFE resins have a continuous service temperature of 260° C (500° F). PTFE provides exceptional chemical, electrical, mechanical and thermal properties for a multitude of applications. PTFE is almost totally unaffected by the chemicals



### SHEETS

1000 x 1000 x 1-100mm

### RODS

DIA 10 - 200 X 1000mm

Tubes & Bushes available

### STANDARD COLOURS

White

### APPLICATIONS .....

Seals | Tubes | Rolls | Pumps | Flanges | Housings | Insulators

Valve housings | Container linings

### ADVANTAGES

Very good UV resistance

Very good sliding properties

Outstanding electrical properties

High resistance to stress cracking

Suitable for use even at low temperatures

Exceptionally high resistance to chemicals



## POLYCARBONATE

POLY CARBONATE is an amorphous engineering thermoplastic with high transparency and toughness, making it ideal for one-time-use medical devices. PC has good strength and heat deformation resistance. It is easily machined, welded and bonded, and provides good electrical insulation. PC shapes are certified as meeting the requirements of USP Class VI. It is commonly used to make medical devices.

### SHEETS .....

3000 x 620 x 6 - 60mm  
2000 x 620 x 70 - 100mm

### RODS .....

DIA 6 - 200 x 1000mm

### STANDARD COLOURS .....

Transparent, Multicolour

### ADVANTAGES .....

Transparent  
Extremely high impact  
High dimensional stability  
High mechanical strength  
Good chemical resistance  
Good insulating properties  
High resistance to radiation  
High temperature resistance



### APPLICATIONS .....

Housings | Coil bodies | Caps and covers | Relay components  
All types of lights | For insulating parts | Medical consumer goods

## ACRYLIC

ACRYLIC distortion-free view enhances a product or message without distracting from it. Available in crystal clear, Acrylic has high mechanical and chemical resistance and is easy to work with.

### SHEETS .....

2400 x 1200 x 2-50mm

### RODS .....

DIA 10 - 150 X 1000mm

### STANDARD COLOURS .....

Clear, Opal Color, Opal White, Translucent,  
Transparent, Opeq Colours

### APPLICATIONS .....

Flood Windows | Interior Decoration | Signage Industries  
Machine Windows | Rear Projection Screens

### ADVANTAGES .....

Easier to bend  
Shatter resistant  
Great optical clarity  
Strong and resilient  
Good impact strength  
Extremely high molecular mass  
Outstanding weathering properties



## PVC

POLYVINYL CHLORIDE (PVC) is a flexible or rigid material that is chemically non reactive. PVC has a broad range of applications, from high volume construction related products to simple electric wire insulation and coatings. Rigid PVC is easily machined, heat formed, welded, and even solvent cemented. PVC can also be machined using standard metal working tools and finished to close tolerances and finishes without great difficulty.

### SHEETS .....

2000 x 1000 x 5 - 100mm

### RODS .....

DIA 10 mm - 150 x 1000mm

### STANDARD COLOURS .....

Grey, Black, Red, White

### APPLICATIONS .....

Ducting | Fume hoods  
Water Tubing | Pump & Valve  
Chemical Tank | Pharmaceutical  
Leisure Industry | Nautical industry

Petroleum industries  
Shoes and Footwear  
Automotive applications

### ADVANTAGES .....

High Rigidity  
High Strength  
High durability  
High Hardness  
Fire retardant  
Low Water Absorption  
Good Chemical Stability  
Good electrical insulator  
Highly resistant to degradation by UV



## HYLAM

HYLAM is a tough and versatile engineering material for electrical and mechanical use. It is light in weight, a good electrical insulator, and resistant to water and chemicals.



### SHEETS .....

1200 x 1200 x 1-100mm

### RODS .....

DIA 3-150 x 1000mm

### GRADES .....

Mechanical | Electrical

### APPLICATIONS .....

Gears | Shuttles | Pulleys | Automobile couplings  
Structural parts | Friction plates | Low voltage contact breaker

### APPLICATIONS .....

Dimensional accuracy  
Mechanical strength  
Heat resistance  
Low absorption of water

