

Material Forms

Bar Stock/Investment Castings / Sand Castings/Die Castings / Forgings /Extrusions / Plate /Tubing.Grain/Injection Molding/Printing Resin

Metal Options

All the metal materials can be done the post-processing finishes: Brushing, Sand blasting Silk screen, Polishing, Painting

No	Material	Description	Common Types	Applicable Finishes
1	Aluminium	High machinability and ductility, Good strength-to-weight ratio. Corrosion resistant, Non-magnetic, Chemical resistant.	Al5052, Al6061, Al6082, Al7075, Al5251, Al1050, Al6063, Al6063-T6, Al5083, Al6061-T6, Al6082, Al7075-T6, Al7050, Al2024-T3	Polishing/Mirror Polishing, Electroplating, Bead blasting, Painting(Matt and glossy), Bake Painting, Anodizing, Brushing, Powder Coating, Chrome Plating, Nickel Plating, Passivation.
2	Stainless Steel	High strength and hardness, Corrosion resistant, Non-magnetic, Chemical resistant. Heat resistant.	Stainless Steel 301, Stainless Steel 303, Stainless Steel 306, Stainless Steel 304, Stainless Steel 304L, Stainless Steel 316L, Stainless Steel 420, Stainless Steel 416, Stainless Steel 17/4, Stainless Steel 440C, Stainless Steel 2205 Duplex	Polishing/Mirror Polishing, Electropolished, Bead blasting, Brushing, Powder Coating, Painting, Chrome Plating, Nickel Plating, Passivation.
3	Carbon Steel	Good Machinability, Weldability, Toughness, Strength, Susceptible to corrosion, Less ductile, Heat-treated	Mild Steel 1018, Mild Steel 1045, Mild Steel A36, Soft Steel, Carbon Steel C45, EN8, EN16, EN24T, EN29, EN39	Polishing/Mirror Polishing, Electropolished, Bead blasting, Brushing, Powder Coating, Painting, Chrome Plating, Nickel Plating, Passivation, Heat-Treated
4	Alloy Steel	High strength and hardness, Good Toughness, Corrosion resistant, Hardenability, Heat-treated	Alloy Steel 4140 Alloy Steel 4340 Alloy Steel 1215	Polishing/Mirror Polishing, Electropolished, Bead blasting, Brushing, Powder Coating, Painting, Chrome Plating, Nickel Plating, Passivation, Heat-Treated
5	Tool Steel	Distinctive hardness, resistance to abrasion and deformation, and their ability to hold a cutting edge at elevated temperatures.	O series, A series and D series	Polishing/Mirror Polishing, Electropolished, Bead blasting, Brushing, Powder Coating, Painting, Chrome Plating, Nickel Plating, Passivation, Heat-Treated
6	Mold Steel	Used for plastic injection mold cavities and tooling and for die casting dies for zinc, good wear resistance and toughness at high temperature with good plasticity and excellent corrosion resistance.	S136, P20 Steel, 420C	Polishing/Mirror Polishing, Powder Coating, Painting, Heat-Treated
7	Brass	High machinability, Corrosion resistant, Non-magnetic	Brass C360, Brass CZ121, Brass CZ131, Brass H59, Brass H62	Electroplating (Nickel or Zinc), Painting, Polishing, Powder Coating
8	Copper	Excellent Conductivity and good corrosion resistance, Electrical Applications, Ductile, Less cutting force than most other metals of similar strengths.	Copper alloys	Electroplating (Nickel or Zinc), Painting, Polishing, Powder Coating,
9	Titanium	High Strength, Bio-compatible, Non-magnetic and a poor conductor of heat and electricity	Titanium alloys	Painting, Polishing, Powder Coating, Anodizing
10	Zinc	High Strength, Bio-compatible, Non-magnetic and a poor conductor of heat and electricity	Zinc Alloys	Painting, Polishing, Powder Coating, Anodizing
11	Cast Iron	Low melting point, good fluidity, castability, excellent machinability, resistance to deformation and wear resistance	Grey cast iron, White cast iron, Malleable cast iron, Ductile cast iron.	Electroplating, Painting, Polishing, Powder Coating, Heat-Treated
12	Magnesium	High-temperature creep and flammability, lightest structural metal with high strength to weight ratio.	Magnesium Alloy	Electroplating, Painting, Polishing, Powder Coating, Anodizing
13	Invar (FeNi36/64FeNi)	Low coefficient of thermal expansion, is used where high dimensional stability is required, such as precision instruments, clocks, seismic creep gauges, television shadow-mask frames, valves in engines and large aerospace molds.	Nickel-iron alloy	Electroplating, Painting, Polishing, Powder Coating
14	Inconel	Oxidation-corrosion-resistant, anti pressure and heat in environment, when heated to a thick, stable, passivating oxide layer protecting the surface.	Nickel-chromium-based superalloys.	Electroplating, Painting, Polishing, Powder Coating

Plastic Options				
All the plastic materials can be done the post-processing finishes:Deburring Silk screen, Polishing, Painting				
No	Material	Description	Usage	Applicable Finishes
1	ABS	Light weight, High stability, Common thermoplastic, impact resistant, easy to machine and do the assembly and split, and easy to adhesive.One of the most common used material,	Used in a wide range of fields of industries for prototypes.	Electroplating(Vacuum Aluminium Plating and Chrome plating), Bead blasting, polishng,
2	Derlin (Resin)	Light weight, Liquid condition for printing High stability, Common thermoplastic, impact resistant, easy to machine and do the assembly and split, and easy to adhesive.One of the most common used material,	Used in a wide range of fields of industries for prototypes in 3D printing areas like automotive, artcrwork and some functional parts	Electroplating(Vacuum Aluminium Plating and Chrome plating), Bead blasting, polishng,
3	PMMA(Acrylic)	Transparent and clear, good properties especilliayfor optical parts milling, more visible than PC. Poor chemical resistance, and can be brittle and vulnerable	Widely used in differemt kinds of areas, such as: Automotive lighting system parts, appliances, shatter panel, LCD screens, lens and other applications	Polishing/Mirror Polishing, Electroplating, Bead blasting, Painting, dyeing
4	PC(Polycabornate)	High thermal resistance, clear and weather resistance, toughness, more durable and strong than PMMA., But thick areas can have defects such as voids, bubbles, and sink	Applicable for automotive, aircraft, medical devices and security components, such as:CD, bezel, lens	Smoke Clear, Polishing, Electroplating, Bead blasting, polishng,
5	PEEK	Injection Molding Material High strength, thermal resistance, chemical resistance.	With excellent mechanical and thermal properties. Can be used to replace metal parts. Biocompatible Such as:bearings, valves, pumps, medical implants, ultra-	Bead blasting, Polishing, Painting
6	PP	Wear-resistant, flexible and high elongation, while it also has high chemical resistance.	Used for the manufacturing of fans, lids, packaging, integral hinges, living hinges, medical tubes.	Deburring, Polishing, Painting
7	POM	Similar properties to the metal parts, high strength and resistance, verstile material with good chemical and physic properties	Used in the electric and electronical compnents, automotive and mechanical partsIdeal for parts with high stiffness, low friction and very low water absorption.	Bead blasting, Polishing, Painting
8	Nylon(PA)	High elongation, Little weight but high resistance, Good specific strength,	Widely used in the automobile industry especially in the engine compartmentSuch as: machine screws, gears, gaskets, and other low- to medium-	Bead blasting, Polishing, Painting
9	PVC	The world's third-most widely produced synthetic plastic polymer, excellent mechanical properties, High accuracy & repeatability	Normally used in construction parts such as: pipes, food-covering sheets, canvas and	Bead blasting, Painting
10	PBT	Slightly lower strength and rigidity, slightly better impact resistance, and a slightly lower glass transition temperature.sensitive to hot water. PBT and PET need UV protection if used outdoors, and most grades of these polyesters are flammable.	Used for housings in electrical engineering and automotive construction as plug connectors, such as: showerheads or iron, keycaps	Bead blasting, Polishing, Painting
11	(PTFE)TEFLON	A thermoplastic polymer, Low friction, wear, and energy consumption of machinery	Graft material in surgical equipment with excellent thermal and chemical resistance and outstanding frictional and electrical properties.	Bead blasting, Polishing, Painting
12	HDPE	Hardness, Tensile Strength and Creep propertiesare better than LDPE. Good at abrasive resistance, electrical insulation, corrotion resistance.	HDPE has a wide variety of applications like: folding chairs and tables, pipes, container of milk or something else.	Bead blasting, Polishing, Painting
13	LDPE	LDPE is the lightest Polyethylene, good at tensile, electrical isulation, transparency and easy to be processed.	Usually used for food, medicine and daily chemical product package.	Bead blasting, Polishing, Painting

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