



## FDM Sls Rapid Prototyping Selecting The Optimal Method For Rapid Prototype 3D Printing Success roughness 126 $\mu$ m

### Our Product Introduction

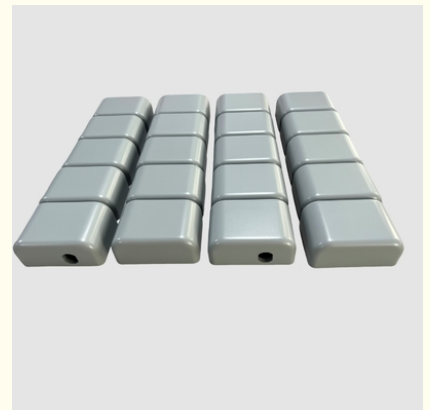
#### Basic Information

- Place of Origin: China Shenzhen
- Brand Name: Plastic ABS Similiar
- Certification: 3D Printing SLA SLS Printing
- Model Number: Polishing, Anodizing, Painting, Chrome Plating, Silkscreen
- Minimum Order Quantity: 1 piece
- Price: USD 30 piece
- Packaging Details: Carton, Plywood Box
- Delivery Time: 3 - 5 Days
- Payment Terms: T/T, Paypal
- Supply Ability: 1 piece per day



#### Product Specification

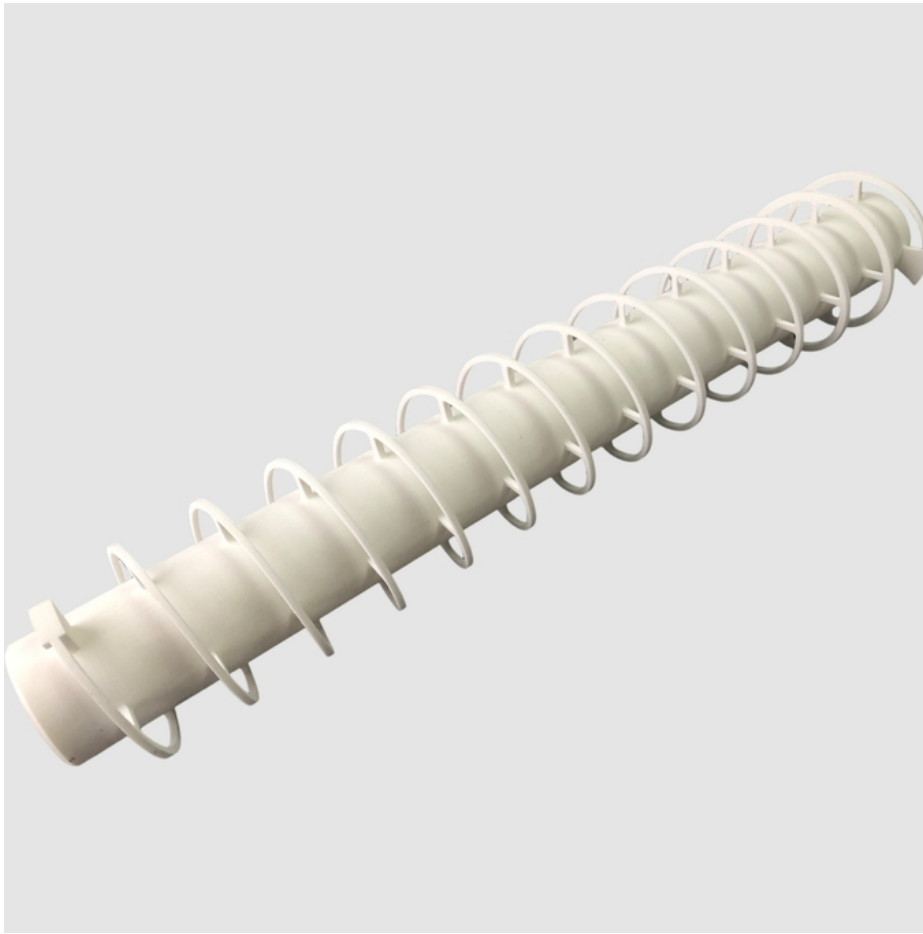
- Printing Technology: Fused Deposition Modeling (FDM)
- Material: Plastic ABS Similiar
- Surface Finish: Polish, Paint, Silkscreen
- Layer Resolution: 0.1-0.3 Mm
- Build Volume: Up To 300 X 300 X 400 Mm
- Supported File Formats: STL, OBJ, AMF
- Dimensions: 500 X 500 X 500 Mm
- Highlight: **FDM Rapid Prototype 3D printing, FDM sls rapid prototyping, roughness 126  $\mu$ m rapid prototyping**



## Product Description

### How to Choose the Right Rapid Prototyping Technique

Choosing the right prototyping method hinges on various factors such as budget limitations, complexity of the part, functionality of the prototype, and the overall project schedule. Although more advanced prototypes are expensive and take longer to create, they provide a closer approximation of the end product.



#### Consider the following questions when choosing a prototyping technique:

Will the prototype be a static display or fully operational?

Are there various interconnected components?

What is the desired surface texture and finish?

Which materials are to be utilized?

How vital are strength and durability?

To what extent should the prototype mirror the final product?

While it's impossible to address all factors here, these questions lay the groundwork for informed decision-making in rapid prototyping.



### **What is Rapid Prototyping?**

Rapid prototyping entails the creation of a physical model of a new product design to assess its viability prior to mass production. This step is vital in confirming that the final product adheres to the required specifications regarding its look, texture, and functionality. Developers employ rapid prototyping for various purposes, including functional testing, securing approvals, perfecting design iterations, backing crowdfunding initiatives, producing models for trade shows, and easing the shift towards low-volume production.



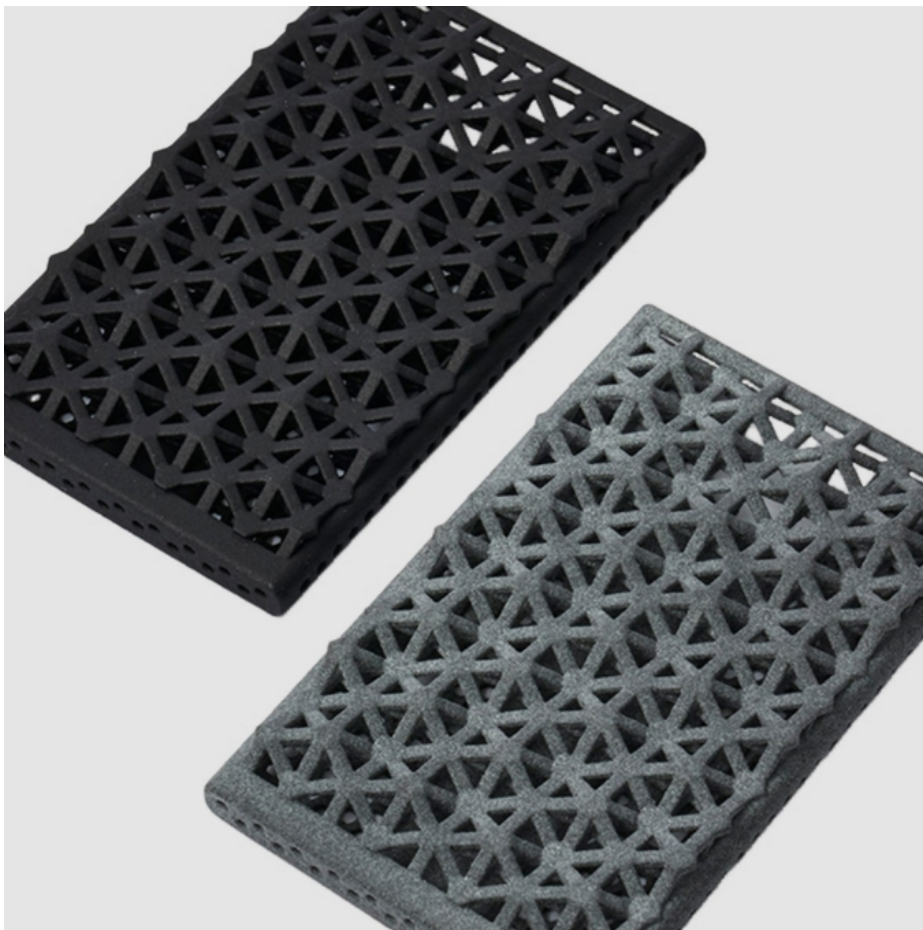
In the automotive industry, 3D printing is crucial for prototyping and manufacturing. It facilitates the swift creation of concept models, functional prototypes, and end-use components. Automotive firms utilize 3D printing for design testing and validation, shortening development times, and enhancing part efficiency.



The consumer electronics industry is characterized by rapid product development cycles. 3D printing facilitates the swift and economical manufacturing of electronic housings, tailor-made components, and working prototypes. This technology empowers businesses to refine designs, conduct form and fit tests, and accelerate the launch of new products.



In the aerospace and defense industry, the demand for lightweight and complex components has made 3D printing an invaluable asset. This technology facilitates the creation of detailed geometries, decreases component weight, and provides economical options for prototyping, tooling, and the small-scale production of specialized parts.



In the Medical and Healthcare Industry, 3D printing has been transformative, providing customized solutions specific to each patient. It enables the creation of detailed anatomical models, personalized surgical guides, prosthetics, and implants.

Additionally, 3D printing aids in the rapid prototyping of medical devices and the innovation of new healthcare solutions.














The industrial manufacturing industry reaps significant advantages from 3D printing across its various sectors, such as machinery, equipment, and tooling. This technology facilitates the creation of intricate parts, tailored jigs and fixtures, and the small-scale production of bespoke components. Additionally, 3D printing enhances swift design modifications and the refinement of manufacturing workflows.





Architecture and Design Industry: 3D printing is increasingly utilized in architecture and design for producing architectural models, prototypes, and intricate structures. It allows designers and architects to visualize their concepts more tangibly, communicate ideas effectively, and explore complex geometries.

Our Surface Finishing Services		
Barana Rapid has more than ten years of experience in surface treatment and excellent engineers, who are proficient in surface treatment of plastics, metals, and composite materials, and can turn your dream prototype or parts into reality.		
Picture	Technology	Description
	As Machined	Coming out of the machine after machining, our parts are cleaned of any sharp edges and burrs while retaining marks. Without any added material, the part had a surface roughness of 3.2 $\mu\text{m}$ (126 $\mu\text{in}$ ).
	Band Blasting	Band blasting cleans the surface of any impurities and peels coating through the propelling of blast media streams over the parts
	Anodizing	To increase surface hardness and dissipate heat, we use anodizing techniques to enhance the look of parts and blend well for painting and priming.
	Electroplating	Electroplating reduces metal cations in the electrolyte solution, producing a metallic coating on a metal surface. This process can be used for purposes of corrosion and wear resistance, as well as for decorative purposes.

	Polishing	Working on metal and hard plastics, our polishing uses highly efficient machinery to get our parts between Ra 0.8~Ra0.1 for a cleaner surface.
	Powder coating	We apply a thin layer of protective polymer with the corona discharge phenomenon to give our part a lasting finish that protects from impacts and prevents wearing down.
	Brushing	Our brushing technique uses abrasive belts over the material to create diverse patterns that match the parts' structure and color.
	Painting	Spray droplets can be dispersed uniformly or in fine amounts to cover a wide surface area and bring out greater color to the part.
	Black Anodized	Adding layers to metallic surfaces like steel, our black anodized technique improves appearance while maintaining durability.
	Alodine	We use chromate conversion coating or alodine to protect aluminum and other materials from corrosive elements, usually done before priming and painting parts.
	Laser Carving	Helpful in brand recognition or parts organization, we use laser carving that applies various printing methods during full-scale production to quickly embed barcodes, lettering and logos on the parts.

### Inspections and Review for Every Stage of Production

To ensure quality from start to finish, Barana Rapid provides the following inspection and review services:

Rigorous verification of incoming materials  
Detailed manufacturing design reviews for all provided quotations  
Contract review upon receipt of purchase orders  
Preliminary article and in-process inspections  
Extensive final inspections and testing, accompanied by required reports and certifications



Visual inspection



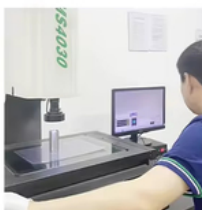
Touch test



Dimension inspection



High gauge



2D image measuring equipment



Hardness tester



Tensile tester



Salt-spray testing machine





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