# 3D printing material guide

www.tinkercad.com

## Plastic

### Nylon (Polyamide)
(also called White, strong & flexible / Durable plastic / White plastic)
- Strong and flexible plastic
- 1mm minimum wall thickness
- naturally white, but you can get it colored
- about 10 layers per 1mm
- made from powder
- Alumide = Polyamide + Aluminum
- Interlocking, moving parts possible (chain)

### ABS (Home printers)
(also called Durable gloss plastic)
- strong plastic like legos are
- made from spaghetti like filament
- many color options
- about 3 layers per 1mm
- 1mm minimum wall thickness

### Resin
(White-, Black-, Transparent detail / White detail resin / High detail-, Transparent-, Paintable Resin)
- Rigid and a bit delicate
- Liquid Photopolymer cured with UV light
- white, black & transparent most typical colors
- about 10 layers per 1mm
- 1mm minimum wall thickness

## Metals

## Others

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**Try first with cheaper material!**

**cm² = $**

- **Solid** - **Hollow**
- **Good** - **Better**

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**Details & Texture:**
- **Strong & Flexible**
- **Min. Wall Thickness**
- **Details & Texture**
- **Price**

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**variable strengths & flexibilities**
- **Min. Wall Thickness**
- **Details & Texture**
- **Price**

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<th>Strengths &amp; Flexibilities</th>
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<td>strong &amp; flexible</td>
<td>1mm</td>
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<tr>
<td>ABS</td>
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| Stainless steel | - Very strong material  
- Made with multiple steps or from powder directly  
- Coloring options like gold and bronze plating  
- about 6 layers per 1mm  
- 3mm minimum wall thickness | ![](image1) | ![](image2) | ![](image3) | ![](image4) |
| Gold / Silver | - Strong materials  
- made from wax and then casted  
- about 10 layers per 1mm  
- 0.5mm minimum wall thickness | ![](image5) | ![](image6) | ![](image7) | ![](image8) |
| Titanium     | - Strongest material  
- Direct metal laser sintering  
- about 30 layers per 1mm  
- 0.2mm minimum wall thickness | ![](image9) | ![](image10) | ![](image11) | ![](image12) |
| Ceramic      | - Rigid & Delicate  
- First ceramic is printed then surface glazed  
- naturally white  
- about 6 layers per 1mm  
- 3mm minimum wall thickness | ![](image13) | ![](image14) | ![](image15) | ![](image16) |
| Gypsum       | - Rigid & Delicate  
(also called Sandstone / Rainbow ceramics / Multicolor)  
- made from powder  
- naturally white, but you can get it with colors  
- about 10 layers per 1mm  
- 2mm minimum wall thickness  
- Interlocking, moving parts possible (chain) | ![](image17) | ![](image18) | ![](image19) | ![](image20) |