



# MATERIALS FOR 3D PRINTING

## **NYLON**



**DANISH  
TECHNOLOGICAL  
INSTITUTE**

# PA12 - PA2200

## White nylon



PA12 is the most widely used material for 3D printing with Selective Laser Sintering, as you can print fully functional parts with good mechanical and thermal properties. It is possible to provide nylon with a 3S surface treatment. This significantly reduces moisture absorption and a smoother surface is achieved. 3S surface treated nylon is approved as food contact material (FCM).

We print with Selective Laser Sintering (SLS). The technology prints in powder and uses a laser to sinter the powder layers together. 3D printing with SLS offers a great deal of design freedom, as the parts do not need support material.

The technology can produce parts that comply with ISO 2768-m 1; however, the tolerances depend significantly on the geometry of the part. At the Danish Technological Institute, our 3D printing production is also ISO 9001 certified.

MATERIAL PROPERTIES	
TENSILE STRENGTH [Rm]	48 MPa
YIELD STRENGTH [Rp0,2]	44 MPa
ELONGATION AT BREAK [A]	22 %
VICKERS HARDNESS [Shore D]	80,6
PART DENSITY	0,95 g/cm <sup>3</sup>

SURFACE TEXTURE	Raw	3S surface sealing
Average roughness [Ra]	10 ±3	1,2

### Technology:

- Select Laser Sintering

### Printer:

- EOS - P396
- 3D Systems - ProX 6100

### Build volume:

- EOS: 340 x 340 x 600 mm
- 3D: 381 x 330 x 460 mm

### Application:

- Industrial use

### Possible post-processing:

- Deburring
- Media blasting
- Colouring
- Lacquering
- 3S surface sealing

### Customization:

Contact us if you have specific requests for surface roughness and material properties.

### Design features:

- Minimum feature size 0,8 mm
- Minimum channel size Ø1,5 mm
- Minimum wall thickness 0,7 mm
- Support not necessary
- Hole for emptying powder Ø5 mm

### Examples of use

- Hygienic nozzles and manifolds for food applications
- Lightweight grippers for robotic handling
- Machine components

## Danish Technological Institute - Industrial 3D-printing

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