PROTOTYPE PROJECTS PROCESS GUIDE

Formiga P110 Laser Sintering System

- **High quality parts - Formiga quality**
- **PA 2200 Nylon**
- **Build layer available in 0.1 mm (Performance)**
- **Effective build volume - 200mm x 250mm x 330mm(Z)**

Material: PA 2200 (base PA12)

PA 2200 is a fine, whitish powder based on polyamide 12 with a well-balanced property profile that is ideal for a wide variety of applications. Laser-sintered parts made from PA 2200 possess excellent material properties including:

- high strength and stiffness
- good chemical resistance
- excellent long-term stability
- high selectivity and detail resolution
- bio compatible according to EN ISO 10993-1 and USP/level VI/121 °C
- approved for food contact in compliance with the EU Plastics Directive 2002/72/EC (exception: foodstuffs with high alcohol content)

Typical applications of PA2200 are fully functional, high quality plastic parts. Its excellent mechanical properties make the material an ideal substitute for common injection moulding plastics. Its biocompatibility allows its use in medical applications e.g. for prostheses, and its high abrasion resistance means it can be used for development of parts with movable components.

PA 2200 Balance 1.0 | PA12

Characteristics

- Process - Laser Sintering
- Delivery form - White
- Chemical Resistance - General Chemical Resistance
- Ecological valuation - US Pharmacopeia Class VI Approved

Build Parameters

- Performance 100 µm

PA 2200	PERFORMANCE	
Mechanical properties	Value	Unit
Tensile Modulus	1700	MPa
Tensile Strength	50	MPa
Strain at break	20	%
Charpy impact strength	53	kJ/m²
Charpy notched impact strength (+23°C)	4.8	kJ/m²
Flexural Modulus (23°C)	1500	MPa
Izod Impact notched (23°C)	4.4	kJ/m²
Shore D hardness (15s)	75	
Density (laser sintered)	930	kg/m³
Melting temperature (20°C/min)	76	°C
Vicat softening temperature (50°C/h 50N)	163	°C

The properties of parts manufactured using additive manufacturing technology (e.g. laser sintering, Stereolithography, Fused Deposition Modelling, 3D printing) are, due to their layer-by-layer production, to some extent direction dependent. This has to be considered when designing the part and defining the build orientation.