



FUSED DEPOSITION MODELING (FDM) MATERIALS

	BASIC MATERIALS			ENGINEERING MATERIALS							
	PLA	TOUGH PLA	PET(G)	ABS	ASA	PC-ABS	PC	PP	NYLON PA6/66	TPU 95A	PEEK
Short description	Mostly used for aesthetic applications	Improved version of PLA. Used for parts with an aesthetic and functional application. Good alternative to ABS.	Chemical resistant material with good mechanical properties	A basic engineering material	Developed as an alternative to ABS with improved chemical and UV resistance.	A blend of PC and ABS with better mechanical properties than ABS.	An excellent material for functional prototypes.	High chemical resistance, ideal for household applications	Technical material resistant to mechanical stress	Ideal for parts that need flexibility	Excellent for applications that need thermal, mechanical and chemical resistance. Biocompatibility is possible.
Surface finish	Gloss	Semi-matte	Gloss	Semi-matte	Semi-matte	Semi-matte	Gloss	Semi-matte	Gloss	Matte	Gloss
Transparent version	Available	N/A	Available	N/A	N/A	N/A	Available	N/A	N/A	N/A	N/A
Hardness	High	High	Average	Average	Average	High	Very high	Low	Average	Low	Average
Elasticity	Low	Low	Average	Average	Average	Average	Low	High	High	High	Low
Impact resistance	Low	Average	High	Average	Average	Very high	High	High	Very high	Very high	Very high
Tensile strenght	Average	Average	High	Average	Average	High	High	Very high	Very high	High with elastic deformation	Very high
Material shrinkage	Very low	Very low	Low	Average	Low	High	Very high	Very high	Very high	Average	High
Mechanical processing	Difficult	Average	Difficult	Easy	Easy	Easy	Easy	Difficult	Average	Difficult	Average
ESD-safe version	N/A	N/A	N/A	N/A	N/A	N/A	Available	N/A	N/A	N/A	N/A
Resistant to	Light wear and tear	Average wear and tear	Salts, some acids and alkalis	Average wear and tear	UV, weather	Temperature	Temperature, most solvents	Fats, organic solvents, non-oxidizing acids, alkalis	Organic compounds	Bending and compression	Temperatures up to 140°C, most chemical compounds
Susceptible to	Temperature	Temperture	Some organic solvents, UV	UV, organic solvents	Organic solvents	Some organic solvents, halides	Halides	Strong oxidizers, UV	Strong acids, oxidizers, humidity	Saturated and aromatic hydrocarbons, some organic solvents	N/A



STEREOLITHOGRAPHY (SLA) MATERIALS

PART 1: BASIC & ENGINEERING MATERIALS

	BASIC MATERIALS				ENGINEERING MATERIALS					
	CLEAR	WHITE	GREY	BLACK	GREY PRO	DURABLE	FLEXIBLE	RIGID	TOUGH	HIGH TEMPERATURE RESISTANT
Short description	Mostly used for aesthetic applications and static prototypes	Mostly used for aesthetic applications and static prototypes	Mostly used for aesthetic applications and static prototypes	Mostly used for aesthetic applications and visual prototyping	An all-purpose engineering material	Both stiff and flexible, it is perfect for prototyping polypropylene parts.	Ideal for parts that need flexibility	A glass-filled material	An excellent material for functional prototypes.	An excellent solution for parts that need to be temperature resistant.
Surface finish	Gloss	Semi-matte	Semi-matte	Semi-matte	Semi-matte	Glossy	Semi-matte	Semi-matte	Semi-matte	Semi-matte
Transparency	Transparent (optical possible)	Opaque	Opaque	Opaque	Opaque	Semi-translucent	Opaque	Opaque	Semi-translucent	Semi-translucent
Color	Clear	White	Grey	Black	Grey	White	Black	White	Turquoise blue	Light orange
Hardness	High	High	High	High	High	Average	Low	High	Average	High
Elasticity	Average	Average	Average	Low	Average	High	High	Low	Average	Low
Impact resistance	Low	Low	Low	Low	Average	High	High with elastic deformation	High	High	Low
Tensile strenght	Average	Average	Average	Low	Average	High	High	High	Average	High
Material shrinkage	Low	Low	Low	Low	Average	Low	Low	Low	Low	Low
Mechanical processing	Easy	Easy	Easy	Easy	Easy	Difficult	Difficult	Difficult	Average	Difficult
ESD-safe version	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Resistant to:	Light wear and tear	Light wear and tear	Light wear and tear	Light wear and tear	Average wear an tear	High impacts, deformation under load	Bending and compression	Impacts, deformation under load	High impacts	High impacts, Thermal expansion
Susctible to:	High impacts, acetone and mechanical stress	High impacts, acetone and mechanical stress	High impacts, acetone and mechanical stress	High impacts, acetone and mechanical stress	High impacts, acetone and continuous mechanical stress	Acetone and stong acid	UV, elevated temperatures	UV, high impacts	Continuous stress and strain, acetone	Impacts when heated



STEREOLITHOGRAPHY (SLA) MATERIALS

PART 2: JEWELRY, DENTAL & EXPERIMENTAL MATERIALS

	JEWELRY MATERIALS	DENTAL MATERIALS			EXPERIMENTAL MATERIALS
	CASTABLE WAX	LT CLEAR	MODEL	SURGICAL GUIDE	CERAMIC
Short description	A wax-filled photopolymer with excellent burn-out properties	Allows the production of Class IIa long-term biocompatible parts	Ideal for dental study models	A material that allows the production of Class 1 biocompatible parts	A ceramic-filled polymer that can be baked
Surface finish	Matte	Gloss	Semi-matte	Gloss	Matte
Transparency	Opaque	Transparent (optical possible)	Opaque	Transparent	Translucent
Color	Purple	Clear	Pink beige	Clear-pink	Ivory
Hardness	High	high	Average	Average	High
Elasticity	Low	Average	Average	Average	Low
Impact resistance	Low	High	High		Low
Tensile strenght	Low	High	Average		Low
Material shrinkage	Low	Low	Low	LOW	Very high, 17%
Mechanical processing	Easy	Average	Average	Average	Difficult
ESD-safe version	N/A	N/A	N/A	N/A	N/A
Resistant to	Very light wear and tear	N/A	N/A	N/A	High temperatures
Suscetible to	Impacts	N/A	N/A	N/A	Impacts