3D PRINTER MATERIALS

PLA

PLA is an environment-friendly material. **PLA 3D printer filament** is easy to print and the printed model has smooth surface. Compared with ABS filament, PLA filament has higher rigidity and strength similar to PC, and does not need to close the cavity; Our best PLA filament has low shrinkage rate, no warping, no cracking, and can print large size model.

Filament Properties Table	
3D PRINTING FILAMENT	PLA
Density(g/cm^3)	1.2
Heat Distortion Temp(°C,0.45MPa)	53
Melt Flow Index(g/10min)	3.5 (190°C/2.16kg)
Tensile Strength(MPa)	72
Elongation at Break(%)	11.8
Flexural Strength(MPa)	90
Flexural Modulus(MPa)	1915
IZOD Impact Strength(kJ/㎡)	5.4
Durability	4/10
Printability	9/10
Recommended printing parameters	
Extruder Temperature(°C)	190 – 230°C Recommended temperature：215°C
Bed temperature(°C)	45 – 60°C
Fan Speed	100%
Printing Speed	40 – 100mm/s
Heated Bed	Optional
Recommended Build Surfaces	Masking paper, PVP solid glue, PEI

PLA+

PLA+ filament is modified based on PLA material, easy to print. In addition, PLA plus improves the toughness and layer adherence.

PLA+ is an environment-friendly material, which is easy to print and has smooth surface. PLA+ filament has good strength, rigidity, toughness balance, strong impact resistance; So PLA plus is considered suitable for functional parts printing. PLA+ is approved by FDA, safer to use; **PLA pro** can be used for modeling, rapid prototyping.

Parameter Information	
3D Printer Filament	PLA+
Density(g/cm3)	1.23
Heat Distortion Temp(°C,0.45MPa)	53 5/10
Melt Flow Index(g/10min)	5（190°C/2.16kg）
Tensile Strength(MPa)	60 7/10
Elongation at Break(%)	20 2/10
Flexural Strength(MPa)	74 7/10
Flexural Modulus(MPa)	1973 3/10
IZOD Impact Strength(kJ/㎡)	6 2/10
Durability	4/10
Printability	9/10
Extruder Temperature(°C)	210 - 230°C Recommended Temperature215°C
Bed temperature(°C)	45 - 60°C
Fan Speed	100%
Printing Speed	40 - 100mm/s
Heated Bed	Optional
Recommended Build Surfaces	Masking Paper, PVP Solid Glue, PEI
Flexible	—
Elastic	—
Impact Resistant	√
Soft	—
Composite	—
UV Resistant	—
Water Resistant	—
Dissolvable	—
Heat Resistant	—
Chemically Resistant	—
Fatigue Resistant	—
Need Drying	—
Heated Bed Required	—
Print Suggestion	—

ABS

ABS filament is a material with low cost and good mechanical properties; ABS plastic has good toughness and impact resistance, which can print strong and durable parts.

ABS plastic has high thermal deformation temperature and can be used in some outdoor and high temperature applications.

ABS material has large shrinkage rate, so please pay attention to heat preservation when printing, and print it in printers with closed chamber.

Filament Properties Table	
3D PRINTING FILAMENT	ABS
Density(g/cm^3)	1.04
Heat Distortion Temp(°C,0.45MPa)	78
Melt Flow Index(g/10min)	12(220°C/10kg)
Tensile Strength(MPa)	43
Elongation at Break(%)	22
Flexural Strength(MPa)	66
Flexural Modulus(MPa)	1177
IZOD Impact Strength(kJ/㎡)	29
Durability	8/10
Printability	8/10
Recommended printing parameters	
Extruder Temperature(°C)	230 – 270°C Recommended temperature：240°C
Bed temperature(°C)	95 – 110°C
Fan Speed	0%
Printing Speed	40 – 100mm/s
Heated Bed	Required
Recommended Build Surfaces	High temperature tape, PVP solid glue
Feature	
Flexible	——
Elastic	——
Impact Resistant	√
Soft	——
Composite	——
UV Resistant	——
Water Resistant	——
Dissolvable	——
Heat Resistant	√
Chemically Resistant	——
Fatigue Resistant	——
Need drying	——
Heated Bed Required	√

ABS+

ABS+ 3D printer material based on the modification of ABS material. ABS+ filament has higher mechanical properties, lower odor and lower shrinkage rate than conventional ABS materials.
With high toughness and high impact resistance, **ABS+ 3D printer material**, can be used to print sturdy and durable parts. ABS plus is low VOC volatile content, low odor during printing, comfortable printing without pressure; ABS+ filament has low shrinkage, not easy to warp and crack during printing.

1. The shrinkage rate of ABS+ material is large, so you should pay attention to heat preservation when printing, and print in a printer with a closed chamber.
2. The cooling of ABS+ is slightly worse. You can turn on a fan to improve the printing effect, or reduce the drape angle structure in the model; or try to reduce the speed to print.

Parameter Information	
3D Printer Filament	ABS+
Density(g/cm3)	1.06
Heat Distortion Temp(°C,0.45MPa)	73 7/10
Melt Flow Index(g/10min)	15(220°C/10kg)
Tensile Strength(MPa)	40 4/10
Elongation at Break(%)	30 3/10
Flexural Strength(MPa)	68 7/10
Flexural Modulus(MPa)	1203 2/10
IZOD Impact Strength(kJ/m²)	42 8/10
Durability	8/10
Printability	8/10
Extruder Temperature(°C)	230 - 270°C Recommended Temperature 240°C
Bed temperature(°C)	95 - 110°C
Fan Speed	0%
Printing Speed	40 - 100mm/s
Heated Bed	Required
Recommended Build Surfaces	High Temperature Tape, PVP Solid Glue
Flexible	—
Elastic	—
Impact Resistant	√

TPU

TPU material has good flexibility with a hardness of 95A, easy to print, and can quickly print large, complex and accurate prototypes of elastomer parts. Excellent elasticity, printed products with TPU filament are not easy to deform.

TPU material has good flexibility, high tear resistance and wear resistance and cut resistance, sturdiness and durability; TPU filament has high hardness and good resilience, can be used for insoles and other applications.

Notes

1. It is recommended to dry the printing (55°C/＞4H) to achieve the best printing effect. It is recommended to use it with BOX cartridges when printing.

2. It is recommended to use a short-range two-wheel reduction extruder designed for flexibility, TPU materials are usually difficult to print on a remote extrusion machine. The remote extruder can try to print at a slower speed at 20mm/s or even slower.

3. The nozzle may have impurities after printing for a long time. It is recommended to use it with the cleaning filament. If necessary, replace the nozzle and throat with a new one.

Parameter Information	
3D Printer Filament	eTPU-95A
Density(g/cm3)	1.21
Heat Distortion Temp(°C,0.45MPa)	/
Melt Flow Index(g/10min)	1.2(190°C/2.16kg)
Tensile Strength(MPa)	35 3/10
Elongation at Break(%)	≥800 10/10
Flexural Strength(MPa)	/
Flexural Modulus(MPa)	/
IZOD Impact Strength(kJ/㎡)	/
Durability	9/10
Printability	6/10
Extruder Temperature(°C)	220 - 250°C Recommended Temperature240°C
Bed temperature(°C)	45 - 60°C
Fan Speed	100%
Printing Speed	20 - 50mm/s
Heated Bed	Optional
Recommended Build Surfaces	Masking Paper, PVP Solid Glue, PEI

Flexible	√
Elastic	√
Impact Resistant	√
Soft	√
Composite	—
UV Resistant	—
Water Resistant	—
Dissolvable	—
Heat Resistant	—
Chemically Resistant	—
Fatigue Resistant	√
Need Drying	—
Heated Bed Required	—
Print Suggestion	Drying at 55°C/>4h, short-range extruder, slow printing

PETG

PETG filament is a high cost performance 3D Printer material with water resistance, chemical resistance and high toughness.
PETG material is tougher than ABS; The product printed with petg filament has translucent and smooth surface. It's easy to print like PLA without temperature chamber.

NOTE:

1. Turn on the Z seam alignment . Turn off the Z-axis lifting with drawing.
2. Slower the printing speed.

Parameter Information	
3D Printer Filament	PETG
Density(g/cm3)	1.27
Heat Distortion Temp(°C,0.45MPa)	64 6/10
Melt Flow Index(g/10min)	20（250°C/2.16kg)
Tensile Strength(MPa)	52.2 6/10
Elongation at Break(%)	83 8/10
Flexural Strength(MPa)	58.1 6/10
Flexural Modulus(MPa)	1073 2/10
IZOD Impact Strength(kJ/㎡)	4.7 1/10
Durability	8/10
Printability	9/10
Extruder Temperature(°C)	230 - 250°C Recommended Temperature240°C
Bed temperature(°C)	75 - 90°C
Fan Speed	100%
Printing Speed	40 - 100mm/s
Heated Bed	Required
Recommended Build Surfaces	Masking Paper, PVP Solid Glue, PEI

Flexible	—
Elastic	—
Impact Resistant	—
Soft	—
Composite	—
UV Resistant	—
Water Resistant	√
Dissolvable	—
Heat Resistant	—
Chemically Resistant	√
Fatigue Resistant	√
Need Drying	—
Heated Bed Required	√
Print Suggestion	Drying at 65°C/>3h

PC(Polycarbonate)

3D printing materials with excellent mechanical properties, high toughness and impact resistance, stable and durable; temperature resistance, heat distortion temperature up to 80 ℃.

3D printing materials with excellent mechanical properties, high toughness and impact resistance, stable and durable; temperature resistance, heat distortion temperature up to 80 ℃.

1. It’s better to dry the PC filament before printing(70℃/>6H).the BOX is suggested to use when printing the PC filament.
2. The shrinkage of PC material is high. So please use printer which has chamber to print the PC filament.

Filament Properties Table	
3D PRINTING FILAMENT	ePC
Density(g/cm^3)	1.12
Heat Distortion Temp(°C,0.45MPa)	80
Melt Flow Index(g/10min)	19.5(300°C/1.2kg)
Tensile Strength(MPa)	54.88
Elongation at Break(%)	150.24
Flexural Strength(MPa)	63.41
Flexural Modulus(MPa)	1073
IZOD Impact Strength(kJ/m^2)	13.2
Durability	10/10
Printability	6/10
Recommended printing parameters	
Extruder Temperature(°C)	240 – 270°C Recommended temperature：260°C
Bed temperature(°C)	80 – 120°C
Fan Speed	0%
Printing Speed	20 – 50mm/s
Heated Bed	Required
Recommended Build Surfaces	PVP solid glue, PEI

Feature	
Flexible	——
Elastic	——
Impact Resistant	√
Soft	——
Composite	——
UV Resistant	——
Water Resistant	——
Dissolvable	——
Heat Resistant	√
Chemically Resistant	——
Fatigue Resistant	√
Need drying	√
Heated Bed Required	√
Print recommend	Drying at 70°C/>6h

PEEK-Industrial

Special plastic materials with excellent mechanical and thermal properties; high strength, high toughness, impact resistance; self-lubricating and wear-resistant properties, printable mechanical gears; flame retardant; resistant to corrosion by most chemical reagents and solvents; high temperature resistance Performance, the heat distortion temperature is as high as 205℃, and it can be used for heat-resistant parts.

Special plastic materials with excellent mechanical and thermal properties; high strength, high toughness, impact resistance; self-lubricating and wear-resistant properties, printable mechanical gears; flame retardant; resistant to corrosion by most chemical reagents and solvents; high temperature resistance Performance, the heat distortion temperature is as high as 205℃, and it can be used for heat-resistant parts.

Print recommend: Drying at 80℃/>8h, try to increase the constant temperature chamber and the bottom plate temperature, and strictly adjust the level before printing

NOTE:

1. It’s better to dry the PEEK filament before printing(70℃/>6H).the BOX is suggested to use when printing the PEEK filament.
2. The shrinkage of PEEK-Industrial material is high. So please use printer which has chamber to print the PEEK-Industrial filament.
3. PEEK-Industrial is prone to warping when printing. Please increase the chamber temperature and plate temperature ; choose a bottom plate with high flatness and high temperature resistance; Leveling is required before printing.
4. Uneven crystallization of PEEK-Industrial material may occur during the printing process. Try to increase the chamber temperature and reduce the cooling speed of the PEEK material; if necessary, an oven is required for post-annealing. Annealing after printing can improve mechanical performance. Put it in the oven 150 ℃/1h→200℃/1h→150℃/0.5h.

Filament Properties Table

3D PRINTING FILAMENT	ePEEK-Industrial
Density(g/cm^3)	1.29
Heat Distortion Temp(°C,0.45MPa)	/
Melt Flow Index(g/10min)	/
Tensile Strength(MPa)	100 10/10
Elongation at Break(%)	40 4/10
Flexural Strength(MPa)	170 10/10
Flexural Modulus(MPa)	4200 7/10
IZOD Impact Strength(kJ/㎡)	6.5 1/10
Durability	10/10
Printability	6/10

Recommended printing parameters

Extruder Temperature(°C)	380-440°C Recommended temperature420°C
Bed temperature(°C)	130-150°C
Fan Speed	0-40%
Printing Speed	20-40mm/s
Heated Bed	Required
Recommended Build Surfaces	PVP solid glue, high temperature glue

Feature	
Flexible	——
Elastic	——
Impact Resistant	√
Soft	——
Composite	——
UV Resistant	√
Water Resistant	√
Dissolvable	——
Heat Resistant	√
Chemically Resistant	√
Fatigue Resistant	√
Need drying	√
Heated Bed Required	√

PA

Development based on nylon 6/66 copolymer; Self-lubricating wear resistance makes it suitable for printing gears; High toughness and impact resistance, with an elongation at break of up to 175%, which can print strong and durable parts with high fracture resistance; Low shrinkage, not easy to warp and crack when printing.

Development based on nylon 6/66 copolymer; Self-lubricating wear resistance makes it suitable for printing gears; High toughness and impact resistance, with an elongation at break of up to 175%,

which can print strong and durable parts with high fracture resistance; Low shrinkage, not easy to warp and crack when printing.

Drying (70℃/> 12 h) before printing to achieve the best printing effect, it is recommended to use with BOX when printing.

Filament Properties Table	
3D PRINTING FILAMENT	ePA
Density(g/cm^3)	1.12
Heat Distortion Temp(°C,0.45MPa)	50
Melt Flow Index(g/10min)	12.3(230°C/2.16kg)
Tensile Strength(MPa)	52.45
Elongation at Break(%)	175.32
Flexural Strength(MPa)	58
Flexural Modulus(MPa)	1370
IZOD Impact Strength(kJ/㎡)	18.4
Durability	10/10
Printability	8/10
Recommended printing parameters	
Extruder Temperature(°C)	250 – 290°C Recommended temperature：265°C
Bed temperature(°C)	70 – 90°C
Fan Speed	0%
Printing Speed	40 – 100mm/s
Heated Bed	Required
Recommended Build Surfaces	Solid glue, PEI

Feature	
Flexible	√
Elastic	——
Impact Resistant	√
Soft	——
Composite	——
UV Resistant	——
Water Resistant	——
Dissolvable	——
Heat Resistant	√
Chemically Resistant	——
Fatigue Resistant	√
Need drying	√
Heated Bed Required	√
Print recommend	Drying at 70°C/>12h

HIPS

Hips, which completely soluble in limonene, frequently used as **3D printing support material**. Dissolvable filament had no residue on the surface of the model after dissolution, and the contact surface is smooth and flat; Hips filament's printing performance is similar to ABS;

This dissolvable filament can be used as a 3D printing support material when printing such as ABS, PETG, etc. extremely complex shapes or shapes with partially closed cavities; **Hips filament** is suitable for multi-nozzle printers.

1. HIPS has a large shrinkage rate, so you should pay attention to heat preservation when printing, and print in a printer with a closed chamber.
2. It is recommended to set the distance between the support and the model to 0, the first contact layer to slow down and turn off the blowing fan to improve the bonding strength with the main material.

Filament Properties Table	
3D PRINTING FILAMENT	HIPS
Density(g/cm^3)	1.05
Heat Distortion Temp(°C,0.45MPa)	80
Melt Flow Index(g/10min)	3(200°C/5kg)
Tensile Strength(MPa)	27
Elongation at Break(%)	55
Flexural Strength(MPa)	39
Flexural Modulus(MPa)	2280
IZOD Impact Strength(kJ/㎡)	11
Durability	7/10
Printability	6/10
Recommended printing parameters	
Extruder Temperature(°C)	230 – 270°C Recommended temperature：250°C
Bed temperature(°C)	100 – 115°C
Fan Speed	0%
Printing Speed	40 – 100mm/s
Heated Bed	Required
Recommended Build Surfaces	Glass plate, PVP solid glue, high temperature tape

Feature	
Flexible	——
Elastic	——
Impact Resistant	√
Soft	——
Composite	——
UV Resistant	——
Water Resistant	——
Dissolvable	√
Heat Resistant	√
Chemically Resistant	——
Fatigue Resistant	——
Need drying	——
Heated Bed Required	√
Print recommend	Minimize the overhang angle structure in the model

4D-1

Heat-induced shape memory material is modified based on PLA material; it can be deformed by force in hot water, and can be fixed and deformed at room temperature and can be stored for a long time. When placed in hot water again, the parts can return to the original shape.

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The 4D printing material has a low softening temperature. When printing the 4D filament, please pay attention to the extruder. If the temp is too high, it may cause the material to soften and block the nozzle.

Filament Properties Table	
3D PRINTING FILAMENT	e4D-1
Density(g/cm^3)	1.23
Heat Distortion Temp(°C,0.45MPa)	/
Melt Flow Index(g/10min)	5.8 (200°C/2.16kg)
Tensile Strength(MPa)	48.89
Elongation at Break(%)	168.83
Flexural Strength(MPa)	49.45
Flexural Modulus(MPa)	1302.4
IZOD Impact Strength(kJ/㎡)	7.5
Durability	4/10
Printability	9/10
Recommended printing parameters	
Extruder Temperature(°C)	200 – 230°C Recommended temperature：210°C
Bed temperature(°C)	45 – 60°C
Fan Speed	100%
Printing Speed	40 - 50mm/s
Heated Bed	Optional
Recommended Build Surfaces	Masking paper, PVP solid glue, PEI

ASA

The characteristics of asa filament are similar to abs filament, but it is more resistant to ultraviolet rays and harsh weather conditions. Besides, **asa 3d printer filament** has strong toughness, strong rigidity, and high impact resistance;

The excellent weather resistance and mechanical properties make asa filament more resistant to the effects of environmental aging. The asa 3d printer filament is widely used in outdoor applications.

The shrinkage of ASA material is high. So please use printer which has chamber to print the ASA filament.

Filament Properties Table	
3D PRINTING FILAMENT	eASA
Density(g/cm^3)	1
Heat Distortion Temp(°C,0.45MPa)	88
Melt Flow Index(g/10min)	10-15(220°C/10kg)
Tensile Strength(MPa)	50
Elongation at Break(%)	30
Flexural Strength(MPa)	35
Flexural Modulus(MPa)	4300
IZOD Impact Strength(kJ/㎡)	19
Durability	10/10
Printability	7/10
Recommended printing parameters	
Extruder Temperature(°C)	240 – 270°C Recommended temperature 240°C
Bed temperature(°C)	90 – 110°C
Fan Speed	0%
Printing Speed	40 – 100mm/s
Heated Bed	Required
Recommended Build Surfaces	PVP solid glue, PEI

Feature	
Flexible	——
Elastic	——
Impact Resistant	√
Soft	——
Composite	——
UV Resistant	√
Water Resistant	——
Dissolvable	——
Heat Resistant	——
Chemically Resistant	——
Fatigue Resistant	——
Need drying	——
Heated Bed Required	√

Print recommend: Print in a closed box to minimize the overhang angle structure in the model

TPE-83A

Flexible TPE printing consumables with hardness of 83A are sturdy and durable; Printed models are softer than TPU-95A and Flex, with delicate and soft hand feeling, also low surface friction.

NOTE :

1. it is recommended to dry the filaments (55℃/> 4h) before printing to achieve the best printing effect, and it would be better to use together with BOX when printing.
2. It is recommended to use a short-range double-wheel deceleration extruder designed for flexibility, and TPE materials cannot be printed by a remote extruder.
3. After a long printing time, impurities may remain in the nozzle, so it is recommended to use it with cleaning filament. If necessary, please replace the nozzle and throat with new ones.

Filament Properties Table

3D PRINTING FILAMENT	eLastic(TPE-83A)
Density(g/cm^3)	1.14
Heat Distortion Temp(°C,0.45MPa)	/
Melt Flow Index(g/10min)	/
Tensile Strength(MPa)	32
Elongation at Break(%)	420
Flexural Strength(MPa)	/
Flexural Modulus(MPa)	/
IZOD Impact Strength(kJ/㎡)	/
Durability	9/10
Printability	6/10

Recommended printing parameters

Extruder Temperature(°C)	220 – 250°C Recommended temperature：240°C
Bed temperature(°C)	45 – 60°C
Fan Speed	100%
Printing Speed	20 – 50mm/s
Heated Bed	Optional
Recommended Build Surfaces	Masking paper, PVP solid glue, PEI

Feature

Flexible	√
Elastic	√
Impact Resistant	√
Soft	√
Composite	——
UV Resistant	——
Water Resistant	——
Dissolvable	——
Heat Resistant	——
Chemically Resistant	——
Fatigue Resistant	√
Need drying	——
Heated Bed Required	——
Print recommend	Drying at 55°C/>4h, short-range extruder, slow printing

PVA

PVA is a water-soluble material that is often used as a support material with no need of adding any chemical and special treating. Leave the part in a warm water bath dissolve faster. After dissolution, there is no residue on the model surface with smoothly effect; it can be worked with PLA, TPU, PA(nylon) and other consumables materials to print extremely complex shapes or support materials with a partially closed cavity model. It’s also a good choice to work for multi-nozzle printers.

1. Suggest to dry the material before printing (45℃/＞10H) to get perfect printing effect. It is recommended to work with BOX(3D filament dryer) in printing.
2. It is recommended to set the distance between the support and the model to 0, Slow down and turn off the fan for the first layer to bond well with the main material.

Filament Properties Table	
3D PRINTING FILAMENT	PVA
Density(g/cm^3)	1.25
Heat Distortion Temp(°C,0.45MPa)	/
Melt Flow Index(g/10min)	/
Tensile Strength(MPa)	22
Elongation at Break(%)	360
Flexural Strength(MPa)	/
Flexural Modulus(MPa)	/
IZOD Impact Strength(kJ/㎡)	/
Durability	7/10
Printability	5/10
Recommended printing parameters	
Extruder Temperature(°C)	180 – 230°C Recommended temperature：190°C
Bed temperature(°C)	45 – 60°C
Fan Speed	100%
Printing Speed	20 – 50mm/s
Heated Bed	Required
Recommended Build Surfaces	Masking paper, PEI

Feature	
Flexible	√
Elastic	——
Impact Resistant	——
Soft	√
Composite	——
UV Resistant	——
Water Resistant	——
Dissolvable	√
Heat Resistant	——
Chemically Resistant	——
Fatigue Resistant	√
Need drying	√
Heated Bed Required	√
Print recommend	Drying at 45°C/>10h, Short-range extruder, slow printing

Inquiries

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Quick Prototyping

Prototyping with 3D printing revolutionizes the product development process by enabling rapid iteration, cost-effective production of prototypes, enhanced design flexibility, and accelerated time-to-market, providing businesses with a valuable tool for innovation and validation.

Prototypes Development

Prototype development with 3D printing streamlines the product design cycle by offering quick and cost-effective production of functional prototypes. It enables designers to test and refine their ideas, explore multiple iterations, and validate concepts before proceeding to mass production, ultimately saving time and resources while fostering innovation.

Detailed prototype developing

Detailed prototype development with 3D printing allows for the rapid creation of highly accurate and intricate prototypes. By leveraging additive manufacturing technology, designers can quickly iterate and refine their designs, test functionality, and validate concepts before moving into mass production. This approach saves time, reduces costs, and enables efficient product development cycles, accelerating innovation and bringing ideas to market faster.

Large Prototypes

Large-scale prototypes created with 3D printing revolutionize the product development process. Using additive manufacturing, designers can quickly produce functional and detailed prototypes at a larger scale. This approach allows for comprehensive testing, evaluation, and validation of designs before committing to costly mass production, saving time and resources in the development cycle.

Mechanical Prototyping

Mechanical prototypes developed with 3D printing offer a quick and cost-effective solution for testing and validating design concepts. By utilizing additive manufacturing, engineers can rapidly produce functional prototypes with complex geometries, enabling them to evaluate performance, fit, and functionality before committing to mass production. This approach accelerates the design iteration process, reduces development costs, and facilitates more efficient product development cycles, making it a valuable tool for engineers and manufacturers.

Low Volume Production

3D printing for low volume production provides cost-effective, flexible, and fast manufacturing solutions, enabling businesses to quickly bring customized products to market with reduced expenses and increased design possibilities.

Customized Mass/Batch Production

Mass volume production with 3D printing offers advantages such as increased production efficiency, reduced costs, improved customization options, and faster time-to-market, making it a transformative technology for large-scale manufacturing.

Medical and Surgical Models

Medical and surgical models produced through 3D printing have transformed healthcare practices. Using patient-specific data, intricate anatomical models can be created for surgical planning, education, and training purposes. This technology enhances precision, reduces surgical risks, and enables personalized healthcare interventions, revolutionizing patient care and medical education.

Architectural Model

Architectural models created with 3D printing offer a powerful tool for visualizing and presenting designs. Using additive manufacturing, intricate and detailed models can be produced quickly and accurately. This technology enhances communication, facilitates design iterations, and enables clients to better understand and experience architectural concepts.

IoT

ombining IoT (Internet of Things) with 3D printing offers new possibilities for creating smart, interconnected devices. By integrating sensors, electronics, and 3D printed components, IoT devices can be customized, rapidly prototyped, and produced at scale. This combination enables the development of innovative and functional IoT solutions with enhanced design flexibility, reduced time-to-market, and cost-effective manufacturing, paving the way for the widespread adoption of connected devices in various industries.

Robotics and Prosthetics

3D printing has revolutionized robotics and prosthetics by enabling the rapid and cost-effective production of customized components. This technology allows for the creation of intricate robotic parts and prosthetic devices that are lightweight, durable, and tailored to individual needs. It promotes innovation, improves functionality, and enhances the quality of life for individuals in need of assistive devices, making it a game-changer in the fields of robotics and prosthetics.

SPM Concept Development

Special purpose machine concept development with 3D printing allows for rapid prototyping and design iteration. By leveraging additive manufacturing, engineers can create functional prototypes of specialized machines with intricate parts and custom features. This approach accelerates concept validation, reduces development costs, and facilitates the creation of innovative and efficient machines for specific industrial applications.

Replacement Parts

Replacement parts development through 3D printing provides an efficient and cost-effective solution for obsolete or hard-to-find components. By leveraging additive manufacturing, businesses can produce custom-made replacement parts on-demand, eliminating the need for extensive inventory and long lead times. This approach offers flexibility, reduces downtime, and ensures the availability of critical components, ultimately improving maintenance and repair processes across various industries.

Parts and Components

With 3D Printing, complex geometries and internal structures can be easily achieved, enabling the production of lightweight, durable, and optimized parts. This technology promotes innovation, reduces production costs, and opens up possibilities for customization, making it a game-changer in various industries, from aerospace to healthcare.

Vehicle modification Parts

Vehicle modification with 3D printing offers a range of possibilities for customization and functional enhancements. By leveraging additive manufacturing, car enthusiasts can create personalized parts, such as interior trim, exterior accents, or even performance components. This approach provides design flexibility, faster prototyping, and the ability to create unique, tailored modifications that can transform the look and performance of vehicles, making it a popular choice among automotive enthusiasts.

Die Making

Die making with 3D printing revolutionizes manufacturing by creating dies and molds through additive manufacturing. It reduces costs and lead times by eliminating complex machining. 3D printing enables intricate designs, custom features, and rapid prototyping, enhancing efficiency and quality in industries such as automotive and aerospace.

Reverse Engineering

Reverse engineering with 3D printing combines scanning and additive manufacturing to replicate or modify existing objects. It involves capturing physical geometry, creating a digital model, and producing replicas or customized versions. This approach is valuable for recreating rare parts, conducting design improvements, and analyzing complex objects for various purposes.

Laser Engraving

Laser engraving combined with 3D printing unlocks new possibilities for customization and personalization. This powerful combination allows intricate designs and detailed markings to be etched onto 3D printed objects, adding unique aesthetic value, branding, or personalized touches to a wide range of products and prototypes.

3D Decoration models

Decoration with 3D printing opens up a world of creative possibilities by allowing intricate and customizable designs to be produced with ease. From personalized home decor items to intricate jewelry and artistic sculptures, 3D printing enables the production of unique and visually stunning decorations. This technology provides design freedom, intricate detailing, and the ability to bring digital designs to life, making it a transformative tool for artists, designers, and anyone seeking to add a touch of creativity to their surroundings.

Wireframe Model Designing

Wireframe model designing with 3D printing enables the creation of lightweight and skeletal models for various applications. By leveraging additive manufacturing, intricate wireframe structures can be quickly produced, allowing designers to visualize and evaluate concepts, assess spatial relationships, and iterate designs efficiently. This approach enhances design exploration and communication in fields such as architecture, product design, and engineering.

CAD/STL modification

CAD/STL modification for 3D printing enables designers to optimize and customize digital models for additive manufacturing. By making adjustments to the CAD or STL files, designers can ensure proper printability, enhance structural integrity, and incorporate specific features. This approach ensures compatibility with 3D printing technology, leading to successful and high-quality printed objects.

CAD Solid Modeling

CAD designing for 3D printing empowers designers to create intricate and complex models with precision and accuracy. By leveraging specialized software, they can develop 3D printable designs, optimize geometries for additive manufacturing, and incorporate specific features or customizations.

2D Drafting

2D drafting involves creating detailed technical drawings and plans using computer-aided design (CAD) software. It includes precise measurement, annotation, and dimensioning of objects in a two-dimensional space. 2D drafting is essential in various industries such as architecture, engineering, and manufacturing for creating accurate and comprehensive documentation of designs and concepts.

Simulation

CAD simulation involves using computer-aided design (CAD) software to simulate and analyze the behavior and performance of designed objects or systems. It enables virtual testing, validation, and optimization of designs, helping to predict how they will function in real-world conditions. CAD simulation enhances product development, reduces costs, and improves overall design quality and performance.

Topology Optimization and Generative Design

Topology optimization and generative design utilize advanced algorithms to optimize object shape and structure. Topology optimization removes unnecessary material for optimal strength and weight, while generative design explores design possibilities. These techniques enable lightweight, efficient, and high-performance designs, benefiting industries like aerospace, automotive, and manufacturing.

CAD Model Animation

CAD model animation brings digital designs to life by adding movement and interactivity. Using specialized software, designers can create dynamic simulations, showcase functionality, and visualize assembly processes. This technique enhances design understanding, communication, and allows for comprehensive evaluation before physical production, saving time and resources in the product development cycle.

CAD Rendering

CAD model or STL rendering involves generating high-quality visual representations of digital designs. Using rendering software, designers can create realistic and detailed images or animations of their CAD models or STL files. This technique enhances visualization, enables realistic product previews, and aids in design communication and presentation.