Industrial 3D Printed On-Demand Parts

Sand

Furanic-Direct-Binding (FDB) Process

Technical data

max. build space*	4,000 x 2,000 x 1,000 mm
resolution x, y	200 dpi
layer thickness	300-400 µm, standard 300 µm
Accuracy	± 0,1 % (min. ± 1,5* layer thickness)
binder type	cold curing furan resin

Material data

material	silica sand			Cerabeads
designation	GS 14	GS 19	GS 25	Cerabeads
average grain size	130 µm	190 µm	250 µm	200 µm
total loss on ignition	1.6 - 1.9 weight %	1.6 - 1.9 weight %	1.6 - 1.9 weight %	1.2 - 1.5 weight %
bending strength	≥ 250 N/cm²	≥ 220 N/cm²	≥ 220 N/cm²	≥ 300 N/cm²
application	Shapes and cores with high demand to the surface	Cores with high Gas permeability	Cores; highest Gas permeability	low expansion, high thermal resistance, high strength, alternative to chromite, kerphalite or zirconium

* depending on sand type

Phenolic-Direct-Binding (PDB) Process

Technical data

process	Phenolic-Direct-Binding (PDB)
build space	1,000 x 600 x 500 mm
resolution x, y	300 dpi
layer thickness	from 250 - 300 µm, standard 300 µm
accuracy	± 0.1 % (min. ± 1.5* layer thickness)
binder type	Thermosetting, phenol-based binder

Material data

material	silica sand	Cerabeads
designation	GS 14	Cerabeads
average grain size	130 µm	200 µm
total loss on ignition	2.0 - 2.6 weight %	> 1.5 weight %
bending strength	250 - 500 N/cm²	> 350 N/cm²
application	Molds and cores with high demand on the surface	low expansion, high thermal resistance, high strength, good surface quality

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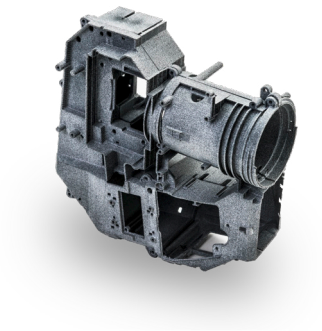
Plastic

High Speed Sintering (HSS) Process

Material data*	
material	PA12
part density	1.0 g/cm³
tensile strength XY	52 ± 1 MPa
elongation at break XY	10 ± 1 %
tensile strength Z	46 ± 2 MPa
elongation at break Z	5 ± 1 %
e-modulus	1716 ± 89 MPa
average grain size	55 µm
post processing options	dyeing, surface blasting
application	functional parts

* Values refer to recycled powder with 20% refresh rate.



Technical data	
build space	290 x 140 x 180 mm
resolution x, y	360 dpi
layer thickness	80 µm

PMMA - PolyPor B (PPB) Process

Material data			
material	PMMA particle material		
average grain size	55 µm - 85 µm		
residual ash content	< 0.01 weight %		
burnout temperature	700 °C		
post processing	without	wax	epoxy
tensile strength	approx. 2.3 MPa	approx. 2.3 MPa	up to 25 MPa
softening temperature	73 °C	73 °C	80 °C
features	detailed, porous	smooth, liquid-tight surface	hard material, dyeable
application		investment casting	display model

Technical data	
build space	1,000 x 600 x 500 mm
resolution x, y	up to 600 dpi
layer thickness	standard 150 µm
Accuracy	± 0.4 % (min. ± 0.3 mm)
binder type	Polypor

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