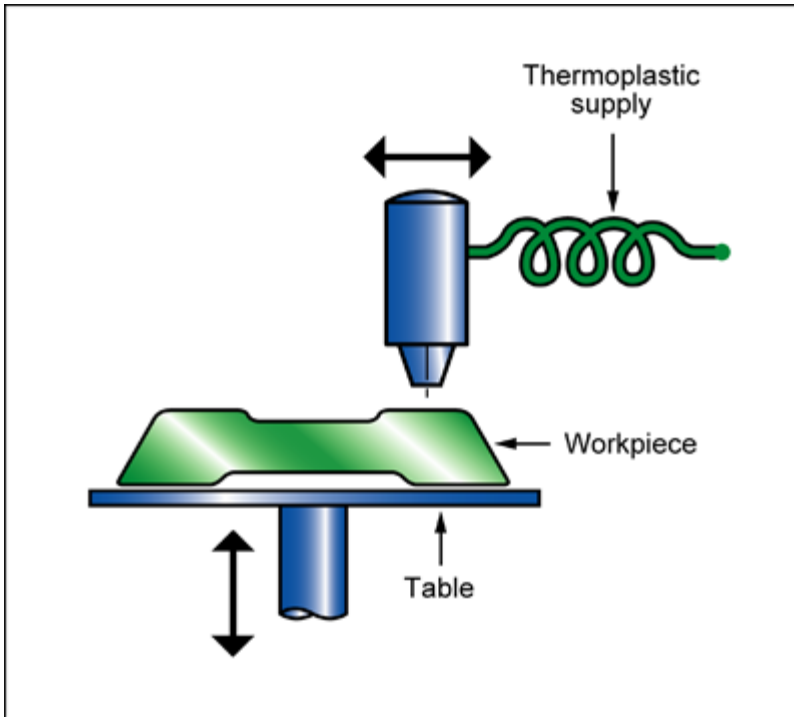


Description

Process schematic



The process

BALLISTIC PARTICLE MANUFACTURE (BPM) is a rapid prototyping technique in which microscopic particles of molten thermoplastic are shot by a piezoelectric jetting system and freeze when they hit the object being created. A wide range of materials can be used. As with other rapid prototyping processes, a CAD solid model of the part is required.

The process is now obsolete, having been superseded by inkjet methods (3D printing).

Material compatibility

Polymers - thermoplastics



Shape

Circular prismatic



Non-circular prismatic



Flat sheet



Dished sheet



Solid 3-D



Hollow 3-D



Economic compatibility

Economic batch size (units)

1

- 10

Physical and quality attributes

Mass range	0.22	-	17.6	lb
Range of section thickness	59.1	-	3.94e3	mil
Tolerance	14.2	-	78.7	mil
Roughness	3.94	-	13	mil

Process characteristics

Primary shaping processes	✓
Discrete	✓
Prototyping	✓

Cost model and defaults

Capital cost	1.89e5	-	3.77e5	USD
Material utilization fraction	* 0.9	-	0.98	
Production rate (units)	0.06	-	0.08	/hr
Tooling cost	37.7	-	94.3	USD
Tool life (units)	1	-	10	

Supporting information

Design guidelines

All shapes can be made. The only finish available is in

Technical notes

The system uses materials which can be easily melted and solidified such as thermoplastics, aluminum and wax.

Typical uses

Making prototypes and models quickly from CAD systems.

The environment

No particular environmental hazards. No material is wasted in this process.

Links

MaterialUniverse

Reference