3DLASERBW
Ein Unternehmen der BENSELER Gruppe

LASER POWDER BED FUSION (LPBF)/ SELECTIVE LASER MELTING (SLM)

Using **Selective Laser Melting** – an additive manufacturing process also known as Laser Powder Bed Fusion (LPBF)—components are built layer by layer based on 3D data. Compared to conventional manufacturing methods, SLM eliminates the need for developing and producing complex cost-intensive tooling and molds. The SLM process is suitable for both **prototyping and serial production** and can be applied across industries such as automotive, aerospace, medical technology, mold making, defense and special machinery manufacturing.

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PROZESS SEQUENCE

In SLM, metal powder is applied to a build plate and selectively melted by a fiber laser. After each layer, the build plate is lowered, and the cycle begins again. This process is carried out automatically based on the pre-generated data of the desired 3D model. Once the excess powder has been removed and the finished component has been separated from the build plate and freed from its support structures, it can either be used directly or further processed according to the specific requirements.

PROPERTIES

- High material densities (> 99%)
- Mechanical properties of SLM components are comparable to, and in some cases superior to, those of conventionally machined parts
- Reduced product development time due to the elimination of tooling and mold making
- High degree of design freedom
- Enables conformal cooling channels for injection molding and die-casting tools
- Reduced inventory costs through on-demand production of components

STANDORT:

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