

Short process chain by additive manufacturing

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When processing long products in particular, the process chain from steel production to the finished component is very long and generally optimized for large quantities. In contrast, the quantities for defense applications are extremely low compared to the automotive industry. Despite the high production costs, additive manufacturing of components can have advantages here because, for example, forging dies do not have to be produced over a long period of time and the high costs are not spread over a large number of units.

Additive manufacturing still focuses on relatively few materials such as 1.2709 and 1.4404. Common engineering steels such as 42CrMo4, 16MnCr6, 100Cr6 and tool steels such as 1.2344 are difficult to process additively. In the meantime, a number of new materials have been developed specifically for additive manufacturing that can substitute the above-mentioned materials. These new steels can also be produced conventionally as mass steel and then cover the entire spectrum from prototypes and spare parts production to mass production. A table of common construction materials and their substitutes suitable for additive manufacturing has been compiled.

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