HIGH PRODUCTIVITY STEEL POWDERS
GKN Additive
formnext2018 | Frankfurt, Germany
Material: Water Atomized 316L Powder

High pressure water atomized stainless steel powders are irregular and rounded in shape with little to no internal porosity. Water atomized powders allow for higher scalability, higher throughput, and lower costs. In addition, water atomized powders can be printed to full density with comparable mechanical performance to gas atomized powders.

Process: Water Atomization

In the water atomization process, a stream of molten metal is disintegrated into powder by high pressure water jets. The process uses electric arc furnace technology to melt the selected raw materials, where the desired alloy composition is adjusted. The molten metal is poured from the furnace into a ladle then subsequently into a tundish, from which a controlled stream flows into the atomizing chamber. The high pressure water jets break up the molten stream and create metal droplets that form powder particles after being dried and annealed in hydrogen to remove oxygen.