



Technical ceramic components can be used in a wide variety of applications due to their extreme heat resistance, hardness, wear resistance, and chemical resistance. We also specialize in the manufacture of custom parts and can offer our customers tailored solutions in this area.

Our precision components, made from various technical ceramic materials, are particularly well-suited for applications in fields such as mechanical and plant engineering, electrical engineering and electronics, the automotive industry, and many others. Depending on the material and products, the size of the parts can range from 1 to 2,000 mm, with a dimensional accuracy of up to 0.005 mm.

3D Ceramic Components for Technical Applications



Commonly Used Ceramic Materials

Aluminum oxide (Al_2O_3)

Al_2O_3 is the most commonly used ceramic and is primarily used in semiconductor and LCD components, plasma components, and various devices and rings, as it offers excellent mechanical strength, heat resistance, and corrosion resistance.

Zirconia (ZrO_2)

ZrO_2 has the highest hardness after diamond and therefore exhibits very high mechanical strength, excellent wear resistance, heat resistance, and impact toughness, as well as a very good surface finish after machining. This material is used, for example, in various cutting tools, guide rollers, various devices, precision bearing balls, precision pump seals, and valves.

Silicon nitride (Si_3N_4)

Si_3N_4 exhibits outstanding properties at both room temperature and high temperatures and is used, for example, in heat exchangers, reaction tubes, bearing balls, roller cutting tools, wear-resistant components, and rotating motor shafts.

Silicon carbide (SiC)

SiC has a stronger covalent bond and greater hardness than aluminum oxide. Due in particular to its outstanding high-temperature strength, it is frequently used as a high-temperature component, for example in heating elements, gas linings, turbine components, semiconductors, and LCD components.

Other ceramic materials available upon request

