Porcelain

The field of technical ceramics began with the development of porcelain in 1849. Today, porcelain is primarily used in electrotechnical applications.

Porcelain is a good insulator against electrical currents, even at higher temperatures.

It provides a high dielectric strength and creep resistance as well as resistance to corrosion and aging. It is highly resistant to temperatures up to 1000°C (1830°F) and a multitude of chemicals.

Material

Porcelain is a silicate based, naturally occuring material.
Its main chemical components are SiO_2 (30-75%) and Al_2O_3 (20-65%). Imbedded in the glass phase portion of the porcelain matrix (60-70%) are crystalline components like mullite (3 Al_2O_3 2 SiO_2), quartz (SiO_2), cristobalite (SiO_2) and corundum (Al_2O_3).

Production

Je nach Formgebung wird Porzellan in verschiedene Gruppen unterteilt:

- C 110: quartz porcelain is formed into shapes by either casting or extruding.
- C 111: the material for pressed porcelain is being plastisized with oil and water and then formed usind steel moulds. This process allows highly intricate shapes to be produced. A firing process with temperatures of 1350-1400°C (2460-2550°F) follows the forming process. Technical standards IEC 672 or DIN VDE 0335 apply respectively.

Applications

Its high dielectric strength combined with its creep resistance even in humid environments, its inflamability as well as its absolute temperature resistance up to 1000°C (1830°F) make porcelain an excellent insulator for the electrotechnical industry (high and low tension).

Thread guides for textile machines made out of glazed porcelain will reliably guide modern fibres out of carbon, aramid, kevlar and other materials.

Its chemical resistance makes porcelain an invaluable material for use in chemical processing plants.

Inquiries

Please send us your drawing, skecth or sample. Let us know your requirements. We will promptly respond with our most cost competitive quote.