

85% alumina (AD 85) compared to electroporcelain

As we are often asked about the difference between alumina (Coors AD 85) and electroporcelain, here are some brief explanations.

The ceramics industry speaks of "electroporcelain" for insulators made of alumina. The terminology "alumina porcelain" or even just "alumina" is used less frequently. The Al_2O_3 content of these products is usually 35 to 45% by weight, with a density of 2.4 to 2.7 g/cm³.

AD 85, containing 85% Al_2O_3 , is sometimes referred to as "High Alumina". The density of the material is 3.4 - 3.45 g/cm³.

Only materials with an Al_2O_3 content of at least 85% are referred to as alumina. This is due to the formation of a stable alumina phase when the Al_2O_3 content exceeds 80%. Crystallographic analysis reveals an α -alumina phase in a glassy matrix.

In electroporcelain, on the other hand, there is a mixture of mullite, quartz, glass and possibly feldspar. The alumina contained in the porcelain is absorbed by the mullite or glass phase.

The significantly better properties of AD 85 are due to the stability of the alumina phase present. For example, the tensile strength of AD 85 is 140-170 MPa versus 34-55 MPa for a typical electroporcelain.

Coors AD 85 meets or exceeds the C-780 standard according to DIN VDE 0335.