PPC INSULATORS

ELECTRIFYING THE WORLD

PPC Insulators

Precipitator Insulators

Precipitator insulators for demanding applications at the highest temperatures

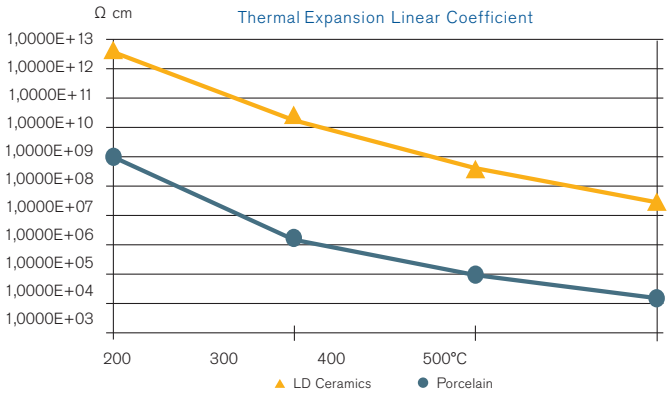
PPC Precipitator Insulators

Superb Resistivity for High Temperature Applications

PPC Precipitator Insulators are high-resistivity LD technical ceramic insulators designed, engineered and manufactured to meet exacting demands in electrostatic precipitation technology and applications requiring insulation in environments with elevated temperatures.

PPC Precipitator Insulators are made of low density (LD) ceramics withstanding mechanical and electrical properties similar to that of alumina-based electrical porcelain C-120. They are sintered to a density degree of 95% and have no open porosity on an unglazed insulator that allows water absorption. The glazing serves the dual enhancement purpose of providing the products with a combined dirt and dust-repelling surface to facilitate inspection, cleaning etc. and to avoid tracking and discharges along the insulator surface.

Volume resistivity vs. temperature



- High resistivity at elevated temperatures whereby electrical breakdown caused by high leakage current through the material is avoided.
- Excellent mechanical strength and impact resistance, significantly reducing failure due to mechanical stress.
- Very low thermal expansion due to increases in temperature or elevated temperature, allowing the insulator to resist cracking in case of thermal shock.
- Glazed surface facilitates visual inspection and cleaning. The glazed surface treatment has a dirt repellent function during plant maintenance and repair work. These properties also significantly reduce the probability of tracking across the material.

Key data

Flexural strength	
for unglazed material	140 MPa
for glazed material	160 MPa
Compression strength	
for unglazed material	650 MPa
for glazed material	650 MPa
Tensile strength	
for unglazed material	60 MPa
for glazed material	80 MPa
Open porosity	nil %
Density	2.730 kg/m^3
Modulus of elasticity	105 GPa
Linear thermal expansion	
in temperature range 20-200°C	4.5 - 4.8 K^{-1} x 10^{-6}
in temperature range 20-600°C	5.3 - 5.5 K^{-1} x 10^{-6}
Thermal conductivity 20-100°C	2.0 w/m^{0}K
Temperature shock resistance	180 - 200 ^{0}K
Dielectric strength	40 kV/mm
Volume resistivity	
at temperature 20°C	10^{18} Ωcm
at temperature 200°C	10^{11} Ωcm
at temperature 400°C	10^8 Ωcm

- LD Ceramics initially has a high resistivity which is marginally lower than the resistivity of alumina ceramics, however, it still meets the required performance levels of resistivity for the application in question.
- LD Ceramics shows a slower decrease of resistivity during use due to the reduced tendencies of build-up conductive surface coatings in comparison with alumina ceramics.
- The life-length expectancy for LD ceramics is improved by the features mentioned above and also shows substantially improved technical performance characteristics of the insulator by the end of its service period – whereby avoiding otherwise dramatic energy-consuming loss of resistivity that occurs in many situations.

PPC Precipitator Insulators Product Range

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