



# **PPC Insulators**

# **Precipitator Insulators**

Precipitator insulators for demanding DC applications at the highest temperatures

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# PPC Precipitator Insulators Resistivity for High Temperature Applications



LD is a high grade ceramic material and it's composition differs significantly from traditional HV porcelain compositions. The material is developed specifically to withstand Direct Current at elevated temperatures in severe operating conditions.

The LD material is sintered to a density degree of 95% with no open porosity that would allow water penetration.

The glaze of LD insulators provides the products with a combined dirt and dust repelling surface. The glazed surface will help avoid tracking and discharges along the insulator surface and facilitate inspection, cleaning etc.The glaze used for the LD products has the same high resistivity as the material.

## **Benefits of LD Ceramic**

- High resistivity at elevated temperatures reduces the risk of electrical breakdown due to excessive leakage currents.
- The glazed surface of LD ceramic gives the material a dirt and dust repelling property, significantly reducing the probability of tracking across the material. This surface also facilitates inspection and cleaning, reducing maintenance costs.
- Excellent mechanical strength and impact resistance, significantly reducing failure due to mechanical stress.
- LD Ceramics show a lower decrease of resistivity due to the reduced build-up of conductive surface contaminants in comparison with unglazed insulators.
- Low thermal expansion allows the insulator to resist cracking in case of thermal shock.

### **LD Ceramic Properties**

FLEXURAL STRENGTH - Glazed, MPa (psi)	160	(23200)
FLEXURAL STRENGTH - Unglazed, MPa (psi)	140	(20300)
COMPRESSION STRENGTH - Glazed, MPa (psi)	650	(94250)
COMPRESSION STRENGTH - Unglazed, MPa (psi)	650	(94250)
OPEN POROSITY	Nil	
DENSITY, kg/m³ (lb/ft³)	2.6	(0,062)
MODULUS OF ELASTICITY, GPa (ksi)	100	(14503)
COEFFICIENT OF LINEAR THERMAL EXPANSION	5.3-5.5	(2.94-3.06)
@ 20-600°C , K <sup>-1</sup> x 10 <sup>-6</sup> (°F <sup>-1</sup> x 10 <sup>-6</sup> )		
THERMAL CONDUCTIVITY @ 20-100°C	2	(13.87)
THERMAL SHOCK RESISTANCE, K (°F)	150	(270)
DIELECTRIC STRENGTH, kV/mm (kV/in)	20	(508)
VOLUME RESISTIVITY at 100°C, ohm-cm (ohm-in)	<b>10</b> <sup>14</sup>	(10 <sup>13</sup> )
VOLUME RESISTIVITY at 200°C, ohm-cm (ohm-in)	10 <sup>12</sup>	(1011)
VOLUME RESISTIVITY at 400°C, ohm-cm (ohm-in)	10 <sup>8</sup>	(10 <sup>7</sup> )
VOLUME RESISTIVITY at 500°C, ohm-cm (ohm-in)	10 <sup>7</sup>	(10 <sup>6</sup> )

### Volume resistivity vs. temperature



#### Learn More

For more information please contact your local sales representative or contact PPC at:

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