Refractories

Refractory substance means any substance that can withstand high temperature without softening , melting or deformation.

Ex- Alumina bricks, silica refractories etc

General properties of refractory meterials

1.Refractoriness

It is the property of meterial to withstand high temperature without undergoing softness.

2.Porosity

It is the ratio between the pore volume to bulk volume.A good refractory meterials should have lower porosity.

3.**Thermal spalling**

Property of refractory brick for undergoing fracturing , peeling or cracking under high temperature. A good refractory brick having minimum tendency of thermal spalling.

4.strength

A good refractory brick should have high mechanical strength even at operating temperature.

Fireclay bricks collapse under heavy load,where silica brick exert good load bearing strength.

5.**chemical inertness**

It should be inert towards slag, fuel furnace gas etc.

6. Thermal expansion

A good refractory should have least possible thermal expasion

7.Electrical conductivity

They should have low electrical conductivity.

Classification of refractory

They are classified on the basis of chemical nature.

1.acidic refractory

They are not attacked by acidic slag but easily attacked by basic substances.

eg-Alumina,silica and fire refractories.

2.Basic refractory

They are not attacked by basic substances but attacked by acidic substances.

eg-Magnesite,dolomite

3.**Neutral refractory**

They are not attacked by slightly acidic or basic substances.

Eg- chromite, graphite, silicon carbide