

L D process

Linz-Donawitz process (or LD process) also known as the basic oxygen steel making process. Liquid pig iron and scrap metal are fed into the LD converter, and **flux** for making slag is added. Oxygen is blown into the cast via a lance.

Furnace proper

The L.D furnace is made of a pear-shaped steel vessel lined, inside this lining tar-bonded, dead burnt dolomite and magnesite along with carbon (Magcarbor) bricks are placed which is known as refractory lining or Converter champaign. The Converter water-cooled oxygen lance is used for blowing. Pure oxygen on to the surface of the liquid metal. The oxygen pressure applied is 7-11 kg/cm² and O₂ consumption is 50 - 60 m³ / tone of metal. Height of blowing is 1 to 2 m from metal surface. A tap hole is located at the conical portion of the furnace.

PRINCIPLE of LD FURNACE

Pure oxygen (99.9%) is blown on the surface of the liquid metal to be refining. The pure O₂ reacts with the impurities to form their respective oxides. The oxidation product from slag combined with CaO addition in the bath and flux over the top of the metal oxide. The slag is removed after blowing and refining metal is tapped out.

Charged Material or Raw material of LD

The L.D charge consists of molten pig iron, cold pig iron steel scrap, lime or limestone (in shortage of calcined lime) dolomite, fluorspar, iron ore, and pure oxygen with bottom argon purging. The recommended composition of metal charged is

Material.	Required for L.D	Range used
Carbon	4.1 to 4.3	4.0 to 4.50
Phosphorus	0.1 to 0.25	0.05 to 0.45
Silicon	0.50 to 0.85	0.65 to 1.40
Manganese	0.5 to 0.80	0.40 to 2.50
Sulphur	0.02 to 0.03	0.02 to 0.08

