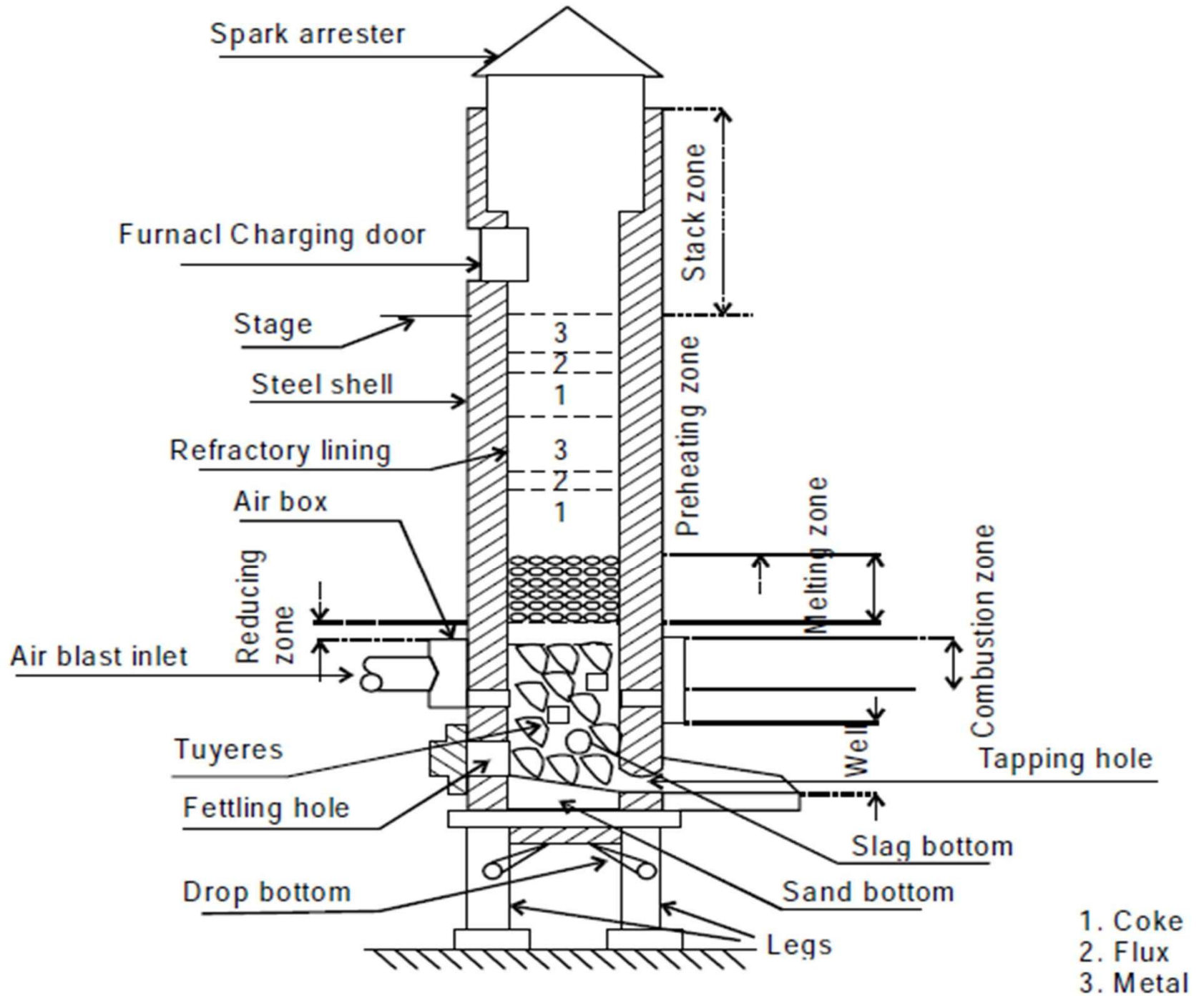


# CUPOLA FURNACE

Cupola furnace is employed for melting scrap metal or pig iron for production of various cast irons. It is also used for production of nodular and malleable cast iron. It is available in good varying sizes. The main considerations in selection of cupolas are melting capacity, diameter of shell without lining or with lining, spark arrester.



# working

- Initially the furnace prop is opened to drop the existing earlier charge residue. The furnace is then repaired using rich refractory lining. After setting the prop in position, the fire is ignited using firewood and then small amount of coke is used to pick fire. The little oxygen is then supplied for combustion. Lime, coke, and metal in balanced proportions are charged through the charging door upon the coke bed and at proper time on starting the blower. Air is forced from wind box through tuyers into furnace. The forced air rise upward rough the stack furnaces for combustion of coke. Besides being fuel, the coke supports the charge until melting occurs. On increase of temperature, the lime stone melts and forms a flux which protects the metal against from excessive oxidation.

Lime also fuses and agglomerates the coke ash. The melting occurs and proceeds and molten metal is collected at the bottom.

Molten metal may be tapped at intervals before each skimming, or the tap-hole may be left open with metal flowing constantly. In most cupolas slag is drained from the slag hole at the back of furnace. When metal is melted completely the bottom bar is pulled sharply under the plates and bottom is dropped. All remaining slag, un-burned coke or molten metal drops from the furnace. When the melt charge has cooled on closing furnace, it is patched and made ready for the next heat.