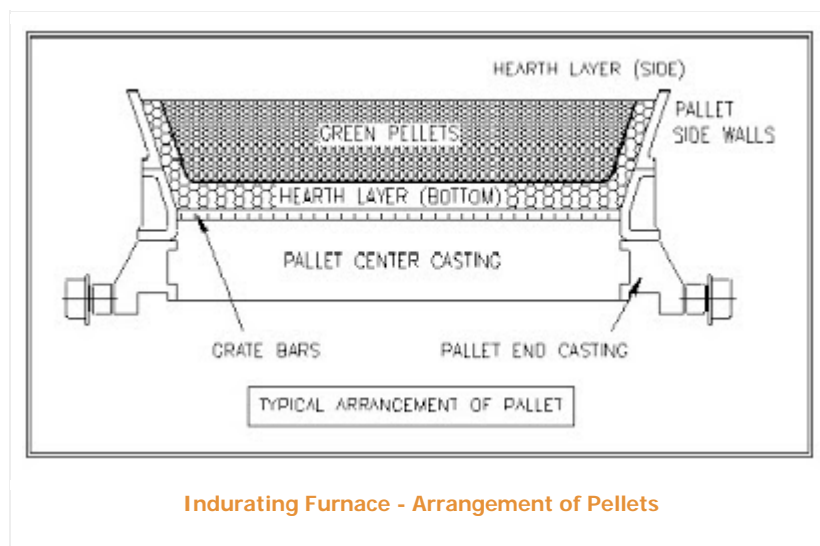


WHAT IS AN INDURATING FURNACE

Indurating Furnaces are circular shaped furnaces like a Rotary Kiln and form a key part of one of the process routes for preparing iron ore fines for use in blast furnaces, and are specifically used to produce iron ore pellets.

Raw or “green” pellets need to be baked to give them sufficient mechanical strength to withstand further handling during transportation and charging to a blast furnace or to a direct reduced iron furnace.



Indurating Furnace

In an Indurating Furnace, the pellets are loaded on to a travelling grate to a depth of approximately 30-60cm where they are preheated (typically to 800-900⁰C), before entering a higher temperature stage (around 1,200-1,350⁰C) which in some designs is a continuation of the travelling grate, and in others take the form of a rotary kiln. Once hardened the pellets are cooled ready for use. In a modern Indurating Furnace, there are 6 to 7 processing zones: Updraft drying (UDD) => Down draft drying (DDD) => Preheating (Ramp) => Firing => After-firing => Cooling.



The thermal treatment done in an indurating furnace is similar to that of a straight line travelling grate. The gas and cooling air flow is down-draught. The grate bars are protected by hearth layer and the green pellet bed height is maintained about 20 cm in order to provide a better gas permeability.

The side walls are protected with refractory lining. The fire pellets are removed from the grate by a scraping device which is installed at a sufficient distance between grate bar and hearth layer (with a depth approximately 5 cm) to leave the hearth layer in its position. The other route to preparing iron ore fines is to agglomerate them by sintering with coke and limestone.

Source : <http://viewforyou.blogspot.in/2013/06/what-is-indurating-furnace.html>