DIRECT REDUCED IRON: AN ADVANTAGEOUS CHARGE MATERIAL FOR INDUCTION FURNACE

K. Sadrnezhaad

Dept. of Metallurgical Engineering
Sharif University of Technology
Tehran, Iran

Abstract

Industrial and experimental induction furnaces are used for melting various types of iron ingots, returned scraps and DRI sponge pellets to produce high purity cast-iron and steel heats. The lowest consumption of the electrical energy is determined for continuous feeding operation to be 0.3 KWH/Kg for production of cast-iron in 1.5-ton industrial furnace and 0.45 KWH/Kg for production of steel in 25-Kg experimental furnace. The optimum feeding rate for lowest energy consumption is obtained to be 12.5 grams per second for continuous feeding of DRI in 25-Kg induction furnace. Similar measurements show that the optimum size of the DRI pellets is around 8 millimeter.

Metallurgical Processes for the Year 2000 and Beyond
Edited by H.Y. Sohn and E.S. Geskin
The Minerals, Metals & Materials Society, 1988