

Recycling, Reuse and Reintegration of Steel Plant Fines

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Abstract : Fines and micro create fundamental problems of respiration. From mines to mills steel plants generate lot of pollutants. Legislation & Government laws are stricter day by day & each plant has to think of recycling, reuse & reintegration of pollutants generated during the process of steel making. This paper deals with experiments conducted in Bhilai Steel Plant and Real Ispat and Power Limited for reuse, recycle & reintegrate some of the steel making process fines. Iron ore fines with binders have been agglomerated to be used as a part of the charge for small furnaces. This will improve yield at nominal cost. Rolling mill fines have been recycled to increase the yield of sinter making. This will solve the problems of fine disposal. Huge saving on account of recycling will be achieved. Lime fines after briquetting is used along with prime lime. Lime fines have also been used as a binding material during production of fly ash bricks. These fines serve as low-cost binder. Experiments have been conducted along with coke breeze & gas cleaning plant sludge. As a result, the anti-sloping compound has been developed for converter vessels. Dolo char and Char during Sponge Iron production have been successfully used in power generation and brick making. Pellets have been made with ventilation dust & flue dust. These samples have been tried as a coolant in the converter. Pellets have been made with Sinter Plant electrostatic precipitator micro fines with liquid binder. Trials have been conducted to reuse these pellets in sinter making. Coke breeze from coke-ovens fines and mill scale along with binders were agglomerated. This was used in furnace after attaining required screening and reactivity index. These actions will definitely bring social, economic and environment-friendly universe.

Keywords : briquette, dolo char, electrostatic precipitator, pellet, sinter

Conference Title : ICECC 2018 : International Conference on Environment and Climate Change

Conference Location : Singapore, Singapore

Conference Dates : March 22-23, 2018