

Maîtrise
de la productivité:
comportement
des microboulettes
dans la zone
surhumidifiée
en agglomération

One of the most important parameters controlling sinter strand productivity is the permeability of the mix bed and its evolution during the sintering operation, through the compression effect of suction pressure and through the action of the water redistribution along the bed height. The most relevant parameters controlling the permeability are the initial permeability of the bed and the capacity of the micropellets to keep a satisfactory cohesion in the overmoistened zone.

The aim of this research is to describe more precisely these factors, with the objective of ranking their effects and of evaluating the importance of the interactions among them. The research was based on characterisations performed at different scales (laboratory and pilot scales, industrial strand) and on the use of mathematical models.

Permeability during sintering is approximately 50 % below the value of the initial permeability. The compression of the sinter mix under the suction pressure and the water redistribution along the bed height are responsible for this evolution. The specific action of quick lime was shown on the transfer dynamic of water between gas and solids. The drying front movement in the direction of the bottom of the bed is faster because quick lime increases mechanical resistance of the micropellets (the fine particles are more strongly attached to the nuclei of the micropellets).

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