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Coarse dust briquetting for reuse in the converter

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In the steel mill, additionally to the room dedusting after the converter there is also coarse and fine dust generated. These dusts have different chemical compositions. There are significant differences, particularly in the zinc-, quicklime- and metallic iron-content. Therefore, some of the dust is passed on to external recyclers and some is recycled internally. Internal recycling means that the dust is briquetted, and the briquettes are reused as iron- and lime-carriers and as coolants in the converter. However, the coarse dust alone cannot be moulded into briquettes in the hot briquetting process at voestalpine Stahl GmbH.
One method of forming briquettes in hot briquetting is to mix the coarse dust with fine dust to make it suitable for briquetting. Due to the higher content of Femet and CaO in pure coarse dust briquettes (or also in a mixture with little fine dust (up to 20%)), a savings potential can be achieved by returning the briquettes to the converter as feedstock (reduced use of scrap and quicklime as well as savings in disposal costs).
As an alternative to the addition of fine dust, voestalpine Stahl GmbH is pushing ahead with the moulding of pure coarse dust briquettes. A research project was carried out for this purpose and, after a series of tests, a spraying system was installed which sprays a graphite suspension (Berulit) onto the roller presses, thus enabling the moulding of pure coarse dust briquettes. In addition to the good moulding of the briquettes, the surface is sealed by the graphite suspension and the briquettes are more dimensionally stable than those not sprayed.

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