AISTech 2019 — Proceedings of the Iron & Steel Technology Conference
6–9 May 2019, Pittsburgh, Pa., USA
DOI 10.33313/377/074

Reduction Behavior of DRI Pellets

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The size of pellets plays crucial role in reduction kinetics inside the kiln. In table 2 the size distribution of incoming pellets form pellet plant is shown. Maximum pellets are between 10 to 15 mm size ranges.

Table 1:- chemical composition and physical properties of incoming pellets

May 2013	Fe(t)	SiO2	Al2O3	P	LOI	Moisture	Ab. Index	Tumbler Index
Avg.	64.0	3.35	2.97	0.1	0.3	1.7	4.3	94.6
Min	63.6	2.92	2.82	0.1	0.2	1.5	3.4	93.8
Max	64.5	3.80	3.14	0.1	0.4	2.2	4.9	95.5

Table 2:- size distribution of incoming pellets

May 2013	-18+15 mm	-15+12.5 mm	-12.5+10 mm	-10+8 mm	-8+5 mm	-5 mm %	Mag. %	MPS
Avg.	1.1	34.0	31.1	21.0	7.7	5.3	5.4	10.9
Min	0.0	23.4	25.8	15.4	6.4	4.4	3.8	10.5
Max	2.3	41.1	44.8	28.0	9.2	6.3	7.0	11.2

REDUCTION BEHAVIOR OF DIFFERENT SIZE RANGE OF PELLETS

To understand the effect of size of reduction, DRI sample were sieved to different sizes. Powder samples were made from all sizes and Fe metallic was checked by satmagan. The results were shown below.

