

ЧЕРНЫЕ МЕТАЛЛЫ



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Ежемесячный научно-технический и производственный журнал
по актуальным проблемам металлургии и машиностроения



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Iron and Steel Making

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Key words: metallurgical slags, environment protection, resource saving, recycling, blast furnace slag, steel making slag, ladle slag, politics, ecological requirements.

W. Tiekink, A. Overbosch, P. Broersen, L. Alders, R. Kooter, M. Rijnders. Traces in alloys and their effect on steelmaking and casting 44

Analysis methods such as automated SEM (Scanning Electron Microscope) are a helpful tool to judge impurities in alloys that may be a cause for problems in steelmaking or casting. Alloys can have unwanted impurities that may cause problems during casting. By knowing what is inside an alloy and what may be the effect on steelmaking and casting, a steelmaker may be able to optimize his ladle treatment and in some cases his casting operation.

Key words: alloying materials, impurities, non-metallic inclusions, titanium sponge, melting, casting, aluminium titanate, ferromanganese, ferrotitanium.

P. Tardy. Demand and supply of ferrous scrap — a changing balance 50

The suitability of the model used for the calculation of scrap supply and demand was confirmed by the comparison of data calculated with data published in literature. That means that forecasts calculated with the help of the model can be considered realistic and the effects of changing the parameters used for the calculations (shares of pig iron and DRI charge, efficiency of scrap collection, indirect steel trade, etc) on scrap demand and availability can be analyzed. According to our calculations — if recent steelmaking practice does not change — in the next decade no shortage stresses on the scrap market can be expected. However, climate protection regulation may force companies to increase their specific scrap consumption and that may change the market situation.

Key words: iron ore, steel scrap, metal processing, non-refined steel, export, financial crisis, collection, consumption, demand.

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H. Neumann, E. Steffen, P. Thieven. Increased plant availability thanks to optimized roll use in the stretch-reducing mill 58

Stretch-reducing rolling is a standard method for the shaping by rolling of seamless steel tubes. Owing to the design-related and technological characteristics of the process, a large number of mill stands are required, representing a significant cost factor as regards new investments and operation. Adjustable rolling stands allow to decrease number of finishing roll passes and to increase degree of roll usage.

Key words: tube rolling mill, stretch-reducing rolling, seamless tubes, tube billet, rolling stands, roll passes, roll shop, CNC machine tools.

P. Pawlitzki, R. Rehbein. High-efficient descaling with high-pressure accumulator 66

Primary and secondary scale is forming during slab or billet reheating in pre-rolling furnaces and during consequent rolling, as a result of air oxidation. This scale has negative effect on surface quality of rolled material, therefore it has to be removed. The paper presents the concept of descaling units with high-pressure accumulators and without them. Potential of power-efficient and resource-saving process is demonstrated. It is shown that using high-pressure accumulator helps to achieve power saving about 72%.

Key words: scale, descaling unit, high-pressure accumulator, piston-type pumps, centrifugal pumps, resource-saving.

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