

Title (en)

METHOD OF PIG IRON PRODUCTION USING ROMELT LIQUID PHASE REDUCTION PROCESS

Title (de)

VERFAHREN ZUR ROHEISENPRODUKTION MIT ROMELT-FLÜSSIGPHASEN-REDUKTIONSVERFAHREN

Title (fr)

PROCÉDÉ DE PRODUCTION DE FONTE BRUTE UTILISANT UN PROCESSUS DE RÉDUCTION EN PHASE LIQUIDE ROMELT

Publication

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Application

EP 16882176 A 20160406

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Abstract (en)

[origin: WO2017116275A1] The invention relates to the pig iron production in the Romelt furnace. Simultaneous loading of iron containing materials, fluxes and >5 mm sized coal fractions into the liquid slag bath of the Romelt furnace through the top loading port. Bubbling of the liquid slag bath and initiation of coal combustion by supplying air/oxygen blowing gas to the bottom tuyeres. Oxidation of released CO and H₂ by supplying oxygen to the top tuyeres. The combustion rate of the gases is maintained at 60-85% of the maximum possible rate by dividing coal into >5 mm and <5 mm fractions. The <5 mm coal fraction is crushed to <1 mm size and supplied to the liquid slag bath through the bottom tuyeres together with the air/oxygen blowing gas at a rate of 400-1000 m³ /m² of furnace area at the bottom tuyere level. A heat flow of 3-6 MW/m² of liquid slag bath area is provided from the combustion zone to the liquid slag bath. The invention provides reduction of iron loss with the slag and exclusion of uncontrolled boiling of a slag bath.

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