MANGANESE SULFIDE PARTICLES IN GRAIN-ORIENTED ELECTRICAL STEEL

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The aim of this work is the characterization of manganese sulfide particles in electrical steels. This analysis was made with samples referring to hot rolling process, with variation in Steckel hot strip rolling practice. The characterization of the particles was made by transmission electron microscopy. The preparation of the samples was carried out by precipitate replica technique. The samples were related to four different temperatures in three different regions of the strip (initial, middle and final region in longitudinal direction with analysis on top and center of thickness for each). This work analyses the diameter and the distribution of the particles. For determination of these parameters, it was used final magnification from 21000 to 52500x. The diameter of particles was measured by Mini-mop image analyser and the data were compiled and elaborated in microcomputer electronic table, which provided graphics of MnS precipates distribution. The diameter of the MnS precipitates, in all sites of studied samples, showed values ranging from 300 to 900Å. This is an evidence for the homogenity according to the size of the precipitates. In the initial region of the strip, at the center of thickness, it was observed a remarkably homogeneity of particle size.

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