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## **ANALYSIS OF INFLUENCE OF CONTINUOUS CASTING REDUCTION BY CCM ROLLERS ON SLABS FINAL SIZE**

**Background.** *At high casting speed at CCM it is getting more difficult to control final dimensions of slabs. This, together with more demanding qualitative indicators of the finished product, sets higher demands for the prognosis of slabs' dimensions. The second most important shaper after crystallization is the roller guide of CCM strands.*

**Materials and/or methods.** *To analyze the ingots free shrinkage during the casting a two-dimensional finite-difference mathematic model of formation of continuous cast steel billets in the curved CCMs is used. The model allows one to take into account the distribution of the local heat-transfer coefficients on all four faces of the continuous cast steel billet.*

**Results.** *The analysis of the interaction of the continuous cast billet and the CCM supporting system has been carried out. The conditions of the billet cross section deformation under its reduction by the rollers of the CCM supporting system are analyzed. The analysis of the continuous cast billets shrinkage calculation results has allowed one to identify three areas of interaction of ingots with rollers – under insufficient, excessive and rational segments obliquity. This can serve as a basis for evaluating the quality of alignment of roller guides.*

**Conclusion.** *According to the results of mathematical modeling the level of reduction of the sectional shape by CCM strand rollers has been determined. It is shown that the reduction strongly depends on the intensity of the cooling and on the share of the biphase in the unconsolidated billet volume.*

**Keywords:** *slabs, strandguide rollers, shrinkage, reduction, secondary cooling zone, curved CCM.*

### **Bibliographic reference:**

Fedosov A.V., Tsuprun A.Y., Paschuk D.V., Severenchuk A.A. *Analiz vliyaniya obzhatiya rolikami MNLZ nepreryvnolitogo slitka na formirovanie konechnykh razmerov slyabov* [Analysis of influence of continuous casting reduction by CCM rollers on slabs final size]. *Metallurgical processes and equipment*, 2013, No.1, pp. 20-27.