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## INFLUENCE OF THE STRUCTURE ON THE DEFORMATION ABILITY OF THE Fe-Cr-Co SYSTEM ALLOYS

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**Abstract.** The deformation behavior of two hard magnetic alloys 23X15KT (Fe-23% Cr-15% Co) and 30X23K (Fe-30% Cr-23% Co) have been studied in the temperature range 800-1050 °C and strain rates  $10^{-1}$ - $10^{-4}$  s<sup>-1</sup>. The influence of two types of structures - ultrafine-grained and lamellar ( $\alpha+\gamma$  in the 23X15KT alloy and  $\gamma+\sigma$  in the alloy 30X23K) on the superplasticity characteristics of alloys was established. During tensile straining of the 30X23K alloy with a lamellar structure, the flow stress after 10% deformation is gradually decreased, while in the alloy 23X15K, on the contrary, the deformation proceeds with hardening. It is shown that the investigated alloys with an ultrafine-grained structure exhibit superplastic behavior both under tensile straining and upsetting deformation in the temperature range of 900-950°C and deformation rates of  $10^{-2}$ - $10^{-4}$  s<sup>-1</sup>.

**Keywords:** superplasticity, ultrafine-grained structure, hard magnetic alloys

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