Фізико-технологічний інститут металів та сплавів
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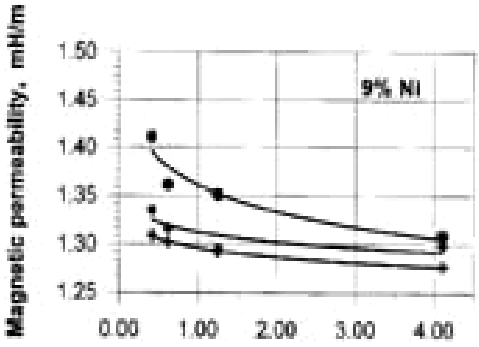
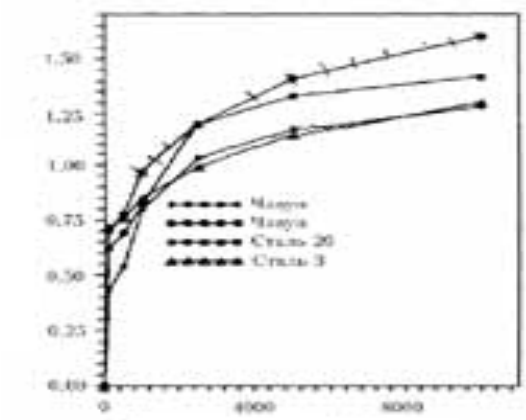
High-strength cast iron special properties

Economy alloyed non-magnetic cast irons with magnetic permeance less then $1{,}3 \cdot 10^{-6}$ Hn/m, corrosion-stable in sea water.
Cast irons are alloyed by 6-9% Ni, 5-6%Mn, 2-3% Cu.
Cast irons' characteristics are:
$\sigma_B \geq 500$МПа, $\sigma_{0,2} \geq 340$МПа, $\delta \geq 25$ %.
Technology of casting production is worked out.

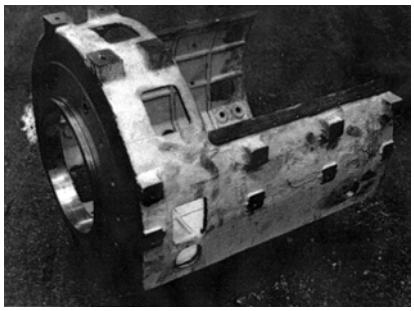


Speed of cooling:
● - 3% Si
♦ - 2,5% Si
+ - 2% Si

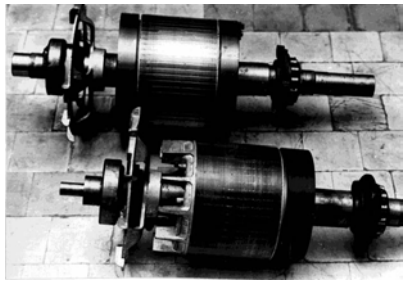
Mild-magnetic high strength cast iron for active parts of electric machines.
Magnetic induction of cast iron in field with tensity 5000A/m is 1,4 TL, increases the efficiency coefficient by 1,5-2%, usage of over-all and reduced capacity by 9-11%.
Technology of casting production is worked out.



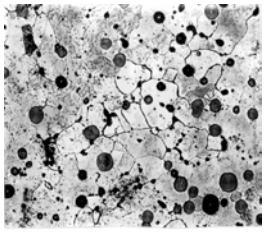
Magnetic induction comparatively with steel 3 and steel 20.



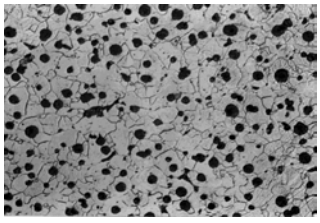
Casting of body of compressor of high pressure 250 kg weight with wall thickness from 8 up to 10 mm made by non-magnetic cast iron for submarine.



Electric motor with outward rotor from mild-magnetic cast iron.



Microstructure of austenite non-magnetic high strength cast iron ЧН9Г6Д3Ш.



Microstructure of ferrite mild-magnetic high strength cast iron.