CONTRIBUTIONS REGARDING THE INFLUENCE OF HEAT TREATMENT TECHNOLOGY OVER MECHANICAL PROPERTIES FROM STEEL OF 700N/mm² YIELDING POINT

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Based on the researches carried out a heat treatment technology can be determined which further lead to an optimum set of mechanical properties according to the technical conditions:

a) Annealing – austenite at temperature 920°C;
b) Tempering – heating at temperature 680°C.

An optimum assembly of strength and tenacity properties can be obtained for austenite temperatures when tempering takes place within the range 680°C – 700°C. The microstructural analysis showed the structural modifications which takes place when tempering within 580 – 700°C. Upon heating the martensite out of balance structural tend to get transformed. The process is based on diffusion whose amplitude is higher when the temperature is higher too. With smaller tempering temperatures, 580 – 700°C, the martensite acs gets segmented.

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