The paper deals with distributions of residual stresses of reinforced smooth part as well as additional compressing residual stresses after making a semicircular profile notch. Various laws of changing axial residual stresses of a smooth part which simulate practically all possible cases of their distribution after reinforcing the parts by known methods of surface plastic deformation are also discussed.

Leading surface plastic deformation, residual stresses, stress concentration, residual stress redistribution

References


S. I. Ivanov, V. F. Pavlov. Impact of residual stresses and cold-work hardening on fatigue strength.


V. F. Pavlov, Head of Department of Strength of Materials, Doctor of Technical Science, Professor. Area of research: residual stresses mechanics.

V. A. Kirpitchyov, Associate Professor of Department of Strength of Materials, senior lecturer. Area of research: residual stresses mechanics.

Ye. A. Deniskina, Associate Professor of Department of Higher Mathematics, Candidate of Technical Science. Area of research: residual stresses mechanics.