

FORMATION OF RESIDUAL STRESSES IN THE SURFACE LAYERS OF CORROSION-RESISTANT STEEL SAMPLES AFTER IRRADIATION WITH HIGH-CURRENT PULSED ELECTRON BEAMS

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In this paper, the level of residual surface stresses of PH 15-5 steel samples manufactured using additive technology before and after heat treatment is analyzed. The research was carried out by layer-by-layer electrochemical etching of stressed metal layers from the sample surface. As a result of the tests, the parameters of the distribution of surface technological residual stresses of the 1st kind (sign, magnitude, depth of occurrence) were obtained. In addition, it is shown that irradiation with high-current and pulsed electron beams affects the level of surface residual stresses and depends on the presence of post-processing operations with or without machining after growing samples by selective laser melting.

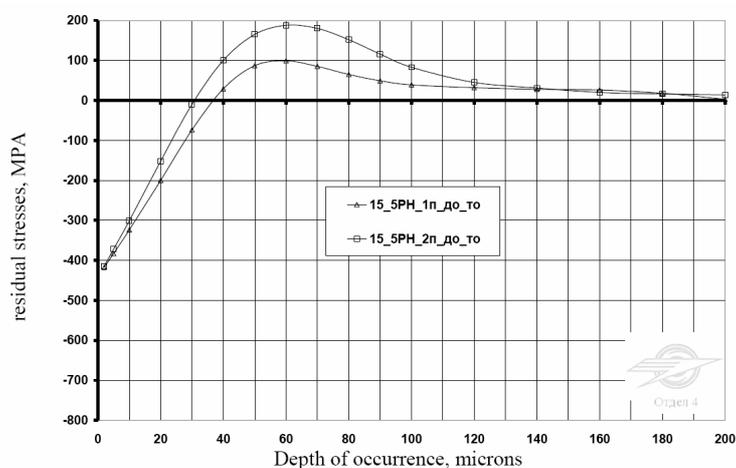


Fig.1. The level of residual stresses before heat treatment after milling.

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