

The real structure of γ -Fe phase of rolled 1.4470 duplex steel after shot peening

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Duplex stainless steels are grades composed primarily of α -Fe and γ -Fe phases. They exhibit better properties compared to single-phase steels and are widely used in many engineering areas. Shot peening is used to further improve the final properties of the materials. It is essential to know how this process affects the real structure. Using X-ray diffraction techniques, the impact of shot peening intensity on crystallite size, residual stresses, and preferred orientation of γ -Fe was studied. The depth distributions of these parameters with respect to distance from the sample surface are described.

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