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Precipitation phenomenon study in austenoferritic steel of 22% chromium and 5% nickel during aging treatment.

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Abstract : The aim of this study is to refine the duplex microstructure without using the conventional processes, as the thermo mechanical treatments. The adopted way consists in carrying out and optimizing aging and annealing heat treatments. A preliminary treatment of hardening since 1250°C was applied to increase the proportion of ferrite in the matrix. The treatments of aging were carried out at the temperature of 850°C during variable duration periods from 02h, 10h and 30 hours. The refinement of the grains had mainly on the level of ferrite, this being with the simultaneous germination of ferrite and austenite during the dissolution of the precipitates..

Keywords : duplex stainless steel, heat treatment, microstructure, grain refinement