

HIGH TEMPERATURE TENSILE TEST OF 12Cr FERRITIC ODS STEEL

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ABSTRACT

The ODS steel, studied for more than thirty years, is an alloy characterized by very high performances, and depending on the purpose, its composition is changed in order to satisfy the requirements. In particular, the 12Cr ferritic ODS steel is widely regarded as a candidate structural material for fusion reactor and advanced next generation fission reactors. In this study, mechanical properties of the alloy will be tested at different temperatures: their dependency on the microstructure and on the temperature will be investigated, focusing the attention on the anisotropy of the alloy and how it affects its performances. Fracture surface analysis at room temperature will be performed as well.

Keywords: Oxide dispersion strengthened steels, Tensile properties, Anisotropy, Microstructure