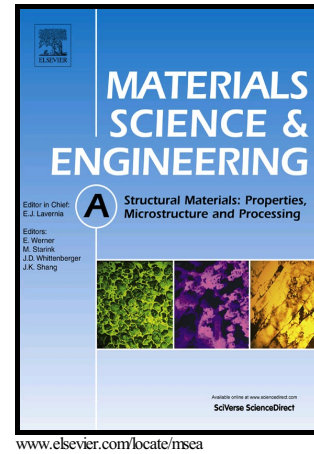


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Determination of Plasticity following Deformation and Welding of Austenitic Stainless Steel

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Abstract

Intergranular strain has been associated with high-temperature cracking of welded pipework in 316H austenitic stainless steel material used in nuclear power plant heat exchangers. In this study, neutron diffraction has been used to study the development of intergranular strains in plastically-deformed and welded 316H stainless steel. Measurements have been made of the intergranular strain evolution with increasing plastic strain in base material, and correlated with further measurements made in samples extracted from welded pipes, where the pipes were welded following plastic deformation to different levels of plastic strain. Strong

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