

Abstract Submitted
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Specifics in plastic straining and spall fracturing of structural steel 12Cr18Ni10Ti ALEXANDER SHESTAKOV, SVETLANA MALUGINA, RFNC-VNIITF, YURY ZUEV, DMITRY KAZAKOV, DMITRY BELYAEV, ALEXANDR GRIGORIEV — Interrelation between structure, chemical composition, and spall strength of steel 12Cr18Ni10Ti (close analog of the 304 stainless steel) was studied in shock-wave experiments. Push-pull VISAR measured the stress wave profiles and the spall pulse. The temperature dependence of spall strength was obtained for temperatures ranging from 300 to 730 K. Transverse microsections on recovered samples of steel 12Cr18Ni10Ti were examined by the SEM and optical microscopy method. Analysis of macrofracture distributions was used to analyze specifics in spall nucleation. The phase structural composition of recovered samples was investigated with the X-ray diffraction analysis.

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