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Instability of an Interface Between Steel layers Acted Upon by an Oblique Shock Wave OLEG DRENNOV, RFNC-VNIIEF — The results of experiments in which development of instability was observed on the interface between two identical metals in tight contact wich passage of an oblique shock wave through it are presented. Numerical modeling of experimental results was performed by a two–dimensional lagrangian procedure using an elasto plastic model with a functional dependence of the dynamic yield point on the state variables of the material. The calculations showed that perturbations develop only in the presence of a technological microgap of several micrometers between the metal layers. Unloading of the material behind the oblique shock front into the gap gives rise to considerable short – term velocity gradient (t $\leq$0.2 μs; ΔU $\geq$3 μmm/μs). Simultaneously, near the interface behing the wave front there is a short–term loss of strength of the material due to thermal softening and the heterogeneous nature of the deformation.

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