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Dynamic Strength of 304L stainless steel under impact MEIR WERDIGER, Soreq NRC, LIOR BAKSHI, BENNY GLAM, Ben Gurion University, SHLOMI PISTINNER, Soreq NRC — We use the Asay self consistent technique to analyze the effects of pressure hardening and strain hardening on SS304L. Previously unloading experiment has been used to infer the strength of this material at high pressure, and recently the Johnson-Cook (JC) model has been calibrated at low strain rate. Release and reshock experiments with impact velocity range of 300-1700 m/s were preformed. We used VISAR to extract the particle velocity of the SS304L- LiF window interface. The velocity profile compared to hydrodynamic simulation using JC model. Our unloading experiments have clearly demonstrate that the material yield but does not fail. Thus infer substantial effect of pressure hardening.

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