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**Dynamic deformation behavior of the TM380 mild steel subjected to blast**

**Shoke, Lerato S**

Council for Scientific and Industrial Research (CSIR)

Meiring Naude Drive, Pretoria, 0184

Email: [LShoke@csir.co.za](mailto:LShoke@csir.co.za)

The dynamic deformation behavior of the mild-steel TM380 subjected to explosive loading has been investigated. An imparted impulse and high pressure, from a PE4 explosive charge, interacted with the plate which is attached to a deflection gauge designed to measure the mid-point deflection time history and the imparted impulse. The shape of the bulge at the midsection of the plate was that of a paraboloid. The deflection-time curve is characterized by an escalation, followed by a very short plateau of a few microseconds at mid-point deflection, and finally a drop in deflection timespan. The dynamic strain, strain rate and impulse changes are revealed by deflection-time, velocity-time and hydrostatic pressure curves. Although no significant change in grain size and morphology occurs after shock wave loading, the pearlite lamellar structure transformed into spheroidized cementite as a result of shock induced phase transformation.