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**Fabrication of microcoined metal foil Rayleigh-Taylor targets** GREG RANDALL, JAMES VECCHIO, PAUL FITZSIMMONS, JACK KNIPPING, DON WALL, MATTHEW VU, EMILIO GIRALDEZ, TANE REMINGTON, BRENT BLUE, MICHAEL FARRELL, ABBAS NIKROO, General Atomics — Rippled metal foils are currently sought for high strain rate material strength studies. For example, the growth of these ripples by the Rayleigh-Taylor instability after a laser-induced ramped compression yields strength behavior at extremely high strain rate. Because metals of interest (iron, tantalum, steel, etc.) typically cannot be diamond turned, we employ a microcoining process to imprint the $\sim 5$ $\mu$m deep by $\sim 50$ $\mu$m long ripples into the metal surface. The process consists of nitriding a steel die, diamond turning the die, and then pressing the die into a polished metal foil of choice (Seugling et al., Proc EUSPEN Int. Conference, 2010). This work details recent process developments, characterization techniques, and important physics for fabrication of these rippled metal targets.

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