

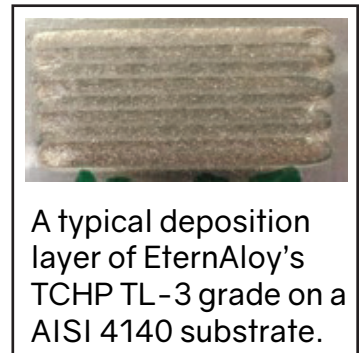
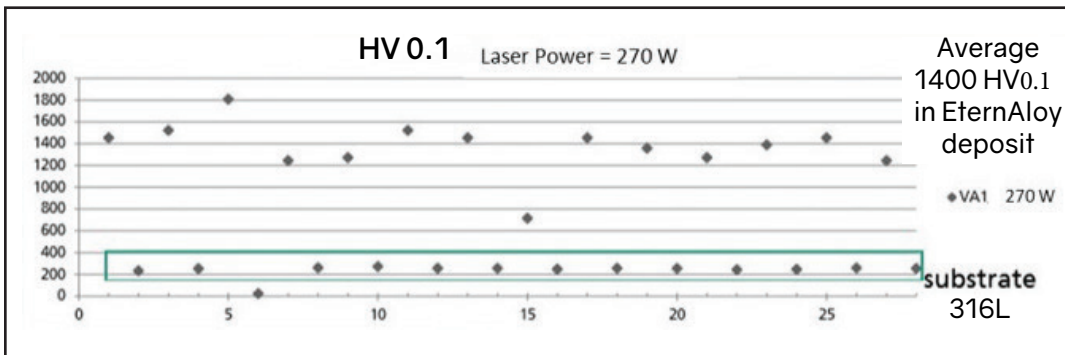
EternAloy[®] TCHP (Tough-Coated Hard Powder)

Development of EternAloy[®] TCHP for LMD (Laser Metal Deposition)

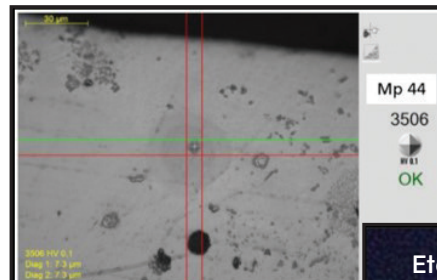
EternAloy Corporation has partnered with experts in the field of laser metal deposition for developing novel wear resistant protective surfaces utilizing **EternAloy TCHP materials**.

Preliminary Results

- Surface experiments using relatively low laser power (270 W) and a continuous co-axial powder feeding nozzle have yielded a deposit with microhardness measurements consistent at **~1400 HV0.1 across the cross-sectioned surface** and relatively low dilution (20% compared to 80% in prior trials).



- Surface experiments using relatively low laser power (510W) and a coaxial powder feed through three outlets have yielded extremely hard phases, indicating that **maintaining the TCHP particle integrity is possible**.



Microhardness measurements range between 2600 and 3500 HV0.1.

- EternAloy TCHP / metal matrix blends for LMD are possible and may provide unique properties.



Cross-section of a TCHP TL-3/ metal matrix blend. TCHP particles and agglomerates survive the LMD process and remain intact.