

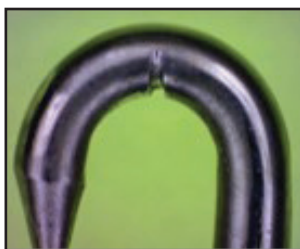
## EternAloy<sup>®</sup> TCHP HVOF Surface Coatings

### Application: Industrial Wire Knitting Needle

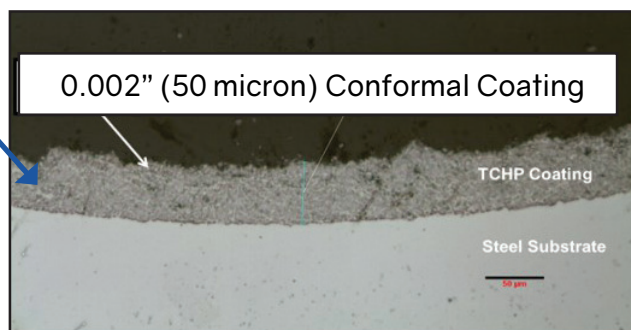
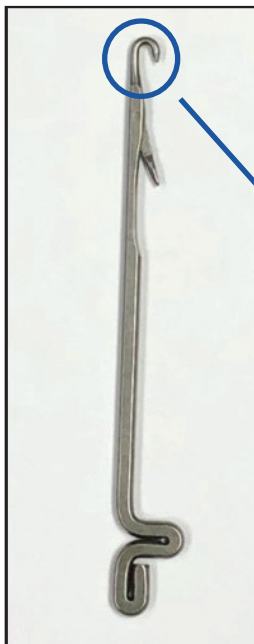
EternAloy Coating Material: ..... Grade TCHP TL-3  
Component: ..... Knitting Needle used to knit wire mesh  
HVOF Equipment: ..... Praxair TAFA Model JP-5000<sup>®</sup>

### Performance Improvement

- Industrial wire knitting needle with EternAloy TCHP coating outperforms the best tool in a high-volume wire mesh knitting operation with up to 5X increases in operational life of the needles.
- Extremely uniform EternAloy TCHP coating thickness of 0.002" (50 microns) applied to the contoured "crook" of the needle consistently across thousands of needles in each HVOF thermal spray production run.



Uncoated used needle showing wear mark in "crook"



Magnified polished cross-section of EternAloy TCHP applied to the "crook" of an industrial wire knitting needle

EternAloy<sup>®</sup> TCHP HVOF grades are manufactured by an exclusive patented process. Grade TL-3 contains Ti(C,N) core particles and grade NL-3-2 contains Al<sub>2</sub>O<sub>3</sub> core particles. In both grades, the core particles are encapsulated with layers of WC and Co to create individual composite powder particles for producing wear resistant HVOF surface coatings.