



PROTECH LAB CORP.

Materials Testing Services

147 Island Dr, Hilton Head Island, SC 29926 843-682-2772

Source: Kermetico	Date Received: 1/18/17	Protech Lab #: 17-0030
Requestor: Verstak, Andrew	Coating: Cu-HVAF	Part Serial #: Not Provided
Customer P.O.#: 2017-3290	Powder: Not Provided	Job #: Not Provided
Quantity Provided: 1 Panel	Gun: S7-N3L-H	Nozzle: Not Provided

Additional Data:	Sample ID: Cu-HVAF_1290-1
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Coating Material: Copper	Coating Vendor: Not Provided	Coating Lot #: Not Provided
Protech Polishing Procedure: PLC-Soft	Mount Identification: 17-0030	Cu-HVAF 1290-1

Microstructure Evaluation

Requirements	Characteristics	Found	Accept/Reject	Comments:
COATING MICROSTRUCTURE				
Not Provided	Porosity	< 0.5%	Info Only	See Additional Comments
Not Provided	Oxide Content	See Photo Below	Info Only	
Not Provided	Unmelted Particles	None Found	Info Only	
Not Provided	Cracks/Delaminations	None Found	Info Only	
Not Provided	Interface Contamination	< 1%	Info Only	Calculated Via Filar Point Count

Additional Comments:	Porosity: ASTM E2109-01(2014) was used as a comparison for determination of porosity percentage.
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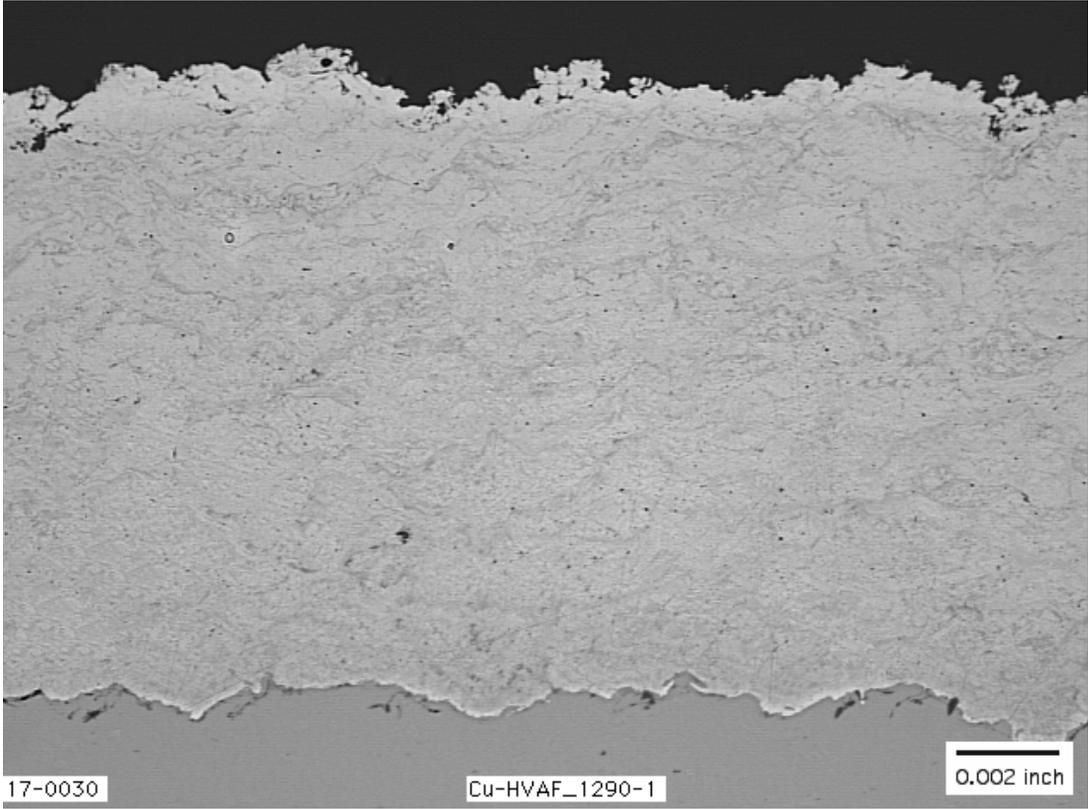
MICROSTRUCTURE EVALUATION FOR INFORMATION ONLY

Average Coating Thickness
11.2 mils

Microhardness Results
Specification: ASTM E384-16
Test Type: HV300
Requirement: Not Provided

Readings
166
184
182
184
182
163
180
176
182
186

Average Hardness
178.5
For Information Only

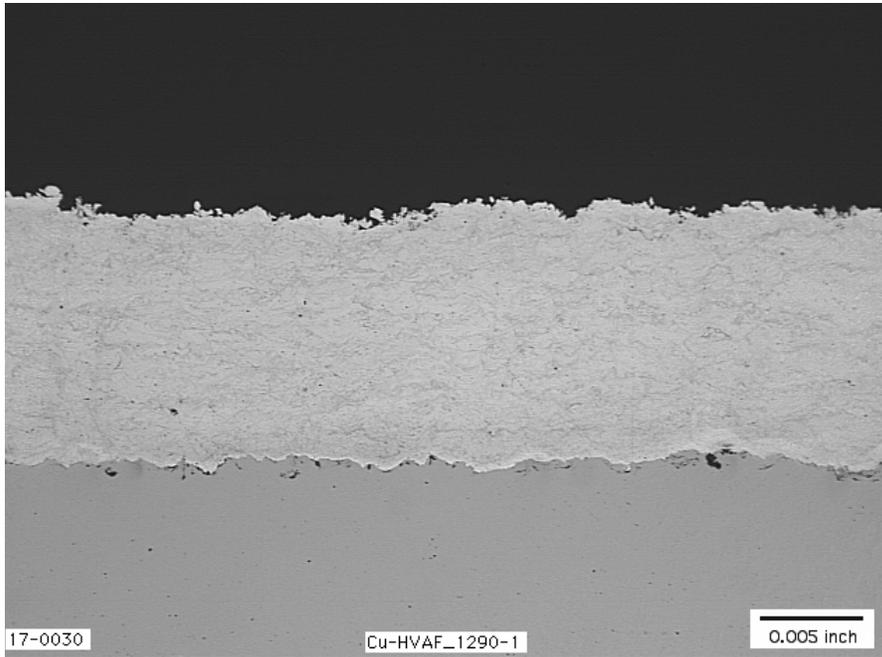


Laboratory Signature: *Michael*

Date: 1/23/17

Reviewed By: *Eric Thibij*

Date: 1/23/17



Microstructure as Viewed at 100x Magnification