

The Watson Lab Difference

We pride ourselves in supplying the highest quality thermal spray coatings and manufactured products in the industry. The Watson Coatings Lab ensures consistent quality and repeatability of Watson Grinding & Mfg's coatings.

A2LA Accredited ISO 17025:2005 Testing:

The Watson Laboratory is A2LA Accredited ISO 17025:2005.



WATSON
coatings
LABORATORY

A Division of Watson Grinding & Mfg.



ISO 17025:2005
Certificate Number: 3390.01

A2LA Accredited ISO 17025:2005 Tests:

Apparent Density	ASTM B212
Flow Rate	ASTM B213
Sieve Analysis	ASTM B214
Knoop & Vickers (100g, 300g)	ASTM E384
Rockwell (B and C)	ASTM E18
Adhesion	ASTM C633; QSLP 01*
Area Percentage Porosity	ASTM E2109; QSLP 03*
Metallographic Preparation	ASTM E1920
Bondline Contamination	QSLP 05*
Coating Thickness	ASTM B487

*All QSLP test methods are in-house procedures.

Additional Testing Includes:

Shear Strength Test
Taber Abrasion Testing ASTM F1978, 18508-1
Valve/Coating Failure Analysis
Thermal Spray Coatings R&D

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Testing:

Thermal Spray Powder Testing

Apparent Density ASTM B212-09

Used to confirm the properties and consistency of thermal spray powders from lot to lot. The volume-mass (size distribution) shape influences efficiency of the thermal spray powder as its deposited onto the part.

Flow Rate ASTM B213-11

Inter-particle friction influences how thermal spray powder will flow into the plume.



Sieve Analysis ASTM B214-07

Determines the particle size distribution of a granular material. Important when determining thermal spray capability and fine tuning spray gun parameters. Size distribution influences deposition efficiency, percent porosity and adhesion of thermal spray coatings.



Hardness Testing

Rockwell ASTM E18

Rockwell B & C determine base metal hardness. Base metal hardness influences the adhesion strength of thermal spray coatings.



Vickers ASTM E384

Hardness influences the abrasion resistance, toughness, and gall resistance of thermal spray coatings.



Thermal Spray Coating Testing

Adhesion Strength Tensile Test ASTM C633

Quantifies the bond strength of a coating to a substrate. This test determines the maximum load force to disbond a coating from the substrate, and/or pull the coating apart.



Area Percent Porosity ASTM E2109; QSLP 03

We try to detect every void that is in the coating. This procedure provides a method for performing porosity ratings on metallographic thermal spray coating samples. Image analysis is used for detection of voids & cavities.



Metallographic Preparation ASTM E1920

Coatings are polished to expose a microstructure, then examined under a light optical microscope for evidence of unmelted particles, metallic inclusion, voids, porosity, spalling, micro-cracking and bond line embedded contaminants.



Coating Thickness ASTM B487

This test involves taking measurements of the local thickness of metal and oxide coatings by the microscopical examination of cross sections using an optical microscope.



Bondline Contamination QSLP 05

The Bondline contamination test is a method for measuring the interface between imbedded media and the overlaying Thermal Spray Coating. Bondline embedded contaminants can cause protruding media through the coating, and spalling. Bondline contaminants are an important factor to eliminate when performing ceramic coatings.



Non-Accredited Testing:

Shear Strength Test

The Shear Strength Test is similar to the Bond Strength tensile test, but the test fixture is designed to apply a *shear force parallel* to the coating surface. The shear strength is determined at failure. This is an R&D test at this time.

Taber Abrasion Testing ASTM F1978, 18508-1

Evaluates a coating's resistance to particle shedding. This rolling abrasion test measures the rate and type of wear. Used to evaluate the effects of variables such as surface texture, coating technique, or post coating treatments.



Valve/Coating Failure Analysis Thermal Spray Coating R&D