

**BTHC-0005**

Hard Chrome Plating Alternative

Using the latest technology in thermal spray, we have developed a hard chrome plating alternative that outlasts hard chrome plating and other thermal spray alternatives, BTHC-0005. BTHC-0005 has all the benefits of hard chrome plating and then some. If it sounds too good to be true, just check the facts for yourself...

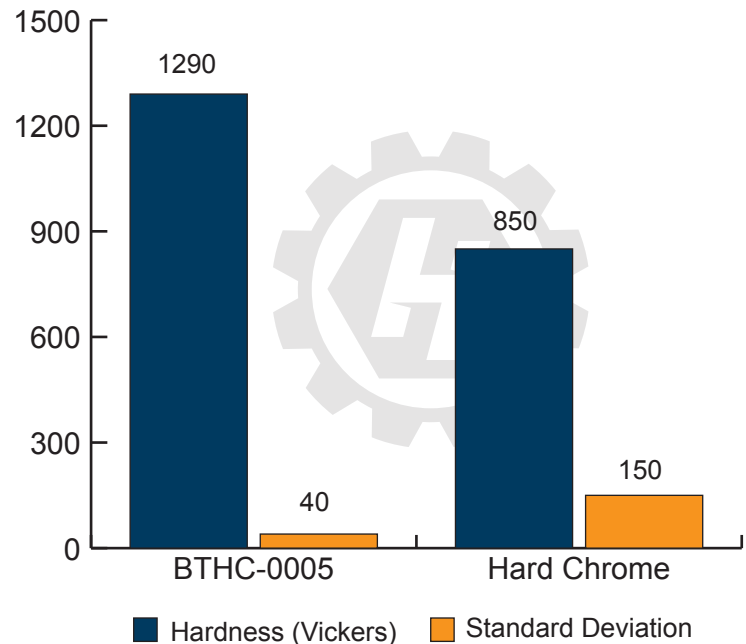
- ✓ Harder
- ✓ More ductile
- ✓ Can be applied thicker
- ✓ Less porous
- ✓ More corrosion resistance

Wear Resistance

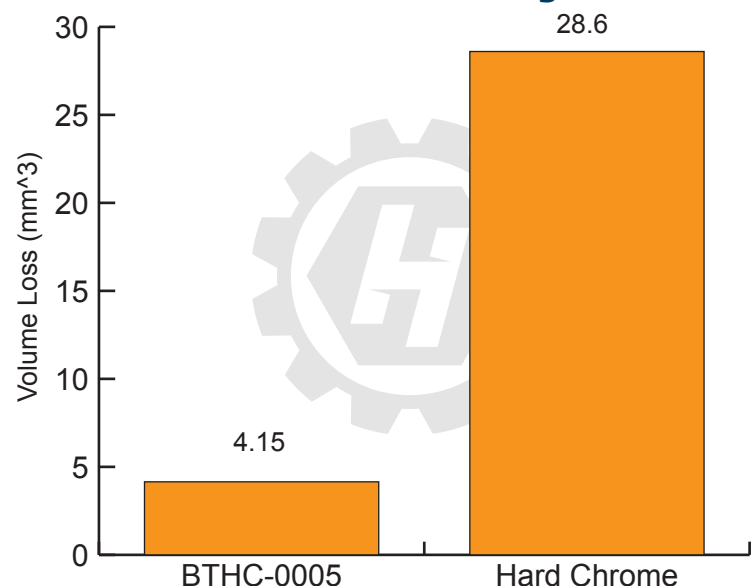
The hardness of a coating does not directly translate to wear resistance. But it can be a first line indicator of whether a coating will be hard or soft. In general, the harder a coating is, the more wear resistant it is likely to be. BTHC-0005 is 50% harder than hard chrome. To take it a step further, you can do specific wear testing.

The ASTM G65 wear test uses a standard procedure to measure the volume loss under high wear conditions. BTHC-0005 shows significantly less volume loss over hard chrome plating. This is not a direct translation to how it will perform in the field, given the part conditions could be vastly different than the testing scenario, but it does give us a great idea of the increased wear resistance of BTHC-0005 over hard chrome plating.

Vickers Hardness



ASTM G65 Testing

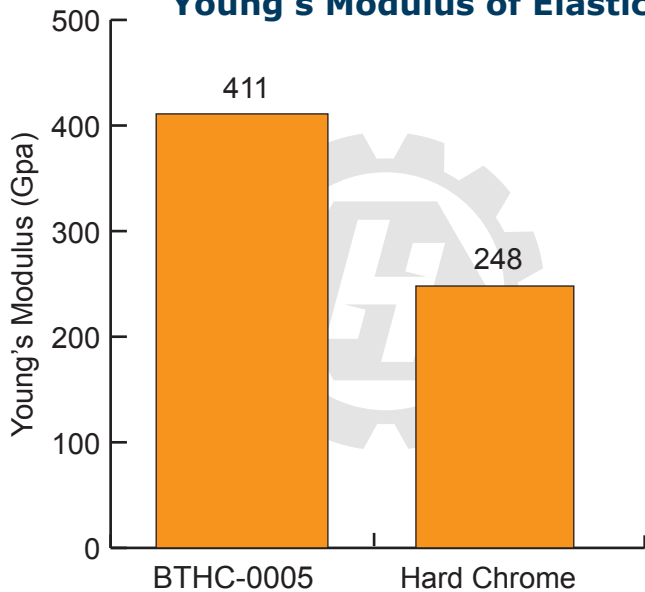


Ductility

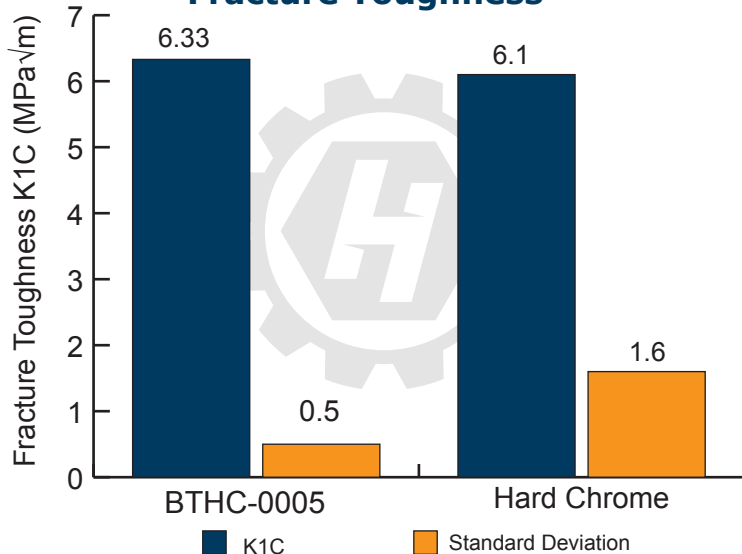
Not only does ductility aid in the wear resistance of a coating but it can also determine how thick a coating material can be built up. In the case of coatings as hard as these, ductility is usually an issue, but not BTHC-0005. Despite being harder than hard chrome plating, it is much more ductile.

Due to this ductility, BTHC-0005 has a higher fracture toughness. This lends it to be more wear resistance against abrasives types of wear.

Young's Modulus of Elasticity



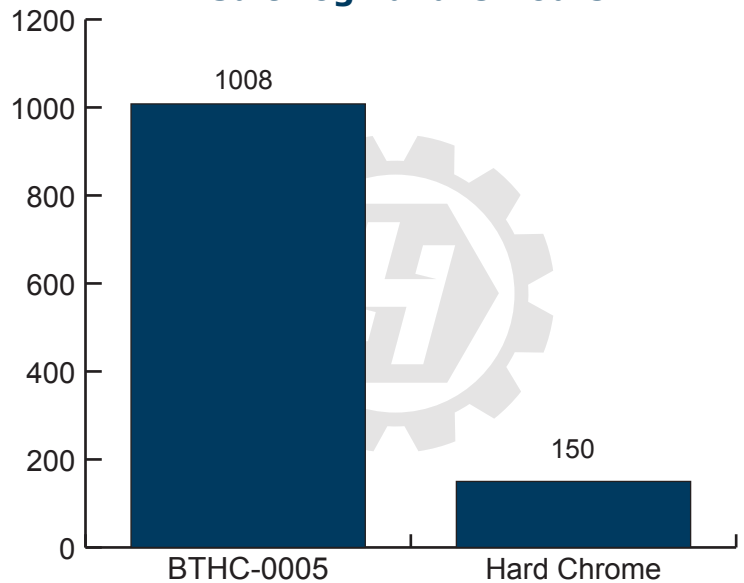
Fracture Toughness



Corrosion

BTHC-0005 shines when it comes to corrosion. Hard chrome plating is highly porous out of the gate. BTHC-0005 boasts less than 0.5% porosity. That means less chance of corrosion and corroding substances getting under the coating and eating away at the base material. BTHC-0005 protects parts from both wear and corrosion.

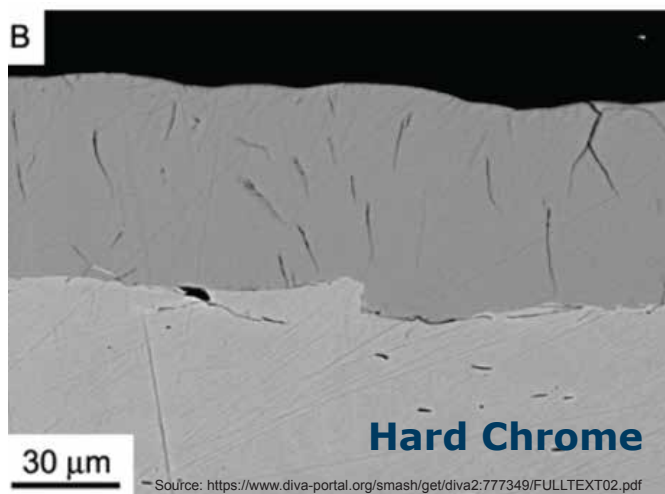
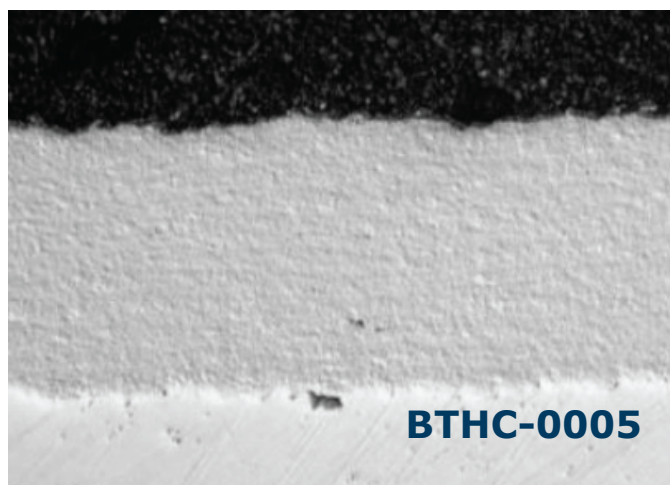
Salt Fog Failure Hours



BTHC-0005 is Better Than Hard Chrome

Hard chrome has dominated the industry due to its protective properties and its low pricing. With rising concerns around health and safety, the benefits have stopped outweighing the risk. There are many alternatives out there but these numbers speak for themselves. BTHC-0005 is REACH and CARB compliant. BTHC-0005 is better than hard chrome and worth the investment.

Under the Microscope



Property	BTHC-0005	Hard Chrome
Hardness	70-75 HRC	60-70 HRC
Porosity	<0.5%	
Bond Strength	12,000+ psi	35,000+ psi
Coating Thickness	0.002" to 0.050+"	0.001"-0.004"
As-Sprayed Surface Finish	~40 Ra	~32 Ra
Final Surface Finish	~1 Ra	~1 Ra



HTS Coatings is your one-stop solution...

- 6 Robotically controlled spray booths
- In-house machining & grinding services
- Inside diameter spray down to 4"
- Spray parts up to 30' long and 36" in diameter
- Can be polished to a 1 Ra-in

**Large company capabilities,
small company care**



HTS COATINGS CAPABILITIES

Our 30,000 square foot facility includes six robotically-controlled spray booths, machining and grinding, as well as an in-house coating laboratory. HTS Coatings has everything to repair and enhance the life of your parts.

ISO 9001:2015 CERTIFIED

THERMAL SPRAY

High Velocity Air Fuel (HVOF)

High Velocity Oxy-Fuel (HVOF)

Plasma

Flame

(Wire and Powder Combustion)

Arc

Spray and Fuse

Six robotically controlled spray booths

30 feet long by 96" diameter, 10,000 lbs

Materials

- Chrome Carbide
- Tungsten Carbide
- Stainless Steel
- Bronze
- Aluminum Oxide
- Chrome Oxide
- Stellite®
- Colmonoy®
- Many more...

MACHINING & GRINDING

Cylindrical Grinding

Surface Grinding

CNC Turning

Manual Lathes

CNC Milling

Up to 27" diameter and 120" center-to-center
60" L x 12" W x 11" H

Up to 22" diameter and 52" center-to-center

Up to 36" diameter and 240" center-to-center
with 24" cross over slide

3 axis, 40" x 26" x 25", 4,000 lbs

WELDING

Plasma Transfer Arc (PTA)

Tungsten Inert Gas (TIG)

Metal Inert Gas (MIG)

Brazing

Materials

- Stellite® 6
- Colmonoy®
- Many more...

LAB & QUALITY TESTING

Hardness Testing

(Micro & Macro)

Metallurgical Evaluation

(Porosity & Structure)

Tensile Testing

Surface Roughness Evaluation

FARO Arm

Overall Shop Weight Capacity is 10,000 lbs