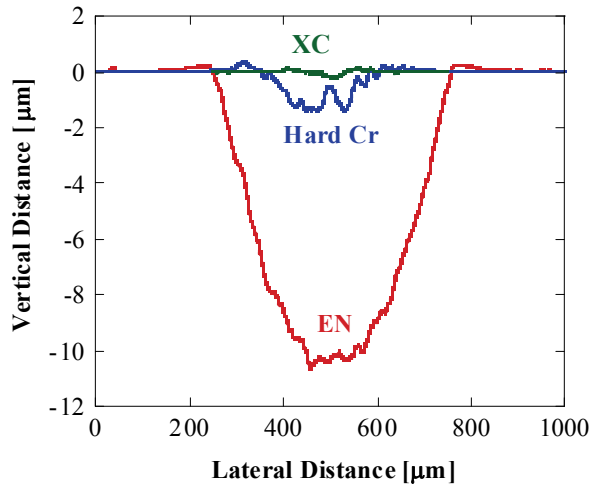


TM-Xcalibur is a hard coating that can have low coefficient of friction, out perform chrome in wear applications with two to four times, and three to ten times the corrosion resistance of chrome. This coating has some leveling properties, which helps maintain surface Ra. TM-Xcalibur is mainly used in high wear, anti-galling, release, or corrosive type applications. TM-Xcalibur can be applied to all ferrous metal & most non-ferrous metals. As coated the hardness is 520 to 750 Vickers and after heat-treatment of 400 F for six hours hardness increases to 900 to 1100 Vickers. TM-Xcalibur in the pin on-disc wear testing has out performed Hard Chrome results by 2 to 4 times in wear resistance. TM-Xcalibur Deposit and Process is CHROME FREE. The coating is bright, scratch resistant, and is environmentally friendly.

Applications and user benefits

- Hard Chrome Replacement and Flame Spray Alternative Technology, not limited to line of sight.
- Applications: Aerospace, DoD, Automotive, Tool & Die, Electronics, Hydraulics, Rotating Equipment, Oil & Gas, and others
- Benefits: Better Throwing Power than Cr, Corrosion Resistance, Better Uniformity than Cr, Hardness, Green Technology

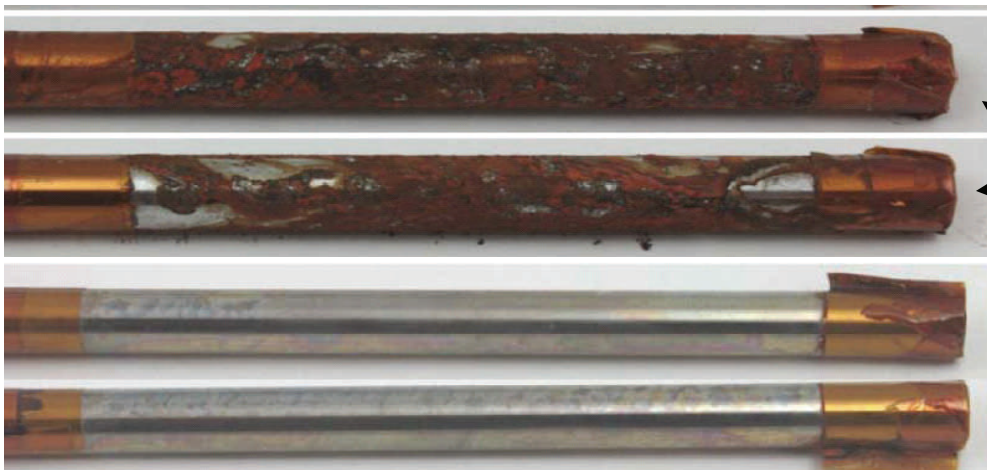


TM-Xcalibur: Meets and Exceeds Wear Resistance vs. Chrome & EN

PIN-ON-DISC WEAR TESTING

TM-Xcalibur was benchmarked against hard Chrome and as deposited Electroless Nickel.

Coating Type	Load [N]	Penetration depth [µm]	Wear Rate [mm ³ /hr]	Relative Wear Rate
Xcalibur	3	0.2	1.0x10 ⁻³	1
Xcalibur HT	3	0.1	4.0x10 ⁻⁴	0.25
Hard Chrome	3	1.5	2.3x10 ⁻²	23
EN	1	10.5	2.9x10 ⁻¹	290



TM-Xcalibur Surpasses Chrome Corrosion Resistance by 3 to 10 Times Standard Salt Spray Testing Results

Standard Hard Chrome .0005 inches Thick on Mild Steel Rods (**48 hours**)

TM-Xcalibur .0005 inches Thick on Mild Steel Rods (**500 hours**)

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