SilcoTek Coating Success and Care Guide

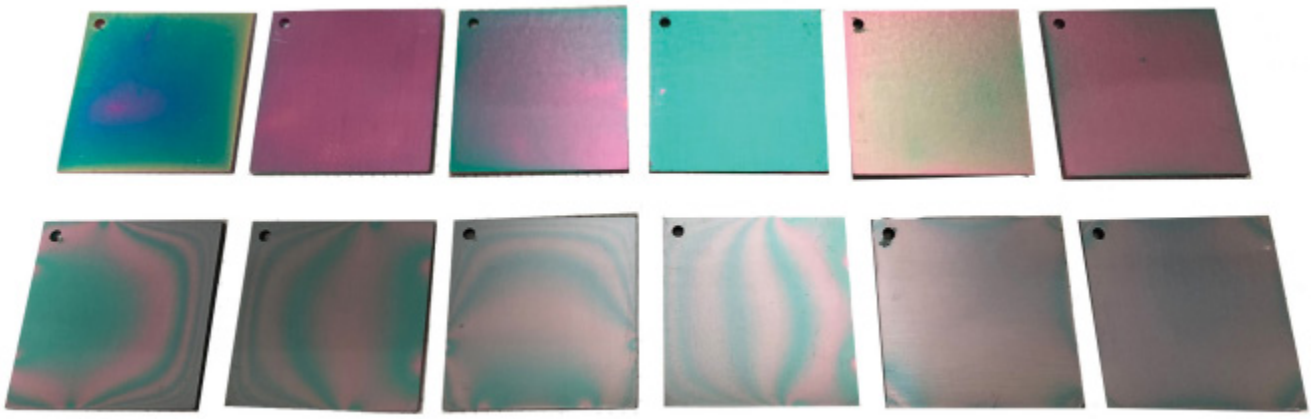
Appearance

Typical Appearance of SilcoTek Coatings

The colors of SilcoTek's coatings are a result of light adsorption and/or refraction through the thin film of the coating on a substrate. A slight change in thickness (a few nm) changes the interference pattern of the light, creating a big impact on the visible colors. The process of light adsorption and/or refraction gives our coatings their signature rainbow appearance.

The surface finish should be bright and free of defects; however, the original surface condition can have a major impact on final surface quality. Customer parts are prepared before and after treatment to ensure optimal aesthetic quality. Sometimes the part surface may contain trace silicon (black particles) as a byproduct of the silicon-based CVD treatment process. Residual silicon can be removed by simply rinsing with a solvent or by sonication in water.

SilcoTek Coating	Typical Thickness	Typical Appearance
SilcoNert 1000	100-500 nm	Rainbow
SilcoNert 2000	100-500 nm	Rainbow
Silcolloy 2000	580-2400 nm	Matte
SilcoKlean	100-500 nm	Rainbow
Dursox	400-1600 nm	Rainbow
Dursan	400-1600 nm	Rainbow
Siltride	500-2000 nm	Rainbow
Notak 2000	No appreciable thickness	Clear (stainless steel will oxidize)



The typical thickness ranges shown above are representative measurements obtained from SilcoTek sample coupons under controlled coating conditions and are provided for reference only. Typical thickness is not a product specification and may vary based on part geometry, surface characteristics, fixturing, quantity, and other processing factors. Variations within normal coating process parameters do not adversely affect coating performance.

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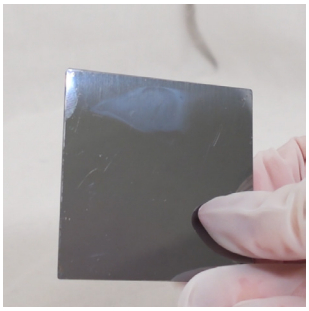
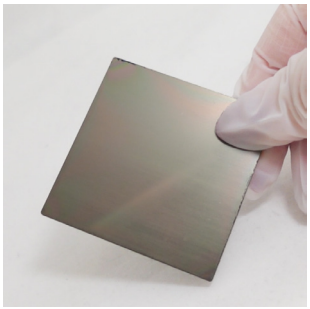
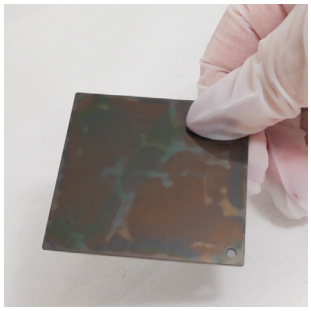
Typical Cosmetic Anomalies

What is a cosmetic anomaly?

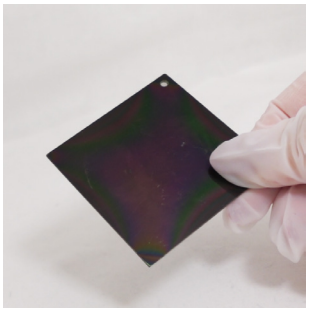
SilcoTek coatings are susceptible to typical cosmetic anomalies due to the nature of our coating process. Our quality control technicians are trained to inspect coated parts for flaws that will affect part performance, in which case the customer will be notified and further troubleshooting steps will be taken. This document will demonstrate common visual anomalies that customers may notice, but our quality team has deemed acceptable as they should not affect part or coating performance. For example, carbon steel will naturally oxidize in the high temperatures of our coating process and appear much darker than uncoated. However, the part remains fully functional and the coating is unaffected. See below for more examples of typical cosmetic anomalies that do not affect performance. For any questions regarding appearance, please contact SilcoTek directly.


Cleaner residue, produces visual cloudiness.

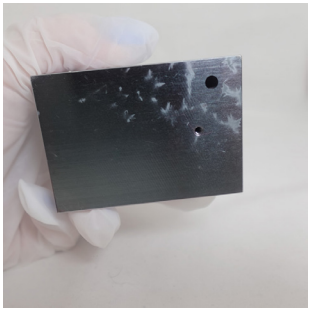

Haze, overall cloudiness.

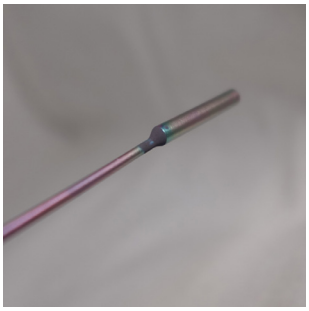

Mottling, random pattern.


Non-raised halo.

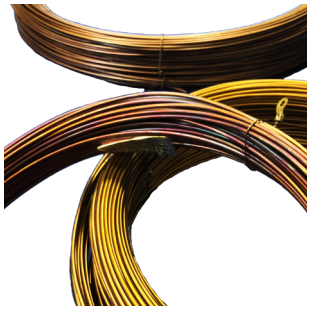

Carbon steel darkening.


Fixturing touchpoint.


Aluminum discoloration.


Discolored braze joint.


Milky residue.


Oxidized coated tubing.