

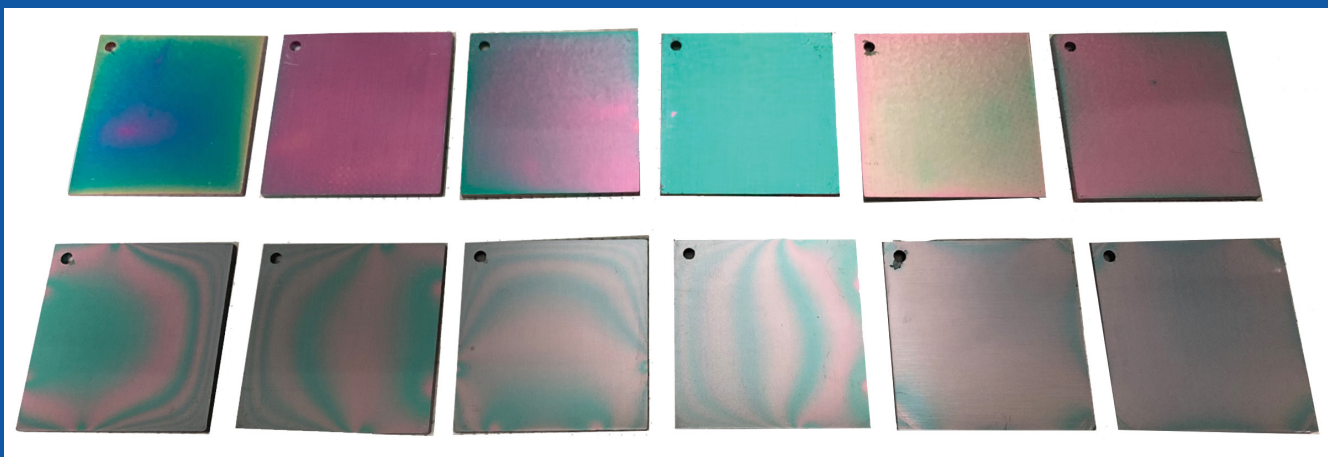
Acceptable Appearance of SilcoTek®'s Coatings



SilcoTek's Dursan® and SilcoNert® coating processes are known by our customers to improve surface inertness, durability, fouling, and corrosion resistance in a range of several industrial applications. If you have ever wondered why our coatings have a rainbow-like color, this application brief will explain the reason behind the appearance of our coatings and how it falls into our acceptable specifications.



Dursan's light refraction properties (seen above) correlate with a coating thickness between 400 and 1600 nm. The refraction properties of the Dursan coating process are more subtle than SilcoNert, making it easy to distinguish between the two.



SilcoNert's light refraction properties above correlate with a coating thickness between 100 to 500 nm (from right to left: thin to thick). The light spectrum produced by the SilcoNert coating process is more vibrant than Dursan and includes deep blues, purple, green, and gray. The coupons shown above are highly polished, resulting in a bright color spectrum. Rough and unpolished steel surfaces will subdue the colors.

Important Notes about Coating Appearance

The colors of SilcoTek's coatings are the result of light absorption and/or refraction through the thin film of the coating on a substrate. A slight change in the thickness of the coating (a few nm) can have a big impact on the visible colors because that changes the interference pattern of the light. This process of light absorption and/or refraction gives our coatings their signature rainbow appearance. A few things to note regarding the coating appearance:

- As long as it meets our specification, the coating thickness (and therefore color) has no impact on surface properties such as inertness, hydrophobicity, and anti-fouling.
- One surface property that can be affected by coating thickness is corrosion protection. SilcoTek has written a white paper on this relationship that can be found [here](#).
- The acceptable thickness range for SilcoNert 2000 is 100-500 nm.
- The acceptable thickness range for Dursan is 400-1600 nm.
- All of SilcoTek's coating processes have specified acceptable thickness ranges that can be found on our [website](#).

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