



Restek Performance Coatings

Substrate Preferences

Construction Material

300 Series Stainless Steel: Extensive experience with 316L and 304 specifically.

400 Series Stainless Steel: Limited experience, good results.

Carbon Steel: Good results. It is important that we receive items after machining and packed in oil. This will prevent oxidation (rusting) of the carbon steel. Any oxidation of the surface causes the formation of a poor quality layer.

Hastelloy: Limited experience, good results.

Inconel, Monel: Limited experience, occasional poor results.

Titanium: Very limited experience, good results.

Platinum: Very limited experience, successful coating.

Gold/Silver: No experience, concern about outgassing in vacuum +400°C environment.

Aluminum: Limited success; appears to be a surface issue. Temperature of process, 400°C, is very high for aluminum: the aluminum will soften. Also, there is no way to remove the coating if re-work is required—the materials that can remove the coating also will dissolve aluminum.

Borosilicate Glass: Good results. One major issue is breakage rate: breakage can occur during processing/packaging/shipping/transit. Customer should be so advised.

Nickel: Not treatable.

Brass: Not treatable.

Copper: Not treatable.

Bronze: Not treatable.

Plastics: Not treatable.

Plated items: Gold, silver, chrome, or nickel-plated items are not treatable.

Surface Finish

Electropolished Surface: Ideal.

Polished Surface: Very good.

Bead Blasted: Very good if the blasting produces a smoothed surface.

Machined: Quality of coating proportional to surface roughness. If the roughness average is low, the coating will be good. If the surface is rough, the coating will not be as good.

Cast surface: Marginally acceptable. The surface produced by casting usually is rough and requires a thicker film to ensure coverage.

Painted/Coated Surface: Unacceptable. No paints and very few coatings can withstand the temperatures and vacuum in the coating processes.

Welded or Brazed Areas

Vacuum-Nickel Brazing: Ideal.

TIG/MIG Weld: Acceptable.

Silver Solder: Poor. Silver solder creates outgassing during coating and leaves a poor surface.

Bronze Solder: Not treatable.

Common Lead/Tin Solder: Not treatable. Temperatures used in the coating process will melt the solder.

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