



A corrosion resistant silicon barrier coating ideal for acidic, oxidative, and high purity environments.

## Overview

Silcolloy® (US Patent 7,070,833) is a chemically protective, corrosion resistant, multi-layered barrier of amorphous silicon. Applied via chemical vapor deposition (CVD), Silcolloy is the ideal choice for protecting stainless steels, exotic metals, glass, ceramics and other alloys from acidic attack or for preventing unwanted compounds from entering the process stream.

## Features & Benefits

- 3D non-line-of-sight process coats all complex geometries and small orifices
- Achieve exotic material performance at a fraction of the price
- Fight corrosion with a non-reactive, pure barrier

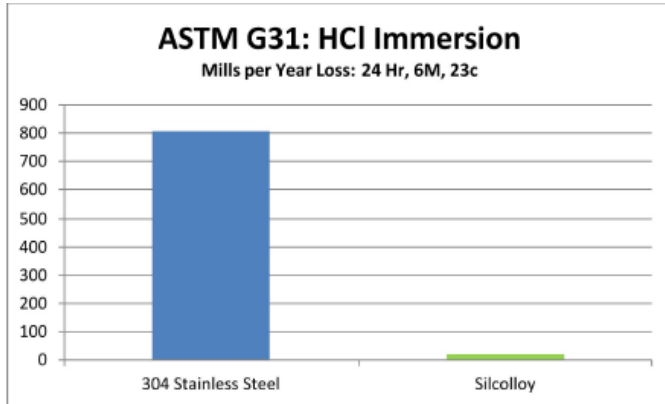
## Specifications

Substrate compatibility*:	SS alloys, ceramics, glass, titanium, most exotic metals, TIG/MIG welds, vacuum-nickel brazed areas
Allowable temp. range:	-210°C to +1140°C
Thickness:	180-800 nm
Allowable pH exposure:	0-8
Lubricity (coefficient of friction):	0.7
Hydrophobicity (contact angle):	80°
Wear resistance	14.00 (304 stainless steel: 13.81)

# Data

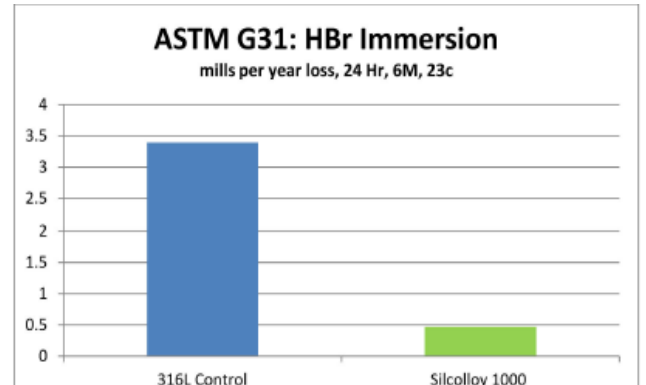
## Acid Corrosion Resistance

Silcolloy® protects stainless steel against corrosive attack from even the strongest acids.



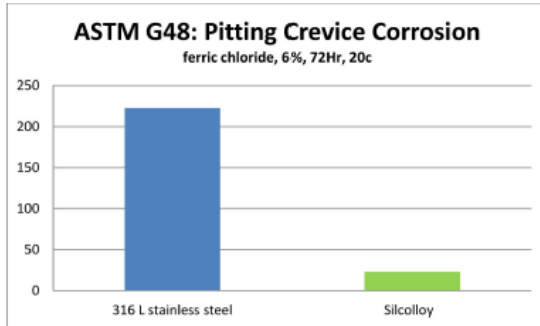
## Semiconductor-Related Corrosion

High purity, corrosion resistant Silcolloy is ideal for gas delivery and chamber systems.



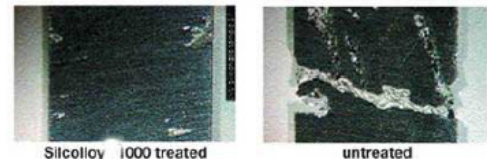
## Crevice Corrosion

Silcolloy acts as a barrier to prevent pitting and crevice corrosion.



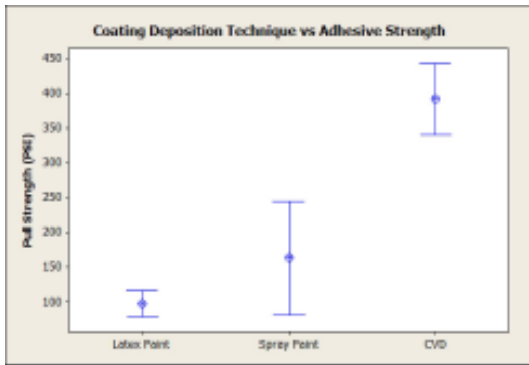
## Acid Corrosion Comparative Results

Silcolloy shows minimal pitting while uncoated stainless steel shows significant crevice corrosion.



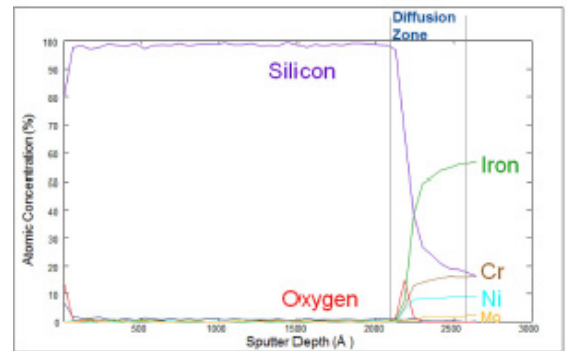
## Adhesion

Our CVD process ensures a molecularly bonded coating that will not flake or peel.



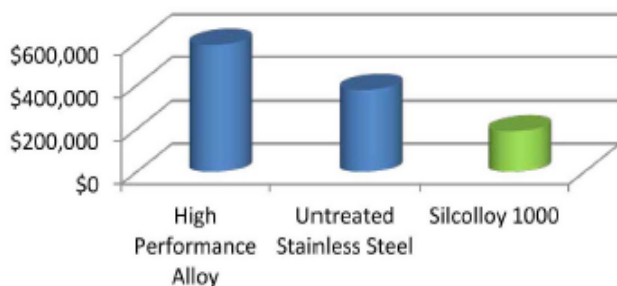
## High Purity

Multilayer silicon surface prevents leaching of metal ions into process streams.



## Lifecycle Cost

Silcolloy offers a significantly lower lifecycle cost compared to exotic materials.



Coatings that Expand Material Limits

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