

H63 chrome carbide hardface coating for better wear resistance



Hardface coatings, particularly HVOF (High Velocity Oxygen Fuel) chrome carbide coatings, have multiple applications in all types of turbomachinery. HVOF chrome carbide coatings are effective in combatting most wear such as solid particle erosion, fretting, abrasion, and cavitation, as well as potentially reducing repair intervals for your coated component.

H63

H63 is a chrome carbide coating in a 20% and 25% nickel-chromium matrix. The thermal expansion of this coating is approximately $9.8 \times 10.6 \text{ m/m}^\circ\text{K}$, which closely matches iron ($\sim 12 \times 10.6 \text{ m/m}^\circ\text{K}$) and nickel ($\sim 13 \times 10.6 \text{ m/m}^\circ\text{K}$), which cover most materials that accept hardface coating.

The Sulzer benefit

- Higher wear resistance
- Increased lifetime
- Lower cost

Coating data

Composition

H63

Cr3C2-25
(Ni-20Cr)

Macrohardness

> 60 HRc

Bond strength

> 10,000 psi

Surface profile

as sprayed
as ground

3.9 – 6 $\mu\text{m Ra}$ (100 – 150 $\mu\text{in Ra}$)
< 0.4 $\mu\text{m Ra}$ (10 $\mu\text{in Ra}$)

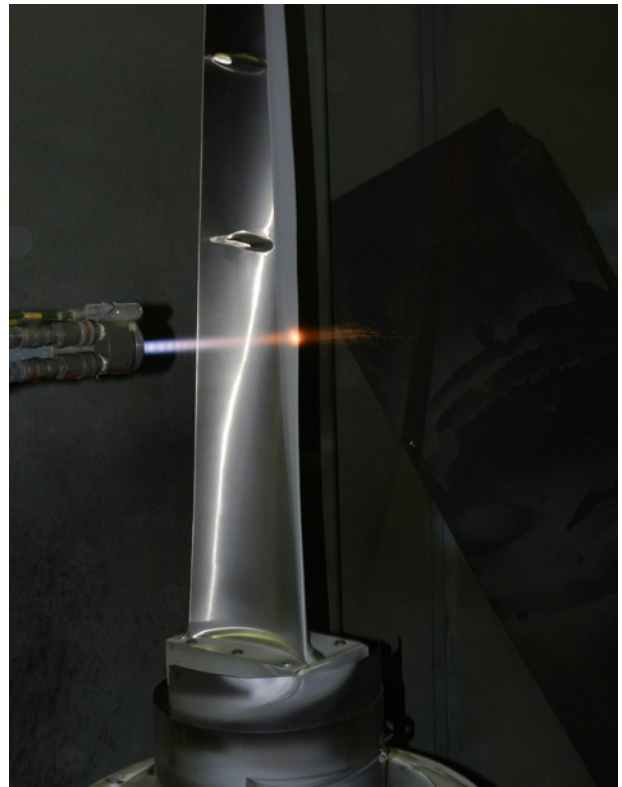
Characteristics

Chrome carbides in a nickel-chromium alloy are very oxidation and corrosion resistant. They are rated to the highest temperature of all carbides and maintain hardness to 870°C (1'600°F). Above this temperature, in the presence of oxygen, the chrome carbides will start to oxidize and soften. H63 meets GE B50F268 specification and is a slightly denser coating. H63 exceeds 60 HRc hardness and is highly recommended for higher temperature wear, erosion and cavitation.

Components

Applications for this coating include contact surfaces of

- Designated wear surfaces on gas turbine combustion components
- Expander blading
- Steam turbine blading
- Steam turbine diaphragm



Sulzer Turbo Services Houston Inc.

Houston Service Center
11518 Old La Porte Road
La Porte, TX 77571, USA
Tel. +1 713 567 2700
sulzerhouston@sulzer.com



How can we help you?
Contact us today to find your best solution.

sulzer.com

E10306 en 03.2025, Copyright © Sulzer Ltd 2025

This brochure is a general product presentation. It does not provide a warranty or guarantee of any kind. Please contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.