

H14

High Temperature Wear Resistant Coatings

During the operation of Westinghouse W191, W25 1or other gas turbines, combustor basket spring clips have a tendency to expand and contract. This is due primarily to thermal cycling. This expansion and contraction can cause scoring and/or fretting of the mating transition duct. Wear is further accelerated by the vibration encountered during operation.

Westinghouse Technical Improvement Bulletin (issue #78-26) recommends a coating of Tribaloy 400 (T400) on both the transition ducts and combustor basket spring clips.

STSH offers H14, a T400 coating to meet the Westinghouse 83262A2 specification. H14 is applied using an oxygen / hydrogen HP-HVOF gun which produces low oxide coatings with high bond strength and smooth surface profile.

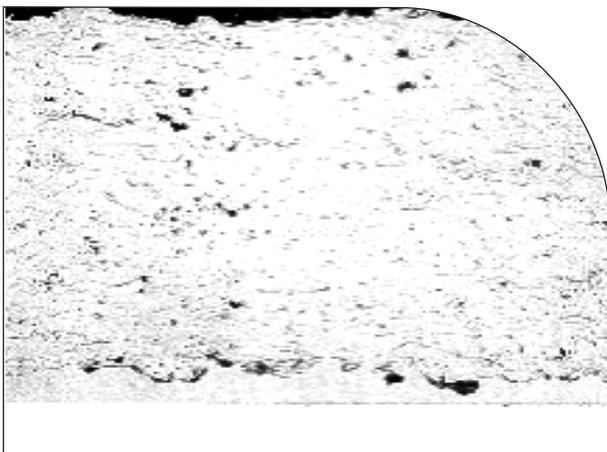


Figure 1

Figure 1 shows a 250X cross-sectional photomicrograph of a typical H14 coating. Coating thickness typically measures 4-6 mils, but can be applied in excess of 25 mils.

The table in Figure 2 shows the typical chemistry for H14.

Element	Weight %
Cobalt	Balance
Molybdenum	28
Chromium	17
Silicon	3

Figure 2

The coating hardness of H14 is greater than 53 Rc. Porosity content of the H14 coating is controlled at less than 2 volume percent. Oxide content on the coating is less than 5 volume percent. Coating roughness measures less than 350 micro inches aa (.100 cutoff). Ground finishes of less than 10 micro inches Ra (.010 cutoff) can be achieved. The bond strength of H14 is greater than 10,000 psi (ASTM C633).

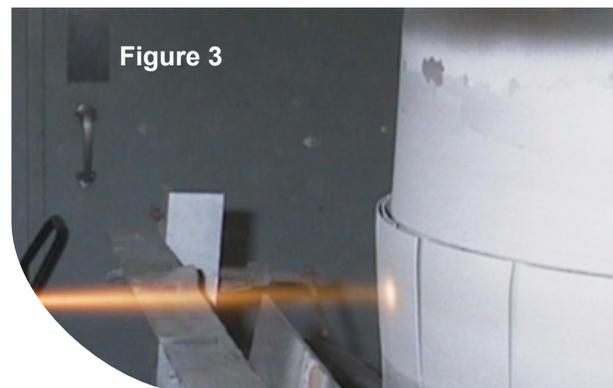


Figure 3

H14 is applied using an 8-axis robotic manipulator along with closed loop automated HVOF spray equipment to coat all components. Robotics and automation offer the advantage of removing the human error associated with hand spraying. Figure 3 shows a Westinghouse W191 combustor basket being coated at the STSH facility.

Since STSH is an ISO 9001 certified coating facility, the quality and reproducibility of H14 is constantly monitored through a vigorous quality assurance process.



H14 coating a proven method of providing high temperature wear resistance on combustion baskets and transition ducts. H14 is just one more reason why STSH is the world's most complete and comprehensive turbo machinery repair facility. If you would like more information please contact a STSH representative.

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