



Commercial Applications

Monitor provide a number of bespoke solutions to severe environment operating conditions associated with traditional thermal spray markets such as the paper and printing industry and the chemical and plastic industry. In addition to this, Monitor promotes its own proprietary and unique solutions to complex applications such as high temperature oxidation and solid particle erosion as seen in the super critical steam turbine industries (Hydro-Steam Turbines) and the aggressive effects of molten glass in the glass manufacturing sectors.

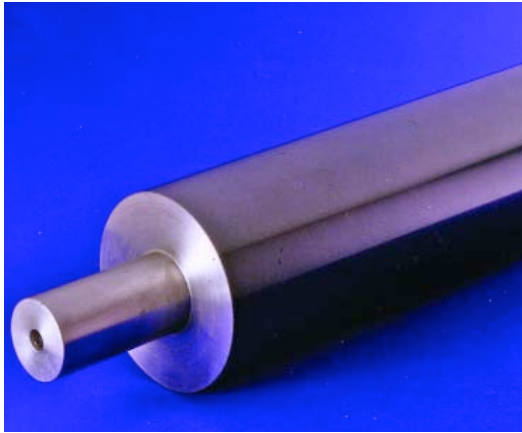
Densification of Hard Faced Coatings

The application of a hard-face material such as a coating selected from the family of Tungsten based carbides is both hard and dense with very little porosity when applied using HVOF. By allowing a small amount of porosity into the coating and subsequently sealing with a ceramic slurry the surface, mechanical, chemical and physical properties are changed.

The same can be said with hard chrome plating. Chrome is by its very nature made up of a network of cracks and voids which increase the apparent surface area of the coating allowing for enhanced corrosion resistance.

However, where the corrosive environment breaches the coating and finds its way to the underlying component, pitting corrosion takes place, lifting the coating and damaging any mating surface such as a rubber stator, seal or gasket. By sealing the chrome plate in the same way as a carbide coating, the surface properties of the coating are changed.

The sealing or densification process involves a secondary coating stage where the sealing slurry is applied to the already hard-face or chrome coated component. After application of the sealant, the component is subjected to low temperature heat treatment which promotes a thermo-chemical conversion reaction of the coating forming a very hard and durable seal. The resultant sealed coating shows a marked increase in wear resistance and dramatic performance improvements in terms of corrosion resistance, resistance to chemical attack and toughness. Increased toughness subsequently leads to improved impact resistance, resistance to solid particle erosion and improved bond strength and adhesion of the coating.



Anilox Rolls

Monitor provide state of the art technology in coating and sealing of Anilox rolls for the print and paper industry. The unique ceramic sealing of the roll means that surface defects are minimal and the increase in surface hardness provides the optimum conditions as a base for the laser engraving.



Glass Manufacturing

The low wettability (non-stick), low friction and high thermal and chemical resistance of MoniPlex® makes these slurry coatings the perfect solution for applications in glass slumping and as protective coatings on equipment such as moulds, plungers and rings.



Hydro - Steam Turbines

Monitor's high temperature oxidation resistant coatings cover both barrier and diffusion coatings. Aluminium based diffusion coatings and nickel, chrome based barrier coatings have shown to extend the life of critical components in supercritical steam at temperatures in excess of 650°C and pressures in excess of 300 bar pressure.

Surface Engineering in extreme environments