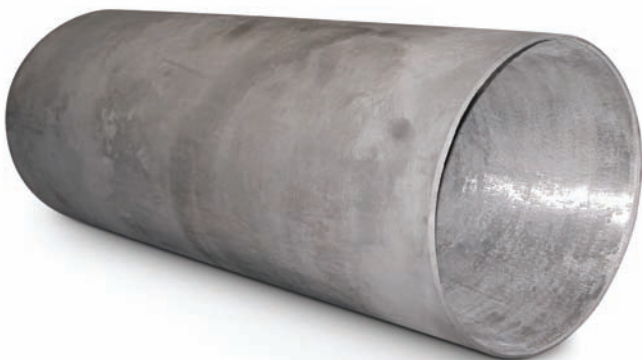


Oil Sands Component Applications

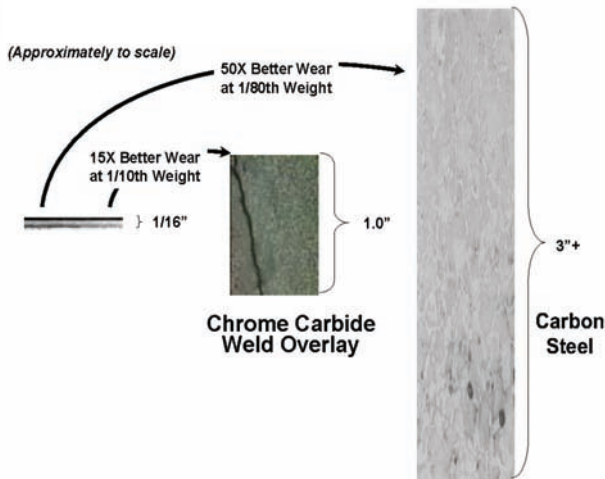
...Conforma Clad® provides extended performance for these Oil Sands Components:



- **Slurry Pump Impellers and Suction Liners**
 - Cladding Extends Pump Component life 1.5x ~ 2x
 - Ability to clad High Chrome Iron Components
 - Ability to process components up to Ø70" and 6500lb
- **Pump Shaft Sleeves**
 - Clad Shaft Sleeves last 3x ~ 6x longer than standard sleeves
 - One Oil Sands mine site has specified Conforma Clad for all pump shaft sleeves
 - Decreased wear means less leakage flow for shaft sleeves and less frequent packing adjustments
 - Reduced wear allows design clearances to be maintained longer
- **Venturis**
 - Conforma Clad awarded cladding business for ~ 50 meters to be installed in Oil Sands expansion project. (Installation target is Jan 2007)
 - As clad surface finish is 125 RMS ~ 250 RMS. Better surface finish than weld overlay leads to improved meter accuracy

Performance Data

Equivalent Erosion Resistance



One sixteenth inch (1/16") of Conforma Clad's tungsten carbide wear protection performs fifteen times (15X) better against erosive wear than an equivalent layer of chrome carbide weld overlay, and fifty times (50X) better than carbon steel. And because of its extremely high metallurgical bond strength, the cladding is up to five times (5X) more erosion resistant than typical nickel chromium alloy castings alone.

Conforma Clad's process uses infiltration brazing to bond tungsten carbide to the base material of a component forming a hard yet tough and uniform protective cladding that provides superior wear against abrasion, erosion, and corrosion, even under high temperature conditions. Because of its extremely high metallurgical bond strength, Conforma Clad resists abrasion up to 3-5 times better than typical alumina ceramic tiles, which are also limited by their low adhesive bond strength. This severe wear protection maintains critical geometries of oil sands components, which means that slurry pump components, shaft sleeves, venturi nozzles and reactor tubes* can deliver the required performance under the harsh oil sands environment.

*Conforma Clad meets the requirements of the ASME Boiler and Pressure Vessel Code ("S" Stamp).

Our Value Proposition

- Avoids unscheduled downtime
- Extends planned outage cycles
- Reduces maintenance costs
- Significantly increases component life
- Maintains consistent product quality

Full-Service Wear Solutions

- Wear Assessment
- Solution design & engineering
- Substrate design & engineering
- Cladding fabrication & application
- Post grinding for precise dimensional control
- Installation support
- Ongoing wear monitoring & consultation

Properties	Conforma Clad*	Thermal Spray	Weld Overlay	Wear Tiles	Plasma Spray
Bond Strength	Very High	Very Low	High	Low	Low
Complex Geometries	Yes	No	Difficult	Difficult	No
Abrasion Resistance	Very High	Moderate	High	Very High	Moderate
Erosion Resistance	Very High	Low to Moderate	Low	Low	Low
Corrosion Resistance	High	Low	Low	Low	Low
Impact Resistance	Moderate	Low	Moderate	Very Low	Low
Oxide Level	Low	High	Low	Low	High
Temperature Resistance	High	Moderate	Low	Very Low	Moderate
Resists Multiple Modes of Wear	Yes	No	Yes	No	No