

# Conforma Clad™ Fan Components

 *Lasts 4 to 5x Longer*

**...significantly extend fan life and reduce unplanned downtime!**

- **Superior Weight-to-Erosion Resistance Ratio**  
It would take an inch of chrome carbide weld overlay or three inches of plain carbon steel to equal the erosion resistance provided by 1/16" (1.5mm) of Kennametal's Conforma Clad cladding.
- **Resists Chipping and Spalling**  
Improve fan efficiency, reduce costly downtime and avoid catastrophic blade detachment.
- **Protect Your Entire Fan**  
Protect the leading and trailing edges, centerplate weldment areas and fan inlet hubs.
- **Proven Results**  
Kennametal's premium technology has been used in coal-fired power plants for more than 15 years, extending the life of burners, gas fans, boiler tubes, thermowells, ash conveyance equipment, pitot tubes, pulverizer components and other plant equipment.



## Technology

Fan failures triggered by high-velocity ash impingement can occur in many areas, including leading and trailing edges, centerplate weldment areas and fan inlet hubs. These failures often result in reduced gas flow and fan efficiency, sudden fan imbalance and the catastrophic detachment of blades.

Conforma Clad infiltration brazed tungsten carbide wear protection has helped dozens of operators increase their fan run-times by more than four times. Typical fan components that benefit from Conforma Clad include induced draft, forced draft, hot primary, gas recirculation, boosters, exhausters and mechanical collectors. Conforma Clad substantially boosts equipment productivity and reduces maintenance costs and unplanned downtime.



## Proven Results

A Northeastern coal-fired power plant experienced induced draft fan and scrubber booster failures as a result of hot fly ash erosion. The plant protected these components with chrome carbide weld overlay liners, with failures occurring every six to nine months. Due to the unpredictable wear characteristics of chrome carbide weld overlays, liner failure represented an extreme risk during the peak summer production season.

The failure of a 640MW unit occurred during the late summer months, causing an unscheduled outage that lasted 96 hours. In order to meet its committed power supply, the facility was forced to wheel 61GW-hour at a cost of \$60/MW-hour. This unplanned outage cost the facility around \$3.7M in lost generation.

By replacing chrome carbide weld overlay liners with Conforma Clad blade and wheel hub liners, the plant extended run times of their hot gas fans from nine months to 36 months, without the fear of unplanned failures between scheduled outages.



Fan blade protected with Conforma Clad liner.

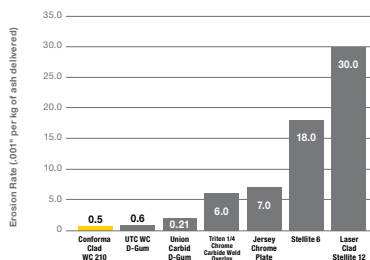


Fan blade protected with chrome carbide weld overlay liner.

## Performance Data

### FLY ASH EROSION TEST

40° Impingement Angle, 550 ft/sec — 30 Minute Test



EPRI testing found that Kennametal's WC 210 provides superior erosion protection for power boiler fan blades exposed to high-velocity bituminous coal fly ash.

EPRI CS - 6068, Project 1649-4

**UP TO 12X BETTER**  
Erosion Resistance versus Chrome Carbide Weld Overlay

### FLY ASH EROSION TEST

Kennametal's Conforma Clad tungsten carbide cladding provides unmatched resistance against abrasion, impact, erosion and corrosion. Other types of protection may guard against one form of wear, but only Conforma Clad protects fan components from multiple modes of wear. Our cladding's high metallurgical bond strength, combined with its ability to withstand continuous operation at elevated temperatures, makes Conforma Clad the premium wear protection for fan applications.

### FLY ASH EROSION RESISTANCE

EPRI conducted laboratory testing on power boiler fan blades to determine the best erosion protection from high-velocity bituminous coal fly ash. Testing was conducted at a 40° impingement angle with a particle velocity of 550 ft/sec for 30 minutes. Conforma Clad WC 210 cladding provided top wear protection while retaining critical component geometries.

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