



Protective Ceramic Coatings

WHERTEC'S COMPETITIVE ADVANTAGES

Dedicated Safety Management

Advanced Equipment Technology

Trained and Experienced Personnel

Detailed Application Procedures

Quality Control and Assurance

Detailed On-Site Documentation and Reports



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Since 1996, Whertec, Inc. has been dedicated to providing specialized thermal coatings to protect metal substrates against erosion and corrosion for companies that have boilers and pressurized vessels. Our purpose is to provide superior, comprehensive services and resources to assure our clients achieve maximum operational utilization.

Whertec provides services across the U.S. and Canada.

Defend Your Power.

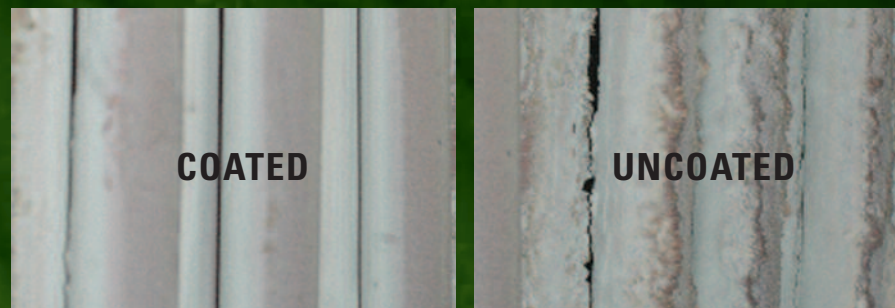


Defend Against Slag, Ash and Volatile Deposits with Tube Armor™ Ceramic Coatings



Today's power producers are under more heat and more pressure than ever before. Staying competitive means your operation has to run at peak efficiency with as few unscheduled shutdowns or work stoppages as possible. As demand continues to grow, so do the demands on your equipment. Preventive maintenance is, undoubtedly, an integral daily task. Boiler and equipment downtime put all that at risk – and it is a matter of time before you will face costly outages, restorations or retrofitting of damaged components.

According to the International Energy Agency, slagging incidents cost the global utility industry several billion dollars a year in reduced power generation and equipment maintenance. Can your operation truly afford to shoulder even a fraction of this cost?



The Enemy: Slag Deposits

Despite their industrial application and heavy-duty appearance, tubes require exacting care and maintenance. The reason is slag – the fine particulates that build up on tubes to cause corrosion, erosion, leaks and other failures. Too much slag literally chokes a boiler by restricting airflow. Once this happens, the specified air-to-fuel ratio no longer applies, causing fuels to burn improperly. And, if the fuel in question has high mineral content, you also have the added safety challenges caused by clinker formation. All of this is a normal side effect of generating energy. It happens with coal, low-sulphur coals, and alternative fuel sources. In fact, the ash chemistry of alternative fuels often varies widely from coal, leading to serious problems in the early days of co-combustion. This, coupled with the complex interaction between fuels and equipment, makes the prediction of slagging and fouling very difficult. Even industry models cannot foresee slag effects with 100% reliability.

Depending on the demands of your operation, it takes only a short time for slag to take its toll. Output declines. A tube bursts or cracks. Or, in order to avoid these situations, you have to schedule an unplanned outage to clear slag using water cannons or even explosives – just so workers can safely mitigate the problem.

One way or another, you're forced to address unexpected repairs. You slow or stop work. You lose money.

The Whertec Solution: Tube Armor

Since 1996, we've seen more than our fair share of shutdowns due to slagging, corrosion and erosion. And in that time, one thing has become absolutely clear: minimizing slag and fouling problems ahead of time is crucial to your operation. But solutions like soot blowers, heat flux sensors and sightglasses only help identify problems once they are there. Thankfully, there's Tube Armor – a simple solution that actively works to prevent deposits from forming – and it can be applied quickly, during a regularly scheduled maintenance outage.



Tube Armor helps prevent slag from depositing on tubes and boilers with a proprietary spray-on ceramic coating. It is a non-porous, non-reactive shield that resists ash, oxidation, erosion, iron sulfide corrosion, sulfur permeation and hazardous chemical byproducts. Once applied, Tube Armor creates an inert, corrosion-resistant barrier between the slag and the tube surface, and it is heat-rated to 1800° F. Additionally, Tube Armor also provides exceptional thermal management for lower furnace exit gas temperatures (FEGT), an ideal benefit for all boilers, but especially those that may be operating at higher-than-designed conditions.

***It goes on quickly.
It increases reliability and performance.
It effectively extends the life of your equipment.
It reduces downtime.***

You win.

Safe. Smart. Swift. The Tube Armor Process

Besides its desirable characteristics of being non-porous, non-reactive and thermally resistant to 1800° F, Tube Armor also delivers the unbeatable benefit of quick application.

We begin by grit blasting down to white metal. Then, after preparing the surface, Tube Armor is applied one coat at a time until the recommended or desired thickness has been met. The convenient spray-on delivery system allows us to cover up to 20,000 square feet in a single shift, making it an ideal task to perform during scheduled maintenance outages.

Afterward, Tube Armor will actually assist in your day-to-day maintenance efforts – the most noticeable being the enhanced output of your facility. At the same time, you'll also be enjoying safer working conditions due to a reduced risk of falling slag deposits and clinker build up. Inspection teams also benefit with better visibility on coated surfaces thanks to Tube Armor's distinctive green color, designed to offer high contrast against even small amounts of surface deposits.

TUBE ARMOR IS PROVEN EFFECTIVE ON:

PULVERIZED-COAL-FIRED BOILERS
CIRCULATING FLUIDIZED BED BOILERS
WASTE-TO-ENERGY BOILERS
WASTE HEAT UNITS
SUPERHEATER AND/OR REHEAT TUBES
AIR PREHEATER BASKETS
BACK PASS AREAS
BURNERS
NOSE-ARCH AND SLOPE TUBES
WATER WALLS
CHUTES AND DUCTS

TUBE ARMOR CERAMIC COATINGS OFFER:

- » Protection against slag build-up, deposits and friction
- » Longer service life of your equipment
- » Non-reactive sealing of exposed surfaces
- » Better heat transfer than typical protective coatings
- » Fast, on-site application of up to 20,000 square feet in a single day
- » Enhanced fuel consumption rates
- » Customized formulas and thicknesses up to 20 mils
- » Reduction in emission of CO₂, NO_x and particulates
- » Reduces reflective fly ash adhesion (PRB coal)



Protective Ceramic Coatings

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