

Insulation Project for Thermal Power Plant



This thermal power plant is in Buenos Aires, Argentina. It has a capacity of 2319 MW and supply electric energy to Buenos Aires and surroundings.

During 2008 they called us to insulate a bundle of pipes below one of the turbines. We used Hot Pipe Coating with Super Therm. Since the results were excellent they have consulted us again about a new project.

This new project is the thermal insulation of the big pipe that collect the exhaust gases from the turbines and carry them to the chimney.

The pipe has a diameter of 4 to 5 meters and a length of 117 meters.

A problem of surface corrosión must also be addressed.



This is the current situation of the pipe. You can see also the poor condition of the old insulating system




Obviously, they do not want traditional insulation systems anymore

Previous Condition



Pipe inside Temp. is
 120°C



Temp. on bare
outside
surface is 80°C
to 85°C

Desired Condition After Insulation

Pipe inside Temp. is
 120°C

Temp. on outside
coating surface
is $55\text{-}60^{\circ}\text{C}$

Together with the customer and the applicator, we decided to run a test to determine the thickness of coating that would be necessary .

We tested two systems:

1. Hot Pipe Coating + Super Therm + Rust Grip
2. Hot Surface Coating 300 + Rust Grip

Surface preparation:

1. Power tool cleaning
2. Hand wash with clean water and a brush. (Pressure wash with Chlor*Rid will be used in case of performing the work)

To address the corrosion problem we proposed to coat Rust Grip directly to the bare steel surface. Because the surface is at 75°C we decided not to apply Rust Grip. We were afraid to cause inflammation of the Rust Grip.

Power tool cleaning



Surface condition before
and after power tool
cleaning



Then we began to apply
Hot Pipe Coating and Hot
Surface Coating 300

HSC300



HPC





The next day we applied two coats of Super Therm on top of Hot Pipe Coating

Hot Surface Coating 300

And finally we applied two coats of Rust Grip



We came back two weeks later to measure
DFT and temperatures.

We took the temperature on the outside pipe surface: It was around 85°C



HSC300 +
Rust Grip



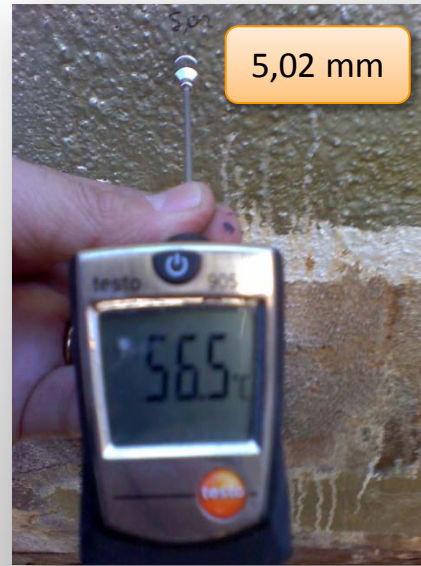
The brownish color was caused by
water dripping coming from the
upper corroded area

HPC + Super Therm + Rust Grip

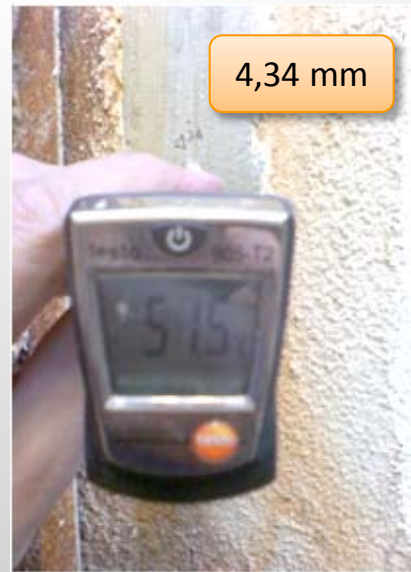


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HPC



HSC



HSC300 + Rust Grip



We have noticed a significant temperature difference between both materials with thicknesses nearly equal. We assume that this difference arises from the middle layer of Super Therm. From the customer point of view, the lower the outside surface temperature, the better.

HPC + Super Therm + Rust Grip



Although we were afraid to apply Rust Grip below the HPC or HSC layer, we applied a brushstroke on the bare hot corroded surface to see its behavior.



Surface temp. here is 85°C

Alternative systems are also being tested.



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Final Comments:

The products are technically approved by the customer.

The customer thinks that a DFT of 3 to 4 mm would be enough for their purposes.

They have not decided yet which system will be used: HPC or HSC300.

Will be very important to determine the system/products to stop and prevent corrosion on the steel pipe.

The alternatives systems that are also being tested, include:

- 1 - An epoxy coating for protecting the steel.
- 2 – Mineral wool supported with a wire mesh.
- 3 – A coating system to seal and protect the mineral wool from the environment.

Project Pictures Courtesy of:

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