

FLY ASH HOPPER HEATING FOR POWER GENERATION

An exceptional way to prevent condensation in fly ash hoppers

Application

Power plants that use waste-to-energy and coal-burning to generate electricity create a by-product called "fly ash." Fly ash is a collection of fine particles that are produced from the combustion process. These fly ash particles are considered a hazardous waste, and must be collected so that they cannot escape into the atmosphere. A system of electrostatic precipitators and filtration systems with large metal hoppers extract the fly ash from the flue gas as it exits the system.

The temperature difference between the hot air inside the hopper and the cool air outside of the hopper causes condensation to form on the inside walls of the hopper. This allows the fly ash to stick to the walls and solidify into a concrete-like material. If not treated, the fly ash will eventually bridge the hopper walls and cause significant blockage that results in extended periods of downtime and expensive repairs.

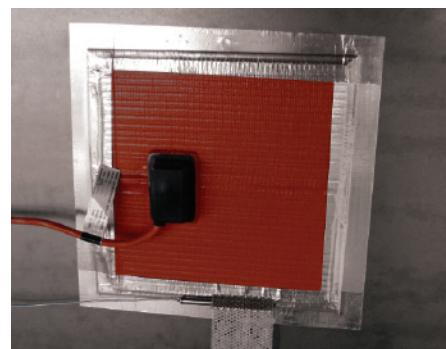
Solutions

Silicone rubber hopper heaters create a temperature equilibrium that virtually eliminates the possibility of condensation from occurring. These heaters provide the best surface contact because they adhere to hopper walls and lay flat. They have an extremely low profile to avoid obstructions, are easy to install, extremely durable, and vibration resistant. Aluminum foil heaters are a low-temperature, economical-heating option. Metal clad heaters are available for higher-temperature systems requiring up to 1,000°F (538°C). Metal clad heaters meet all IEEE standards.

Heaters should be arranged symmetrically around the hopper with a temperature sensor under each heater for control. The TB4000, TC4000, or MPC2 temperature controllers are options for controlling multiple heaters arranged around the hopper.

Additional Uses

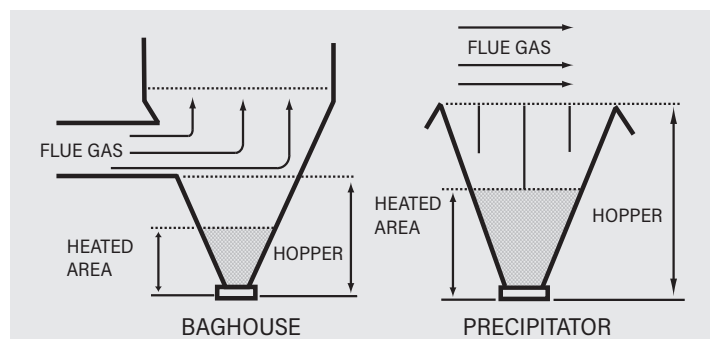
Metal-clad and silicone rubber heaters can also be used on most any tank or vessel to prevent condensation or protect against freezing.



Silicone Rubber Hopper Heater



Metal-Clad Hopper Heater



TC4000