

REPORT: Fitch Fuel Catalyst installation at Madison Kipp Corporation, Madison Wisconsin USA.
Provided by GES USA, Fitch Fuel Catalyst Distributor, 352-459-6545

FITCH MODEL: FHD10-6/4NG

APPLICATION: Furnace – Manufactured by Applied Foundry Solutions, Dayton Ohio USA.
Rated at 21000000 BTU {6.1 MW} Operating temperature – approx. 1600 deg. Fahrenheit (872 Celsius)

- Furnace has 8 controlled burners and a variable control valve system that switches from low burn to high burn as needed.
- Furnace is PLC controlled with a HMI panel, displaying all functions and temperature. The maximum heat output is 21MBTU, (6200 KWH) but it is normally operated at 80% of that.

TYPE OF BUSINESS: Melting aluminum alloy for die casting process

FITCH FUEL CATALYST INSTALLED: February 2022 with bypass system in place

PROCEDURE: Proper site inspection of proposed installation. Customer provided a high precision gas flow meter to accurately measure the gas flow into the aluminum melt furnace.

PRE-FUEL CATALYST DATA

- Fuel usage at high burn is 16000 CFH (453 M3).
- Stack temperature measured 1012 degrees F. (544 C)

FUEL CATALYST ENGAGED – DATA AND ADJUSTMENTS

- After a weeklong acquisition of fuel usage, the Fitch unit was removed from bypass and fuel was now exposed to Fitch technology.
- The fuel flow was reduced by 15% at high burn, allowing the furnace to build up operation temperature.
- The stack temperature was 998 degrees F(536 C). A slight decrease in temperature, however, after running 30 minutes, stack temperature went up to 1003 degrees F(539 C).

CONCLUSION

- Furnace was able to maintain proper roof temperature and aluminum melt temperature
- There has been no reduction of aluminum melt rates or performance
- CO emission was significantly reduced from 29PPM to 4PPM, indicating more complete combustion of the fuel and increased energy of the natural gas.
This calculates to a reduction of harmful emission of 85%
- CO2 emissions were also reduced - calculated to appx.14 metric tons or 30846 pounds per week
- Per year, it equates to 728 metric tons or 1,604,000 pounds of CO2
- Fuel consumption went from 16000 CFH (453 M3) at high burn to 13600 CFH (385 M3) This equates to a **15% reduction in fuel consumption.**
- Based on 60 % high burn of the furnace, the savings per week is approximately 263000 CF (7447 M3) of natural gas per week. The furnace never turns off, due to the melting process.

****This report is provided with the approval of the Madison Kipp management. Any communication directly is not authorized. Any requests to communicate should be directed to authorized Fitch Distributor Paul Barone, paul@gesusa.us. Mr. Barone acts as liaison to the Madison Kipp management.

