Postbus 44 - 4510 AA Breskens
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LADLE PRE-HEATER

APPLICATION INFORMATION

PROJECT INFORMATION

Type: Ladle Pre-Heater
Fuel type: Natural gas

- The ladle pre-heater is used to dry out castable-lined covers before reuse.
- A gas burner with an automated controller is used to ensure proper drying.
- Emisshield coating was applied to the cover to reduce energy loss.
- Fuel usage was monitored before and after coating application.

APPLICATION

Ladle Pre-heater

SUBSTRATE

Fiber & Cast Fiber

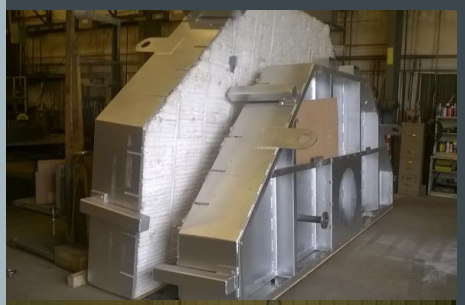
RESULTS

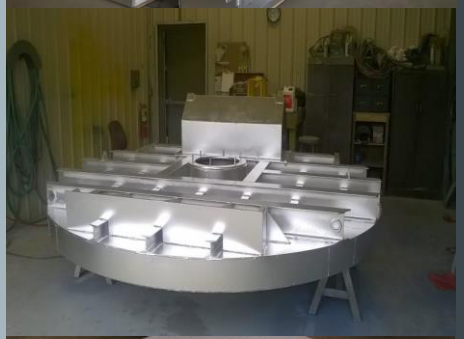
- 11.5% reduction in fuel consumption for a 40-hour schedule when both the barrel and working lining were replaced.
- 21.3% reduction in fuel consumption for a 32-hour schedule when only the working lining was replaced.
- Heat was absorbed and redirected back into the ladle, increasing energy efficiency.
- Steel mill personnel recognized the cost savings opportunity through reduced natural gas consumption.

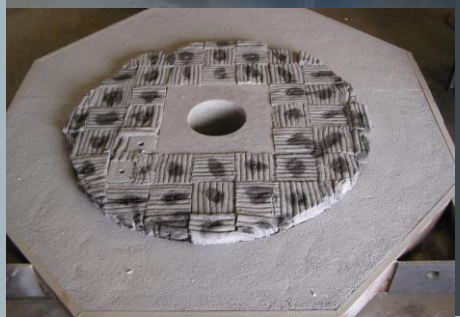
EMISSHIELD BENEFITS

- Significant reduction in energy consumption.
- Faster drying schedules without compromising safety.
- Improved heat retention within the ladle pre-heater.
- Increased operational efficiency and reduced downtime.

Note: These results demonstrate that the application of Emisshield coatings on ladle pre-heater covers can lead to substantial energy savings and improved drying efficiency in steel mills.







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SCFH DATA COLLECTED WITHOUTH EMISSHIELD:

8358 SCFH

Month	Hrs Avail	Hrs On	SCFD	SCFH	% Operational
OCT	655	626.97	5134465	8189	95.72%
NOV	744.03	585.47	4690838	8012	78.69%
DEC	208.3	151.55	1344706	8873	72.76%

SCFH DATA COLLECTED WITH EMISSHIELD:

7452 SCFH

HMI Data without EMISSHIELD	**Hrs.**	**Hrs. On**	**Total SCF**	**SCF/Hr.**	**% Op.**
Oct.	655	626.97	5134465	8189	95.72%
Nov.	744.03	585.47	4690838	8012	78.69%
Dec.	208.3	151.55	1344706	8873	72.76%
AVG SCFH CONSUMPTION				***8358***	***84.86%***
HMI Data with EMSISHIELD	**Hrs.**	**Hrs On**	**Total SCF**	**SCFH**	**% Op.**
12/29/14	420.52	383.98	3,083,781	8031	91.31%
12/29/14 - 1/19/15	505.33	432.70	3,264,655	7545	85.63%
1/19/15 - 2/12/15	573.40	526.80	4,043,356	7675	91.87%
2/12/15 - 2/23/15	257.33	230.00	1,437,581	6250	89.38%
2/23/15 - 3/20/15	590.83	559.00	3,943,903	7055	94.61%
3/20/15 - 3/27/15	163.07	125.47	955,208	7613	76.94%
3/27/15 - 4/8/15	272.03	246.37	1,852,732	7520	90.57%
4/8/15 - 4/15/15	167.70	142.33	1,079,574	7585	84.87%
4/15/15 - 4/29/15	327.37	289.50	2,257,660	7798	88.43%
AVG					
SCFH SAVINGS 8358-7452 = ***902***				***7452***	***89.58%***

50%Formula / 4 months with Emisshield no Optical Pyrometer:

50% 25% 12% 6% 3% 1.50% 0.75%

4179 2090 1045 522 261 130.5 65.25

HMI Data: 8358 – 7452 = ***902 SCFH reduction***

6% +3%+0.75% = ***9.75%+ Fuel Savings***

522+261+65.25 = 848.5 SCFH

Preliminary Savings 4 months with Emisshield no optical pyrometer:

Reduction in gas usage: @ 9.75% +

(Example) Assume a fuel consumption @ $1,000,000.00

- Estimated savings would be @ ***$97,500.00***