Case Study #3

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The following series of slides document the results of using Redux EF40L fluxes at 15 International Foundries to eliminate slag buildup on refractory walls of coreless induction furnaces, extend refractory life and clean ladles. Additional details on increases in refractory life are presently not available because of the COVID-19 pandemic.

By
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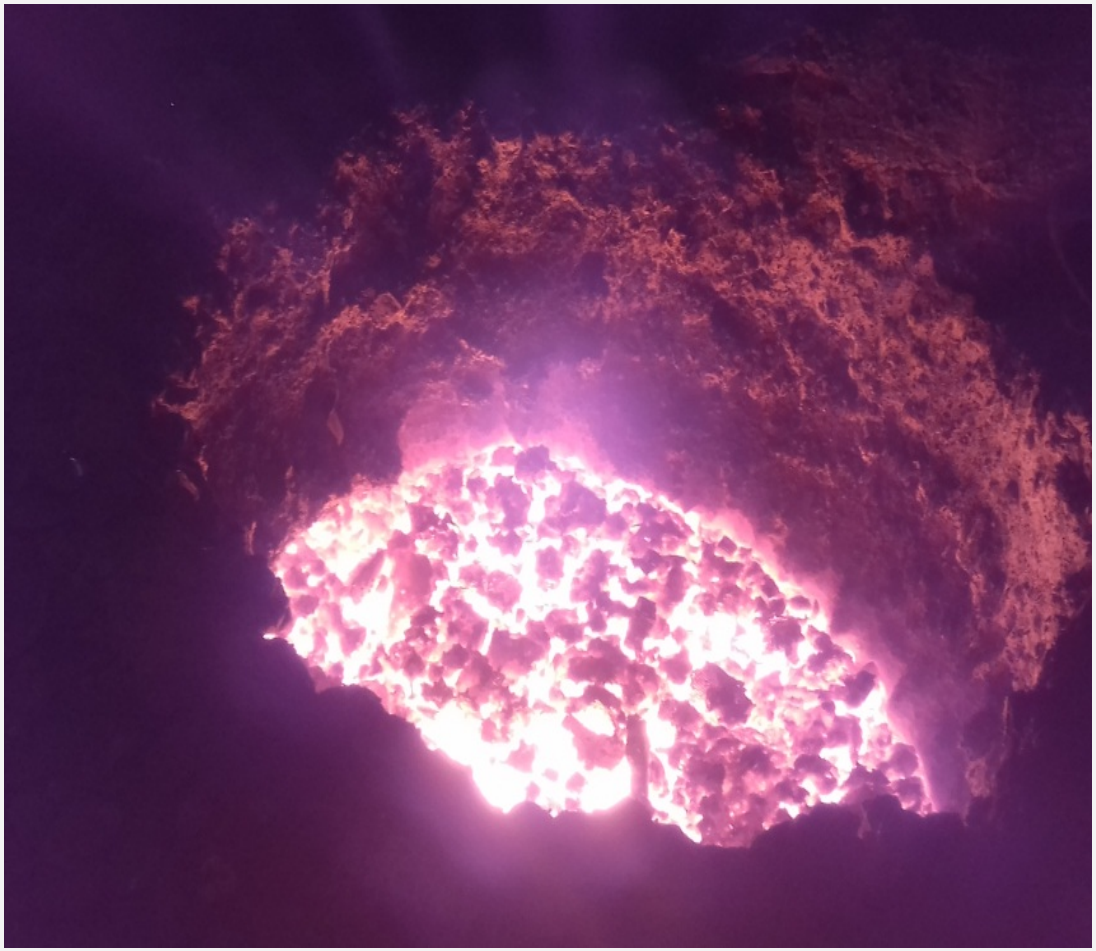
Case Study 3- REDUX EF40L
Objective: Clean slag build-up from Coreless Induction furnace walls

REDUX EF40L at International Foundry “C” Producing Grey and Ductile Iron Castings

Test Conditions at Foundry C

- Trial conducted in Plant 3
- Coreless Induction Furnace – 4 Metric Ton capacity
- Charge Make-up - Steel scrap – 2000 kg
- Foundry returns – 1200 kg
- Foundry spillage material (Oxides and Dusts) – 300 kg
- Heel Melting (500 kg liquid heal remains in furnace)
- Considerable slag is generated from charge

Condition of the Furnace before the Redux EF40L trial



FURNACE BEFORE TRIAL

Redux Procedure Details at Foundry C

- Total REDUX EF40 addition rate was 0.05% (2.0 kilograms for per 4 metric tons of iron)
- Tapping temperature was 1446ºC (2635ºF) during the trial
- Redux additions were made when there was approximately 200 kg's of liquid iron remaining in the heel melter, and then back charged with the remaining charge

Condition of the Furnace after the Redux EF40L trial

AFTER

Summary and Conclusions

- At regular tapping temperatures, slag from buildup on furnace walls was removed from the Redux treatment
- Furnace walls were clean after the furnace was tapped after just one heat
- Slag that floated to the top of the furnace was removed by skimming
- Foundry “C” was very satisfied with the performance of Redux after just one treatment addition