#### Case Study #6

### Offering Customised Solutions



**Forace Polymers**<sup>™</sup>

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 Forace Polymers / ASI International Ltd

Case Study 6 - REDUX EF40L Objective: Clean slag build-up from Coreless Induction furnace walls



**REDUX EF40L at International Foundry "F" Producing Grey and Ductile Iron Castings** 

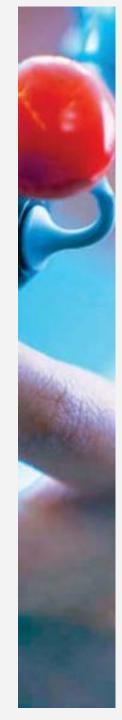


#### **Redux EF40 Test Conditions**

- Furnace type Medium frequency Coreless Induction Furnaces
- Furnace Capacity 2 1.5MT's and 2 - 1.0 MT furnaces
- Plant capacity 1000 Ton/Month
- Charge Mix –

Pig Iron – 15% Steel – 20% Boring – 30% Foundry Returns – 35%

- Furnace Lining Silica Lining- Dhaka.
- Average Lining life 350 heats



# Observations before the Redux Trials began



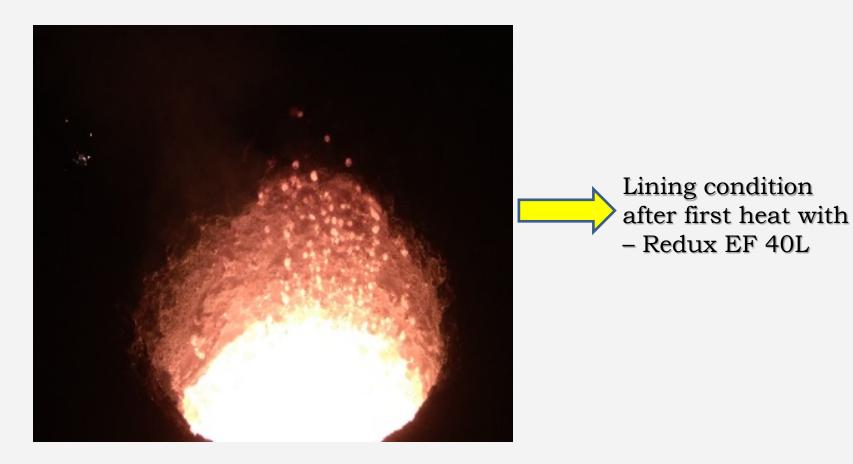
Lining condition before trial

- Due to excessive use of foundry returns and turnings/borings, more slag was generated on lining and continues to increases on subsequent heats.
- High temperature -1500°C is required for slag cleaning, and it is possible only with SG iron tapping, (gray iron melting generates more slag on lining).
- Number of heats taken 81 before trial.

# **Trial Details**

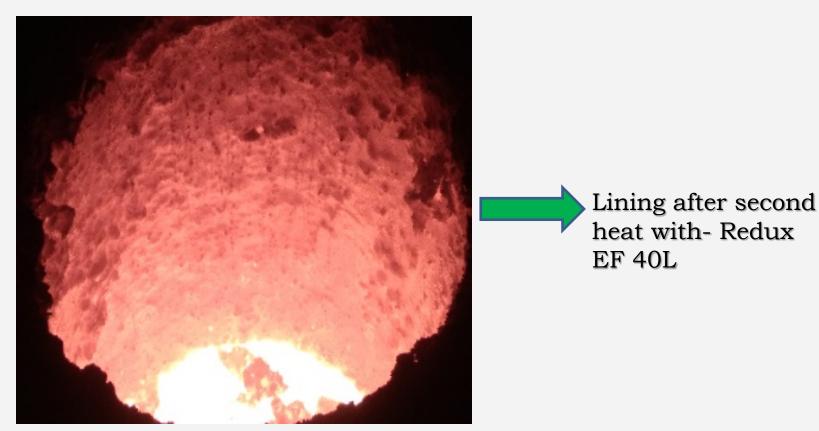
- Addition Rate- 0.05% REDUX EF 40L
- Redux is added along with charge and with 10% of charge material in furnace
- **Melting-** done as per there regular practice- no change in charging/melting process
- **Slag cleaning-** Done as per their regular practice with pearlite ore
- **Tapping and pouring-** As per regular practices

### First Heat with Redux EF 40L



- Slag still was sticking on upper part of furnace refractory
- No slag was found in lower half of the furnace after the first heat that was treated with Redux
- A second heat was then made with Redux

## Second Heat with Redux EF 40L



- After the second Redux addition, there was no slag adhering to the furnace lining.
- All of the liquid slag that was generated on top of metal was removed by skimming
- No extra time and temperature was required for melting
- No added process practices were needed