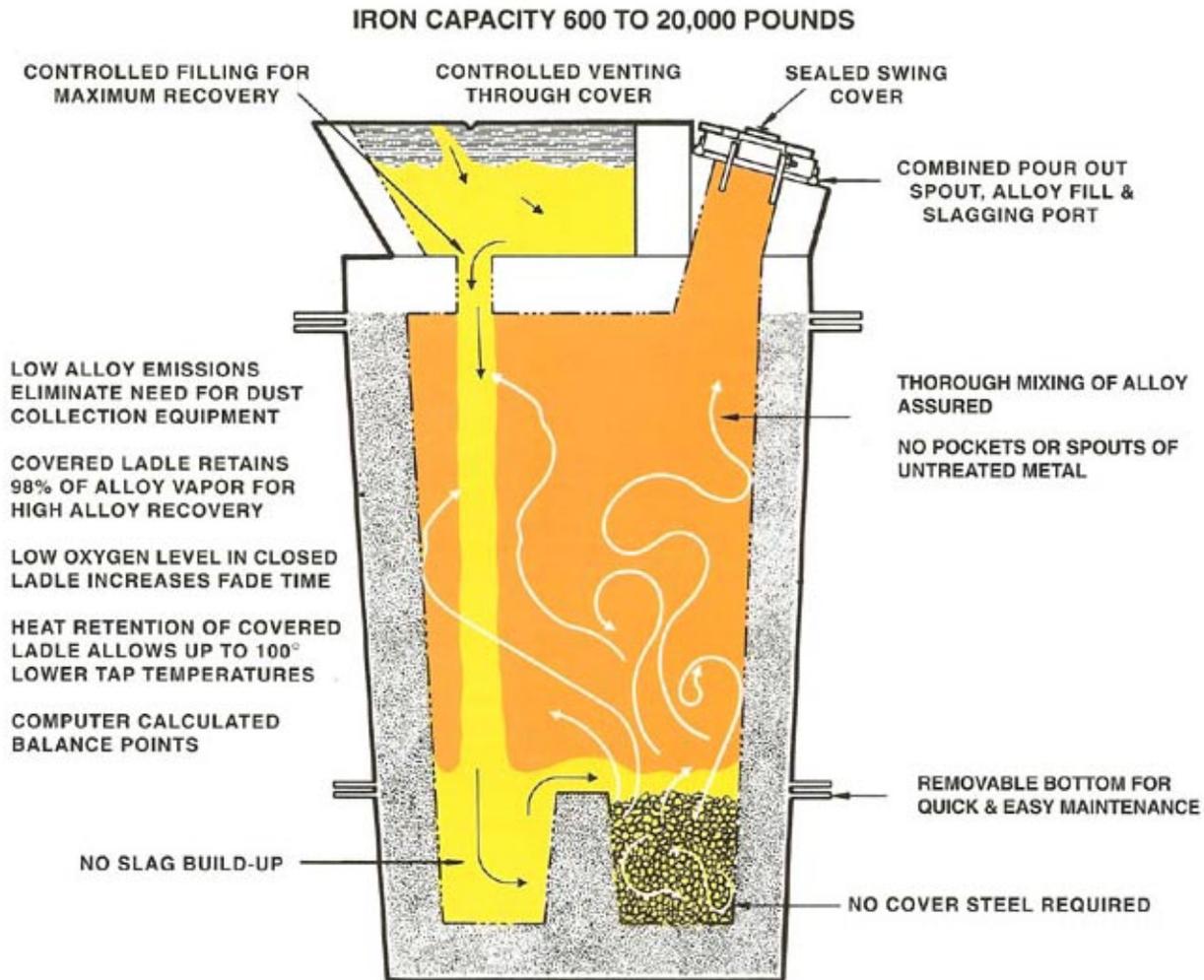


# Redux<sub>(patent pending)</sub> EF40 L Flux



Field Trial for 1 Metric ton Treatment Ladle  
in a Ductile/S.G. Iron Foundry  
Hakan Johansson, Beijers Sweden  
David C. Williams, ASI International

# Case Study: Treatment Ladle Build-Up from Ductile Iron



Iron Ladle Capacity 273 to 9091 Kgs.

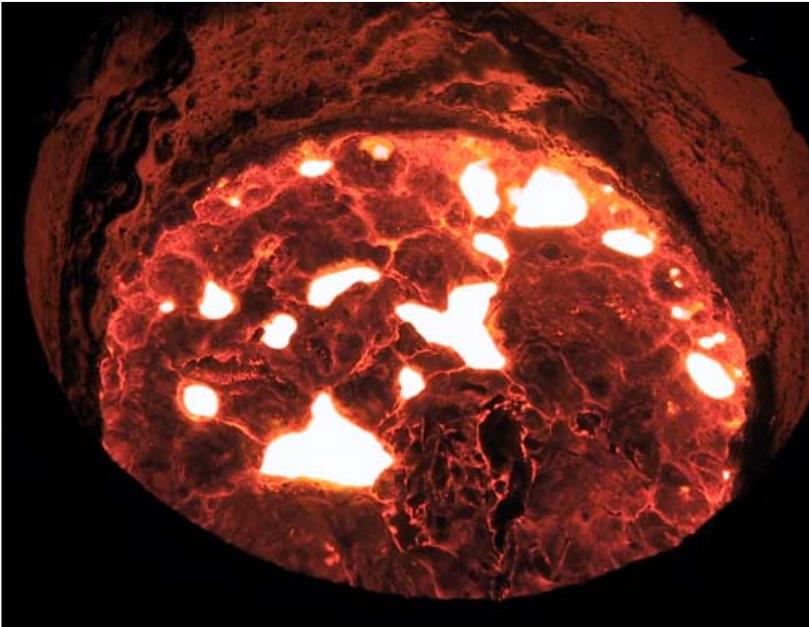
*Courtesy of D&E Foundry Ladles*

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



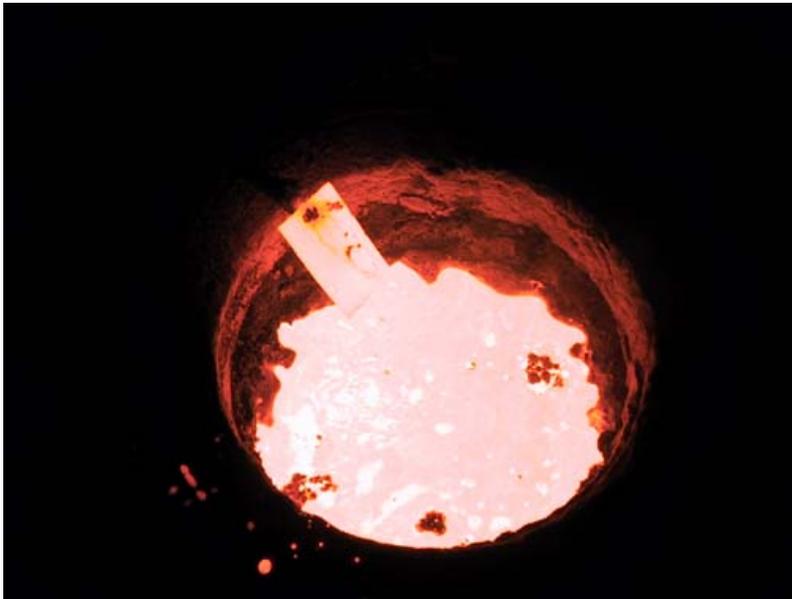
**A typical view of a 1000Kg or 1 M ton Ductile or S.G.  
Iron Treatment Ladle after 1 week of operation**

## Case Study: Treatment Ladle Build-Up from Ductile Iron



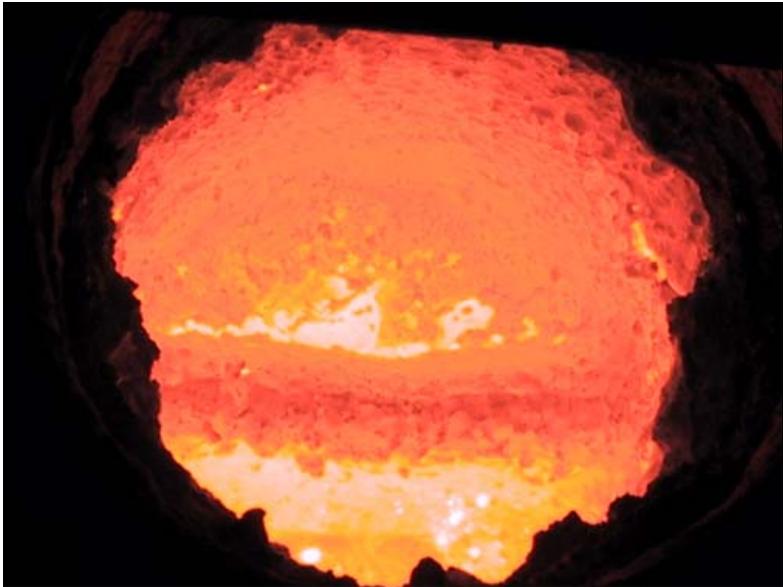
A Typical View of Ladle Slag after Treatment Process Has been completed. Also pictured is the pouring spout of the Ladle showing the build-up.

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



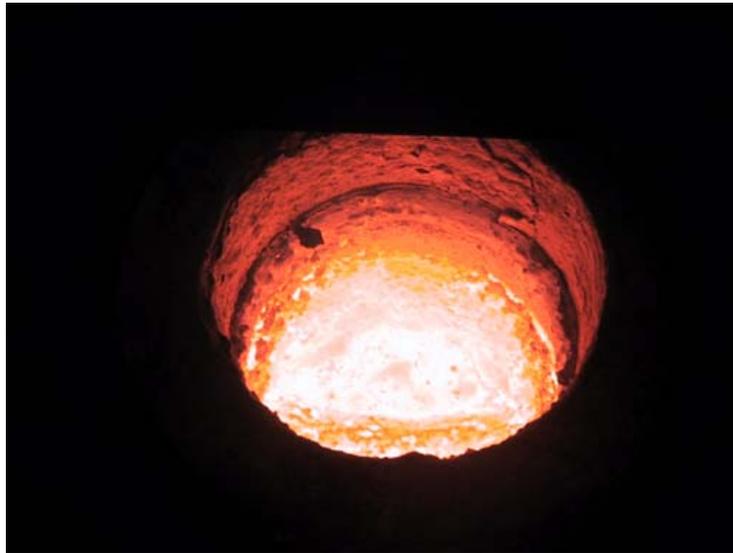
**Pictures illustrating the first and second addition of Redux EF40 L crushed briquettes for two consecutive wash heats. Note the turbulence on top of the bath.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**Views of the second and third Redux EF40L flux treatments with individual wash heats. Each heat used 0.43 Kg(1lb) of Redux Flux per 1000Kg of Molten Iron. A noticeable improvement in cleanliness of the refractory sidewall and treatment pocket.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



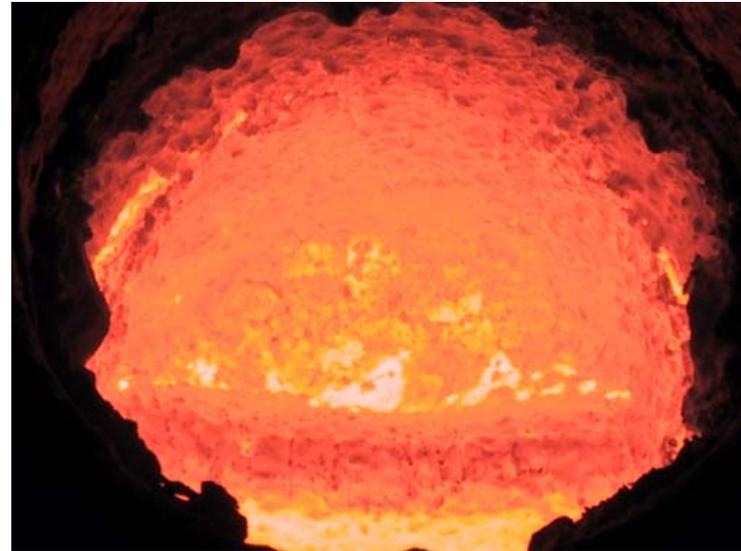
**Views of the Treatment Ladle being subjected to the third 1000Kg wash heat with 0.43 Kg Redux EF40L treatment.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**Views of the fourth wash heat treatment with 0.43Kg Treatment of Redux EF40L. Note the vigorous reaction with the slag. The Gas being released is carbon dioxide, NO Fluorine or Chlorine**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**After the fifth and final wash heat, the Ladle was drained to reveal significant improvement in cleanliness of the Ladle sidewalls, spout and treatment pocket.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**Views of the spout of Ladle showing less restriction of the opening after the 5 wash treatments.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**An overhead view of the ladle after the 5 wash heats in a cold state. Noticeable definition of the pocket was evident.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**Another overhead view focusing on the entrance of the pour spout into the ladle. Noted improvement in restoring the size of the opening.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**



**An overhead view of the Spout opening with significant improvement in the size of the opening.**

## **Case Study: Treatment Ladle Build-Up from Ductile Iron**

This case study was a simple test utilizing the Redux EF40L Briquettes, which were crushed up into a powder, then added to each 1000Kg wash heat. Each heat contained 0.43Kg(1lb) of Flux and was added directly to the molten metal stream. Each ladle was allowed to sit idle for 5 minutes, then the molten iron was dumped. The foundry had no intention here to treat the iron with magnesium units, only to test the flux out in the cleaning the ladle.

The results speak for themselves. Whether the Redux EF40 is used in the Briquetted form or the powder pack form, the same results can be expected,

- Significant Ladle Cleanliness and restored capacity
- No Significant Refractory Erosion
- No Contribution of Insoluble Inclusions to the molten Iron.