



September 2015

Issue 32

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Dear Newsletter Reader,

It is hard to believe that our 3rd quarter of 2015 is almost over. We are looking forward to ending 2015 on a high note and hope that you are as well.

2016 is exciting for us, and we are focused on finding new opportunities for our Refractory team.

In this issue we are going to tell you about our ChillKote™ Lining success in a couple of different places. First we have a story from a FeCr Smelter in the North West Province of Rustenburg. Next, we will tell you about Indian Metals & Ferro Alloys success incorporating their first ChillKote Lining.

**Another UCAR® ChillKote™ Lining Record
for a FeCr Smelter**

Boshoek Smelter - A Glencore Merafe Venture Operation

The Boshoek Smelter started as SA Chrome in 2002 owned by Merafe Resources. In July 2004 Xstrata and Merafe formed a Pooling and Sharing Venture, and in May 2013 this Venture transferred to Glencore.

The Boshoek Smelter is located approximately 30 km northwest of Rustenburg, in the North West Province. The plant is a fully integrated Outokumpu pelletizing, pre-heating and smelting plant comprising two closed 54MVA submerged arc furnaces, an

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Agglomeration plant as well as a Metal Extraction Plant. Both furnaces were installed with GrafTech ChillKote Linings in 2002.

No. 2 furnace of the Boshhoek Smelter was the third UCAR ChillKote Lining supplied into the ferrochrome industry, and is the second longest campaign in South Africa, lasting 13 years.



In July 2015 this furnace was totally relined, including replacement of the furnace shell. Boshhoek Smelter chose to install a ChillKote Lining for the furnace sidewalls, while optimizing general alumina bricks in non-critical areas.

GrafTech supervised their part of the installation. This is the only Glencore Merafe furnace in South Africa relined with a conductive lining during the past year.

GrafTech was invited to collect samples and data during orchestrated demolishing of the furnace. The condition and wear pattern of the old lining were thoroughly documented, which also included core drilling in the critical zones. The photo below gives an indication of the lining condition. Here the 700mm NMA™ HotPressed™ brick and the 70mm tile are visible.



The Photo indicates the condition of the lining to the right of the tap hole cut out (southeast).

The furnace is currently in operation and both companies are looking forward to long and productive campaigns.

IMFA CCP-2 Furnace After 1 Year Operation with UCAR ChillKote Lining

Indian Metals & Ferro Alloys Limited (IMFA) incorporated their first UCAR ChillKote Lining for a ferrochrome furnace at Choudwar plant in 2014. The furnace then started at the end of September 2014, and achieved its targeted power of 19 MW within 2 weeks of start-up.

The 25 MVA furnace has been operating at greater than 19 MW ever since November 2014. After one year of operation, the Lining Monitoring Systems (LMS) showed the lining condition as very stable. From the LMS data, we calculated the sidewall NMA HotPressed™ bricks hot face temperature always below 400°C. This condition indicates there is formation of a protective freeze layer as was predicted during the design stage. The freeze layer protects the lining from erosion. The protective freeze layer not only provides the conditions for long lining life, but it also ensures higher productivity without interruption due to the lining failure.

In addition to sidewall performance, IMFA has also showed that the UCAR ChillKote Lining improved the taphole performance. Their internal study showed that taphole sleeve performance has increased significantly after they incorporated the UCAR ChillKote Lining. This showed that the ChillKote Lining had improved the heat transfer efficiency around the taphole area, which has contributed to improved taphole sleeve performance.

With a stable and consistent UCAR ChillKote Lining condition, IMFA is now confident and ready to increase the power load by a further 10%.

Please [contact](#) GrafTech International if you're interested in further exploring the UCAR ChillKote Lining, the cost effective and productive lining system for your furnace operation.



Redefining limits

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