


**40 YEARS OF PERFORMANCE DESIGNED SOLUTIONS**
**APPLICATION: CORELESS IRON SHOP      LOCATION: SOUTHEAST USA**
**BACKGROUND**

In two separate iron coreless furnaces, the customers were using traditional Swedish SiO<sub>2</sub> linings with varying degrees of success in the TOP CAP and in the furnace. URC addressed the issue at both facilities with an enhanced product approach. After considerable running time, both facilities showed significant improvements in lining performance and bottom-line results.

**UNITED APPROACH**

The following products were used in the two applications. To improve lining life and operational efficiencies, the traditional SiO<sub>2</sub> products were replaced with UNI-SIL FF30 in the TOP CAP and UNI-SIL F4 in the lining.

	FURNACE SIZE (CAPACITY)	METAL	OPERATION	FORMER PRODUCT	NEW PRODUCT
TOP CAP	15 ton	50% grey 50% ductile	Emptied every weekend	Svenska Q-15	UNI-SIL FF30
Furnace Lining	12 ton	100% ductile	Emptied every weekend	Svenska 1.0	UNI-SIL F4

**RESULTS**

In both applications, results are monitored monthly. To date, the findings are as follows:

**TOP CAP**

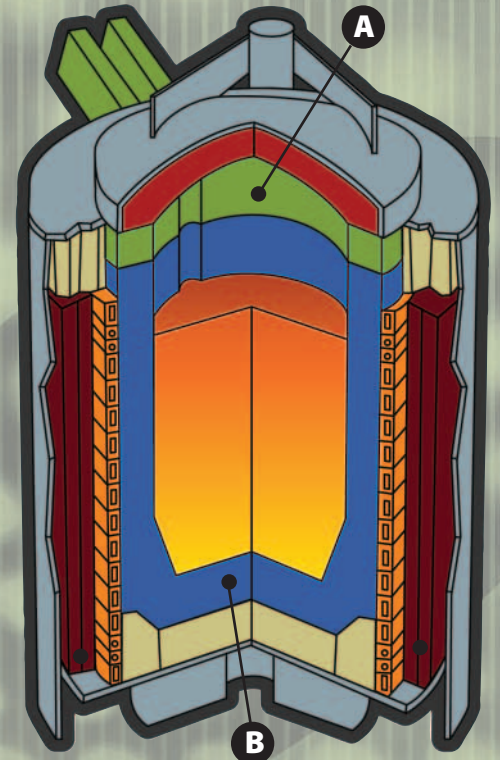
MATERIAL	LINING LIFE IMPROVEMENT	OPERATIONAL BENEFITS	EFFICIENCIES	BOTTOM LINE
Svenska Q-15	After 1 week, a patch is required	25 more patches per year @ \$1,500/ea	Metal behind lining caused 5-7 down days per year	---
UNI-SIL FF30	After 2 weeks, a patch is required	Annual patch savings = \$37,500	From Jan. – Sept. 2012, no down days caused by UNI-SIL FF30	5-7 production days gained annually

**FURNACE LINING**

MATERIAL	LINING LIFE IMPROVEMENT	OPERATIONAL BENEFITS	EFFICIENCIES	BOTTOM LINE
Svenska 1.0	Occasional spalling and inconsistent wear	Expected approx. 4 weeks service	20-25% more linings required	---
UNI-SIL F4	Significantly less spalling, more consistent	UNI-SIL F4 delivers 5 weeks service, 1 additional week!	2-3 linings saved @ \$11,000 total per lining = \$27,500	3-4 production days gained annually

**TOTAL ANNUAL DELIVERED VALUE TO CUSTOMER**
**Summary**

At two separate locations, the combination of UNI-SIL FF30 in the TOP CAP and UNI-SIL F4 in the furnace lining have improved lining performance, added operational efficiencies and positively impacted the bottom line of the facility. On an annual basis, the enhanced approach can DELIVER close to \$65K in linings savings and surpass \$100K in production efficiencies.


**A. UNI-SIL FF30  
TOP CAP**
**B. UNI-SIL F4  
FURNACE LINING**

 Special features of the URC SiO<sub>2</sub> approach include:

- Improved Grain Purity
- Controlled Grain Structure
- Enhanced Mix Design

On an annual basis, the enhanced approach can DELIVER close to **\$65K in linings savings** and surpass **\$100K in production efficiencies.**

