

IRON REFRACTORY SOLUTIONS

APPLICATION:
CUPOLA NITRIDE BONDED
SiC BRICK

LOCATION:
MIDWEST - U.S.A.

Coke Savings with **SN20SC** Brick

SITUATION:

A large 70 ton/hr. cupola attempted to improve process efficiencies and reduce wear by trialing a carbon brick lining in the melt zone and stack.

During the installation of the carbon brick, 3 rings of SN20SC nitride bonded SiC brick were installed directly adjacent to the carbon brick. **After a few weeks of operation, the SN20SC brick showed little to no wear and were sticking out past the carbon brick.**

During the next major repair, the customer lined the entire melt zone and stack with SN20SC brick.

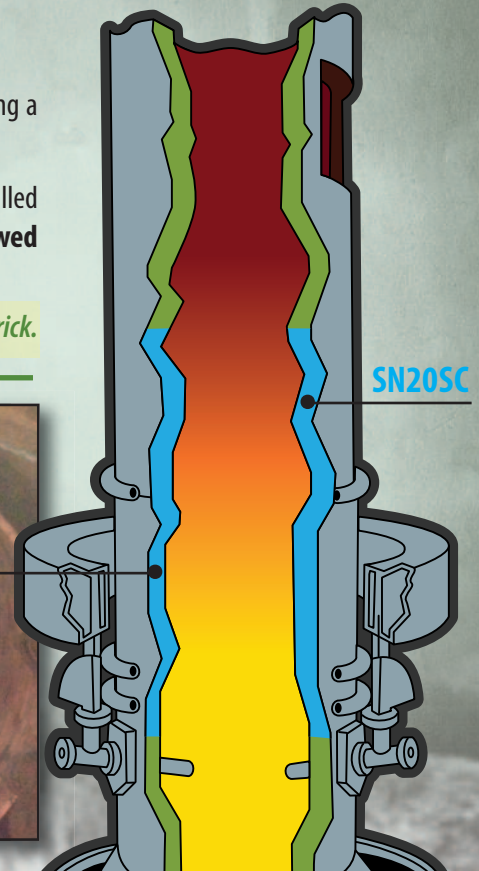
SOLUTION:

The **SN20SC** nitride bonded SiC brick have exceptional properties that make it ideally suited for the cupola environment.

- Superior resistance to slag, oxidation, abrasion and thermal shock.
- Excellent heat transfer properties
- Exceptional quality and sizing

In this cupola, the **SN20SC** lining included:

- Melt: 6" SN20SC RKBs (3" gunned hot face every drop)
- Upper Stack: 6" SN20SC RKBs / 3" SD Brick



DELIVERED VALUE:

After running a number of months on SN20SC brick, the foundry noted 2 significant impacts on savings:

COKE SAVINGS

In speaking with foundry melt personnel:

They estimate a **5% SAVINGS** over the previous lining.

REFRACTORY SAVINGS

In the melt zone, the foundry estimates a 50% savings in gunned/shot refractory. Due to the excellent wear of the SN20SC in the upper stack, almost 100% of the refractory maintenance product is eliminated.

– Monthly savings in refractory (approximate)

- Melt Zone 9,900 lbs. = \$8,000
- Upper Stack 6,600 lbs. = \$2,000

\$10,000 savings per month

Total annual impact
utilizing
SN20SC lining:

ESTIMATED

Coke Savings = \$648,000
Refractory Savings = \$120,000

TOTAL SAVINGS = \$768,000
Payback period = 3-4 months