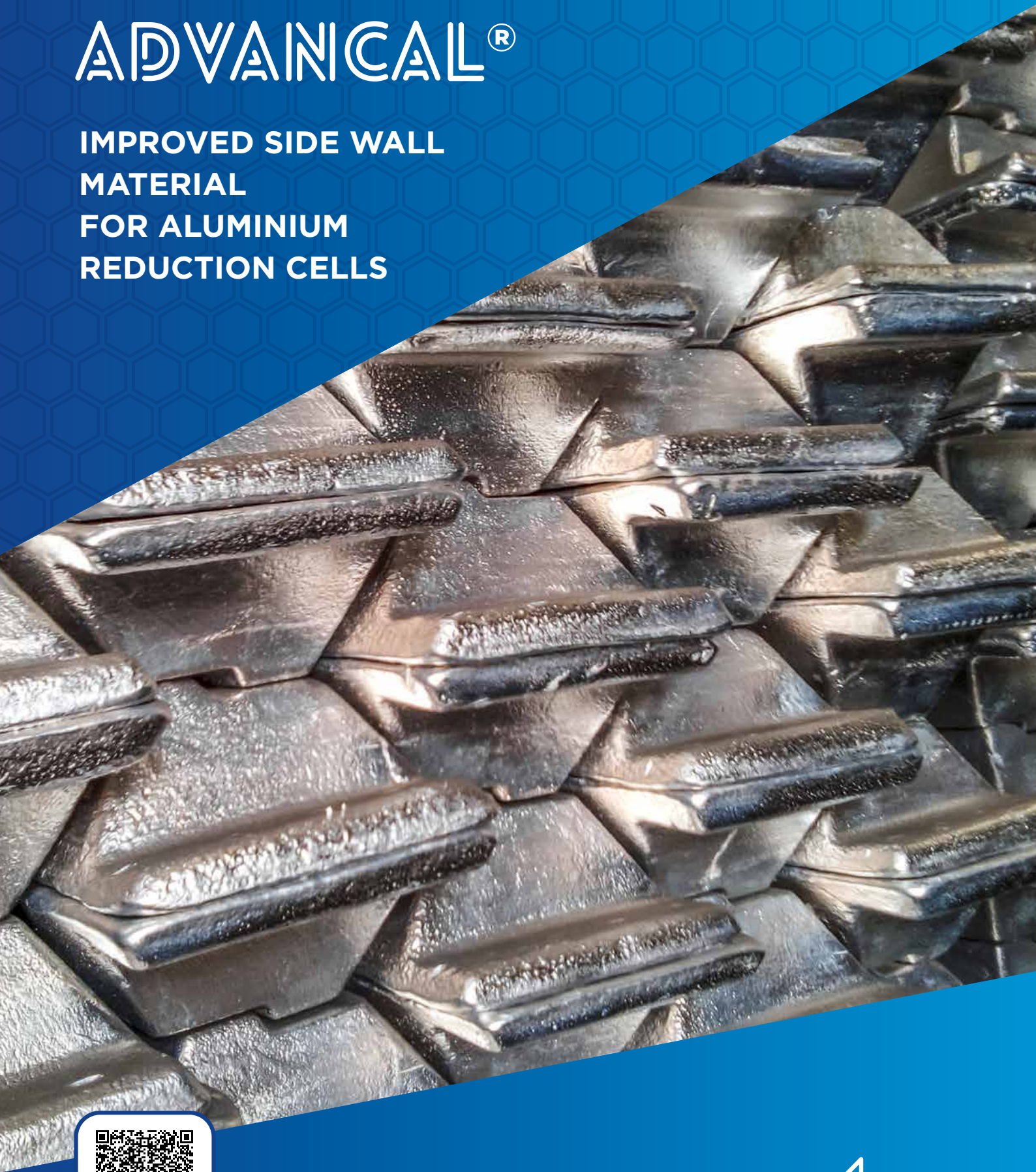


SAINT-GOBAIN PERFORMANCE CERAMICS & REFRACTORIES

# ADVANCAL<sup>®</sup>

**IMPROVED SIDE WALL  
MATERIAL  
FOR ALUMINIUM  
REDUCTION CELLS**



  
SAINT-GOBAIN

## OUR MATERIAL

# ADVANCAL® BLOCKS

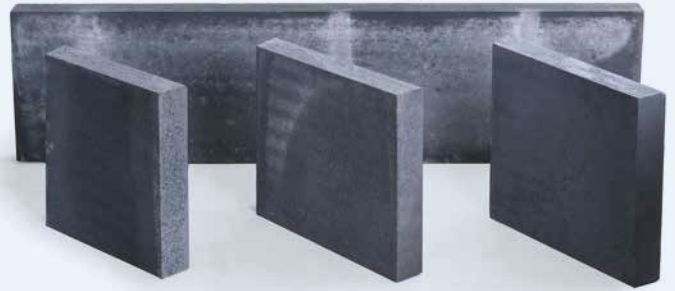
### HIGH PERFORMANCE MATERIAL FOR ALUMINUM REDUCTION CELLS

Innovative refractory technologies have set a new performance standard for reduction cell sidewall blocks.

With their outstanding corrosion resistance, new Advancal® blocks last longer than conventional blocks.

As a result, substantial savings are made on replacements and cell disruption is minimized - significant benefits for any aluminium plant operator.

Approved by leading technology suppliers Advancal® keeps on delivering long after other blocks have been taken out.



### FEATURES & BENEFITS



High oxidation resistance



Up to 40% better corrosion resistance



Outstanding chemical resistance



Extended service life

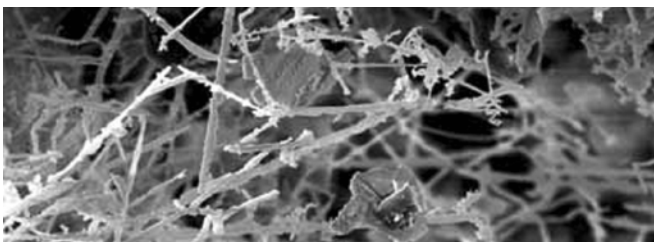


Thinner sidewalls to maximize the heat flow

## ADVANCAL® - NEW MICROSTRUCTURE

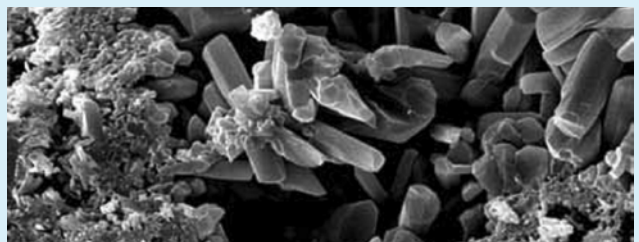
### TYPICAL NITRIDE BONDED SIC

- Main bond phase Alpha  $\text{Si}_3\text{N}_4$
- Fine bond needle matrix
- Susceptible to oxidation in medium temperatures
- No protection once oxidized



### ADVANCAL®

- Main bond phase Beta  $\text{Si}_3\text{N}_4$
- Modular bond matrix
- Resistance to oxidation in any temperature range
- „SELF“ protection system against oxidation



### PATENTED SYSTEM

TO ENCOURAGE BETA  
SILICON NITRIDE  
BONDING PHASE



## CASE STUDY

### CORROSION RESISTANCE

Comparison of corrosion resistance after oxidation  
(500 hrs - 900°C)

#### RESULT

Superficial contamination with no penetration to the body.

ADVANCAL®



Regular SiC-Si<sub>3</sub>N<sub>4</sub>



BLOCKS AFTER 500 HRS

### OXIDATION RESISTANCE

Comparison of oxidation behavior according to  
ASTM C863 (500 hrs - 1,000°C)

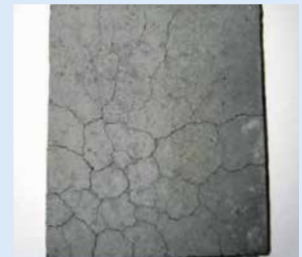
#### RESULT

No volume growth.

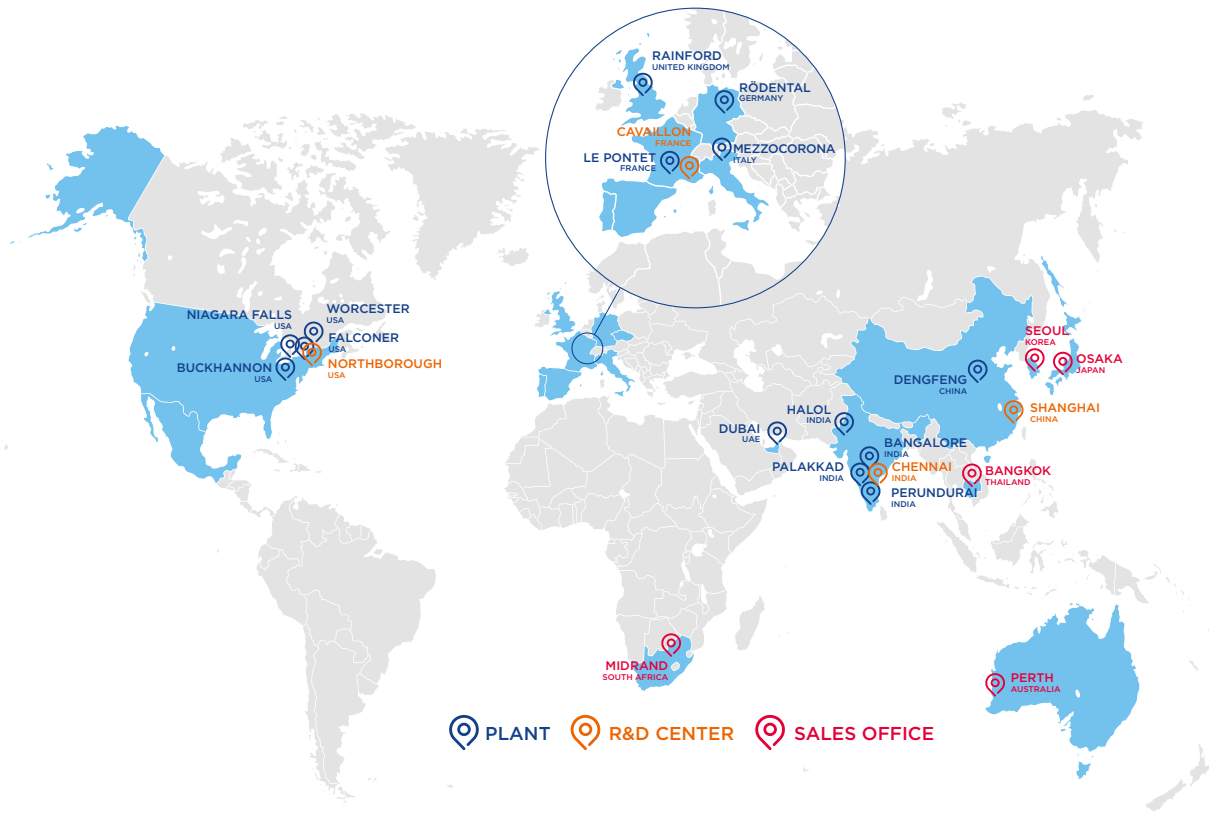
ADVANCAL®



Regular SiC-Si<sub>3</sub>N<sub>4</sub>



# OUR GLOBAL PRESENCE



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