



Unconventional Thinking...

Unconventional Performance...

Unconventionally FAST!

# RAPID TURNAROUND

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REFRACTORY TECHNOLOGY TO QUICKLY  
TURNAROUND YOUR ALUMINUM FURNACE



Global **Refractory** Solutions

in our  
element

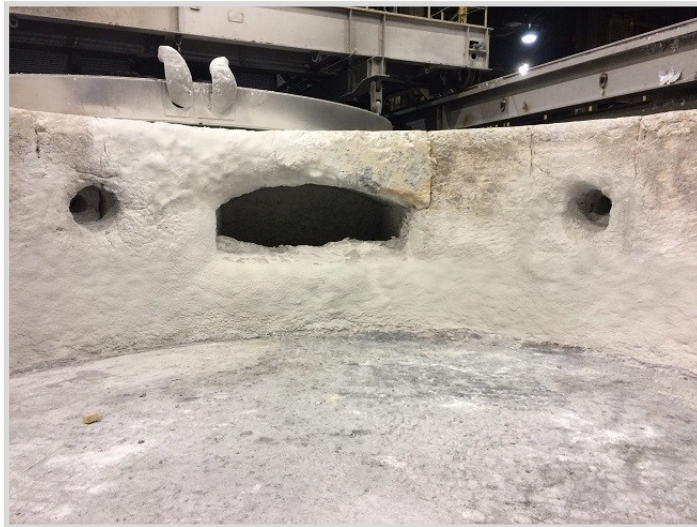
# RAPID TURNAROUND

Our customers asked for reduced turnaround time on aluminum furnaces and we listened.

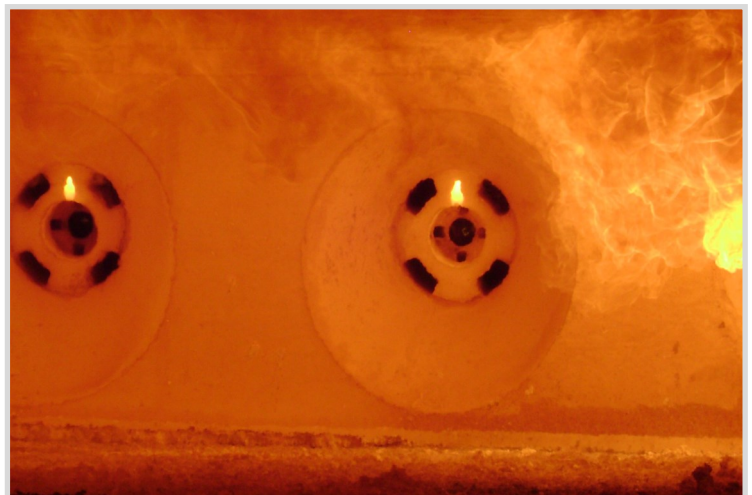
That's why we offer top of the line refractory products like:

- QUICK-FIRE®
- FAST-TURN®
- MATRIPUMP FF
- NANO-TEK®

We provide solutions for market needs across the globe.

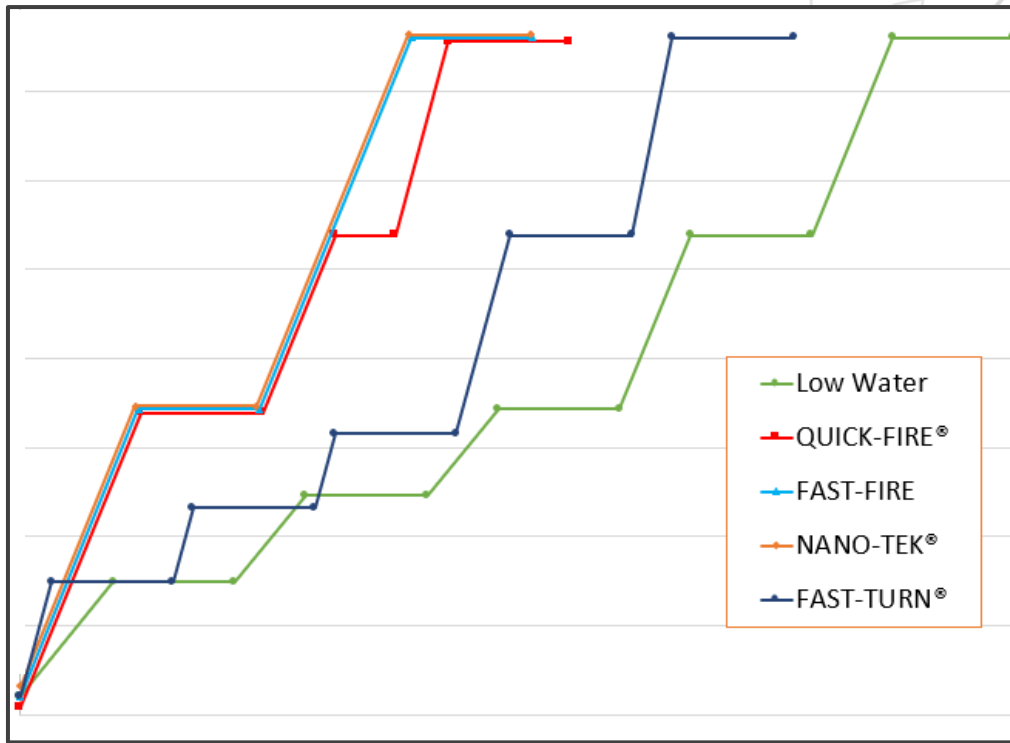


- ✓ **Reduced heat up cost**
- ✓ **Decreased down time**
- ✓ **Increased performance**

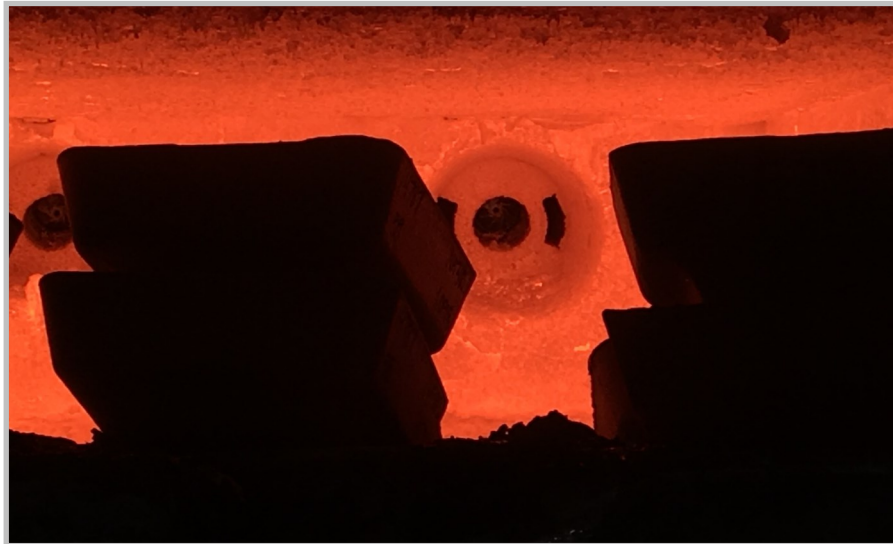




# HEAT UP COMPARISON



\*Graphic for comparison purposes only. Please contact your Allied sales rep for your specific application.





# PRODUCTS

refractory



$\Sigma$

research

Name	Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %	Density	Max. Temp
ECONORAM® 85-PX	82.0%	9.7%	2.79-2.85 g/cm <sup>3</sup> (174-178 lb/ft <sup>3</sup> )	1760°C (3200°F)
FAST-TURN 45 AL	47.0%	46.9%	Vibration: 2.32 g/cm <sup>3</sup> (145 lb/ft <sup>3</sup> ) Pumping: 2.27 g/cm <sup>3</sup> (142 lb/ft <sup>3</sup> )	1370°C (2500°F)
FAST-TURN® 60 M	60.5%	34.3%	Vibration: 2.48 g/cm <sup>3</sup> (155 lb/ft <sup>3</sup> ) Shotcrete: 2.41 g/cm <sup>3</sup> (151 lb/ft <sup>3</sup> )	1700°C (3100°F)
FAST-TURN® 65 M	64.8%	29.6%	Vibration: 2.58 g/cm <sup>3</sup> (161 lb/ft <sup>3</sup> ) Shotcrete: 2.57 g/cm <sup>3</sup> (154 lb/ft <sup>3</sup> )	1700°C (3100°F)
MATRIPHOS 70 AC	75.5%	18.0%	2.59 g/cm <sup>3</sup> (162 lb/ft <sup>3</sup> )	1650°C (3000°F)
MATRIPHOS 85 AC	80.7%	12.2%	2.80 g/cm <sup>3</sup> (175 lb/ft <sup>3</sup> )	1650°C (3000°F)
MATRIPUMP FF 65 AL	65.4%	28.3%	Vibration: 2.55 g/cm <sup>3</sup> (159 lb/ft <sup>3</sup> ) Pour/Pump: 2.48 g/cm <sup>3</sup> (155 lb/ft <sup>3</sup> )	1540°C (2800°F)
MATRIPUMP FF 85 AL	85.3%	8.4%	2.77 g/cm <sup>3</sup> (173 lb/ft <sup>3</sup> )	1540°C (2800°F)
NANO-TEK® 61 HS	61.4%	35.2%	Vibration: 2.45 g/cm <sup>3</sup> (153 lb/ft <sup>3</sup> ) Shotcrete: 2.35 g/cm <sup>3</sup> (147 lb/ft <sup>3</sup> )	1700°C (3100°F)
NANO-TEK® 65 AC	69.4%	26.4%	Vibration: 2.53 g/cm <sup>3</sup> (158 lb/ft <sup>3</sup> ) Shotcrete: 2.45 g/cm <sup>3</sup> (153 lb/ft <sup>3</sup> )	1480°C (2700°F)
QUICK-FIRE® 55	56.1%	36.2%	2.32 g/cm <sup>3</sup> (145 lb/ft <sup>3</sup> )	1600°C (2900°F)
QUICK-FIRE® 65	66.7%	24.7%	2.48 g/cm <sup>3</sup> (155 lb/ft <sup>3</sup> )	1650°C (3000°F)
QUICK-FIRE® 85 G	87.1%	4.3%	2.50 g/cm <sup>3</sup> (156 lb/ft <sup>3</sup> )	1650°C (3000°F)
QUICK-FIRE® 88	88.6%	3.5%	2.84 g/cm <sup>3</sup> (177 lb/ft <sup>3</sup> )	1650°C (3000°F)
QUICK-FIRE® 90	89.2%	2.1%	2.90 g/cm <sup>3</sup> (181 lb/ft <sup>3</sup> )	1700°C (3100°F)
RAM MAX® BR 70-P	69.9%	23.4%	2.56-2.63 g/cm <sup>3</sup> (160-164 lb/ft <sup>3</sup> )	1760°C (3200°F)



AL =  $\alpha \cdot \Delta T$

thermal expansion



%





# REVERBERATORY FURNACE



## ROOF

NANO-TEK® 61 HS

FAST-TURN® 60 M

FAST-TURN® 65 M

QUICK-FIRE® 65

## UPPER SIDE WALLS

NANO-TEK® 61 HS

FAST-TURN® 60 M

FAST-TURN® 65 M

QUICK-FIRE® 65

QUICK-FIRE® 88

MATRIPHOS 70 AC

MATRIPHOS 85 AC

RAM MAX® BR 70-P

ECONORAM® 85-PX

## BURNERS

MATRIPHOS 85AC

ECONORAM® 85-PX

QUICK-FIRE® 88

## JAMBS / LINTELS

FAST-TURN® 60 M W/6% 406 SS NEEDLES

FAST-TURN® 65 M W/6% 406 SS NEEDLES

QUICK-FIRE® 88

## RAMP / SILL

MATRIPUMP FF 65 AL

MATRIPUMP FF 85 AL

QUICK-FIRE® 88

QUICK-FIRE® 90

## SUBHEARTH

FAST-TURN® 45 AL

## HEARTH

MATRIPUMP FF 65 AL

MATRIPUMP FF 85 AL

QUICK-FIRE® 88

QUICK-FIRE® 90

NANO-TEK® 65 AC

## LOWER SIDEWALLS

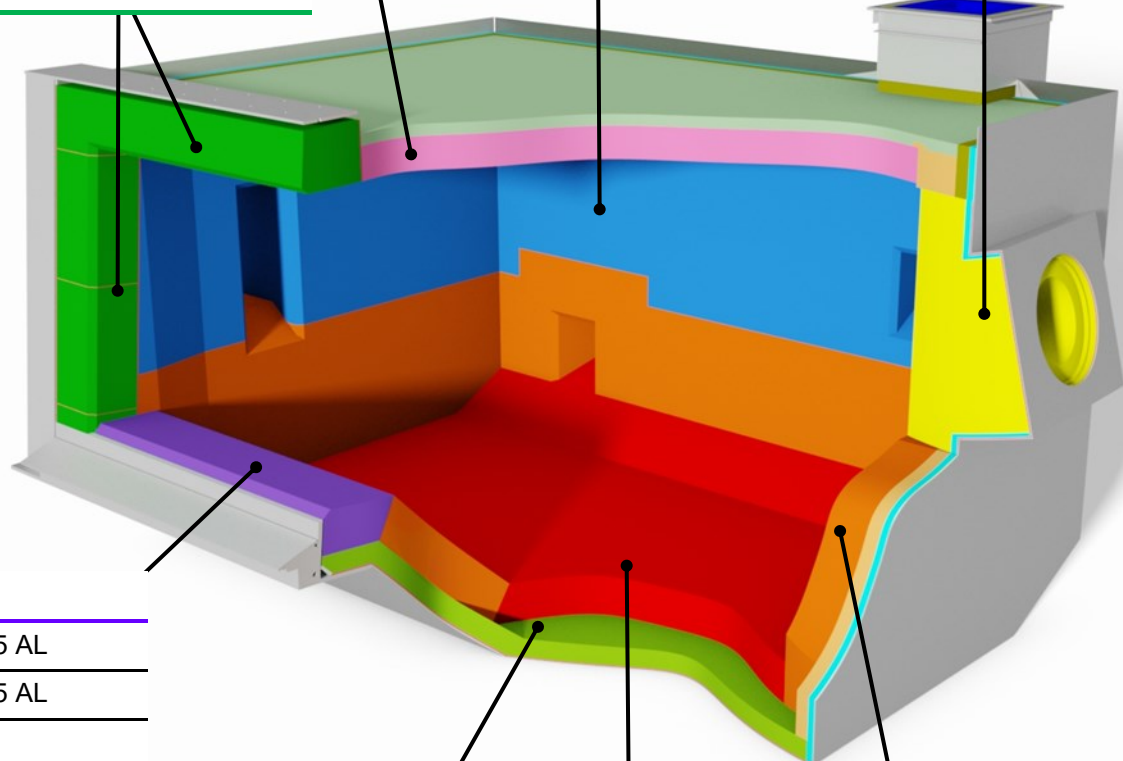
MATRIPUMP FF 65 AL

MATRIPUMP FF 85 AL

QUICK-FIRE® 88

QUICK-FIRE® 90

NANO-TEK® 65 AC





Allied Mineral Products is a world leader in the design and manufacture of monolithic refractories. With strong sales and service teams in the foundry, aluminum, steel, heat treat/forge and industrial markets, our success is based on our dedication to *Being There Worldwide with Refractory Solutions*.

Producing quality, consistent products is top priority at Allied and we have the products to meet your refractory needs. Our extensive product line includes innovative refractory technology and longstanding refractory alternatives.

Allied's focus on quality at every stage in the production process is unparalleled. A stringent raw material standard and global quality control testing before and after each batch is produced, provides customers with consistent products. We provide quick response times to any urgent request through flexible manufacturing systems at all our manufacturing facilities.

## Global Refractory Solutions



**13 MANUFACTURING FACILITIES**  
OVER 145 INTERNATIONAL SALES REPRESENTATIVES  
**3 RESEARCH AND TECHNOLOGY FACILITIES**  
SALES ACTIVITY IN MORE THAN 100 COUNTRIES  
**6 PRECAST SHAPES FACILITIES**





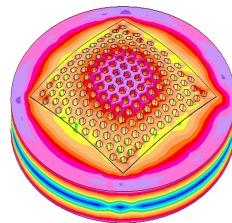
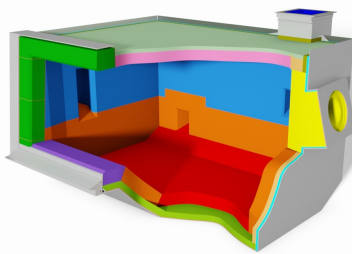
# RESEARCH & ENGINEERING

After gaining a detailed understanding of your specific needs, our team evaluates operating criteria and physical design parameters to create a detailed engineered design encompassing:

- Patented technologies
- Optimized product zoning
- Thermal models to optimize and validate designs
- Proven safety lining system designs
- Unique installation properties and techniques
- Leading edge refractory system designs

We're focused on developing new products, improving existing products and perfecting installation techniques. Our product development and testing is conducted in our state of the art research and technology center. We have an on-site gunning and shotcreting lab allowing extensive testing of installation properties.

As an innovative, technology-driven supplier we're devoted to providing customized refractory solutions for various industry operations. We offer a wide variety of high performance refractory products with superior raw material quality.



FEA Thermal Analysis



Flow Testing



Contact Tests



Strength Tests



Gunning/Shotcrete Lab

## Headquarters:

### Allied Mineral Products, LLC

Columbus, Ohio, U.S.A.

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