



QUICK-FIRE® & QUICK-FIRE® ONE

RAPID TURNAROUND FOR YOUR FURNACE



Global **Refractory** Solutions



ABOUT ALLIED



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





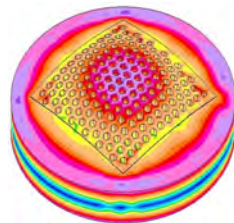
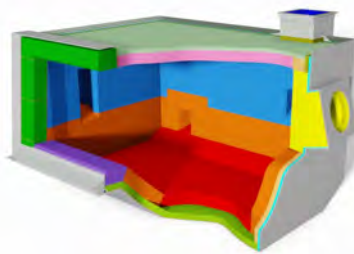
RESEARCH & ENGINEERING

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.

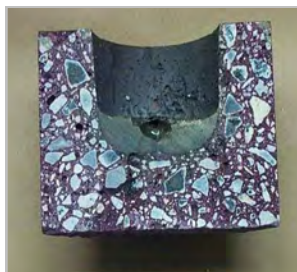
As an innovative, technology-driven supplier we're devoted to providing customized refractory solutions for various industry operations. We offer a wide variety of high performance refractory products with superior raw material quality.



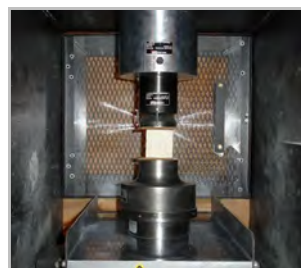
FEA Thermal Analysis



Flow Testing



Contact Tests



Strength Tests



Gunning/Shotcrete Lab



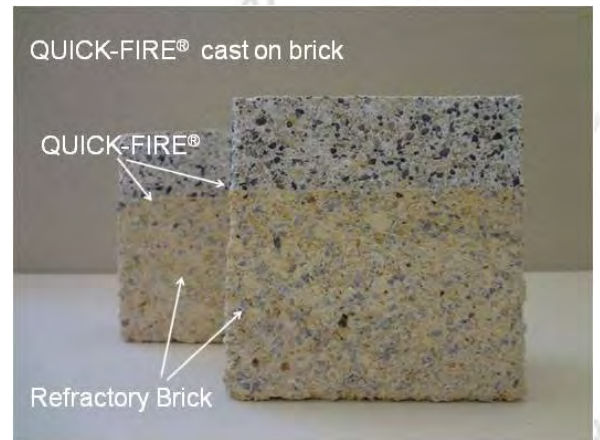
The two-component technology in QUICK-FIRE® products utilizes a liquid phosphate bonding system that improves performance and can drastically reduce downtime. Like its name states, QUICK-FIRE® is a rapid-turnaround material that can set in half the amount of time as other cement bonded castables.

Allied supplies a mix suitable for all applications, including harsh metal contact areas below the melt line and non-metal contact areas such as doors, burner blocks and maintenance above the melt line.

QUICK-FIRE® is a versatile product. It can be used as a veneer on top of an existing lining, or as a repair for full lining thickness. The product can be gunned or cast into place.

Benefits

- Non-wetting properties
- Short mixing and working time and improved flow ability
- Quick set time & rapid dry out
- Bonds to itself and existing refractories
- Thermal shock resistance



| Product | Al ₂ O ₃ % | SiO ₂ % | Density | Max. Temp |
|---------------------|----------------------------------|--------------------|--|-----------------|
| QUICK-FIRE® 60G | 65.5 | 25.5 | 2.21 g/cm ³ (138 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® 65 | 68.6 | 26.7 | 2.48 g/cm ³ (155 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® 85G | 87.1 | 4.3 | 2.50 g/cm ³ (156 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® 88 | 88.6 | 3.5 | 2.84 g/cm ³ (177 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® 90 | 89.2 | 3.7 | 2.90 g/cm ³ (181 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® PATCH B | 78.5 | 11.2 | 2.53 g/cm ³ (158 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® PATCH M | 63.4 | 26.5 | 2.33 g/cm ³ (145 lb/ft ³) | 1650°C (3000°F) |





QUICK-FIRE® ONE

QUICK-FIRE® ONE is a line of single-component, rapid turnaround products that set faster than most cement bonded castables.

QUICK-FIRE® ONE products require only a water addition for mixing instead of liquid phos acid. This single-component system allows the product to ship like typical refractory materials without the need for special transportation requirements.

Benefits

- Non-wetting properties
- Short mixing and working time and improved flow ability
- Quick set time & rapid dry out
- Bonds to itself and existing refractories
- Thermal shock resistance



| Product | Al ₂ O ₃ % | SiO ₂ % | Density | Max. Temp |
|-------------------------|----------------------------------|--------------------|--|-----------------|
| QUICK-FIRE® ONE 55 ARG | 55.4 | 34.7 | 2.05 g/cm ³ (126 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® ONE 70 | 70.3 | 21.1 | 2.40 g/cm ³ (150 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® ONE 70 G | 68.0 | 22.3 | 2.09 g/cm ³ (131 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® ONE 83 ABR | 82.9 | 3.9 | 2.58 g/cm ³ (161 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® ONE 84 G | 87.2 | 4.5 | 2.42 g/cm ³ (151 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® ONE 86 | 86.4 | 4.2 | 2.55 g/cm ³ (159 lb/ft ³) | 1650°C (3000°F) |
| QUICK-FIRE® ONE PATCH B | 79.9 | 10.3 | 2.46 g/cm ³ (153 lb/ft ³) | 1650°C (3000°F) |



process
BEFORE & AFTER
QUICK-FIRE®
refractory
research



BEFORE: Furnace with material needing repair



AFTER: QUICK-FIRE® 85 G installed



BEFORE: Furnace with material needing repair



AFTER: QUICK-FIRE® 85 G installation completed





process
refractory
research

BEFORE & AFTER

QUICK-FIRE® ONE



BEFORE: Furnace with material needing repair



AFTER: QUICK-FIRE® ONE 84 G installed



BEFORE: Furnace with material needing repair



AFTER: QUICK-FIRE® ONE 84 G installation completed





process



CASE STUDY

refractory

QUICK-FIRE®

QUICK-FIRE® 88 ROUND TOP WALL VENEER

EQUIPMENT

- 220,000 lb top charge melting furnace

PRODUCT

- 145,000 lbs (65,770 kg) of QUICK-FIRE® 88, a high alumina, two-component castable that can be used to repair existing linings or cast in place as a new lining

APPLICATION

- Lower and upper walls
- Veneer cast 3 - 4" on average

INSTALLATION

- QUICK-FIRE® 88 cast in panels
- QUICK-FIRE® 88 placed via a conveyor system

RESULTS

- Previously this furnace required quarterly maintenance, but after installing QUICK-FIRE® 88 the 220,000 lb furnace has run without maintenance for nearly 2 years





process
refractory
QUICK-FIRE® ONE
CASE STUDY

QUICK-FIRE® ONE

EQUIPMENT

- 70-ton reverb furnace

PRODUCT

- QUICK-FIRE® ONE 84 G

APPLICATION

- Diecaster uses mostly 380 and 383 series alloys
 - One of the highest diecasting producers
- QUICK-FIRE® ONE 84 G was installed in the jambs, sill, upper & lower sidewalls to replace a competitive 80% low-cement castable that had premature wear.
- The competitive material lasted 12 months of operation.

INSTALLATION

- QUICK-FIRE® ONE 84 G was installed using a standard pneumatic gunning installation material
- Installed December 2021.

RESULTS

- The lining has been in service for 19 months.
- The customer noted that Allied's QUICK-FIRE® product line has performed better than anything else they have tried in the last 20 years.



August 2022 - 7 months in service

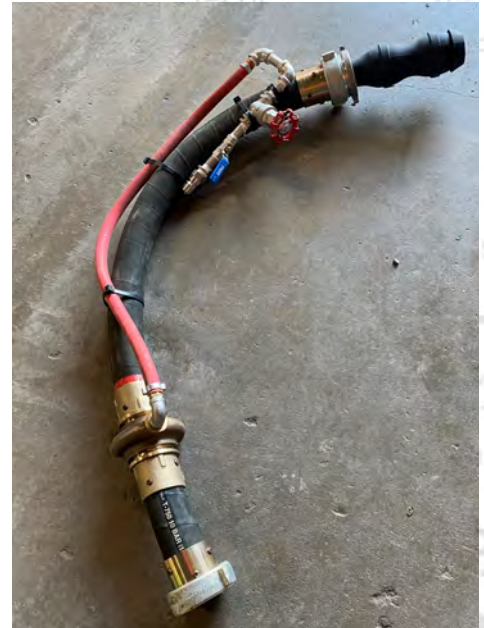


August 2023 - 19 months in service



QUICK-FIRE® GUN KIT

Allied's QUICK-FIRE® GUN KIT is available for rent or purchase. We offer this convenience as a one stop shop for your gunning needs. Contact your Allied representative for more details.



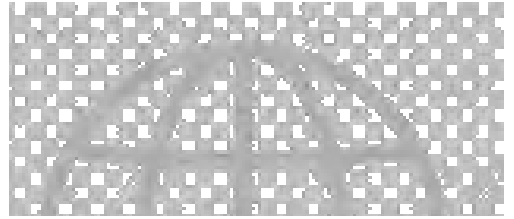


Corporate Headquarters

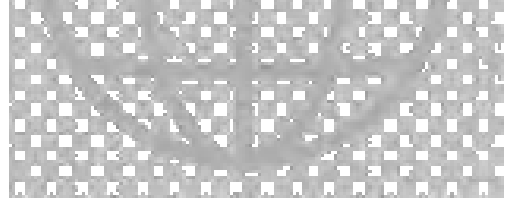
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Global **Refractory** Solutions



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