



Don't
**LET YOUR
LADLE GO
COMMANDO**

ADD PROTECTION ★ RETAIN HEAT



Need **ladle solutions** to optimize refractory performance?


We've got you covered.

alliedmineral.com

A dark, industrial scene featuring a large crane structure on the left and a smokestack on the right emitting a plume of white steam. The overall atmosphere is hazy and industrial.

KEEP **HEAT** WHERE
YOU NEED IT
with
A LAYERED APPROACH

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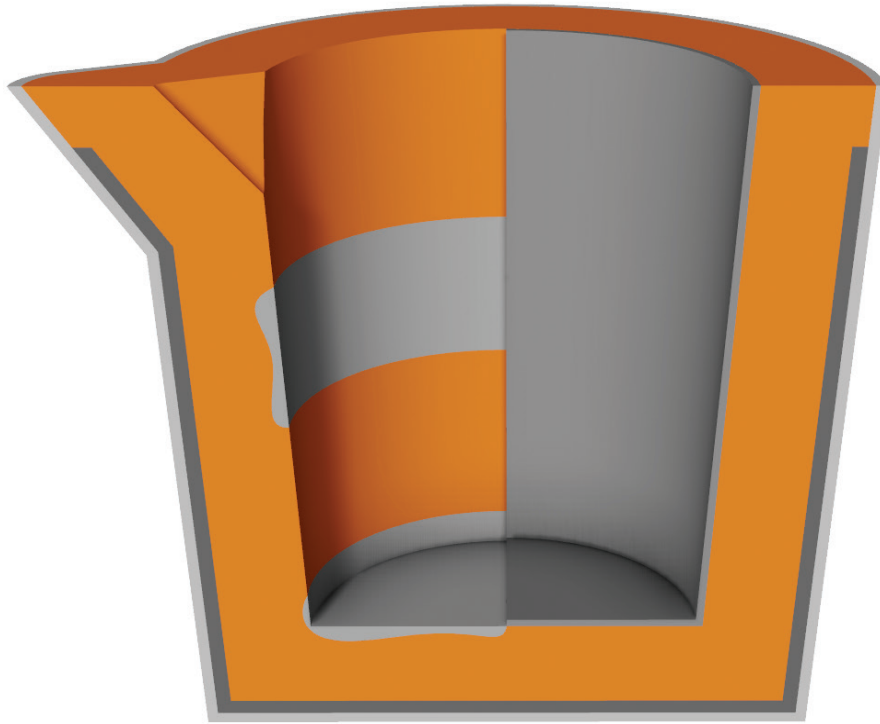
For superior refractory performance and savings, Allied Mineral Products offers the most advanced monolithic refractories to line iron, steel, copper and aluminum ladles. Get unique products for a complete refractory system that ensures your ladles get the job done — addressing optimal lining function, durability and maintenance.

Allied's products are designed to retain heat. That translates into less work for your furnace and ladle refractory savings.

Learn how our **customers are succeeding with ladle solutions** for backup insulation, working linings, maintenance and coatings.

Working Lining

— Monolithic Cast Ladles —



IRON ALLOYS

- CW 712 CASTABLE
- CW 965 CASTABLE
- DRI-VIBE® 916A
- MINRO-AL® PLASTIC A76
- METAL KAST 85 & 85 C
- DURACON 32
- TUFF-FLO 608
- VIB RAM 70
- DRI-VIBE® 88

ALUMINUM ALLOYS

- MATRICAST 82 SiC
- QUICK CAST® 61ACX
- MATRILITE HS AC
- MATRIPUMP 63ACX
- QUICK CAST® 62

STEEL ALLOYS

- METAL KAST 85 & 85 C
- METAL KAST 90
- DRI-VIBE® 916A
- DRI-VIBE® 88
- MINRO-AL® RAM A60-W

COPPER ALLOYS

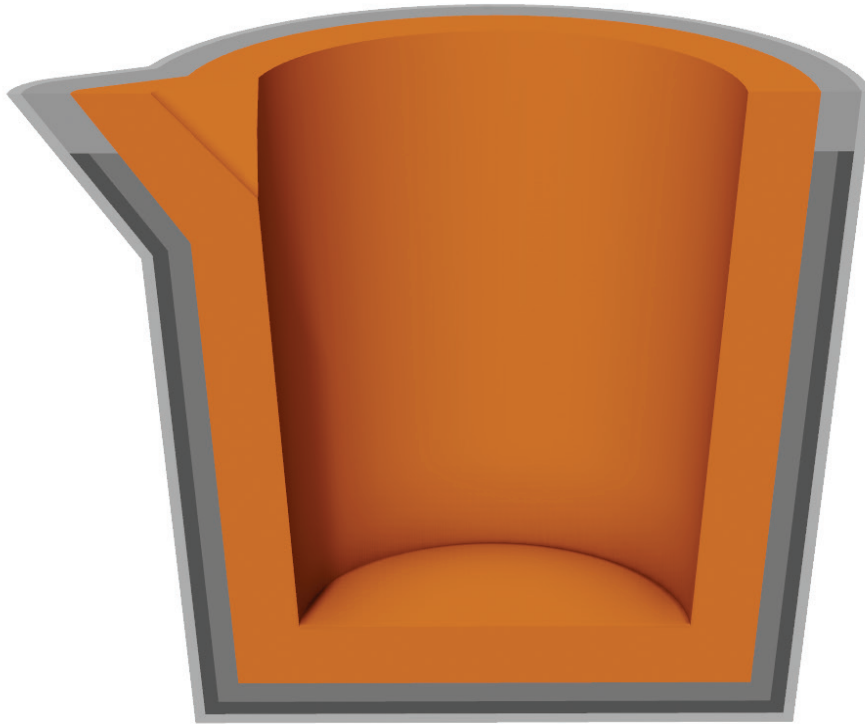
- TUFF-FLO 608
- CW METAL KAST 85
- CW METAL KAST 60
- LCF 798A

ZINC ALLOYS

- MATRIFIRE® 8085ACX
- QUICK-FIRE® 88
- MINRO-AL® PLASTIC A76
- QUICK CAST® 62AC

Working Lining

— Precast Shape Ladles —



IRON ALLOYS

- CW 712 CASTABLE
- CW 965 CASTABLE
- METAL KAST 85 & 85 C
- DURACON 32
- TUFF-FLO 608

ALUMINUM ALLOYS

- MATRICAST 82 SiC
- QUICK CAST® 61ACX
- MATRIPUMP 63ACX
- QUICK CAST® 62

STEEL ALLOYS

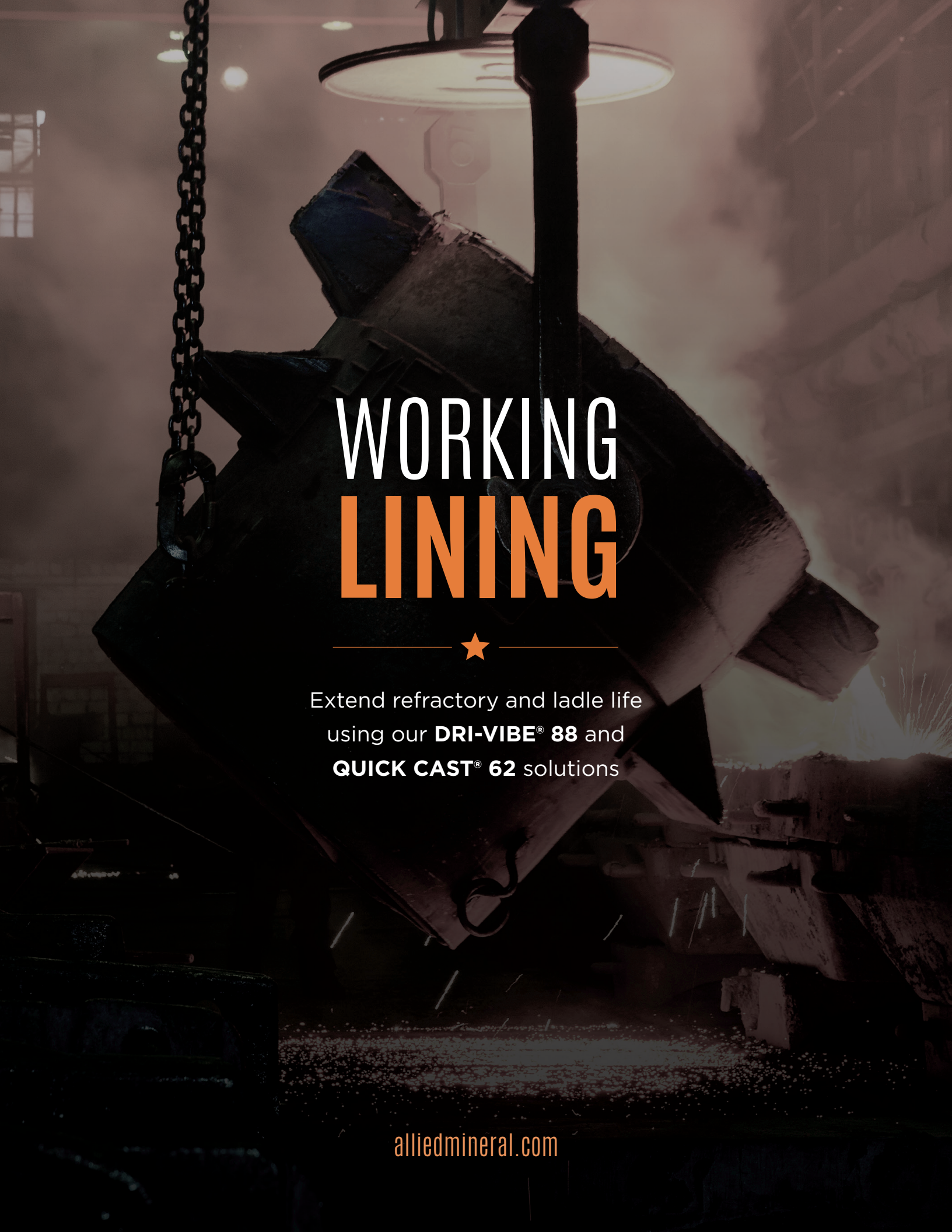
- METAL KAST 85 & 85 C
- METAL KAST 90

COPPER ALLOYS

- TUFF-FLO 608
- CW METAL KAST 85
- CW METAL KAST 60

ZINC ALLOYS

- QUICK CAST® 62



WORKING LINING



Extend refractory and ladle life
using our **DRI-VIBE® 88** and
QUICK CAST® 62 solutions

alliedmineral.com

CASE STUDY

POURING LADLE WITH QUICK CAST® 62 AND BREAST PLATE

EQUIPMENT

- Pouring ladle, 1765 lb (800 kg) capacity

PRODUCT

- QUICK CAST® 62 and Precast Breast Plate

APPLICATION

- Pouring ladle

INSTALLATION

- Used pan mixture and needle vibrator, with mica combination as backup
- 715 lb (325 kg) of QUICK CAST® 62 was installed
- 100 lb (50 kg) of MINRO-AL® PLASTIC A76 was used for a repair
- 88 lb (40 kg) of LADLE WELL was used as a coating
- Precast pre-fired plate was used as a dam to use the lip pouring ladle as a teapot ladle

RESULTS

- The ladle performed 1,000 tappings before the customer took it offline
- The pre-fired breast plate looked brand new
- Due to Allied's recommendation to clean the slag after 50 to 60 tappings and coat with LADLE WELL, the customer does not have to repair dams

CASE STUDY

DRI-VIBE® 88 LADLE INSTALLATION

EQUIPMENT

- Sliding tundish ladle, 1765 lb (800 kg) capacity

PRODUCT

- DRI-VIBE® 88 was chosen due to easy sintering and equipment availability to install the castable

APPLICATION

- Product was installed in grey iron treatment ladle
- It took 990 lb (450 kg) to finish the ladle lining

INSTALLATION

- Completed according to Allied procedures

RESULTS

The ladle is still in service after 10 months of use

THERMAL EFFICIENCY



Conserve energy with Allied's high-performance backup insulation product,

MINRO-SIL® RAM 1001 NO BA

IRON, STEEL, ALUMINUM, COPPER & ZINC ALLOYS

- Skamol VIP-12 HS Board
- Skamol VIP-12 HS Clickboard
- Kaowool Paper
- Microporous Board



CASE STUDY

PRECAST LADLE LINER

EQUIPMENT

- 700 lb (315 kg) ladle

PRODUCT

- Allied precast shape

APPLICATION

- Pouring ladle with dam wall
- Customer was initially achieving about 1 month of ladle life/campaign

INSTALLATION

- Lined the shell with 1/4" ceramic fiber paper
- Rammed floor with MINRO-SIL® RAM 1001 NO BA
- Set precast ladle and rammed sidewalls with MINRO-SIL® RAM 1001 NO BA

RESULTS


- Customer now achieves a shape life of 3 months with improved maintenance and pouring practices
- Using Allied's precast ladles vs. competitive material liners, which were replaced daily, will save the customer an estimated \$60,000 annually in lining, material and man hour costs

MAINTENANCE



Use Allied's **PLASTER 55AC** to increase ladle performance

IRON ALLOYS	STEEL ALLOYS	ALUMINUM ALLOYS	COPPER ALLOYS	ZINC ALLOYS
STEEL-PAK 90CR	STEEL-PAK 90CR	PLASTER 55AC	CW 620 SEAL	PLASTER 55AC
CW 85 HS PLASTIC	MINRO-AL [®] PLASTIC A91	QUICK-FIRE [®] PATCH B	CW 608 SEAL	MATRIFIRE [®] 8085 ACX
RAM MAX BR 70-P	CW 608 SEAL	MINRO-AL [®] PLASTIC A76	CW 85 HS PLASTIC	STEEL-PAK 90CR
PLASTER 55AC	PHOS FREE PLASIC FINE	CW 608 SEAL	RAM MAX BR 70-P	QUICK-FIRE [®] 88



CASE STUDY

TOP CAP AND SPOUT PATCHING MATERIAL

EQUIPMENT

- 5 ton ladle

PRODUCT

- PLASTER 55AC

APPLICATION

- Patching top cap and spout

INSTALLATION

- Mix in 5-gallon bucket using a paint mixer; added water to desired consistency

RESULTS

- Customer saw successful patching lasting an entire week of production
- The customer now uses PLASTER 55AC to successfully repair 5-ton ladles

COATINGS



Improve casting quality and surface
finish with Allied's **LCF 384A** and
T-COAT® 692M coatings



CASE STUDY

INSTALLATION OF LCF 384A AND T-COAT® 692M IN T-SPOUT LADLE

EQUIPMENT

- 2425 lb (1100 kg) T-spout ladle

PRODUCT

- LCF 384A and T-COAT® 692M

APPLICATION

- LCF 384A was installed for the working lining
- T-COAT® 692M for the coating

INSTALLATION

- Lining thickness for the sidewall was 3 inches and 3.5 inches for the bottom
- Used a removable form, mixer and forking tools for installation
- After dry-out, 8 to 10 mm of T-COAT® 692M was applied
- The temperature of the spout was raised and liquid metal was later poured for tapping

RESULTS

- Customer has used T-COAT® 692M with LCF 384A for 5 months and is very happy with the results
- T-COAT® 692M helped improve refractory lining performance by 50%



12 MANUFACTURING FACILITIES
OVER **130** INTERNATIONAL SALES REPRESENTATIVES
3 RESEARCH AND TECHNOLOGY FACILITIES
SALES ACTIVITY IN MORE THAN **100** COUNTRIES
5 PRECAST SHAPES FACILITIES



WE ARE A GLOBAL REFRACTORY SOLUTIONS PROVIDER

Allied Mineral Products is a global leader in developing, designing and manufacturing monolithic refractories and precast refractory shapes. With more than 1,400 products, we provide leading-edge refractory technology and valued-added alternatives.

We're dedicated to being there for you. Partner with us to get the smartest refractory solutions, with quality and consistency, for every furnace and industry application. From research and engineering to manufacturing and service, it's all in our element.

we are a

GLOBAL REFRACTORY SOLUTIONS PROVIDER



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