



# REFRACTORIES

— FOR —

# FOUNDRY



Global **Refractory** Solutions



Allied Mineral Products is a world leader in the design and manufacture of monolithic refractories and precast shapes. 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



**12** MANUFACTURING FACILITIES  
OVER **145** INTERNATIONAL SALES REPRESENTATIVES  
**3** RESEARCH AND TECHNOLOGY FACILITIES  
SALES ACTIVITY IN MORE THAN **130** COUNTRIES  
**7** PRECAST SHAPES FACILITIES





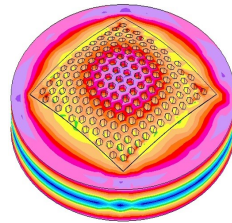
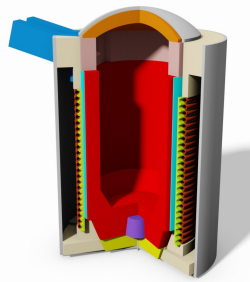
# RESEARCH & ENGINEERING

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



# CORELESS | IRON ALLOYS



## TOP CAP / SPOUTS

- DRI-VIBE® 54A-FR
- DRI-VIBE® 53A
- MINRO-SIL® RAM 1001
- MINRO-SIL® 2001
- STEEL-PAK 86Cr
- RAM MAX® 70 P FINE
- RAM MAX® 75 P

## COVER

- MINRO-FIRE CAST F80
- INSULMIX® 33100
- LCF 52A

## WORKING LINING

- MINRO-SIL® RAM 1001
- MINRO-SIL® 2001
- DRI-VIBE® LGS HTC
- DRI-VIBE® LGS
- TEK-SIL
- TEK-SIL LGS

## GROUT

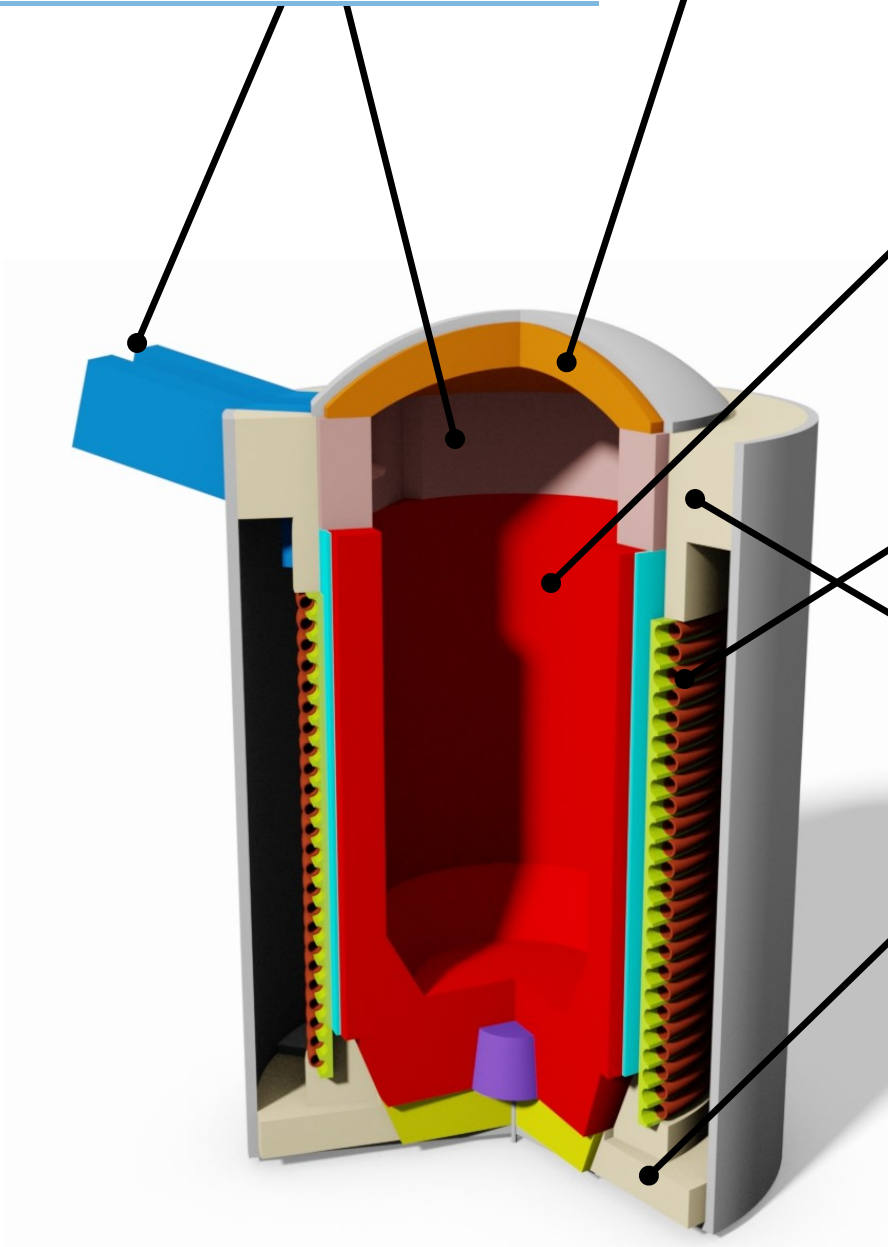
- GROUT 163AF
- GROUT 563A
- GROUT 663A
- COIL-CAST 97A
- MINRO-AL® CAST A44

## STRUCTURAL COMPONENTS

- LCF 47A-FR
- MINRO-AL® CAST A43
- QUICK CAST® 62

## SPECIALTY LINING

- DRI-VIBE® 462S
- DRI-VIBE® 461S
- DRI-VIBE® 458Cr
- DRI-VIBE® 149Z
- DRI-VIBE® 799A
- DRI-VIBE® LGS 258S-CR





# CORELESS | STEEL ALLOYS



## TOP CAP / SPOUTS

DRI-VIBE® 480CR

CW HS 85 PLASTIC

DRI-VIBE® 88A

STEEL-PAK 86Cr / 90Cr

RAM MAX® 90 P FINE

DRI-VIBE® 493A

## COVER

MINRO-FIRE CAST F80

INSULMIX® 33100

LCF 52A

## WORKING LINING

DRI-VIBE® 388A

DRI-VIBE® 883A

DRI-VIBE® 682A

DRI-VIBE® 931A / 975A / 985A

DRI-VIBE® LGS

## GROUT

GROUT 163AF

GROUT 563A

GROUT 663A / 763AF

COIL-CAST 97A

MINRO-AL® CAST A44

## STRUCTURAL COMPONENTS

LCF 47A-FR

MINRO-AL® CAST A43

QUICK CAST® 62

## SPECIALTY LINING

MINRO-MAG RAM M20

MINRO-Z RAM Z73-W

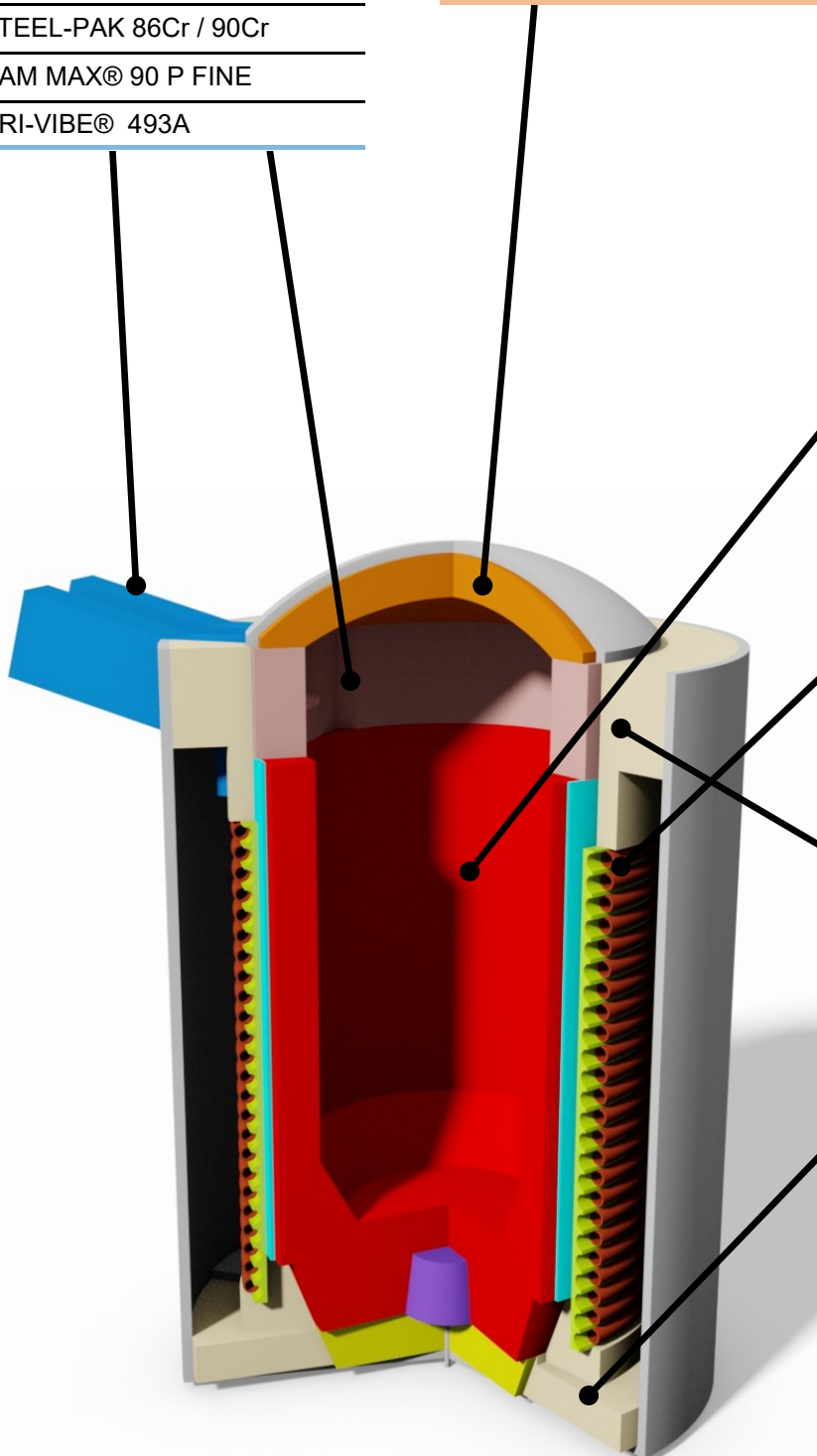
DRI-VIBE® 529M / 673M

MINRO-AL® RAM A55-W

MINRO-AL® RAM A60-W

AC RAM

DRI-VIBE® 967Cr







# CORELESS | COPPER ALLOYS

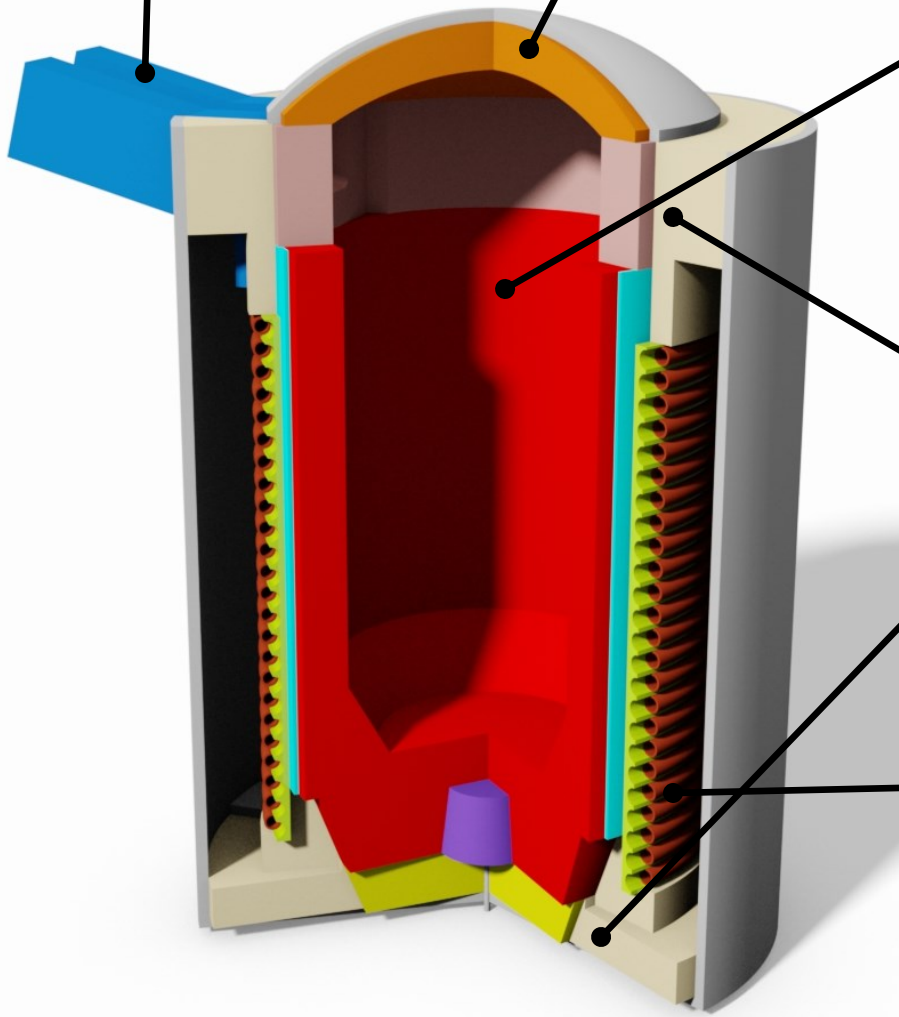
SPOUTS
RAM MAX® 70 P FINE
RAM MAX® 75 P
RAM MAX® 85 P
RAM MAX® 90 P FINE
QUICK-FIRE® 88
MATRIFIRE® 8085ACX
PRECAST SHAPES

COVER
MINRO-FIRE CAST F80
INSULMIX® 33100
LCF 52A

WORKING LINING
DRI-VIBE® 31A
DRI-VIBE® 252A / 253A
DRI-VIBE® 351A / 357A
DRI-VIBE® 390A
DRI-VIBE® 462S
DRI-VIBE® LGS Cu
DRI-VIBE® 401Z
PRECAST SHAPES

STRUCTURAL COMPONENTS
LCF 47A-FR
MINRO-AL® CAST A43
QUICK CAST® 62

GROUT
GROUT 263AF / 563A
GROUT 663A / 763AF
MINRO-AL® CAST A44
COIL-CAST 97A





# CORELESS | ALUMINUM ALLOYS

SPOUTS
RAM MAX® 70 P FINE
RAM MAX® 75 P
RAM MAX® 90 P FINE
QUICK-FIRE® 88
MATRIFIRE® 8085ACX
PRECAST SHAPES

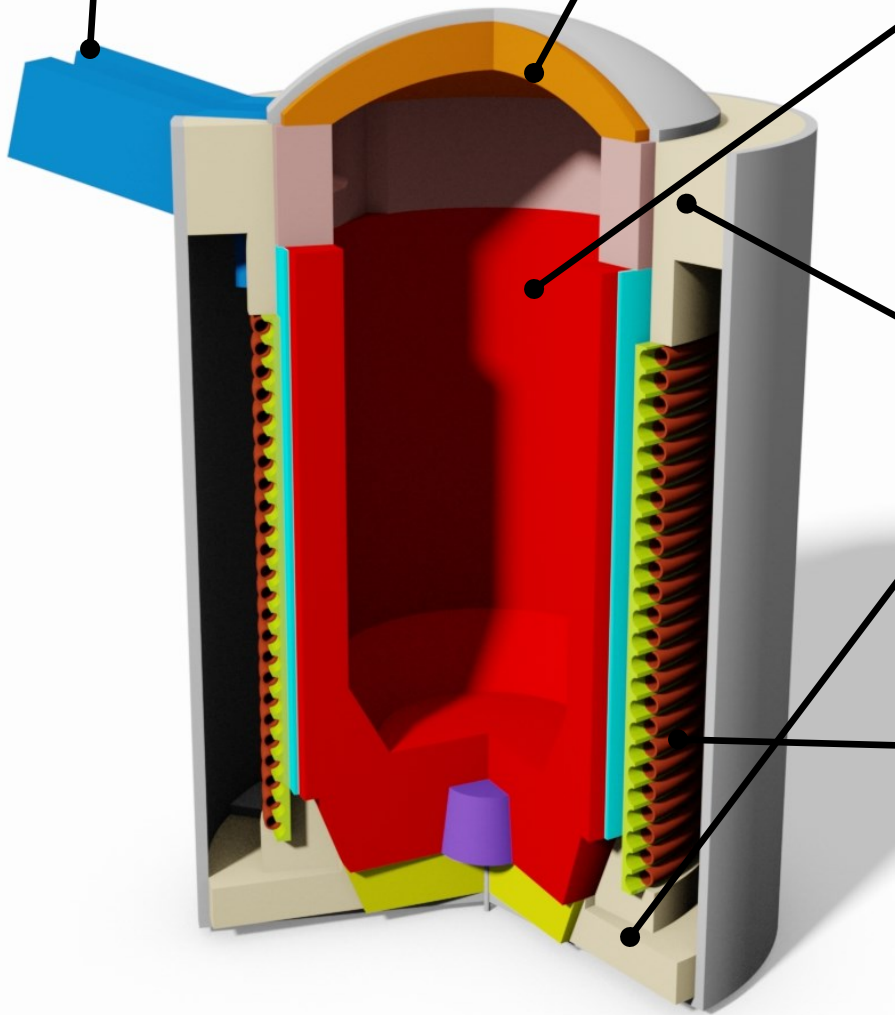
COVER
MINRO-FIRE CAST F80
INSULMIX® 33100
LCF 52A

WORKING LINING
X-ACT® Technology*
DRI-VIBE® 520A
DRI-VIBE® 622A
PRECAST SHAPES
DRI-VIBE® 558A-FR*
DRI-VIBE® 522A-FR*

\*Patented / Patent pending

STRUCTURAL COMPONENTS
LCF 47A-FR
MINRO-AL® CAST A43
QUICK CAST® 62

GROUT
GROUT 263AF / 563A
GROUT 663A / 763AF
MINRO-AL® CAST A44
COIL-CAST 97A





# CHANNEL FURNACE | FERROUS



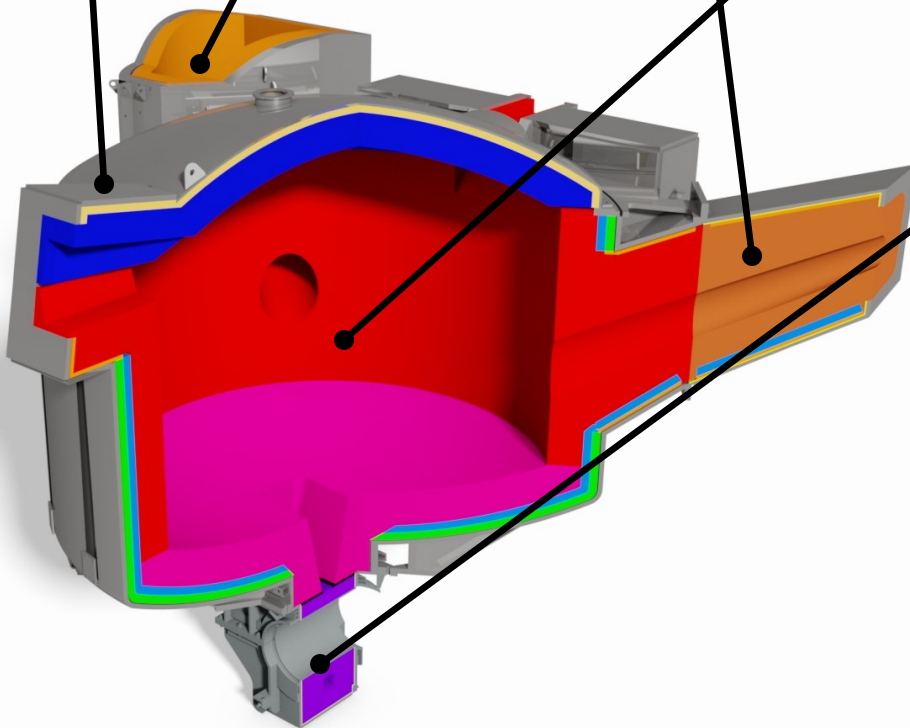
COVER
MINRO-FIRE CAST F80
LCF 52A
INSULMIX® 33100

RECEIVER / POUR SPOUTS
CW 965 CASTABLE
V-CAST® 426A
DRI-VIBE® 336Cr
V-CAST® 707A / 712A
STEEL-PAK 90Cr

WORKING LINING / UPPER CASE
MINRO-AL® RAM A29
V-CAST® 418A / 426A
DRI-VIBE® 336Cr
DRI-ROK® 2029 / 2036
V-CAST® 707A / 712A
V-CAST® 720A / 724A
MINRO-AL® RAM A26
V-CAST® 397Cr

INDUCTORS
DRI-VIBE® 331A
DRI-VIBE® 696M
DRI-VIBE® 305A, 306A
MINRO-MAG RAM M10

GUNNING / SHOTCRETE / REPAIRS / MAINTENANCE
DURAGUN® 80
DURAGUN® 90Cr
DURAGUN® 90NF
STEEL-PAK 90Cr
TEK-GUN 31A







# CHANNEL FURNACE | NON-FERROUS



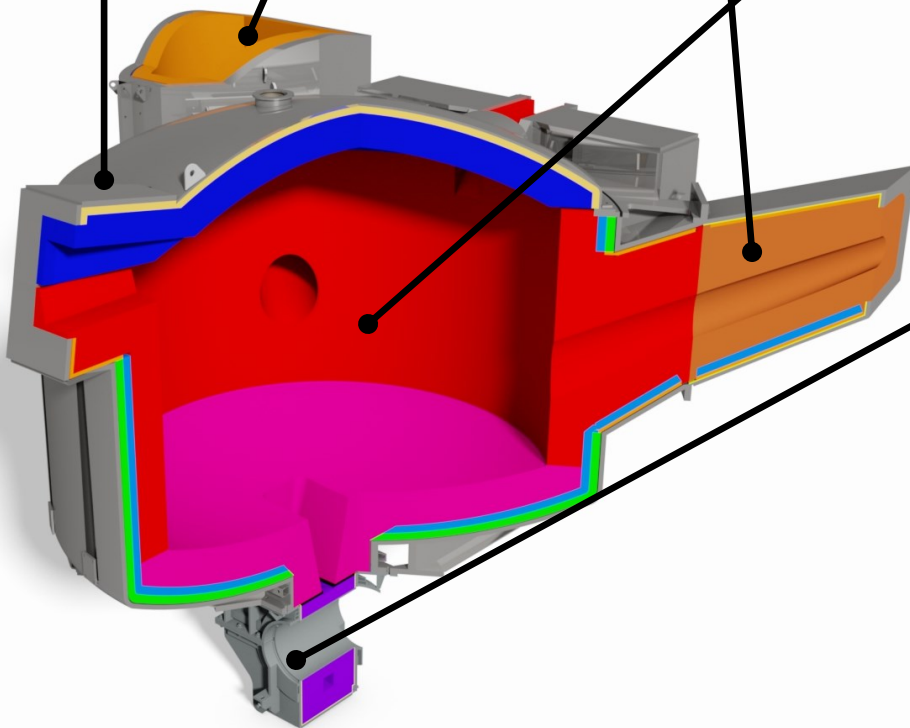
COVER
MINRO-FIRE CAST F80
LCF 52A
INSULMIX® 33100

RECEIVER / POUR SPOUTS
CW 965 CASTABLE
METAL KAST 68
V-CAST® 426A

WORKING LINING / UPPER CASE
V-CAST® 426A
MINRO-AL® RAM A29
DRI-VIBE® 351A
V-CAST® 707A
TUFF-FLO 608
MINRO-SIL® 1001
LCF 579A
LCF 596Cr

INDUCTORS
DRI-VIBE® 351A / 355A
MINRO-AL® RAM A34W
DRI-VIBE® 432Cu
DRI-VIBE® 800Cu
TUFF-FLO 608
DRI-VIBE® 252A
V-CAST® 426A
MINRO-SIL® 2001

GUNNING / SHOTCRETE / REPAIRS / MAINTENANCE
DURAGUN® 90NF
STEEL-PAK 90Cr
MATRIGUN 70AC-H
V-CAST® 397Cr
TEK-GUN 31A
V-CAST® 426A





# PRESSURE POUR | FERROUS



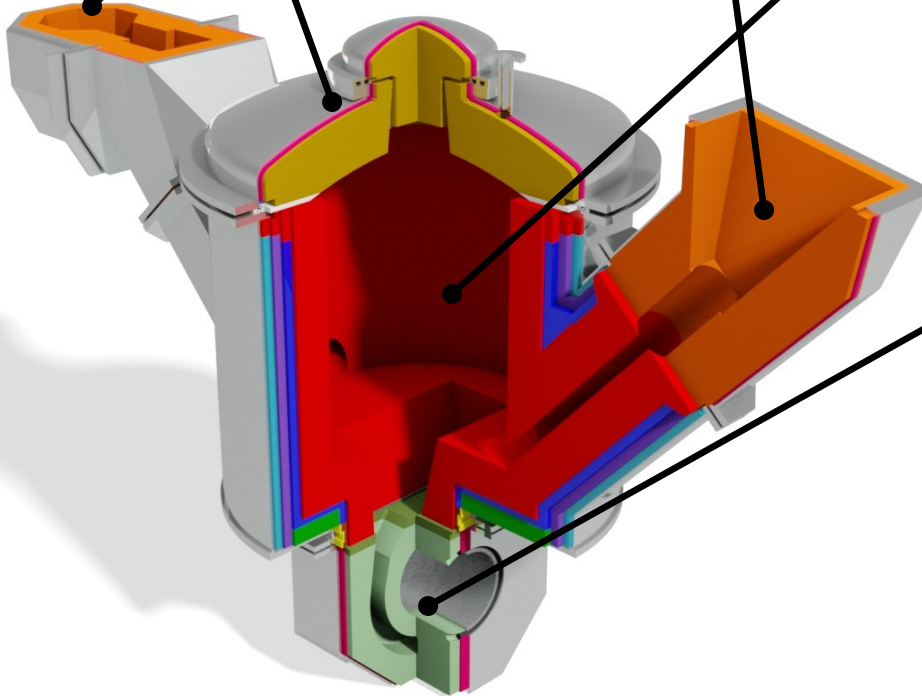
COVER
MINRO-FIRE CAST F80
LCF 52A
INSULMIX® 33100

RECEIVER / POUR SPOUTS
CW 965 CASTABLE
V-CAST® 426A
DRI-VIBE® 336Cr
V-CAST® 707A / 712A

WORKING LINING / UPPER CASE
MINRO-AL® RAM A29
CW 921 CASTABLE
V-CAST® 418A / 426A
DRI-VIBE® 336Cr
DRI-ROK® 2029 / 2036
V-CAST® 707A / 712A
V-CAST® 720A / 724A
MINRO-AL® RAM A26
V-CAST® 397Cr
V-CAST® 701A

INDUCTORS
DRI-VIBE® 696M
DRI-VIBE® 305A, 306A
MINRO-MAG RAM M10

GUNNING / SHOTCRETE / REPAIRS / MAINTENANCE
DURAGUN® 90NF
STEEL-PAK 90Cr
MATRIGUN 70 AC HOT
V-CAST® 397Cr
TEK-GUN 31A
V-CAST® 426A





# PRESSURE POUR | NON-FERROUS



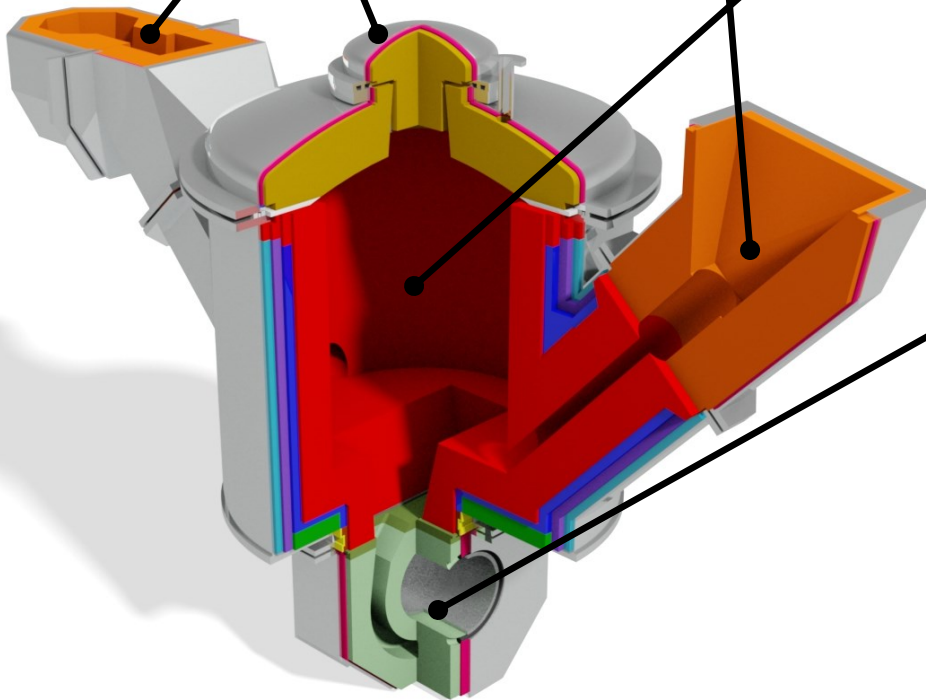
COVER
MINRO-FIRE CAST F80
LCF 52A
INSULMIX® 33100

RECEIVER / POUR SPOUTS
CW 965 CASTABLE
TUFF-FLO 608
V-CAST® 426A

WORKING LINING / UPPER CASE
V-CAST® 426A
DRI-VIBE® 351A
V-CAST® 707A
METAL KAST 68
MINRO-SIL® 1001
LCF 579A
LCF 596Cr

INDUCTORS
DRI-VIBE® 351A / 355A
MINRO-AL® RAM A34W
DRI-VIBE® 432Cu
DRI-VIBE® 800Cu
METAL KAST 68
DRI-VIBE® 252A
V-CAST® 426A

GUNNING / SHOTCRETE / REPAIRS / MAINTENANCE
DURAGUN® 90NF
STEEL-PAK 90Cr
MATRIGUN 70ACG
V-CAST® 397Cr
TEK-GUN 31A
V-CAST® 426A

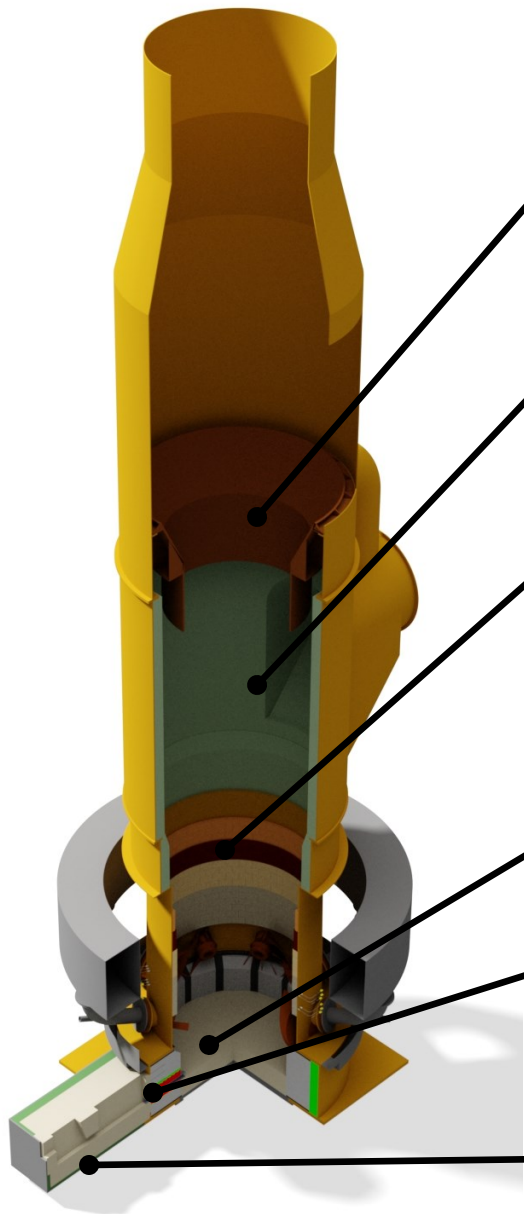






Allied provides the refractory and Allied Mineral Technical Services, Inc. provides the technical expertise. Allied Mineral Technical Services provides value added technical support for refractory systems and specializes in the following.

- Melt zone monitoring and modeling
- Data collection and analysis
- Engineering and design services
- Analysis of melt practices
- Emergency responsiveness
- On-site supervision and assistance



CHARGE RING
METAL-ROK® SHAPES
ARMORMAX 70SR

UPPERSTACK
TUFF-GUN™
DURAGUN®
REZIST ABRABE
STACKCRETE®
GUNCAST®
STACKGUN

MELTZONE
CW 500 SERIES GUN MIXES
STACKGUN
DURAMELTZ®
STACKCRETE®

WELL
300 SERIES PLASTICS
500 SERIES GUN MIXES
V-CAST® CASTABLES
KARBSHIELD

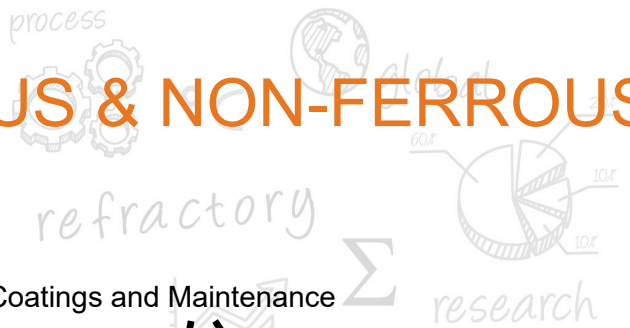
TAPHOLE
CW 300 WET RAM SERIES PLASTICS
V-CAST® CASTABLES
DURAMELTZ®
PRECAST SHAPES

SEPARATOR
CW 400 SERIES RAMS
ALPHA RAM
V-CAST® CASTABLES
OMEGA RAM





# LADLES | FERROUS & NON-FERROUS



## IRON ALLOYS

WORKING LINING	
LADLE KAST	METAL KAST 60
DURACON® 32	CW 965 CASTABLE
METAL KAST 68	METAL KAST 85
CW 712 CASTABLE	VIB RAM 70
MINRO-AL® PLASTIC A76	DRI-VIBE® 916A

LADLE COATINGS / MAINTENANCE	
CW 85 KOTE	STEEL-PAK 90Cr
LADLE WELL	T-COAT® 692M

## STEEL ALLOYS

WORKING LINING	
CW 965 CASTABLE	METAL KAST 85
METAL KAST 90	DRI-VIBE® 88A
DRI-VIBE® 916A	

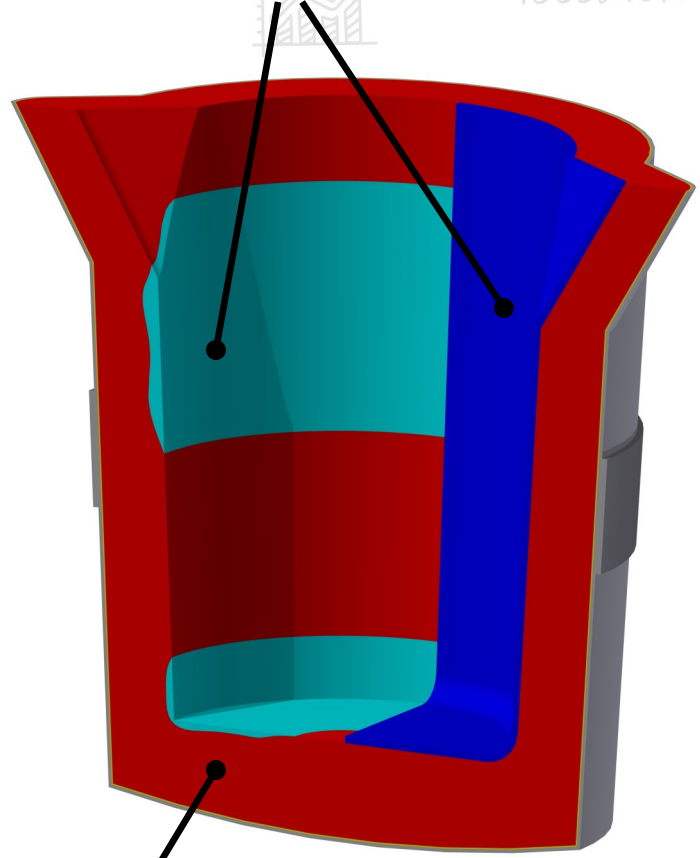
LADLE COATINGS / MAINTENANCE	
CW 85 KOTE	STEEL-PAK 90Cr
LADLE WELL	T-COAT® 692M / 689M

## NON-FERROUS ALLOYS

WORKING LINING	
LADLE KAST	CW 712 CASTABLE
MATRIFIRE® 8085ACX	QUICK-FIRE® 8085
MATRISIL CV	RAM MAX® 70 P FINE
VIB RAM 70	DRI-VIBE® 916A

LADLE COATINGS / MAINTENANCE	
CW 85 KOTE	STEEL-PAK 90Cr
LADLE WELL	T-COAT® 692M
PLASTER 55AC	DRI-LITE® 79AL-M
MATRIFIRE® 8085ACX	QUICK-FIRE® 88

Coatings and Maintenance



Working Lining





# PRECAST SHAPES

Allied's precast center is a leading supplier in the manufacture of precast, prefired refractory shapes in a variety of industries. Allied has locations worldwide which provide access to over 1000 product formulations for custom designed refractory solutions.

## PRECAST BENEFITS:

- Consistent quality
- Extensive product offerings including the ultimate ceramic-metal composite for shapes, METAL-ROK®
- Shapes manufactured from Allied's flagship product lines
- Solution-driven: Collaboration between Sales, Research and Technology, Manufacturing and Engineering
- Shape capabilities from 2 lbs to 10 tons (1 kg to 9 MT)

## ALLIED'S PRECAST SHAPES LOCATIONS:

- Columbus, Ohio, USA
- Pell City, Alabama, USA
- Tianjin, China
- Tholen, The Netherlands
- Germiston, South Africa

## PRECAST APPLICATIONS:

- Coreless Induction Furnaces
- Channel Induction Furnaces
- Cupolas
- Gas-fired Furnaces
- Resistance Rod Furnaces
- Heat Treating & Forging Furnaces
- Reverberatory Furnaces
- Vacuum Induction Tundishes
- Transfer Ladles
- Ductile Treatment Ladles
- Pouring Tundishes / Boxes
- Launderers
- Centrifugal Casting Feed Equipment
- Impact Shapes







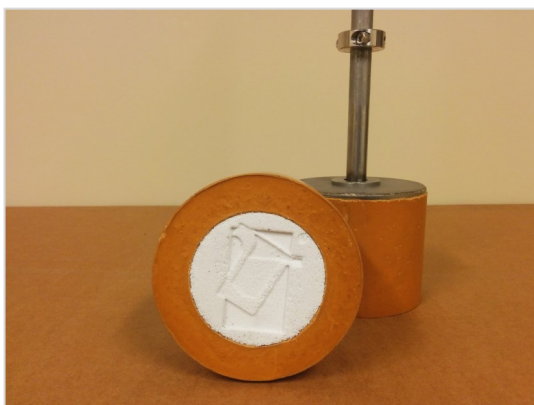
# RELATED PRODUCTS

- Bricks and Mortar
- Microporous Insulation
- Mica and Cloth Slip Plane Material
- Flues
- Fiber Insulation Products
- Installation Equipment (Mud Hog mixers, EVS, Allied IDEAL Rammers, Bosch Tampers and Stopper Rods)
- Ladle Bowls
- Digital Thermometers and Thermocouple Wire
- Cast Loop Forms for Inductors



## MINRO STIR PRO NOZZLES & FLOW KITS

MINRO STIR PRO NOZZLES bring the advantages of inert gas stirring of molten metals to the coreless induction furnace and foundries. These nozzles are available in various sizes to fit a range of coreless furnaces. MINRO STIR PRO FLOW KITS are also available to ensure accurate and consistent delivery of the inert gas to the furnace.





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