Unimark West Asia – marketing partner of Permatech refractory products for the middle-east region

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Products in the Casthouse

- Billet / Ingot / Continuous casting components
- Furnace linings
- Metal treatment liners
- CFF boxes
- Troughs
- Pump impellers
- Castables
- Baffles
- Furnace refractories
- Hearth
- Lower walls
- Taphole Blocks
- Big Block
- Pre-fired drop-in sections
- Complete trough systems
- Choice of liner cost and service life
Degassing Process Systems

- One-piece pre-fired drop-in liners
- Complete reline service
- Baffles
- One piece monolithic
- All filter sizes available
- Standard depth and deep bed
Thimbles, Transition Plates

- For Maxicast and Airslip casting units
- Alcoa FDC
- Reynolds hot top
- VAW
Products for Aluminium Casting

- Transition Plates
- Thimbles
- Degassing Liners
- Bed Filter Liners
- Furnace Block
- Pump Impellers
- Downspouts
- Flow Control Rods
- Baffles
- Sleeves
- Moldable
- CFF Bowls
Product Display
Billet Casting Components
Casting Table Liners
Precast Launders
Precast Filter Bowls
Precast Degassing Parts

A622

Mint
Ingot Casting / Flow Control Components
Complete Molten Metal Assemblies
Complete Launder Assemblies
Non-Wetting Moldable Products
Non Wetting Moldable

The world’s first aluminum resistant “Non-Wetting” Moldable was introduced in 1989 by Permatech, USA
Non Wetting Moldable

- Versatile
- Insulating
- Resistant to Aluminum Reaction
- High Strength
- Available in RCF and Mineral Fiber Formulations
Moldable for Distribution Launder Installation and Repair

Troweling of Moldable on Clean Steel Shell

Repair of Distribution Launder System
Moldable for Sealing Thimble to Transition Plate

Transition Plate

Thimble

Moldable Thimble Seal
Billet Casting Components
Billet Casting Components

- Transition Plates
- Thimbles
Thimble Benefits

- Longer Life
- Precision Geometry
- 100% Inspection
- Guaranteed Performance
- Thimbles to Fit All Processes
Guaranteed Thimble Performance

Permatech, Incorporated guarantees to the buyer that Permatech Sigma distribution thimbles will outperform competitive parts by extending useful life at least twofold under comparable conditions and during normal use. Permatech, Incorporated will replace any Sigma distribution thimble which does not perform as guaranteed, without cost to the buyer.
Transition Plate Benefits

- Longer Life
- No Shrinkage
- Maintains Precision Overhang Geometry
- No Ambient Moisture Absorption
- Minimal Oil Absorption
- Defect-Free Surface Finish
- 100% CMM Inspection
Precision Surface and Dimensions
Dimensionally Optimized
For all Mold Sizes
Ceramic Parts for Other Casting Technologies
Ceramic Foam Filter Units
Permatech
‘The Original One-Piece Precast Filter Bowl’
Filter Units Customized to Fit All Applications
Foam Filter Bowl Assemblies
Metal Refining & Treatment Equipments

ACD : Removal of hydrogen bubbles
DBF : Removal of inclusions
IGDC : Dross cooling & recovery of 10-20% aluminium (10 to 20%)
Degassing and Bed Filter Units
Deep Bed Filtration Boxes
(~4 tons Each of Refractory)
Baffle Slots Cast into Deep Bed Filtration Unit
System Assembly
Alpur Degassing Box Rebuild
Precast Grid Plate for Deep Bed Filtration
BED FILTER WITH GRID PLATES

INLET

OUTLET

Grid Plates

Baffle

Refractory Liner

Molten Metal Flow Direction
Benefits of Grid Plates

- Allows for uniform pre-heating of bed (no cold corners).
- Reduces channeling through bed for longer bed life and/or more effective filtration.
- Facilitates exit of filtered metal from bed.
Troughing and Table Top Liners
Precast Troughing
Preheating Lids on Installed Launder System
Large Precast Block for Furnace Construction
The BETA Family of Furnace Castables

- **Upper Wall**
  - BETA-U65

- **Belly Band**
  - BETA-2HPSL

- **Lower Wall**
  - BETA-2
  - BETA-2HPSL

- **Hearth**
  - BETA-SC65

‘Unique Custom-Blended Formulations to Provide Superior Performance in molten aluminium contacts’
What is a “Big Block”

- Massive Precast Refractory Shape.
- Kiln Fired to Operating Temperature.
- Held to Tight Dimensional and Squareness Tolerances.
Benefits of Big Block

- Better refractory properties due to lower water usage vs. cast-in-place.
- More consistent refractory properties due to controlled 6-sided kiln firing.
- Installation time and man-hours reduced by >50%.
- Bakeout time reduced from 10-14 days to 3-4 days.
- Eliminates possibility of on-site explosive spalling.
On-Site Bakeout of Cast-in-Place Refractory

- Single-sided drying.
- Inconsistent physical properties throughout thickness.
- Long on-site dryout time required.
- Possibility of explosive spalling with improper bakeout.
Kiln-Fired Big Block

- Six-sided firing.
- Very consistent physical properties throughout block thickness.
- Shorter on-site dryout time required.
- Significantly reduced cracking due to firing shrinkage.
- Eliminates possibility of on-site explosive spalling.
Benefits of Big Block Lining

- Fully engineered.
- Prefired to operating temperature.
- Complete refractory block furnace linings.
- Either Permatech formulations, or other commercial materials, if specified by customer.
- Only approved manufacturer of Alcoa furnace Big Block.
Big Block Installation
Fired Big Block
Custom Big Block Shape with Burner Block
Custom Big Block Shape with Burner Block
Other Applications for Precast Block

- Time consuming installation areas – hearths, roofs, burner tunnels, pressure ports, etc.
- Furnace problem areas – door jambs, arches, lintels, etc.
Furnace Engineering Capability

- Complete Design Assistance.
- Furnace Installation Project Management.
Custom Parts for Special Aluminium Processes
Precast Rock Screens for Pumping System
Induction Pump Components
Multiple Baffle Holder for Molten Metal Treatment Unit
Precast Skim Dam
Automotive Foundry Applications

- Stalk / Riser Tubes for Low-Pressure Casting
- Fill Tubes for Counter-Pressure Casting