Electric Arc Furnace (EAF)



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Electric Arc Furnace Segments

SUBHEARTH / Stadium

The subhearth/ stadium zones of most EAFs are zoned in one of three ways:

- 1.Somewhat unusual but still used in some shops is the all brick hearth concept. This design uses brick that are laid horizontal to achieve a laid stairstep stadium contour.
- 2. The second concept used today is that of laying 9" straights flat on the shell in several layers and then covering with dry vibratible.
- 3. The third concept is simply placing dry vibratible directly on the shell.

The stadium area is designed to provide a safety lining beneath the dry vibratible.

Brand Selections: PERECON, OXILINE H, OXILINE B

Lower Sidewalls

This is the area of the furnace that makes the transition from the stadium or dry vibratible to the sidewall. Generally this area uses a single brick length and is either a burned magnesia or mag-carbon composition. Slag or metal contact is possible but maintenance should prevent this.

Non-Severe / Moderately Severe Application: OXILINE B, NULINE R10SA, R20SA

Severe Application: NULINE 10-99, NULINE 13 DF

UPPER SIDEWALLS

Non-Severe Application Selections: NULINE R10SA, NULINE 10-99

Moderately Application Selections: NULINE 13 DF

Most Severe Application Selections: NULINE 13 DFP, NULINE 15 DFP, NULINE 20 DFP

SLAGLINES

This is the area of the furnace that sees the slag produced in the melting process. Based upon slag volumes and slag control this furnace zone can be a minor or severe problem.

Non-Severe Application: Oxiline B, Nuline R10SA / R20SA

Moderately Severe Application: Nuline 10-99, Nuline 13DF

Severe Application: Nuline 13 DF, Nuline 15DF, Nuline 20 DFP

TAPHOLE / DELTA

Tapholes epoxied & drilled for standard side tapping furnace are available in a range of compositions from mag-chrome to burned magnesite tar-impregnated, to mag- carbon brick of many types.

SPOUTS Precast spouts for side-tapping furnaces can be cast in any number of materials with the following representing the typical choices;

Non-Severe Application: Uniform 80CLC 102

Moderately Severe Application: Uniform 85 LC

Severe Application: Uniform 98LCXC

- EZCAST 3250
- **KRICON 32-70**
- PERECON
- OXILINE H
- **OXILINE B**
- NULINE R 10 SA
- NULINE R 20 SA
- **NULINE 10-99**
- NULINE 13 DF
- NULINE 13 DFP
- NULINE 15 DFP
- NULINE 20 DFP
- VIBROCAST 85 ULM
- VIBROCAST ASC 8 LT

Electric Arc Furnace Recommended Products

NULINE R10SA / R20SA - sintered MgO compositions having additions of dual metals to provide oxidation resistance.

NULINE 10-99 - a resin-bonded mag-carbon composition that contains 100% fused high purity MgO grain as well as dual metal additions.

NULINE 13DF - a brick similar to NULINE 10-99 but at higher carbon content.

NULINE 15 DFP - a composition similar to Nuline 13DF but enhanced metals to provide greater oxidation and hydration resistance. **NULINE 13 DFP** - a resin-bonded mag-carbon composition that contains 100% high purity fused MgO grain and high purity graphite. Dual metals are used to enhance oxidance resistance while providing resistance to aluminum carbide hydration.

NULINE 20 DFP - a composition similar to Nuline 13 DFP but with higher graphite content to provide greater non-wetting capability to slag attack.

OXILINE H - a burned, high purity MgO composition that has a balanced lime/silica ratio that imparts excellent refractoriness and excellent strength across a wide temperature range.

OXILINE B - same as OXILINE H, but tar-impregnated, to enhance composition by adding carbon to existing porosity to provide greater slag resistance as well as enhancing hydration resistance.

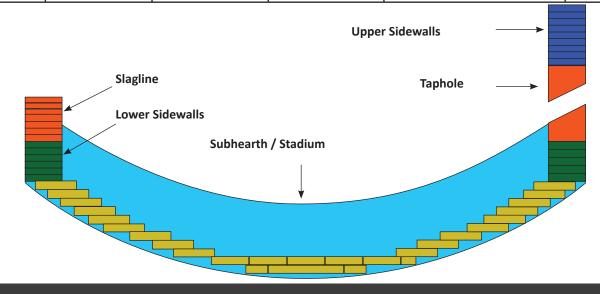
PERECON - a cost effective, burned, regular purity MgO composition that has good hydration resistance.

UNIFORM 80CLC 102 - an 80% alumina, 3200°F degree low cement castable designed to yield minimum porosity and very good strengths.

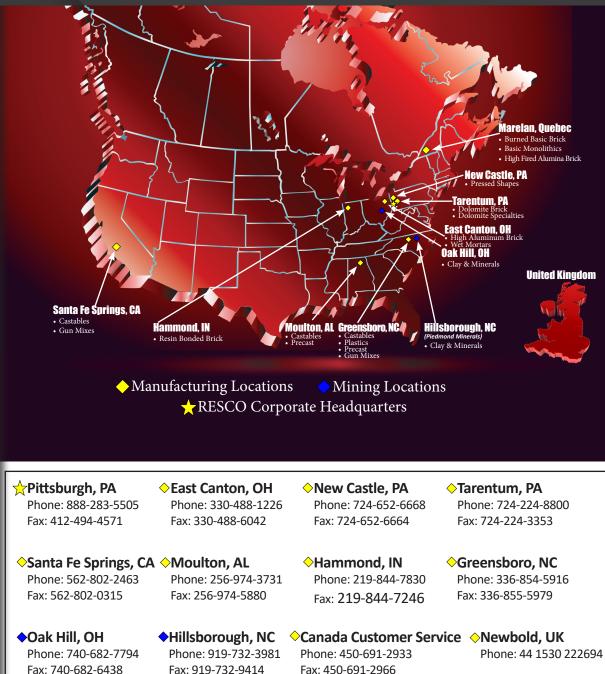
UNIFORM 85LC - an 85% alumina, 3200°F ultra low cement castable designed for maximum slag and metal resistance.

UNIFORM 98LCXC - a high purity, low cement, 3400°F alumina - castable to provide maximum to molten steel and slags.

	SUBHEARRTH STADIUM	LOWER SIDEWALLS	SLAGLINE	UPPER SIDEWALLS	SPOUTS / DELTA
Non-Severe	PERECON OXILINE H OXILINE B	OXILINE B NULINE R 10 SA NULINE R 20 SA	NULINE R 20 NULINE 9-99	Cold Spot: NULINE 10-99 Hot Spot: NULINE 13 DF	UNIFORM 80CLC 102
Moderately Severe	OXILINE H OXILINE B	OXILINE B NULINE R 10 SA NULINE R 20 SA	NULINE 10-99 NULINE 13 DF	Cold Spot: NULINE 10-99 Hot Spot: NULINE 15 DFP	UNIFORM 85LC
Most Severe	OXILINE B	NULINE 10-99 NULINE 13DF	NULINE 13 DFP NULINE 15 DFP NULINE 20 DFP	Cold Spot: NULINE 10-99 Hot Spot: NULINE 15 DFP NULINE 20 DFP NULINE 13 DFP	UNIFORM 98LCXC



RESCO PRODUCTS LOCATIONS



Founded in 1946, Resco has served its markets with specialized products ever since, initially, with the refining industry and later in the steel industry. Innovations have been key to Resco's long success, including AA-22 and the original patent on semi-universal ladle brick.

Recent acquisitions have diversified Resco into many new refractory markets. The addition of Nationals product lines allows Resco to offer a comprehensive range of products, and dolomite products are available.

One Robinson Plaza 6600 Steubenville Pike #300 Pittsburgh, PA 15205



EZCAST 3250

KRICON 32-70

PERECON

OXILINE H

OXILINE B

NULINE R 10 SA

NULINE R 20 SA

NULINE 10-99

NULINE 13 DF

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VIBROCAST 85 ULM

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