ALUMINUM Metal Contact Castables

Many modern aluminum melting and holding furnaces are continuously being pushed harder and harder to produce more metal in shorter time. In many cases, the furnaces are being pushed to produce a variety of different aluminum alloys. These operating conditions have created a demand for refractories that withstand more severe environments.

TEMPERATURE

Temperature is generally the simplest method of increasing throughput. While the higher temperatures do decrease melt times, they can cause problems. Higher temperatures increase the rates of reaction between the metal and the refractories, leading to corundum formation and accelerated wear.

FLUXING

While necessary for efficient metal melting, fluxing practices are damaging to refractories. Alkali based fluxes can have the same effect on alumino-silicate refractories as they have on aluminum metal. Chlorine containing fluxes can degrade the bond system of cement-bonded refractory castables.

CHARGING

Scrap quality and charging practice can also be detrimental to the refractory performance. Painted or other contaminated scrap can introduce components that are highly reactive with refractory linings. The size and charging method can be abusive, too. Pushing large scrap into the furnace causes abrasion on the sill, and results in high mechanical impact on the ramp and hearth.

ALLOYS

Various alloying components can degrade refractories. Silicon alloys tend to be highly fluid, and can penetrate further into furnace linings. Magnesium alloys are prone to thermiting, which produces localized temeratures greater than 3000°F, and can lead to corundum formation. Zinc alloys also tend to promote corundum formation.

CLEANING

In all cases, it is very important to employ thorough furnace cleaning practices. Good furnace cleaning can help minimize corundum growth and refractory wear. Efficient cleaning can also help to improve heat transfer to the bath, reducing thermal gradients and melt losses.

FIRECLAY CASTABLES

VERSAFLOW® 45/AL ADTECH®
A 45% alumina, pumpable, low-cement castable with improved strength versus conventional castables

H-W® ES CASTABLE C AL – *An Industry Standard*
This product is a coarse aggregate castable with excellent impact and thermal shock resistance

60 - 70% CASTABLES

GREENKLEEN-60 PLUS
Among the most popular maintenance materials available, GREENKLEEN-60 PLUS is a 60% alumina, andalusite containing, low cement castable. It has high strength and excellent aluminum resistance

ARMORTECH 65AL ON-LINE®
The fast turnaround version of the ARMORTECH family, ARMORTECH 65 AL ON-LINE® is designed to set quickly and be dried out rapidly. It can be installed in vibracast to pumpcast consistencies

VERSAFLOW® 65/AL PLUS®
A 65% alumina, low-cement castable with high strength and versatile installation characteristics. Available in a coarse aggregate containing version for enhanced impact and thermal shock resistance - **VERSAFLOW® 65/AL C ADTECH®**

ULTRA-EXPRESS 70 AL
An ultra-low cement, aluminum resistant castable designed with enhanced flow and self-leveling characteristics. This is very strong and is ideal for pumping over long distances and for casting into intricate form patterns

ARMORTECH 65 AL
State of the art, very high purity, low-cement castable. It's unique bonding matrix provides exceptional hot strength and superior, high temperature aluminum corrosion resistance. Available in a coarse aggregate containing version for enhanced toughness - **ARMORTECH 65 AL C**

ARMORTECH 65 MW AL
Uses middleweight technology to provide lower thermal conductivity and excellent non-wetting to aluminum. Uses could include aluminum crucibles

VERSAFLOW® 70AL SC PLUS
This 70% alumina castable contains 8% silicon carbide, is non -wetting to molten aluminum, and contains a coarse aggregate for enhanced impact and thermal shock resistance

80+% ALUMINA CASTABLES

EXPRESS ARMORKAST 80AL MAX
This high purity, pumpable castable with self-leveling characteristics is built for corrosion resistance. It has exceptional strength and aluminum resistance. Designed for the most severe aluminum contact applications and a problem solver for corundum build up. Available in a coarse aggregate containing version for enhanced impact and thermal shock resistance -
ARMORKAST 80AL C ADTECH®

HP-CAST 96AL
An ultra-low cement, tabular alumina castable that is free of silica for the most severe aluminum corrosion environments. HP-CAST 96AL has a combination of high refractoriness and hot strength

MISCELLANEOUS CASTABLES

GREENLITE®-45-L AL PLUS
This lightweight castble has a very high strength to weight ratio. It is ideally suited for insulating subhearths and crucibles

NARCON ZRAL
A 60% zirconia castable with excellent corundum resistance. Zoning belly bands with NARCON ZRAL has proven to be very successful in furnaces prone to corundum formation

THOR® 60 ABR ADTECH®
60% silicon carbide castable with very high strength and abrasion resistance, a proven problem solver in hearths, ramps, and sills