CeramTec



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The measured values mentioned before were determined for test samples and are applicable as standard values. The values were determined on the basis of DIN-/DIN-VDE standards and if these were not available, on the basis of CeramTec standards. The values indicated must not be transferred to arbitrary formats, components or parts featuring different surface qualities. They do not constitute a guarantee for certain properties. We expressly reserve the right to make technical changes.

THE CERAMIC EXPERTS

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MATERIAL DATA МАСН ΝΕ

Advanced Ceramics for the Nonferrous Molten Metal Industry

Aluminium Titanate

ALUTIT – Aluminium Titanate Components in Nonferrous Molten Metals

Suction Tube / Dosage Tubes

Aluminium Titanate (Al, TiO,)

This material distinguishes itself by a unique combination of thermal and physical properties. High-purity aluminium oxide and titanium oxide are combined into a micro-porous material via a precision-controlled reaction sintering process. A structure characterized by a microfine system of fissures gives ALUTIT its unique performances characteristics. The extremely good thermal shock resistance is a result of the very low thermal expansion and a certain amount of porosity in the microstructure. This ceramic material's poor wettability with molten metals also makes it ideal for use in foundry and metallurgical melting, especially in aluminium casting.

Properties

- Outstanding thermal shock resistance: temperature differences up to 900°C
- Anti-wetting properties
- Low thermal conductivity
- Very good chemical resistance / good corrosion resistance
- Low thermal expansion

Advantages

- Direct exposure to the molten metal feasible
- even without any preheating!
- Simplified cleaning
- Energy efficiency of casting process
- Reduced melt temperature gradients
- Provides valuable solidification
- Increasing component service
- Better efficiency of casting plants
- No decomposition of the melt by degraded products of ceramic
- Low mechanical stress

Products and Applications

ALUTIT can find its applications in metallurgy in various forms:

- Riser Tubes for LPDC (low pressure die casting)
- Breakrings for continuous casting of brass
- Nozzles / Bushes as casting mold inserts or mold joints
- Suction Tubes for vacural casting
- Dosage Tubes for dosing furnaces
- Plates, Stoppers and Closing Systems for flow control of molten masses

Furthermore, CeramTec also produces special components according to customer requirements made of Aluminium Titanate Ceramic:

- Spacers
- Crucibles
- Foundry Molds
- Spouts
- Rotors and Rotor Shafts
- Protection Tubes
- Special Components

Shapes and Special Requirements

- Wide tolerance range
- (from fine to course tolerances)
- Sophisticated three-dimensional shapes
- Depending on the version with / without:
- coating (e.g. boron nitride)
- with groove
- with drilling(s)
- with flange
- cranked or others





Riser Tubes

Breakrings



Handling Instructions

When using our material it must be considered that ALUTIT is a ceramic, and therefore brittle material. Thus, be aware when handling:

- Avoidance of any mechanical impact loads during assembly and cleaning operations
- Consideration of different thermal expansions during installation in metallic devices
- Use of round, wooden tools for cleaning (no metallic hammers, no chisels)
- Use of fibrous gasket to avoid stress levels that may result in component failure
- Removal of adherent aluminum or dross from the component immediately after takeout from the melt





Nozzles / Bushes

Stoppers / Plates