

ZIRCON

Zircon is a naturally occurring refractory mineral and is therefore subject to variability. It is chemically inert and is stable to very high temperatures. Zircon has a very high thermal conductivity and acts as a chill to eliminate metal mold reactions and burn-in, resulting in a smooth cast surface. Zircon is available in both granular and flour form.



Zircon is almost exclusively used in the primary slurry and as a primary stucco. Because of its high density, zircon provides excellent flow characteristics in a primary slurry. The round grains do not cause defects such as rough casting surfaces.

Typical Material Properties*

%	Sand	Flours
Zirconium Dioxide (ZrO ₂)	≥65.0%	≥65.0%
Silica (SiO ₂)	≤33.0	≤33.0
Alumina (Al ₂ O ₃)	≤2.0	≤2.0
Titania (TiO ₂)	≤0.35	≤0.35
Ferric Oxide (Fe ₂ O ₃)	≤0.05	≤0.05
Melting Point	4001 °F (2205 °C)	4001 °F (2205 °C)
Specific Gravity	4.5	4.5
Refractive Index	2	2
Hardness (Mohs)	7.5	7.5
Thermal Expansion Coefficient (cm/cm/°C)	4.2 x 10 ⁻⁶	4.2 x 10 ⁻⁶

*Trebol USA has determined test method and provided analysis as noted herein. The levels referenced herein are only for general guidance and do not constitute a firm specification.



RANSOM & RANDOLPH

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ZIRCON

Particle Size**

Zircon Sand

- 96-111 AFS

Zircon Flours

	200 Mesh	325 Mesh	400 Mesh
Particle Size (Microns) d 50%	20	14	10.5
Residue in 200 Mesh (%) maximum	0.5 - 3.0	—	—
Residue in 325 Mesh (%) maximum	—	0.5 - 6.0	—
Residue in 400 Mesh (%) maximum	—	—	1.0 - 6.0

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