

Product Data Sheet

Calcium Aluminate Cement (CAC) – 40% Al₂O₃ Grade

Description

Description	Calcium Aluminate Cement (CAC), also known as high-alumina cement, is a hydraulic binder produced by fusing or sintering bauxite with limestone. This ~40% Al ₂ O ₃ grey/black grade is the highest-volume commercial CAC grade, serving as the standard binder across general-purpose refractory castables as well as rapid-hardening and chemically-resistant construction applications.
Applications	General-purpose refractory castables, gunning mixes and precast refractory shapes Magnesia/fireclay-aggregate castables for kiln linings, ladles and furnace repair Rapid-hardening and cold-weather construction concrete Sewer pipe linings and chemically-resistant concrete (biogenic sulfuric acid resistance)
Grade	~40% Al ₂ O ₃ , Grey/Black Commercial Grade
CAS No.	Mixture – primary components Al ₂ O ₃ (1344-28-1) and CaO (1305-78-8)

Key Benefits

1. Rapid strength development – usable strength within hours versus weeks for Portland cement
2. Excellent resistance to biogenic sulfuric acid and chemical corrosion
3. Cost-effective hydraulic binder for the largest-volume tier of refractory castables
4. Good high-temperature stability for general furnace lining applications
5. Versatile across both construction and refractory industries from a single commercial grade

Chemical Analysis & Physical Data

Typical Specification

Parameter	Test Method	Unit	Specification
Al ₂ O ₃ Content	Titration / XRF Method	wt%	38 – 42
CaO Content	Titration / XRF Method	wt%	36 – 40
SiO ₂ Content	Gravimetric / XRF Method	wt%	Max. 8
Fe ₂ O ₃ Content	Spectrophotometric / XRF Method	wt%	Max. 18
Fineness (Blaine)	Blaine Air Permeability Method	cm ² /g	3,000 – 4,000
Setting Time (Initial)	Vicat Needle Method	hours	4 – 6
Setting Time (Final)	Vicat Needle Method	hours	6 – 9
Compressive Strength (24 hr)	Standard Cube Compression Test	MPa	Min. 40
Compressive Strength (28 Day)	Standard Cube Compression Test	MPa	Min. 60
Appearance	Visual	–	Grey to dark grey/black powder

Packaging

Packaging 25 kg / 50 kg Moisture-Proof Paper Bags (PE-lined)
1,000 kg Jumbo Bags (moisture-proof liner)
Custom packaging available on request.

Storage & Handling

1. Store in a dry, covered warehouse – product is hygroscopic and will hydrate/degrade if exposed to moisture
2. Keep bags sealed until point of use
3. Recommended shelf life approximately 6–12 months in sealed, unopened packaging
4. Stack on pallets, away from direct ground contact
5. Use appropriate PPE (dust mask, goggles) when handling – avoid dust generation

Quality Assurance

1. Every batch is tested against the specification above before dispatch
2. A batch-specific Certificate of Analysis (COA) accompanies each shipment, reporting Al_2O_3 , CaO, setting time and compressive strength against this TDS
3. COA available on request prior to shipment for buyer pre-approval
4. Third-party inspection (SGS/Intertek) can be arranged on request for regulated-market shipments

Disclaimer: The information provided in this document is based on our current knowledge and is intended as a general guide. Ochnology Solution Pvt. Ltd. reserves the right to modify specifications without prior notice. Buyers are advised to conduct their own testing for specific applications. A batch-specific Certificate of Analysis (COA) is available on request for each shipment.