ALVERTEX® PRIMIX-70 SUPER WHITE

TECHNOLOGIST Q&A | 20 KEY QUESTIONS

Ready technical answers for Technical Directors, R&D and laboratories

Purpose: prepare ALVENTUS technical representatives for questions from a technologist about a high-whiteness calcium aluminate binder. Answers are based on the available technical profile, representative batch data and qualification program. Where data are insufficient, this is stated explicitly.

Key message: PRIMIX-70 SUPER WHITE is a high-whiteness CA/CA_2 calcium aluminate binder combining high fineness, controlled setting and rapid early-strength development for premium dry-mix formulations.

1. What is PRIMIX-70 SUPER WHITE?

ALVENTUS: It is a high-whiteness hydraulic calcium aluminate binder based on CA and CA_2 phases for demanding dry-mix and specialty technical mortar applications.

Technical basis: *Technical profile: high-whiteness hydraulic calcium aluminate binder based on CA and CA_2.*

2. What is the main reason to choose this material?

ALVENTUS: It combines high whiteness, high fineness, controlled setting and rapid early-strength development. This is especially relevant where colour and technical performance are both critical.

Technical basis: *TDS/profile: Hunter 92–94; Blaine 4,300–4,500; setting 140–200 min; early strength 6/24/72 h.*

3. How white is the product?

ALVENTUS: Hunter Whiteness is 92–94, with a guaranteed minimum of ≥90. The representative batch measured 93.1.

Technical basis: *Representative batch and technical specification.*

4. Why is Hunter Whiteness not the same as L*?

ALVENTUS: They are different methods/metrics. For a direct comparison with a material measured by CIELAB, ALVENTUS recommends measuring L*, a*, b* and ΔE for both materials under identical conditions.

Technical basis: *Qualification program recommends CIELAB L*, a*, b* and ΔE.*

5. What is the chemical composition?

ALVENTUS: The representative batch showed Al_2O_3 69.8%, CaO 29.1% and Fe_2O_3 0.05%. For a full analysis of other oxides such as SiO_2 and alkalis, the complete batch CoA/laboratory analysis should be used.

Technical basis: *Representative batch data; full analysis where required.*

6. What is the fineness?

ALVENTUS: Blaine is 4,300–4,500 cm²/g, guaranteed ≥4,200. The representative batch measured 4,845 cm²/g.

Technical basis: *TDS/profile and representative batch.*

7. How does this affect formulation?

ALVENTUS: High fineness is part of the product's reactivity and processing profile. However, dosage from another grade should not be transferred automatically; the optimum formulation must be established through water demand, flow, setting and strength testing.

Technical basis: *ALVENTUS qualification program.*

8. What is the setting time?

ALVENTUS: Initial setting is 140–200 minutes and final setting 150–230 minutes. The representative batch had an initial setting time of 200 minutes.

Technical basis: *Technical specification and representative batch.*

9. What early strength can be expected?

ALVENTUS: The stated range is 30–40 MPa at 6 hours, 50–65 MPa at 24 hours and 55–67 MPa at 72 hours. The qualification document also gives minimum guarantees of ≥25, ≥40 and ≥42 MPa respectively.

Technical basis: *Technical profile / comparison document.*

10. What about 28-day strength?

ALVENTUS: The current technical profile recommends measuring 28-day strength, but the source data used for the document do not provide a numerical 28-day range. ALVENTUS therefore should not promise a specific value without a CoA or test report.

Technical basis: *Qualification program includes 28-day strength; no numeric value in current source data.*

11. Can PRIMIX-70 be used as a standalone binder?

ALVENTUS: Yes. It is described as a standalone hydraulic calcium aluminate binder and is also intended for ternary systems with Portland cement and gypsum.

Technical basis: *Technical profile: standalone use and ternary systems.*

12. Is it compatible with Portland cement and gypsum?

ALVENTUS: Yes, this use is explicitly stated. In ternary systems, the balance of cement, gypsum, water and binder should be adjusted to the required setting and strength profile.

Technical basis: *Formulation compatibility section.*

13. Which products are particularly suitable?

ALVENTUS: Self-leveling compounds and technical screeds, architectural and decorative mortars, terrazzo and cement-based grindstone systems, premium technical mortars, tile grouts, and white/coloured cementitious systems.

Technical basis: *Applications in technical profile.*

14. Is it suitable for coloured systems?

ALVENTUS: Yes. The positioning includes colour-sensitive white and coloured cementitious systems. For a specific pigment, ALVENTUS recommends checking L*, a*, b* and ΔE, as well as colour stability and efflorescence.

Technical basis: *Profile and laboratory qualification program.*

15. What can be said about Fe_2O_3?

ALVENTUS: The representative batch showed only 0.05% Fe_2O_3. This is a strong result for a white binder, but commercial qualification should rely on the CoA of the specific batch.

Technical basis: *Representative batch chemistry.*

16. How consistent is the material from batch to batch?

ALVENTUS: The technical specification defines ranges for key parameters, but batch-to-batch consistency should be assessed using CoAs from several batches. ALVENTUS recommends monitoring whiteness, Blaine, chemistry and setting.

Technical basis: *TDS ranges plus recommended qualification controls.*

17. How should the current calcium aluminate binder be replaced?

ALVENTUS: Start with a 1:1 substitution at the same dosage in the current formulation, then compare water demand, flow, workability, setting, early strength and colour. If needed, optimize dosage and formulation balance.

Technical basis: *Replacement evaluation procedure in ALVENTUS technical document.*

18. Which parameters should the technologist measure?

ALVENTUS: Water demand, flow and workability retention, initial/final setting, strength at 6/24/72 hours and 28 days, CIELAB L*/a*/b*/ΔE, particle-size distribution, residue on 90 µm sieve, colour stability/efflorescence and abrasion resistance where relevant.

Technical basis: *Recommended laboratory evaluation.*

19. Can ALVENTUS promise full replacement of TERNAL® WHITE without testing?

ALVENTUS: No. The correct ALVENTUS position is that the product has a strong comparable technical profile based on available data, but final suitability and dosage must be confirmed in the customer's formulation.

Technical basis: *Technical qualification statement recommends controlled laboratory evaluation.*

20. What does ALVENTUS offer besides the powder?

ALVENTUS: Supply with batch documentation, TDS/CoA, laboratory samples, technical support during trials and assistance with dosage and formulation optimization.

Technical basis: *ALVENTUS technical support section.*

How to answer the main technologist question: “Why should I test a new material?”

“We propose evaluating the material by its result in your formulation, not as a powder in isolation. PRIMIX-70 SUPER WHITE has documented data for whiteness, chemistry, fineness, setting and early strength. We therefore propose a short controlled laboratory trial: the same formulation, the same dosage, followed by measurement of water demand, flow, setting, strength and colour. If required, we then optimize the dosage.”

Recommended laboratory test package

- 1:1 replacement of the current calcium aluminate binder
- Water demand and consistency
- Flow and workability retention
- Initial and final setting
- Strength at 6 / 24 / 72 hours and 28 days
- CIELAB L*, a*, b* and ΔE
- Particle-size distribution and residue on 90 µm sieve
- Colour stability and efflorescence
- Abrasion resistance where required

Note: this document is intended for ALVENTUS technical communication. It does not replace the TDS, CoA, SDS or test reports.