

Calumex UPC - White

Ultra performance cement

- Fast setting
- Rapid drying
- Extremely high strength development
- (CEM I strengths within 24hrs)
- Whiteness 90
- Compensated shrinkage
- Additive or straight binder
- Low alkalinity
- Reduced efflorescence

CALUMEX[®]

UPC

Applications:

Calumex UPC White is especially developed for decorative concrete such as:

- Terrazzo
- Decorative flooring
- Glass fibre reinforced concrete (GRC)
- Dry-mixed mortars
- Architectural precast

The specially selected high purity raw materials combined with optimized calcination and carefully monitored grinding guarantees a stable quality and a consistent white colour. Besides the high whiteness the Calumex UPC White achieves very high (early) strengths, and has a high abrasion resistance. These qualities make it also suitable for:

- Concrete runway / roadway repair
- Bridge deck repair
- Non-shrink grouts
- Tunneling
- Concrete repair mortars
- Manhole repair

Properties:

Calumex UPC White is based on A.C.A. technology, which increases (early) strength development, reduces setting times, and compensates the shrinkage of traditional Portland cement. The Calumex UPC White can be used as a straight binder or blended with (white) Portland cement resulting in a highly durable concrete or mortar. Concrete or mortars based on a UPC-system will achieve strengths of a CEM I 52,5 within 6 hours instead of 28 days.

Conventional retarders can be used in UPC formulations however, we advise to use the Delta 20, which was specifically developed for these rapid setting systems. The Delta 20 will increase the workability/pot life by delaying the setting time without diminishing the rapid set. Depending on the dosage the Delta 20 will have little to no effect on the strength development.

The A.C.A. technology uses nearly 100% of the water needed during the hydration process, leaving very little water to contribute towards shrinkage as occurs in traditional systems. Due to the high initial strength development, negligible shrinkage occurs after the initial set.

Durability and carbon footprint:

During the production of the UPC White the amount of energy required for calcination is significantly lower compared to Portland cement. Portland cement requires 1500°C (2700°F) compared to 1250°C (2250°F) for the UPC. Furthermore, the clinker that is produced is much softer compared to Portland cement clinker, which means the amount of energy needed for grinding is about half. These factors contribute to significant energy savings and a carbon footprint that is 33% smaller compared to Portland cement.

Technical data

Setting times (according to Vicat):

Initial set	~	15 minutes
Final set	~	20 minutes

Compressive Strength development (MPa):

1 hour	~	30	24 hours	~	70
3 hours	~	40	72 hours	~	80
6 hours	~	60	7 days	~	90