



ÇİMSA

RECIPRO50

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HIGH COMPRESSIVE STRENGTH + LIGHT COLOR



Recipro50 is a high-performance calcium aluminate cement with an alumina content above 50%, specifically designed by Çimsa Research and Application Center to meet the requirements of construction chemicals manufacturers.

This product delivers excellent results in technical mortars and dry-mix systems where high early strength, superior abrasion resistance, and protection against biogenic corrosion are essential. Thanks to its rapid setting feature, Recipro50 offers a significant advantage in time-critical projects and ensures long-term durability in aggressive chemical environments. When combined with Çimsa EcoShine, it provides light-colored formulations and optimized reaction speed in ternary systems. With these properties, Recipro50 is the ideal choice for innovative solutions that meet both aesthetic and technical expectations.

**RECIPRO50 IS PRODUCED ACCORDING TO EN 14647 STANDARDS AND HAS THE FOLLOWING FEATURES.**



#### Physical and Mechanical

Physical and Mechanical	Çimsa Values (%)
Initial Set (min)	≥ 90
Final Set	up to 120 minutes after initial set
Compressive Strength (MPa)	6 sa ≥ 18,0 / 24 sa ≥ 60,0
Specific Gravity (g/cm <sup>3</sup> )	≤ 3,1
Compressive Strength (MPa)	≤ 7,0
Residue at 90 microns (%)	≤ 0,3
Blaine (cm <sup>2</sup> /g)	≥ 3800

#### Chemical Composition

Al <sub>2</sub> O <sub>3</sub> (%)	CaO(%)	SiO <sub>2</sub> (%)	Fe <sub>2</sub> O <sub>3</sub> (%)
≥ 49,0	≤ 38,8	≤ 5,0	≤ 2,5

TiO <sub>2</sub> (%)	MgO (%)	SO <sub>3</sub> (%)	Na <sub>2</sub> Eq Alkali (%)	Cl-as ions (%)	S-as ions (%)
≤ 3,5	≤ 0,8	≤ 0,2	≤ 0,4	≤ 0,01	≤ 0,1

#### Phase Composition

Major Mineral Phase	: CA
Minor Mineral Phases	: C <sub>12</sub> A <sub>7</sub> , C <sub>4</sub> AF

**% 2,5**

Offers high purity with Fe<sub>2</sub>O<sub>3</sub> below 2,5%.

**pH 3**

Maintains structural integrity even in environments down to pH 3.

**1450 °C**

Ensures strong thermal resistance up to 1450 °C.

**-5 °C**

Allows easy and safe application at temperatures as low as -5 °C.



For mortar testing in accordance with EN 14647, a mix prepared with CEN standard sand and a water-to-cement ratio of 0.40 is used.

# ADVANTAGES



## LIMITED IRON CONTENT

Recipro50 is designed to meet the aesthetic requirements of light-colored construction chemicals. With  $\text{Fe}_2\text{O}_3$  content below 2%, it offers both high performance and ideal solutions for light-toned formulations.



## ADJUSTABLE SETTING TIME IN TECHNICAL MORTARS

Recipro50 provides the optimal structure for modern technical mortars in ternary systems. Applicators can adjust the initial set according to project requirements and achieve early strength within the first minutes.



## LOW ALKALINE CONTENT

Portland cement typically contains more than 0.6% equivalent alkali, which can react with silica aggregates to form alkali-silica reaction (ASR), leading to gel formation and cracking. Recipro50, with its low equivalent alkali content, offers high resistance to these reactions, ensuring long-lasting and reliable systems.



## LOW CHROMIUM (VI) CONTENT

High chromium (VI) levels can cause skin sensitivity and irritation upon contact with cement. According to EU regulations, all cement products must contain less than 2 ppm of chromium (VI). Recipro50 naturally meets this requirement, providing safer handling and compliance with health standards.



## RESISTANCE TO SULFATE ATTACKS

In conventional Portland cement systems, sulfate attack occurs due to reactions between aluminates and sulfate ions, causing expansion and cracking over time. This risk increases in environments exposed to seawater, groundwater, or chemicals. Recipro50 contains no tricalcium aluminate phase and forms different hydration products, ensuring superior resistance to sulfate exposure.



## HIGH FINAL STRENGTH

Recipro50 reaches approximately 95% of its ultimate strength within the first 24 hours, exceeding the 28-day strength of Portland cement. Additionally, it achieves over 60 MPa compressive strength in 24 hours, offering a major advantage for fast-track applications.



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