

# Çimsa Rapid 42,5

## TECHNICAL DATA SHEET

### 1 GENERAL INFORMATION

In accordance with the TS EN 197-1:2012 standard, **Çimsa Rapid 42.5** (CEM I 42.5 R) Portland cement comprises solely Portland cement clinker and gypsum. The product is formulated to achieve rapid strength development in concrete.

#### Advantages in applications;

- The product offers high early strength, reducing formwork time in applications such as subway tunnels, ready-mixed concrete, and precast structures. The product also accelerates precast production.
- The product generates more heat during hydration, which proves advantageous in cold weather. This helps mitigate the effects of low ambient temperatures and facilitates manufacturing.
- All common concrete additives (e.g., plasticizers, air-entraining agents, setting retarders) can be used with **Çimsa Rapid 42.5** cement.

### 2 AREAS OF APPLICATION

**Çimsa Rapid 42.5** Portland cement, suitable for general use, finds application in the following areas:

- Production of various reinforced concrete structures where early strength is a design requirement, such as residential buildings, bridges, foundations, viaducts, concrete pavements and precast structural members.
- Ideal for use in shotcrete, dry mix mortars, and construction chemicals production.

### 3 PRODUCTION

Stability is the central focus of Çimsa's production facilities, with product parameter variations minimized through controls implemented at each process stage, spanning from raw materials to delivery. The production processes hold certifications compliant with EN ISO 9001, EN ISO 14001, EN ISO 50001, ISO 10002, and ISO 45001 standards.

### 4 CHEMICAL PROPERTIES

Properties	Çimsa Values (%)	Standard Limit (EN 197-1)	
		Min.	Max.
Insoluble Residue	0,3 – 0,6	-	5,0
SiO <sub>2</sub>	19,0 – 20,0	-	-
Al <sub>2</sub> O <sub>3</sub>	4,0 – 5,0	-	-
Fe <sub>2</sub> O <sub>3</sub>	3,0 – 3,5	-	-
CaO	63,0 – 65,0	-	-
MgO	1,0 – 2,0	-	-
SO <sub>3</sub>	3,20 – 3,80	-	4,0
Loss on Ignition	3,0 – 4,5	-	5,0
Na <sub>2</sub> O	0,2 – 0,4	-	-
K <sub>2</sub> O	0,5 – 0,7	-	-
Chloride (Cl)	0,02 – 0,05	-	0,10

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### 5 PHYSICAL AND MECHANICAL PROPERTIES

Properties	Çimsa Values	Standard Limit (EN 197-1)	
		Min.	Max.
Specific Weight	3,11 gr/cm <sup>3</sup>	-	-
Specific Surface (Blaine)	3600-3900 cm <sup>2</sup> /gr	-	-
Initial Setting	150 -180 mins	60	-
Final Setting	190 – 220 mins	-	-
Water	26 – 27 %	-	-
Soundness (Le Chatelier)	1,0 mm	-	10
0,045mm Residue on Sieve	4 – 6 %	-	-
2-day Compressive Strength	26-28 MPa	20	-
28-day Compressive Strength	50-52 MPa	42,5	62,5

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### 6 QUALITY CONTROL

**Çimsa Rapid 42.5** cement undergoes quality control in accordance with EN 197-1 standards. The product is available in both domestic and foreign markets with a CE certificate.

### 7 SAFETY INSTRUCTIONS

We adhere to standard safety requirements for general cements. For more detailed information, please refer to the safety data sheet for **Çimsa Rapid 42.5** cement.

### 8 STORAGE CONDITIONS AND SHELF LIFE

**Çimsa Rapid 42.5** should be stored in dry and sheltered environments. This ensures the product retains its properties for a minimum of 6 months. Based on previous studies, the product has been observed to maintain its properties for over a year. Bagged products should not be stored for more than 3 months. It is advised not to stack more than 10 bags or 2 pallets on top of each other. The product must be stored in its original packaging, and the package should be tightly closed when not in use.

