



ÇİMSA

CEM I 42,5 R
RAPID 42,5
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RAPID STRENGTH, RAPID SOLUTION

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KG



Çimsa Rapid 42.5 Portland cement has been specially developed for applications where early strength is critical. Thanks to its high clinker content, the cement provides rapid strength gain and significantly reduces formwork removal time. This characteristic makes it an excellent choice for precast and prestressed element production, as well as for concrete pavement applications requiring fast service in high-traffic areas. With its high heat of hydration, uninterrupted production can be maintained even under cold weather conditions. Çimsa Rapid 42.5 stands out as the ideal solution for reinforced concrete structures where early strength is crucial—such as metro tunnels, tunnel formwork buildings, bridges, and viaducts. In addition, the cement is well-suited for use in shotcrete, dry-mix mortars, and the production of construction chemicals.

ÇİMSA RAPID 42.5 (CEM I 42.5 R) PORTLAND CEMENT IS MANUFACTURED IN COMPLIANCE WITH TS EN 197-1:2012 AND IS CHARACTERIZED BY THE FOLLOWING PROPERTIES:



Chemical Properties	Çimsa Values	Standard Limits (EN 197-1)	
		min	max
Insoluble Residue	0.4 - 0.6	-	5
SiO ₂	18 - 21	-	-
Al ₂ O ₃	4.8 - 5.8	-	-
Fe ₂ O ₃	2.5 - 3.5	-	-
CaO	61.0 - 64.0	-	-
MgO	2 - 3	-	-
SO ₃	2.6 - 3.6	-	4
Loss On Ignition	2.0 - 3.5	-	5
Na ₂ O	0.2 - 0.4	-	-
K ₂ O	0.6 - 1.00	-	-
Chloride (Cl)	0.01 - 0.05	-	0,1

Physical Properties	Çimsa Values	Standard Limits (EN 197-1)	
		min	max
Specific Gravity	3.13 gr/cm ³	-	-
Specific Surface Area (Blaine)	2900-3500 cm ² /gr	-	-
Initial Setting Time	170 -250 minutes	60	-
Final Setting Time	220 - 300 minutes	-	-
Water	%27- 30	-	-
Soundness (Le Chatelier)	1.0 mm	-	10
Residue on 0.045 mm Sieve	%3- 5	-	-
2-Day Compressive Strength	26-32 MPa	20	-
28-Day Compressive Strength	48-54 MPa	42,5	62,5



ADVANTAGES



FAST PRODUCTION CAPABILITY

Thanks to its high early strength gain, Çimsa Rapid 42.5 shortens formwork removal time and increases production speed. Time savings in the production of prefabricated elements support overall efficiency. Provides ideal solutions for projects with intensive production schedules.



HIGH STABILITY

Delivers consistent performance across all ages of strength development. Ensures reliable results in various applications and maintains formulation stability. Provides production consistency with its compatibility with additives.



OPTIMIZED SETTING TIME

Has an optimized setting time for application convenience and controlled strength development. Offers an ideal balance between workability, surface finishing, and formwork removal periods. Allows you to manage the setting process safely even under cold weather conditions.



HIGH EARLY STRENGTH

Provides rapid load-bearing capacity in structural elements with its high early compressive strength. Accelerates formwork cycles with fast strength development within the first 2 days. Offers an advantage in projects with critical timelines.



HIGH FINAL STRENGTH

Ensures high final compressive strength at 28 days, creating a solid foundation for long-lasting structures. Can be reliably used in all classes of concrete design. Provides stable strength within the Portland cement (CEM I 42.5 R) class.



SUITABLE FOR PRECAST PRODUCTION

With its early strength gain feature, it offers ideal solutions for precast production. Easily integrates into quality control processes. Saves time and cost in repeated formwork cycles.



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