



ÇİMSA

CEM III/B 32,5 L
ECOFORT
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REDUCED EMISSIONS, ENHANCED DURABILITY



Çimsa Ecofort 42.5 combines environmental sustainability and long-term performance through the use of high blast furnace slag content. The low heat of hydration reduces cracking risk in mass concrete applications and hot weather conditions. The dense microstructure minimizes micro-pores, ensuring impermeability and strong resistance against water and chemical effects. Superior performance is achieved in industrial floors, dams, water channels, coastal and port structures exposed to challenging environmental conditions. A reliable choice for infrastructure and superstructure applications focused on durability, energy efficiency, and environmental compatibility. Production aligned with the European Union Taxonomy "substantial contribution" level provides lower greenhouse gas emissions compared to Portland cement, supporting the development of sustainable structures.

ÇİMSA ECOFORT (CEM III/B 32.5 L) BLAST FURNACE SLAG CEMENT IS PRODUCED IN ACCORDANCE WITH THE TS EN 197-1:2012 STANDARD AND HAS THE FOLLOWING PROPERTIES:



Kimyasal Özellikler	Çimsa Values (%)	Standart Limits (EN 197-1)	
		min	max
Insoluble Residue	0.10 - 0.50	-	5,0
SiO ₂	32.0 - 35.0	-	-
Al ₂ O ₃	9.50 - 11.5	-	-
Fe ₂ O ₃	1.0 - 1.60	-	-
CaO	40.0 - 45.0	-	-
MgO	4.60 - 5.80	-	-
SO ₃	0.50 - 2.0	-	4,0
Loss on Ignition	0.10 - 1.0	-	5,0
Na ₂ O	0.25 - 0.35	-	-
K ₂ O	0.8 - 1.0	-	-
Chloride (Cl)	0.01 - 0.03	-	0,1

Fiziksel Özellikler	Çimsa Values	Standart Limits (EN 197-1)	
		min	max
Specific Gravity	2.90-2.95 gr/cm ³	-	-
Specific Surface Area (Blaine)	3400-3700 cm ² /gr	-	-
Initial Setting Time	200-400 Minutes	75	-
Water Demand	29.0-32.0%	-	-
Soundness (Le Chatelier)	0.5-1.0 mm	-	10,0
Residue on 45 Micron Sieve	1.5-3.5 %	-	-
7-Day Compressive Strength	12-14 MPa	12,0	-
28-Day Compressive Strength	32.5-34.0 MPa	32,5	52,5



ADVANTAGES



HELPS PREVENT CRACKING

Thanks to its high blast furnace slag content, cement hydration occurs in a controlled manner, reducing early-age temperature differences. This minimizes thermal stresses and prevents volume changes or plastic shrinkage cracks within the concrete structure. The feature provides a major advantage for mass concretes and hot-weather casting applications.



CONTROLLED HYDRATION HEAT

Ecofort cement generates lower hydration heat compared to Portland cement, preventing excessive temperature rise at early ages. As a result, temperature gradients between the core and surface are reduced, minimizing thermal cracking risk. Ideal for mass concrete, dams, and foundation systems, providing easier temperature control and enhanced durability.



HIGH DURABILITY

The dense microstructure of slag cement increases impermeability, preventing the penetration of harmful ions and moisture. This feature ensures long-lasting resistance against reinforcement corrosion, chemical attacks, and environmental effects. Even in hot, humid, or marine environments, structural integrity is maintained for years.



HELPS PREVENT EFFLORESCENCE

Efflorescence, visible as white stains or salt deposits on concrete surfaces, occurs when calcium hydroxide (CH) formed during cement hydration migrates to the surface. The blast furnace slag binds this free CH through pozzolanic reaction, converting it into more stable compounds. This process enhances impermeability and reduces the transport of soluble salts, preserving surface aesthetics with a cleaner and more uniform appearance.



RESISTANT TO SULFATE ATTACK

The pozzolanic effect of blast furnace slag reduces calcium hydroxide in the concrete matrix, limiting harmful reactions with sulfate ions. This minimizes the risk of expansion and cracking in environments exposed to sulfate-bearing groundwater, seawater, or industrial conditions. Provides long-term protection and superior durability for infrastructure projects.

LOW CARBON FOOTPRINT

The use of blast furnace slag reduces the clinker ratio in cement production, lowering both energy consumption and CO₂ emissions. Compared to Portland cement, it provides an environmentally friendly solution with a significantly smaller carbon footprint. Production aligned with the EU Taxonomy supports sustainable construction objectives and eco-efficient building practices.



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