



ECOPLANET

The Low-Carbon Cement

CEM II/A-P 42.5R



ECOPlanet delivers a 30% lower carbon footprint, offering enhanced performance compared to CEM I. As the UAE progresses toward its Net Zero 2050 targets, this EPD-verified cement offers a durable, low-carbon solution designed to support the nation's transition to sustainable construction.

ECOPlanet AP4 is a blended hydraulic cement engineered to balance high early strength with long-term durability and structural integrity. Specifically developed for the UAE's challenging environment and arid climate, it provides superior resistance to chloride and sulfate ingress. By achieving a minimum 30% reduction in CO₂ emissions compared to conventional cement (CEM I), it ensures a sustainable building footprint without compromising mechanical performance or service life.

PERFORMANCE AND DURABILITY

- **High early strength:** Optimized for rapid construction cycles and early stripping of formwork (42.5R class).
- **Superior chemical resistance:** Specifically formulated to resist chloride ingress and sulfate attack in harsh ground and coastal conditions.
- **Long-term reliability:** Engineered for stable long-term strength gain and improved impermeability of hardened concrete.
- **Thermal and shrinkage control:** Features a reduced heat of hydration to minimize the risk of thermal cracking and shrinkage stress in mass concrete pours.
- **Advanced microstructure:** Provides improved densification through an optimized pozzolanic reaction.
- **Enhanced workability:** Offers placement and finishing characteristics comparable to traditional cements for ease of use.
- **SCM compatibility:** Performs effectively with micro silica, GGBFS, and other supplementary cementitious systems.



SUSTAINABILITY AND GREEN BUILDING

- **Low-carbon footprint:** Delivers up to a 30% reduction in CO₂ emissions per ton of cement compared to conventional Portland cement.
- **EPD verified:** Provides transparent, third-party validated environmental data to support low-carbon procurement.
- **Green building certifications:** Directly contributes to achieving credits in LEED, BREEAM, and Estidama (Pearl Rating).
- **Circular economy:** Utilizes high-quality supplementary cementitious materials (SCM) to reduce overall Global Warming Potential (GWP) and embodied carbon.

APPLICATIONS

For all applications from complex infrastructure to residential projects, engineered for concrete products with high durability requirements such as:

- Ready-mixed concrete
- Structural and reinforced concrete
- Precast and prestressed elements
- Shotcrete and tunneling works
- Concrete blocks and paving units
- Marine and coastal structures
- Mass concrete and foundations
- Infrastructure and industrial projects

STANDARDS COMPLIANCE

- ASTM C595 for blended hydraulic cements
- BS EN 197-1:2011 CEM II/AP 42.5R for hydraulic cement

ATTRIBUTE	TYPICAL VALUES
Sulphates (SO ₃)	2.70 – 3.20 %
Compressive Strength: 2 Days	22 – 25 (MPa)
Compressive Strength: 7 Days	38 – 42.0 (MPa)
Compressive Strength: 28 Days	48 – 52 (MPa)
Initial Setting Time	120 – 160 min
Final Setting Time	190 – 220 min
Blaine	3600-3800

RECOMMENDATIONS

For optimal performance, it is recommended that ECOPlanet mix designs be validated through laboratory trials to optimize strength development, durability, and workability for specific application requirements and exposure conditions.

ECOPlanet AP4 is a high-performance blended hydraulic cement engineered for modern construction needs, offering enhanced durability, improved sustainability credentials, and reliable compatibility with supplementary cementitious systems, thereby supporting advanced low-carbon construction practices.

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