

CLASSIC

Portland Cement



bringing materials to *life*™



Portland Cement CEM I 42,5 R

Lafarge Emirates' Portland Cement is a premium quality, cost-effective basic building material used in virtually all forms of constructions including plain & reinforced concrete, brick & stone masonry, floors & plastering, finishing of all types of structures etc. This is general-purpose cement suitable for all kind of uses where the special properties of other types of Portland cement are not required. Lafarge Emirates' Portland Cement meets or exceeds all applicable chemical and physical requirements of BS EN 197-1:2000 for CEM I 42.5 R & ASTM C 150 - 07 (Type I). It is produced by inter-grinding of cement clinker & a small quantity of gypsum.

Applications:

Cast-in-place plain & reinforced concrete, Ready mix concrete, Pre-cast & pre-stressed concrete, Pavement concrete, Architectural concrete, Concrete masonry units, Masonry mortars, Grouts, Renders, screeds, etc..

Features & benefits:

- Guaranteed premium product with high uniformity & consistent quality.
- High early & final strength: Strength class of Lafarge Emirates' Portland Cement is 42,5 R which implies that high strength is achieved at an early age. It attains 23–27 MPa strength at 2 days and 53–57 MPa strength at 28 days.
- Low alkali Cement: Alkali content is low which is effective to prevent damage from Alkali Silica Reaction (ASR).
- Cost Savings: Perceptible saving in costs due to slump retention at lower admixture dosage, high early & final strength.
- Conforms to both BS EN 197-1:2000 (CEM I) & ASTM C 150 - 07 (Type I) standards : The requirements of these two standards are compared in the table to typical performance data for Lafarge Emirates' Portland Cement.

Requirements of standards and typical properties of Lafarge Emirates' Portland Cement

Property	Standard Requirement for Portland Cement		Typical values* of Lafarge Emirates' Portland Cement CEM I 42,5 R
	ASTM C 150 - 07 (Type I)	BS EN 197-1 : 2000 (CEM I 42,5 R)	
Silicon Dioxide (SiO ₂)	---	---	19.50 – 20.50 %
Aluminum Trioxide (Al ₂ O ₃)	---	---	4.50 – 5.10 %
Ferric Oxide (Fe ₂ O ₃)	---	---	3.30 – 3.70 %
Calcium Oxide (CaO)	---	---	63.00 – 64.00 %
Magnesium Oxide (maximum)	6 %	---	1.00 – 2.00 %
Sulfate (as SO ₃) (maximum)	3 %	4 %	2.60 – 2.95 %
Tri Calcium Aluminate (C ₃ A)	---	---	6.70 – 7.50 %
Equivalent Alkalis (maximum)	0.60 %	---	0.48 – 0.58 %
Chloride (maximum)	---	0.10 %	0.01 – 0.05 %
Loss on Ignition (maximum)	3 %	5 %	2.50 – 2.95 %
Insoluble Residue (maximum)	0.75 %	5 %	0.20 – 0.70 %
Compressive Strength : 2 days (minimum)	---	20.0 MPa	23 – 27 MPa
Compressive Strength : 7 days (minimum)	19.0 MPa	---	40 – 44 MPa
Compressive Strength : 28 days (minimum)	---	42.5 MPa	53 – 57 MPa
Initial Setting Time (minimum)	45 minutes	60 minutes	150 – 190 minutes
Final Setting Time (maximum)	375 minutes	---	200 – 240 minutes
Soundness (maximum)	0.8 %	10 mm	0.00 – 2.00 mm
Fineness (minimum)	280 m ² /kg	---	320 – 350 m ² /kg

* Values obtained from tests as per BS EN standards.

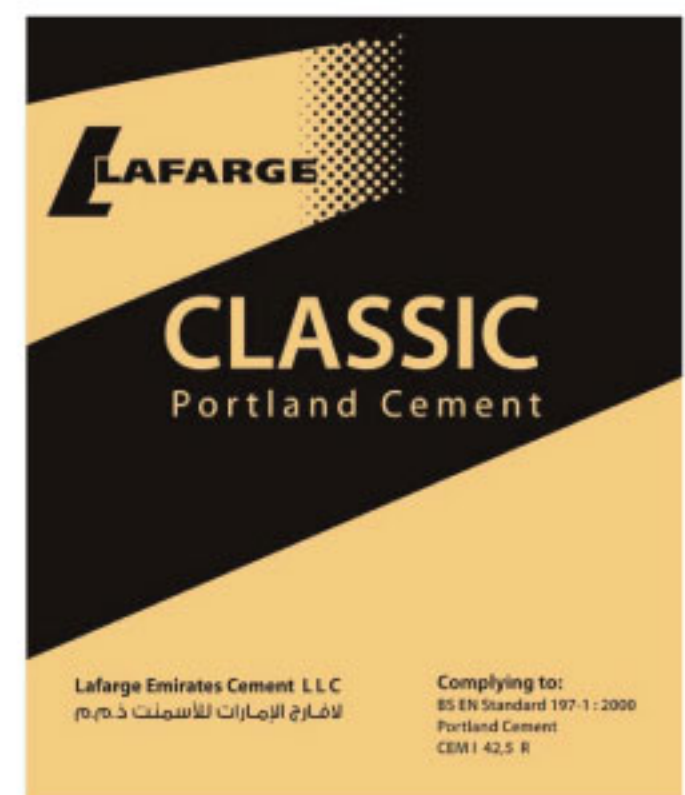
Admixture additions: It is recommended to carry out trial mixes to verify admixture compatibility with Portland cement & to find out optimum admixture dosage.

Test Certificates: Routine product test data covering the key physical and chemical parameters are made available on weekly basis on request.

Availability: Portland Cement is supplied both in bulk tanker & 50 kg bag.

Storage:

Cement should be stored dry to avoid its quality deterioration due to premature hydration and carbonation. Moisture from the air can be as harmful as direct moisture. Cement in bulk should be stored in well-maintained silo with no damp air or moisture ingress. Bags should be stored unopened and clear off the ground in dry conditions and should be stacked in a safe and stable manner.



Other Information

Health & Safety:

Contact between cement powder and body fluids (e.g. sweat and eye fluids) may cause irritation, dermatitis or burns. Wear suitable protective clothing, dust mask, protective goggles, gloves while handling. Immediately wash with plenty of clean water when it comes in contact with eye or skin. Seek immediate medical advice for persistent or severe discomfort.

Technical Support:

Further information or specification advice on Portland Cement and the full range of Lafarge Emirates' products can be obtained through the contacts listed below.

Other Cements

Lafarge Emirates Cement also manufactures:

- Portland Limestone Cement (PLC)
- Sulfate-Resisting Portland Cement (SRPC)
- Moderate Sulfate Resisting Cement (MSRC)
- Ground Granulated Blast-furnace Slag (GGBS)

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