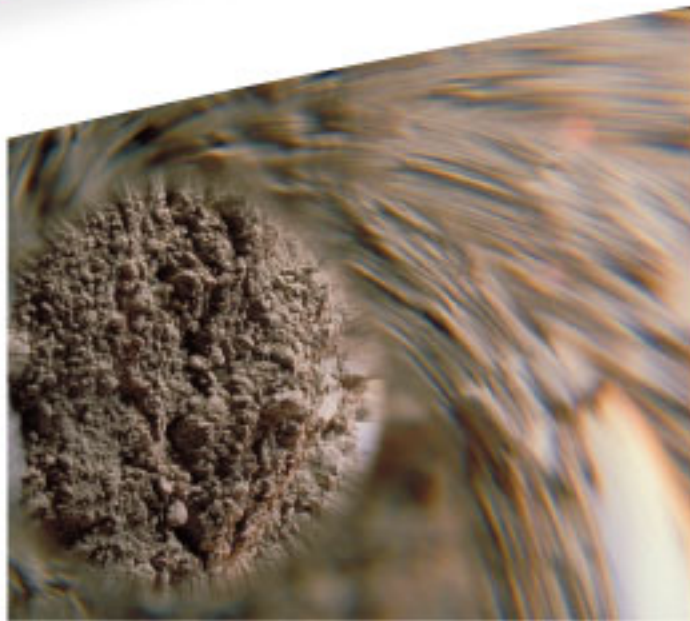


SHIELD

Sulfate-Resisting Portland Cement



bringing materials to *life*™



Sulfate-Resisting Portland Cement 42,5 R (LA)

Lafarge Emirates' Sulfate-Resisting Portland Cement, produced by inter-grinding of cement clinker & a small quantity of gypsum, conforms to both BS 4027:1996 & ASTM C150-07 (Type V). Sulfate resistance is achieved by limiting the level of C_3A in cement, the main component influencing resistance to sulfate attack. SRPC is used where sulfates present in soil, groundwater etc. are in concentrations that would damage concrete made with OPC. Sulfate attack, a series of chemical reactions in hardened cement paste in the presence of sulfate ions, results in products occupying greater volume than the host reactants thus causing internal expansion & deterioration of the concrete elements.

Applications: Structural concrete subject to sulfate-rich environment, Blinding / PCC, Sewage treatment structures, Mass concrete structures, Piles, Foundations, Underground structures, Precast concrete etc.

Features & benefits:

- Excellent Durability: High resistance to sulfate attack due to low C_3A & low alkali content.
- Guaranteed premium product with high uniformity & consistent quality.
- High early & final strength: Strength class of Lafarge Emirates' SRPC is 42.5 R which implies that high strength is achieved at early age. It attains 21–25 MPa strength at 2 days and 51–56 MPa strength at 28 days.
- Lafarge Emirates' SRPC is Low Alkali cement. Low alkali content reduces early availability of sulfate ion for reaction with C_3A thereby further improving resistance to Sulfate attack.
- Perceptible saving in costs due to slump retention at lower admixture dosage, high early & final strength.
- Conforms to both BS 4027:1996 & ASTM C 150–07 (Type V): Properties of Lafarge Emirates' SRPC meets or exceeds the requirements set by these standards as illustrated in the table.

Requirements of standards and typical properties of Lafarge Emirates' Sulfate-Resisting Portland Cement:

Property	Standard Requirement for SRPC		Typical values* of Lafarge Emirates' SRPC 42,5 R (LA)
	ASTM C 150 - 07 (Type V)	BS 4027 : 1996 (Class 42,5 R)	
Silicon Dioxide (SiO ₂)	—	—	20.70 – 21.70 %
Aluminum Trioxide (Al ₂ O ₃)	—	—	3.80 – 4.60 %
Ferric Oxide (Fe ₂ O ₃)	—	—	4.40 – 5.20 %
Calcium Oxide (CaO)	—	—	63.00 – 65.00 %
Magnesium Oxide (maximum)	8 %	5 %	1.00 – 2.00 %
Sulfate (as SO ₃) (maximum)	2.3 %	2.5 %	1.80 – 2.30 %
Tri Calcium Aluminate (C ₃ A) (maximum)	5 %	3.5 %	2.50 – 3.30 %
2 C ₃ A + C ₄ AF (maximum)	25 %	—	18.00 – 23.00 %
Equivalent Alkalis (maximum)	0.60 %	0.60 %	0.48 – 0.58 %
Chloride (maximum)	—	0.10 %	0.01 – 0.05 %
Loss on Ignition (maximum)	3 %	3 %	1.00 – 2.50 %
Insoluble Residue (maximum)	0.75 %	1.50 %	0.20 – 0.70 %
Compressive Strength : 2 days (minimum)	—	20.0 MPa	21 – 25 MPa
Compressive Strength : 7 days (minimum)	15.0 MPa	—	38 – 43 MPa
Compressive Strength : 28 days (minimum)	21.0 MPa	42.5 MPa	51 – 56 MPa
Initial Setting Time (minimum)	45 minutes	60 minutes	150 – 210 minutes
Final Setting Time (maximum)	375 minutes	—	200 – 260 minutes
Soundness (maximum)	0.8 %	10 mm	0.00 – 2.00 mm
Fineness (minimum)	280 m ² /kg	—	290 – 330 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 SRPC & to find out the 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: SRPC 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 and 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 SRPC and the full range of Lafarge Emirates' products can be obtained through the contacts listed below.

Other Cements

Lafarge Emirates Cement also manufactures:

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

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