

Oil Well CEMENT

Class 'G' High sulfate-resistant grade (HSR)

Technical Data Sheet



AKCC Test Certificate Data complying
With

API 10A Specs for Class 'G' High sulfate-resistant grade (HSR)

Class G Grade HSR Well Cement is manufactured locally to comply with the requirements of American Petroleum Institute (API) standards (Specification for Cements & Materials for Well Cementing API Spec 10A) and (API Recommended Practice for Testing Well Cement API RP 10B-2).

Class G Grade HSR Well Cement is manufactured by grinding clinker with calcium sulfate. The product Class G grade HSR is intended for use as a basic well cement and will meet chemical (clause 4.1.2) and physical clause (4.1.3) requirements mentioned in API 10A Spec and 10B-2.

with all the requirements of American Petroleum Institute (API) standards (Specification for Cements & Materials for Well Cementing API Spec 10A) for Class G grade HSR.

Reports of tests providing data on Thickening time test, Maximum consistency (15-30 min), Free fluid content, Compressive Strength 8h, 38°C and 60°C, chemical composition including Magnesium Oxide, Sulfur tri Oxide, Loss on Ignition, Insoluble Residue, Tricalcium Silicate, Tricalcium Aluminate, Tetracalcium Aluminoferrite + twice (C3A), Chloride and Alkali levels are available on a batch wise production.

Applications

Oil well cements are extensively used in the exploration for and the production of oil and gas. They can also be utilized for sealing water wells, waste disposal wells and geothermal wells. Cement plays an important part in the successful drilling of a well. It is used primarily to seal the annulus between the walls of the borehole and the steel casing in order to isolate the pressured or weak zones encountered whilst drilling.

Strength

Optimum performance in terms of strength and durability is achieved by making slurry from cement and water with fixed water cement ratio of 44% according to API 10A (4.1.3)

Other factors affecting strength include conditions of curing.

Quality

AKCC's Oil well cement is produced using carefully selected raw materials. Strict quality control throughout each stage of the manufacturing process ensures that a consistent final product is achieved. It confirms that in addition to applying a system of factory production, control independent sampling and testing of the cement has confirmed conformity

Major Mineral Constituents in Class 'G' High sulfate-resistant grade (HSR)

Compound	Abbreviation	Chemical Formula	Typical Concentration %
Tricalcium Silicate	C3S	$3\text{CaO} \cdot \text{SiO}_2$	48.0 min- 65.0 max
Tetracalcium Aluminoferrite + twice (C3A)	C4AF+2C3A	$4\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Fe}_2\text{O}_3$ + $2 \cdot 3\text{CaO} \cdot \text{Al}_2\text{O}_3$	24.00 max
Tricalcium Aluminate	C3A	$3\text{CaO} \cdot \text{Al}_2\text{O}_3$	3.00 max

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UNITS			RESULTS	API Standard requirement 10A
Magnesium Oxide	MgO	%	3.40	6.00 max
Sulfur tri Oxide	SO3	%	2.60	3.00 max
Alkalies (Na2O + 0.658 K2O)		%	0.45	0.75 max
Loss on Ignition	LOI	%	1.60	3.00 max
Insoluble Residue	IR	%	0.56	0.75 max
Tricalcium Silicate	C3S	%	62.00	48.0 min- 65.0 max
Tricalcium Aluminate	C3A	%	2.46	3.00 max
C4AF+2C3A		%	19.85	24.00 max
Chloride	Cl	%	0.01	0.10 max
PHYSICAL TEST				
Free fluid content		%	2.20	5.90 max
Compressive Strength 8h, 38°C		MPa	3.10	2.10 min
Compressive Strength 8h, 60°C		MPa	12.60	10.30 min
Thickening time		Minutes	110.00	90.0 min-120.0 max
Maximum consistency (15-30 min)		Bc	20.00	30.00 max
Fineness(Blaine Air Permeability method)		M2/Kg	327.00	-

Technical Support:

For further advice please contact Technical Support at
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