

COROMANDEL OIL WELL CEMENT



The India Cements Ltd



Coromandel
OIL WELL CEMENT



STRONG PERFORMANCE UNDER HIGH TEMPERATURE & PRESSURE

COROMANDEL – OIL WELL CEMENT CLASS G

Oil-well cement is used in the exploration and production of oil and gas onshore as well as for offshore well to water depths of up to 2100 meters (7000 feet approx.) A typical well is constructed using a metal casing surrounded by a special cement slurry mix that is pumped down the interior of the well casing and forced back towards the surface from the base of the bore hole, filling the annulus between the casing and wall of the well.

When cement is produced for oil wells the clinker is analysed microscopically. Hence, high degree of attention is given for quality and consistency so as to perform with admixtures and achieve the desired Rheology and thickening times. Given the complexity of application and the extreme conditions of temperature and pressure, oil well cement must be carefully designed to meet the demanding requirements. Predictable thickening time (set time), high sulphate resistance, long term performance, fluid loss control, consistency, low viscosity, low free fluid and strength are all important parameters.

The 3 most commonly API certified oil well cements are Class A, Class G, and Class H depending on the demanding well conditions. Classes G and H are used for deeper and high temperature and pressure well conditions.

Our plant located in Vishnupuram, State of Telangana in South India is ISO 9001: 2015, ISO 14001:2004, ISO 18001:2007 certified. Our OWC meets API Specifications with " liberal margin".



API logo – The American Petroleum Institute (API) is recognised worldwide. The API monogram denotes the producing plant's Quality Management System meets API Q1 and products meet the specifications of API Spec 10A



In order to be an effective seal, the cement must possess the following properties:

- Have a low permeability
- Form a good bond with the rock and the casing
- Maintain these properties under downhole temperature and pressure conditions, and also whilst the casing undergoes vibration caused by continued drilling

In addition to providing zonal isolation, the cement also performs two other important functions:

- Protecting the casing against aggressive wellbore fluids
- Protecting the casing against collapse by rock creeping in on the wellbore

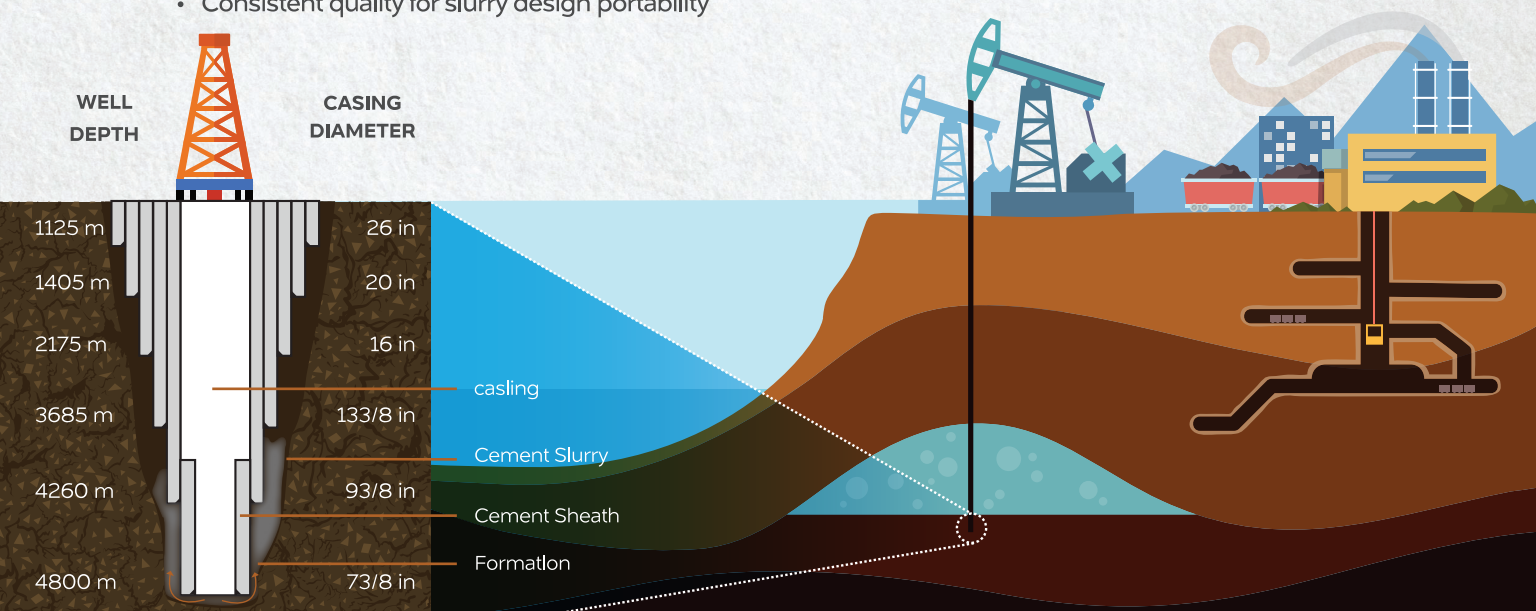
CLASS G & H

Features:

- C3S content of 48% to 65% depending on Class
- C3A content of 0% to 8% depending on Class

Benefits:

- Excellent retarder response for higher economic benefit in mix design
- Low free fluids for cement integrity and long term performance
- High sulfate resistance for high durability under harsh conditions
- Non-Settling by Uniformity in Rheology
- Consistent quality for slurry design portability



QUALITY REQUIREMENTS OF OIL WELL CEMENT (CLASS- G-HSR)
Specification Code : IS-8223:1986 API- 10 A Class G HSR*

PHYSICAL PARAMETERS	UNIT	REQUIREMENT	CORAMANDEL OIL WELL CEMENT
Mix Water	% bwoc	44 %	44 %
Free Fluid Content	% by vol.	5.9 % (max)	5.4 %
Compressive Strength after 8 hrs. Curing			
i) At 38 °C, Atmospheric Pressure	Psi / Lbf / in2	300 (min) (2.1 Mpa)	841 lbf / tin2
ii) At 60 °C, Atmospheric Pressure	Psi / Lbf / in2	1500 (min) (10.5 Mpa)	1630 lbf / in2
Thickening Time at 52 °C, 5160 psi raised in 28 minutes	minutes	90 (min) 120 (max)	111 min
Maximum Consistency (15 to 30 min. stirring period)	Bc	30 (Not over) (Bc is a measure of consistency of cement slurry)	07
CHEMICAL REQUIREMENTS	CLASS G REQUIREMENTS		
Magnesium Oxide (MgO)	%	6.0 % (maximum)	1.26 %
Sulphur Trioxide (SO ₃)	%	3.0 % (maximum)	2.51 %
Iron Oxide (Fe ₂ O ₃)	%	-	-
Aluminium Oxide (Al ₂ O ₃)	%	-	-
Loss on Ignition	%	3.0 % (maximum)	1.48 %
Insoluble Residue	%	0.75 % (maximum)	0.42 %
Tricalcium Silicate (3CaO.SiO ₂)	%	48 – 65 %	61 %
Tricalcium Aluminate (3CaO.Al ₂ O ₃)	%	3.0 % (maximum)	2.6 %
Tetracalcium Aluminoferrite (4CaO.Al ₂ O ₃ .Fe ₂ O ₃) + Twice the Tricalcium Aluminate (3CaO.Al ₂ O ₃)	%	24.0 % (maximum)	22.5 %
Total Alkali content expressed as Sodium Oxide (Na ₂ O) Equivalent	%	0.75 % (maximum)	0.55 %
Additives	%	No additive other than Clinker & gypsum permitted	

*American Petroleum Institute Specification – 10 A for Class- G- High Sulfate Resistant (HSR)

ABOUT INDIA CEMENTS

The India Cements Ltd., South India's No. 1 cement company has played a vital role in the booming infrastructure and construction growth in India for the past 70 years. With a capacity of over 16 million tonnes per annum, 8 cement plants and 2 grinding units spread across the nation, India Cements is committed not just to the creation of stronger buildings, but to the emergence of a stronger India.



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Product Disclaimer: The information contained in this sheet is for general guidance only and should not be relied upon in specific instances. Cement performance results quoted are indicative as cement performance can be heavily influenced by a wide range of factors beyond our control. Users should rely on professional advice according to their particular circumstances.