

INFORMATION

CA-EX11

POZZOLAN/LIME CEMENT

DESCRIPTION

Messina's CA-EX13 is a thermally stable blend of pozzolan and lime used primarily as a lead (or fill) cement in high temperature cementing applications.

At temperatures above 212° F (100° C), calcium reacts with silicates to form a cement material (Calcium Silicate Hydrate Gel). As the temperature and pressure increases with time in the wellbore, the cement gains rapid compressive strength and, because of its high silicate content, is not subject to deterioration (strength retrogression).

APPLICATION

CA-EX13 can be applied as a lead or tail cement system whenever BHST's (Bottom Hole Static Temperatures) exceed the boiling point of water, 212° F (100° C). The reaction of the lime with CA-EX9 at these temperatures forms a thermally stable cement.

CA-EX13 is ideal for geothermal applications. It has very low porosity, and, because of its high silicate ratio, it will not degrade with time even at extreme temperatures.

The reaction temperature for CA-EX13 can be reduced by the addition of Portland cement to the system. Typically, 20% to 30% Portland cement can be used with CA-EX13 for applications at wellbore temperatures as low as 150° F (65° C).

The optimum ratio for lime:pozzolan mixing, or lime:pozzolan:cement mixing will depend on the well temperature, treatment procedure, and slurry density, and should be tested in a laboratory before application to optimize the system.

PHYSICAL PROPERTIES

Component	Form	Space Gravity	Bulk Density	Abs. Volume
CA-EX9	Grey Powder	2.48	74 lb/cu ft	0.048 gal/lb
	Lime White	2.20	30 lb/cu ft	0.054 gal/lb

PACKAGING

CA-EX9 in One cubic foot sacks and 50 lb sacks.

CA-EX13 is a Messina trademark