

THERMAL 40 CEMENT

OVERCOME CLASS G CEMENT DEGRADATION

Earth Pro Thermal 40 Cement is typically used where wellbore temperatures exceed 115°C, due to well depth, or physical treatment (i.e. steam flooding).

Under extreme temperatures, Class G cement undergoes severe and detrimental chemical structure changes causing a rapid breakdown of cement integrity, resulting in a loss in compressive strength and substantial increases in permeability.

Earth Pro Thermal 40 Cement overcomes this degradation by the increased loading of silica, which extends the product stability to temperatures up to +/- 360°C.

APPLICATION

Typical use on a small scale is for dump-bail treatments. The product is batched in small volumes according to the following blend table, and dumped down the wellbore using conventional rig equipment. After a period of time the cement sets, providing a small, hard plug in the problem area.

Bag Size (kg)	Water Req. (litres)	Slurry Yield (litres)	Density (kg/m ³)	Approximate Working Time (Hrs:min at BHT)	
				20°C	30°C
20	8.2	14.9	1885	2:30	2:00
Compressive Strength, MPa @ 20 to 30°C (16-24 hours)				2.5, 5.0	3.8, 6.1

At temperatures below 30°C, calcium chloride can be added in a small amount, to accelerate the set time if required. Typical dosage is 0.5-1% w/w, depending on well depth and wellbore temperature. Slurry viscosity and working time will be reduced substantially. (Exercise extreme care in the addition of calcium chloride. In itself calcium chloride is a corrosive material and will cause skin burns. If poorly mixed, it can cause excessive heat through hydration, potentially leading to a flash set of the cement before placement has occurred.)

MIXING & HANDLING

Earth Pro Thermal 40 Cement is not hazardous. However, if product becomes wet through unforeseen circumstances, some heat will be given off due to hydration. Avoid excessively humid conditions. Store in a cool dry place.

As product is mixed with water, some heat evolution will occur. Caution should be exercised to mix continually until ready to place the slurry in the dump-bail. Since Earth Pro Thermal 40 Cement is caustic in nature, it will cause severe burns to eyes and sensitive skin areas. Wear the appropriate safety goggles and protective equipment when handling this product.

WHMIS: Controlled (see SDS)

TDG: Not regulated

Packaging: 20 kg bag / bulk

PHYSICAL PROPERTIES:

Appearance: Finely textured greyish powder

Bulk Density: 0.741 m³/ton

Composition: Oilwell 'G' Cement / 325 Silica Flour

CHEMICAL PROPERTIES:

Type: Thermally stable oilwell cement

Solubility: Insoluble in water

pH: 10.0 – 12.0 (in fresh water)

Water Requirement: 0.41 m³/ton