

# HOTSET CEMENT

## WEIGHTING MATERIAL

**Earth Pro Hotset Cement** is a thermally stable cement blend package designed specifically for use in wireline operations. It contains a combination of several additives developed to keep the cement slurry stable and in fluid form for the placement time necessary to set deep plugs at temperature extremes from 100 – 130°C. Thermal cement is typically used where wellbore temperatures exceed 100°C, due to well depth, or physical treatment (i.e., steam flooding, etc.).

Under these conditions, normal Class G cement undergoes severe and detrimental chemical structure changes causing a rapid breakdown of cement integrity leading to plug failure. **Earth Pro Hotset Cement** overcomes this degradation by the increased loading of silica (SiO<sub>2</sub>), which extends the product stability to the temperatures described herein and beyond.

## 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 wireline equipment. The slurry flows out and the bail is retracted slowly and removed, allowing the plug to set in place.

Temp (°C)	Density (kg/m <sup>3</sup> )	Working Time (hrs)	Setting Time (est. hrs)	Time to 500 psi (3.5 MPa)
100	1800	8-15	24	46:00
110	1800	4-5	7	14:00
120	1800	2.5-3	3.5	7:30
130	1800	1.5-2	2.75	5:15

## PHYSICAL PROPERTIES:

**Appearance:** Greyish – white powder  
**Bulk Density:** 0.741 m<sup>3</sup>/ton  
**Composition:** Oilwell ‘G’ Cement / 325 Silica Flour

## MIXING & HANDLING

For each 20 kg bag of **Earth Pro Hotset Cement** being mixed, measure 10 liters of fresh water into the mixing vessel. Begin stirring the water in a moderate fashion, and start adding the **Earth Pro Hotset Cement**. Once all the sacks are cut and added to the slurry, continue mixing for at least another 5-10 minutes to ensure proper dispersion and all lumps are removed. At this point the mix can be transferred to the dump bail.

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. **Earth Pro Hotset Cement** is caustic in nature (pH 10-12) and 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:** 20kg pails

## CHEMICAL PROPERTIES:

**Type:** Thermally stable oilwell cement

**Solubility:** Insoluble

**pH:** 10.0 – 12.0 (in fresh water)

**Water Requirement:** 10 liters per 20kg blend