

Case Study – Above Ground Storage Tank Bases

Long Lake SAGD Tank Farm Fort McMurray, Alberta, Canada

Problem: Fourteen tanks were to be constructed at the Long Lake SAGD site. The operating temperature of these tanks ranged from 5 °C to 90 °C. The largest tank was 33.5 m in diameter and 17 m high. Without insulation, high temperatures would cause dessication of the underlying soil, thus resulting in excessive tank settlements. Also, a high density polyethylene (HDPE) secondary containment liner was being placed beneath the tank. This liner was rated for a maximum sustained temperature of 60 °C.

Solution: For each tank, 100 mm of bedding sand was placed over top of the HDPE liner, followed by 475 mm of CMTI-450 placed inside steel rings. This material was leveled to API-650 requirements. The above-ground storage tanks were placed directly on the CMTI-450.

Advantages: CMTI-450 is the ideal balance between insulating value, strength, and cost. Typical insulating materials have extremely limited load bearing capacity. This often requires numerous structural layers to overcome these limitations, thus substantially increasing cost. The use of gravel to dissipate heat requires many metres of fill. CMTI-450 is produced onsite; therefore, transportation logistics and costs are substantially reduced in comparison to traditional insulating methods.

Many traditional tank bases incorporate a sand layer beneath the tank. During tank construction, this sand layer becomes disturbed. This often requires remedial activities such as grouting beneath the annular ring. CMTI-450 does not have this limitation since it remains in place during construction activities.



1/10 10005CEM