

# Case Study - Road Base over Perma Frost

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## Franklin Avenue – August 2004 City of Yellowknife, NT, Canada

**Problem:** A 1 kilometre section of the City of Yellowknife's main thoroughfare – Franklin Avenue – was experiencing major total and differential settlement due to thawing of the underlying frozen ground – perma frost. The road segment had been rebuilt several years earlier, but showed significant deterioration within a year of that re-construction.

**Solution:** CEMATRIX CMEF-475 insulating cellular concrete with a wet cast density of 475 kg/m<sup>3</sup> was produced and placed onsite. A 250 mm layer of cellular concrete was placed on the prepared sub grade, followed by 150 mm of aggregate, and then 75 mm of asphaltic concrete.

**Advantages:** The CEMATRIX solution provided a monolithic blanket of insulation to minimize and slow the ongoing thawing of the sub grade, control settlement, as well as provide a structural component to the road structure.

This application was an extremely successful project and remains as a very effective solution as per information provided by the Public Works and Engineering Department of the City of Yellowknife on November 30th, 2009.

