Frost-Protected Shallow Foundations

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ABSTRACT

Conscientious builders constantly strive for ways to improve quality, conserve energy, and reduce costs in the structures they build. Seldom do they find one single material or technique that allows them to accomplish all three of those goals at the same time. The frost-protected shallow-footing technique is an exception. It improves quality, conserves energy, and significantly reduces costs anytime the building is in a climate where the ground freezes and buildings are susceptible to damage from frost heaving.

In simple terms, rather than build the footing below the frost line, we insulate the ground at the building perimeter to raise the frost line.

I first heard about the Scandinavian frost-protected shallow-footing technique from several Canadian building scientists seven years ago, but it was another two years before I tried it. Finally I decided that it was a system too obviously practical to fail.

Today we have over 80 buildings in northwestern Iowa (8000 heating degree-days, 48" frost depth) with frost-protected shallow footings.

The cost savings with this technique are substantial and it allows me to build other features into my new homes and still remain competitive.

I will demonstrate with a slide presentation practical applications for this technique in new residential, light commercial, and remodeling project completed within the last five years.

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