

NEWSLETTER

MONTHLY UPDATED INDUSTRY NEWS



National Centers for Environmental Information
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA & FROST PROTECTED SHALLOW FOUNDATIONS

A frost-protected shallow foundation (FPSF) is a practical alternative to deeper, more-costly foundations in cold regions with seasonal ground freezing and the potential for frost heave. An FPSF incorporates strategically placed insulation to raise the frost depth around a building, which allows for foundation depths as shallow as 16 inches even in the most severe climates (see Figure 1). This method has been used extensively in Nordic countries, where over one million FPSF homes have been constructed successfully over the last 40 years. Scandinavia considers FPSF a standard practice for residential buildings. The Air-Freezing Index (AFI) is a common metric for determining the freezing severity of the winter season. AFI values represent the seasonal magnitude and duration of below-freezing air and can be used to estimate the maximum depth of frost penetration, which is useful for determining the depth of shallow foundation construction. An accurate estimate of maximum soil frost depth is one important factor in construction costs and building foundations. AFI data and maps have been calculated using temperature data from the 1951–1980 and 1981–2010 Climate Normals.

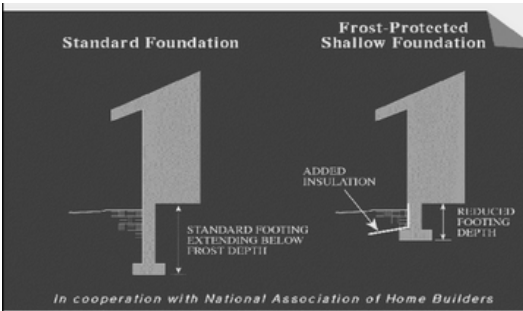


Figure 1: Standard Foundation compared to Frost Protected Shallow Foundation

“Frost Protected Shallow Foundations.” National Centers for Environmental Information (NCEI), 17 Jan. 2023, www.ncei.noaa.gov/products/land-based-station/frost-protected-shallow-foundations.

PANELIZED BUILDING AND MONOLITHIC SLAB FOUNDATIONS

When it comes to residential construction, selecting the right method is crucial for efficiency, durability, and energy performance. Panelized construction is on the increase in the US. Wagler Custom Homes and Cardinal Forming in Indiana has taken full advantage of efficient building by incorporating panelized walls and Mono Slab® EZ Form for a faster and better building process.



SLAB VS CRAWL SPACES: WHAT IS THE DIFFERENCE?

<p>Construction Process</p>	<ul style="list-style-type: none"> • Involves multiple steps and materials, including wooden or metal forms, insulation placement, and subsequent concrete pouring. • Typically requires separate construction phases for forming, insulation, and backfilling, leading to longer construction timelines and increased labor costs. 	<ul style="list-style-type: none"> • Offers a streamlined process by combining formwork, insulation, and backfilling into a single step before concrete placement. • Simplifies the construction process, reducing labor requirements and increasing build cycles. • Enables faster project completion, saving time and costs associated with traditional methods.
<p>Energy Efficiency and Insulation</p>	<ul style="list-style-type: none"> • Often result in uninsulated or minimally insulated foundations, leading to increased heat loss and energy inefficiency. • Requires additional steps and materials for insulation installation, which can be prone to gaps, compromising energy performance. 	<ul style="list-style-type: none"> • Provides far superior insulation through integrated insulating properties of the form. • Creates a continuous thermal barrier, minimizing heat loss and optimizing energy efficiency in residential foundations. • Complies with IRC, IBC, and IECC code requirements, ensuring adherence to energy efficiency standards.
<p>Durability and Strength</p>	<ul style="list-style-type: none"> • Relies on separate formwork materials that may degrade over time, leading to potential issues with stability and durability. • May be susceptible to moisture penetration, leading to mold, mildew, or foundation deterioration. 	<ul style="list-style-type: none"> • Patented design ensures exceptional strength and durability, providing a reliable foundation for residential homes. • Offers built-in moisture management systems, reducing the risk of water infiltration and related foundation issues. • Designed in accordance with ASCE 32, ensuring compliance with industry standards for structural integrity
<p>Cost-Effectiveness</p>	<ul style="list-style-type: none"> • Requires additional labor and materials for separate formwork, insulation, and backfilling processes. • Longer construction timelines and multiple construction phases can lead to increased costs and potential budget overruns. 	<ul style="list-style-type: none"> • Significantly reduces labor requirements and construction timelines, resulting in cost savings. • Eliminates the need for separate insulation materials and reduces material waste. • Provides an efficient and cost-effective solution for residential foundation construction.

