

# Pressure Treated Wood Foundations

**By: Inspector Weeks     613.290.3697**

**I have always been curious about homes in Chelsea built with a pressure treated wood foundation. What are the Pros and what are the Cons of this type of construction. Is there a limited lifetime to this type of foundation and what happens when it reaches its end life span, what are the options? R. Reynolds, Chelsea**

Thanks for the question. I have always had a keen interest in Preserved Wood Foundations, PWF's, and I have inspected a number of them in the Gatineau Hills and Eastern Ontario. This type of foundation was quite popular in the 80's and early 90's and is still a viable method of foundation construction.

The first house I built in Chelsea was constructed with a preserved wood foundation. I chose this method for a variety of reasons. First of all I was impressed with the fact that once framed the 2x6 walls were all ready for R-20 fiberglass batt insulation, vapour barrier, drywall and the basement was complete. The basement was warm and dry without that common "basement smell" as is often the case with block or concrete. The second factor that helped me decide this method of basement construction was my past renovating experience with cracked concrete foundation walls and all the leaks that came as a result of the cracks. I didn't want my basement to leak. Last but not least, it came down to cost. At that time it was about 20% less expensive than a poured concrete foundation. Furthermore, the actual construction was as simple as framing regular 2x6 walls on 2x10 Sleepers as footings. Once the footings were in place, the walls were framed in two days.

The key thing for a well-constructed preserved wood foundation that will last is drainage. An all-encompassing drainage tile, well positioned beside the footing is imperative. The backfill soils around the perimeter of a PT basement must be sandy soil that drains well. When I do inspections on PT foundations I always try to dig up an area around the basement to establish the soils conditions. Native soils with poor drainage will hold water and cause the wood to rot prematurely causing leaks. That I have seen. On a positive note if there is an area that has become a problem and needs repairs, the area affected

can be dug up, structurally supported and repaired with limited aggravation. The other key item to look for is a 6 mil layer of plastic ( moisture barrier ) over the exterior of the foundation walls with proper protection at the top; all fasteners must be stainless steel. As mentioned before, the key to a successful preserved wood foundation is proper drainage.

As far as longevity is concerned the jury is still out on that one. An interesting fact is that a 13<sup>th</sup>-century church tower in Suurhusen, Northern Germany was built on a wood foundation. The combination of the oak wood foundations and wet soil caused the church tower to slowly lean to one side over the years. This tower has become a rival to the leaning tower of Pisa, in Italy, as to whose tower was leaning more. This fact may or may not, answer your question as to how long a wood foundation will last, but it shows that wood foundations are not a new idea!

It is my understanding is that the Canadian military started constructing and doing research on preserved wood foundations in the far north back in the 1950's and many of them are still standing today. Through these projects, CHMC and NRC have done tests on PWF's and have determined that with proper construction methods and guidelines being followed this type of construction is very durable.

One of the drawbacks and the reason some people are leery of this type of construction is the risk due to the preservative chemicals used in the wood. All pressure treated wood has to be handled with care and when completed it is best to cover over the exposed wood as soon as possible to eliminate the risk. Further testing has also been done pertaining to the leaching of these preservatives from the wood into the ground and their effects on the soils. The results were negligible. Due to public pressure and awareness, the types and quantity of preservatives used in pressure treated wood manufactured today is far safer than in years past.

A big thanks to the Low Down for letting me write this column and my readers for your calls and e-mails ... MERRY CHRISTMAS and lets all have a great 2009 !!



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