

Structural Engineering: Assurance for Your Insurance

The common goal on any log home/timber frame design and construction is to have a client's experience that is built on trust and understanding. From the very beginning, there are a lot of decisions that need to be made with building a structure. Often referred to as the 'process', one must decide on several key items such as budgets, the style of the home, floor plan layouts, total square footages, which manufacturing company to use and finally who the general building contractor will be. One often overlooked decision in this process is the need for structural engineering design and review.

Structural engineering of your log home/timber frame structure ensures that all building elements of your final construction permit documents are:

- 1) Well coordinated
- 2) Have been properly sized for all structural components such as roof framing members (girders, joists, outriggers, ridge beams), floor framing members (girders, joists, ledgers), headers, decks, columns, foundations and retaining walls
- 3) Ensures that all connections and details are adequately designed using the correct building codes, loads and load paths, and
- 4) Verifies the building lateral loads (out-of-plane wind or earthquake loads) have been taken into account and are properly resisted.

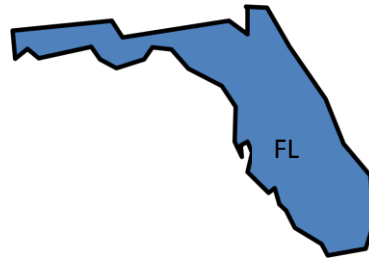
Often the question is asked, "When is structural engineering **required** for my log home/timber frame structure?" Based upon where you are building your structure, some of the local building departments and/or local governing jurisdictions will require some form of professional structural engineering construction documents and calculations that are to be stamped and signed by a licensed professional engineer. These documents would include your foundation plan, floor framing plans, roof framing plan, building sections, structural details, general structural notes and structural engineering calculations. Several factors that would require or cause recommendation for structural engineering include, but are not limited to:



1) You are building within a high snow load area



2) You are located within a high wind or earthquake zone



3) The complexity of your final floor plans and building elevations (i.e. how each floor level stacks up, is there a prow, are there a lot of exterior windows or opening placements, the column/post spacings, beam/girder spans, is there a daylight basement, etc.)



4) The local governing building jurisdiction requires sealed and signed drawings and engineering for issuance of building permits?



5) The defining site requirements in which you are building your log home/timber frame structure on (i.e. is the building pad site flat or sloped, are you building into a hillside or next to water and what are the native soil bearing types that would dictate the foundation design).



6) How complex the building connections, framing layouts and required detailing are? Do you rely on the general contractor to 'figure it out' in the field or do you provide well coordinated, detailed set of construction documents?





7) How experienced is the designer, drafter or architect in sizing correctly all aspects of the structural framing components to resist all vertical/gravity and lateral load transfer?



A structural engineer can work with your local jurisdiction to help streamline the 'process' and obtain your building permit in a timely fashion, then allowing you, your log home/timber frame company and your general building contractor to begin work. A structural engineer can also be available through the construction process to help answer or clarify any questions that can arise during construction.

Whether or not it is required, it is highly recommended to consult with a licensed professional structural engineer on any log home/timber frame structure that you are building. The common goal for any structural engineer is to safeguard life, health, property and public welfare through the design and implementation process. When put into perspective with what typical structural engineering fees are in relation to the overall cost of your project, you will find that these fees are typically less than 1% of your overall construction budget. For the quality assurance that you are given knowing your structure is designed and coordinated properly by a professional, it provides the additional assurance for your insurance in protecting your life long investment.

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(Please feel free to contact our office for any questions or comments that you might have related to this article, we can be reached at the following information noted below.)

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