

LOG HOME - SELF INSPECTION

Log homes settle as they get older - they must be designed and built with this in mind. Settling is the result of several factors:

- **Shrinkage** - decrease in moisture content
- **Compression** - occurs when it crushes
- **Slumping** - bottom portion of each log spreads

The rate of settlement can also be affected by wood species, size of logs, time of year the log is cut (winter is best), roof and floor load. The first 2 - 4 years is when the majority of settlement occurs, but vacation homes not heated in winter, will generally take longer to settle

Green or dry logs - majority of Canadian logs are green. An 8 foot wall could settle as much as 6", more sap present, more likely green logs. Typical settlement is approximately 2 - 4 inches per 8 foot wall. This is why stairwells, pipe supports and window and door openings are designed with shrinkage in mind.

Log Style - there are three typical types of log designs used in log home construction:

Chinked round log, hand scribed or milled styles.

Things To Watch For:

- Vertical logs rot at bases due to moisture
- Vertical mixed with horizontal settle at different rates - settling devices such as screw jacks, and adjustable bolts are needed.
- Trouble areas include vertical porch supports and interior columns and stairs
- The structure should be free of permanent ties to masonry and metal chimneys (which do not shrink)
- Log gables - often leave a gap at the roof junction
- Old chinking becomes brittle and should be replaced. Not all buildings are chinked.
- Check the condition of exterior exposed logs - ends and lower courses where wind, driven rain, irrigation sprinkler water can enter upward facing cracks. Protect upward facing or beams exposed to sun with a metal or other suitable covering
- Painted logs - logs may be unable to breathe or allow moisture to escape

Floors

- Manufactured floor joists - need crush blocks or solid timbers to transfer load to foundation
- Most log homes will have uneven floors, especially second floors, due to uneven settling, compression of logs supporting the second floor.

Plumbing

- Slip couplings should be used in vertical runs - usually not visible - these allow for vertical building shrinkage
- Offsets or flexible copper loops in supply lines help relieve stress
- Check for leaks, cracks and improper slope due to settlement

Windows/Doors

- It is hard to see wood bucks (a sub-frame installed in log openings to accept a window or pre-hung doors, it floats or has a method of slotted fastener or angle iron to compensate for settlement.
- Check every window for sticking, warping frames and compressed openings
- Window and door vertical trim should only be fastened to the buck and jamb extensions, not to the log walls!

Electrical

- Check mast and meter can for movement - the mast should not be attached securely to a shrinking building
- Wiring cables are often sandwiched between tongue and groove decking
- Operate all switches and check all receptacles to make sure wiring has not broken or disconnected

Stairways

- Inspect treads - if sloped backwards, not enough settlement allowance was allowed when they were made
- Unusual height of lower or upper most risers will indicate if the stair jacks have been modified for settlement

Room Additions

- Expect differential settlement where floors are joined

Downspout

- Look for straps for adjusting - the downspout should **not** be attached firmly to a shrinking building

Exterior Inspection

- Concentrate on chinking material
 - Width should be 1/6 diameter of the log
 - Look for loose / pulled away material
- Note **upward facing cracks** that can collect water
 - they are normally sealed with a "check filling sealant".
- Focus on decks, steps, grading, windows and door trim
 - adequate clearance between soil and bottom log - 12 inches
 - irrigation direction - do not spray towards the building
 - check window/door trim for movement
- Check roof and walls for sags and bows. If ice dams are present, watch for damaged fascia, gutters and minor roof damage.

Attic Inspection

- Don't assume a built-up roof system has insulation - some homes built for summer have no insulation. This is not necessarily visible without drilling holes or removing structural members.