

# Common Problems with “Middle-aged” Log Homes

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*By Matthew Edmunds*

## Introduction:

Hello. My name is Matt Edmunds from Edmunds and Company Log Home Restorations, LLC. We have restored log homes in the upper Midwest for over thirty years. Our business started out of necessity back in 1978 when my father (former owner of Edmunds & Company) was looking to restore our family cabin in Northwestern Wisconsin. Upon not finding anyone to do the work locally - he did the work himself.



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After a decade or so of working on older places built between the 1880's and 1950's we started to see more “newer” homes that needed restoration. In the last 20 years, our work on log homes has shifted from almost exclusively working on homes built before 1950 to almost 60% of the homes we work on being built after 1950.

While the antique log home has its charm and many hold family memories and histories, this generation of log homes is not the focus of this article. Homes built since 1975 have their unique problems and I will go over some of these problems in detail to give the reader a road map for keeping them sound and livable for the next 40 years. Many of these homes are used as year-round residences. This means that we want to be especially mindful about the necessity of maintaining them so that their owners may enjoy these beautiful structures for generations to come.



Let me say that our fast-paced world has certainly affected the way log homes get built. The statement that they “don't build them like they used to” certainly holds true for many of these homes. Many were built with quickness in mind and constructed with cheap materials. If I could give one piece of advice going forward it is “do it right the first time” ... it's much easier than going back and fixing it later. Investments in gutters and proper flashing, for example, can save thousands of dollars in repairs down the road. Below are 15 of the most common problems we see with middle-aged log homes and what can be done to remedy these issues.

## 1. Rot caused by logs getting wet from splash back

Water splashing onto lower logs is the #1 cause for log rot. Decks and other accessories around the home have two ways they put the logs at risk. First, they reflect UV light and heat from the sun onto the logs, which in turn, causes finishes to breakdown faster. Second, they deflect water onto the logs effectively negating the “free board” or distance the logs are off the ground. The log continually getting wet causes them to rot. Rotten logs can be very expensive to replace especially if they are the bottom logs in the wall.



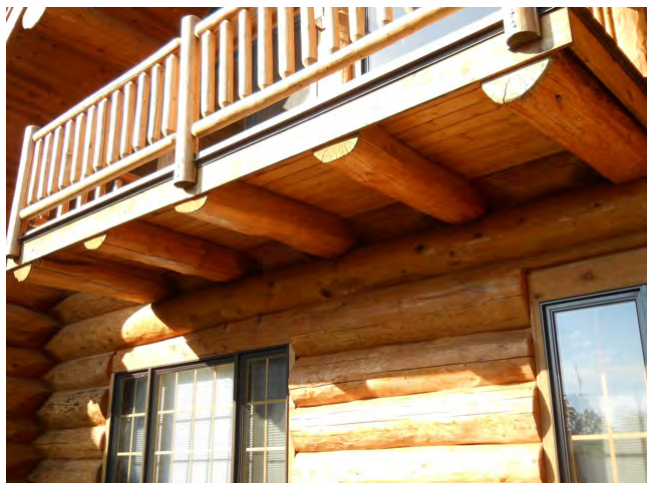
## 2. Gutters are part of the solution

Having gutters in place and keeping them in working condition goes a long way in helping prevent water from splashing back on the logs. At the same time, improperly installed or broken gutters can accelerate the rotting process by concentrating water in one or two areas. Gutters often have to be retrofitted to an existing log home in order to keep the water that splashes off the roof to a minimum. The number one cause of rotten logs is water splashing off of something (decks, fuel tanks, grills or wood piles) onto the logs. Gutters can be a reasonably economic part of the solution to controlling moisture. Note: Most times metal roofs and gutters don't work well together in snowy climates. This is because in the winter, when the ice and snow slides off the roof, it can tear off the gutters. One can mitigate this problem by removing the gutters for the winter season.



## 3. Cantilevered decks

Cantilevered log decks are a potential area for problems. We run into this type of deck a number of times each year. A cantilevered deck is a deck that is supported by logs that stick through a wall (on the outside) and support the deck. These



decks are usually located on the second floor of a log home and most times are small in size.

The problem is that most of the time, they are constructed with pine logs that are designed or allowed to stick out beyond the roofline where they are exposed to the rain, snow and ice. They take on so much moisture that they become susceptible to rot. When these logs begin to rot, it often happens very fast.

In my assessment, there are basically three options for the homeowner, assuming the logs are still sound.

1. The deck can be removed. This is an option but leaves you with the problem of what to do with a "door to nowhere".
2. The length of the extending logs can be shortened enough to get them inside the drip line. This means cutting them back typically between 12 and 24 inches, which eliminates the rotted portion of the log. Usually with this option, the railings can be modified and used again but this ends up leaving a smaller deck.
3. Convert the deck into a roof. To do this, we take off the railings and decking, make a new platform and create a flat roof and then the old railings are reinstalled.

#### **4. Lack of chinking**

In our experience, chinking is one of the finishing touches that is often overlooked. Some log homes are designed to be chinked or caulked. For other log homes, over time it becomes necessary to chink them. Unless the joint between the logs self-drains like a Swedish cope does, the logs need caulking or chinking.



Chinking does not need to have the "bulky" look that many people first think of when they consider having their logs chinked. Many times the lines need not be wider than 1". The reduction in moisture migration between the logs is the primary reason to chink. Energy savings and draft reduction is a secondary reasoning and an added bonus. Some states allow energy tax credits to be taken for chinking a log home. Talk to your tax professional about this possibility.

## 5. Lack of headspace

Lack of headspace above the doors and windows can cause them to stick, which is a pesky problem that we see in log homes. All wood shrinks 5-10% in its diameter from the time it is cut down to the time it is “seasoned”. This seasoning process takes about seven years. Most log packages are put up “green” or “un-seasoned” so this means that at some time in the life of a log wall it will shrink on average 6”. If the window sides or jambs are not allowed to “slip by” as this shrinking happens or if an inadequate amount of space is left to accommodate the shrinkage, then windows can bind up and stop working properly.

Problems with logs settling can be solved by removing trim around the window, assessing the location of the “binding”, removing offending “pressure point” behind the trim. If the window unit is only hard to open and not completely stuck most time the unit itself can be saved in this process. We have seen units that needed to be replaced after having the logs settle down on them...in this situation the damage is just too severe.

## 6. Logs protruding out too far from drip line

The type of logs used to build log homes are not suitable to leave outside the roofline. Though it is a popular design feature to leave logs sticking out beyond the drip line, these roof members or corner logs that are allowed to stick out into the weather are highly susceptible to rot. Most times cutting these logs back - getting them within the drip line - is the best method to solve the problem. Some of the most extensive repairs we have done results from when rot extends into the interior of the home.



## 7. Checks or cracks in logs

Many log homes are built with milled logs, which do tend to develop cracks or “checks”. A check is a crack that radiates from the middle of the log toward the outer surface. Checking is a natural part of the curing process. As wood dries, the difference in surface tension and



moisture gradients between the inner and the outer parts of the logs causes these checks.

Where checks becomes a concern is when they cause the logs to take on too much moisture. Logs with cracks that face upward are very susceptible to rot because they allow the water to travel deep into the logs where rot starts.

Cracks over 1/4" wide that are up-facing and are in vulnerable places need to be filled and caulked. This has become a "rule of thumb" based on our experience in the field. We have found that caulk cannot seal checks in logs that are smaller than 1/4" and we think it is worse to caulk a check, and have it fail, than to not caulk it at all.

### **8. Finish on logs - keep it fresh**

It is very important to keep up with the finish on your logs. Log home finishes are designed to keep logs from soaking up moisture and protect the logs from UV light while at the same time, letting the logs breathe. Why breathe? Logs will take up moisture when it rains -- this is a fact. Logs have knots, checks and other defects all over. When it rains, water gets in these defects in the logs and causes the core of the log to take on moisture.



This is when the log needs to breathe. Modern log home finishes not only seal water, but also allow for the logs to breathe. Many times when stains are over-applied or get built up, we see issues with rotting logs. This is why log home finishes have a two-fold purpose: seal up the logs while still allowing them to breathe.

### **9. Logs too low with little or no "free board"**

Logs that are too low to the ground, or actually in the ground, are very susceptible to rot. Sometimes it is impossible to change where a given log sits in relation to the ground, which may have been a design flaw from day one. Sometimes landscaping, re-grading or adding gutters can get water away from these vulnerable logs. Keeping these low logs dry



and well treated with [Borates](#) is key to staying rot-free.

## 10. Roof design flaws

We see many bad roof designs in our inspections of log homes. These flaws or oversights can cause water to be concentrated onto the logs, where it can cause rot. Gutters can be a solution in some of these cases. “Kickers” that redirect water away from a vulnerable area can be another solution. Sometimes two converging rooflines can be modified or connected in a different way to accommodate a new drainage scheme, thus solving the original drainage problem.

## 11. Lack of deck flashing

When a deck is not properly flashed to a log wall, water can travel along the log wall and cause considerable rot. One of the most common rot-related problem we see is a result of water leaking around decks and getting onto and behind the logs. Often the solution here is to create an impenetrable barrier between the log and the deck where it attaches to the log wall.



[Click here](#) to see a diagram of the proper way to flash a deck to a log wall. Certainly doing the flashing correctly the first time is always the best but this type of deck flashing can also be retrofitted to an existing situation.

## 12. Lack of roof flashing

The place where a lower roofline meets an upper log wall is an area that warrants particular attention. If the ends of the logs are allowed to be too close to the roofline then rot can take hold. Discoloration of the log ends is often the first sign of a problem. To solve this problem, the logs need to be cut back so that they are not exposed to this moisture input. One solution is to create a “curb” so that water running down the roof does not run directly against the logs in this area. In a situation like this, we have replaced the rotted logs and cut in the flashing so that this new flashing detail could



be installed. [Click here](#) for a drawing of the proper way to flash an upper log wall to a lower roof system.

### **13. Borates can stop rot in the first place!**

Part of the defense against decay and insects are boron compounds. We most times recommend using a borate compound prior to finishing your logs when the logs' pores are open or raw. [Borates](#) work by raising the Ph level of the wood to the point where the rot organism is impeded, and subsequently, the bugs are less able to attack it.

Borates and insects? Unfortunately, most of the time boring insects indicates a larger problem -- rot. (See "[Why Do Logs Rot](#)") If you suspect you have insect problems see below.

### **14. Problems with insects**

In Northern climates, boring insects can be a nuisance but as stated above, they can also be a symptom of a larger problem. The boring insects that we see the most of in log homes are the carpenter ant/bee and the powder post beetle. These insects bore into your home leaving in their path small holes in the logs and a bit of dust. It is important to remember that these insects are only interested in eating rotting wood. Though they do not cause the rot, but they are sometimes a good indicator that you have some rotten wood.



By getting rid of the rot/moisture problem, these bugs will have no food source and will leave or substantially die back. Moisture is the cause of rot and if one can control moisture that can go a long way towards controlling these nuisance insects.

In the Southern climates, termites can be a real danger to log homes. Keeping these wood eaters away from your home is very important! If you suspect any termite activity in your logs, call a professional exterminator to have an assessment done.

### **15. Problems with bats and rodents**

The rustic nature of log home certainly gives them a lot of character. Because of all the nooks and crannies in a log home, there can be places that are perfect for certain rodents. Mice getting into log homes is one problem most homeowners have in common. Especially in the fall, these critters are looking for a warm place to call home. Sealing up the outside of the home with chinking or caulking can prevent

mice from making their way into the home. Looking for, and sealing up places around the foundation is especially helpful in ridding the home of mice.

Bats are the other rodents common to log homes. Generally bats are looking for a place to raise their young. They occupy small or large crevasses than can be entered from below. A bat needs 3' of free fall to get flying again and for this reason they usually like places closer to the roofline. They make these crevasses their home and eventually fill them with their feces, which in turn becomes a really pervasive problem. Homes with bat issues have a distinct smell inside. If you see signs of bats such as droppings, contact a bat evacuation company right away. By sealing up their pathways to the cavities with chinking, in combination with evacuation efforts, this problem can be surmounted

### **Conclusion:**

If I could give each log home owner one piece of advise it is to inspect your logs every year. It's important to not let these types of problems get out of hand. A simple leaking gutter could be as little as \$50 to fix but if it goes unfixed - five years down the line it could be \$5000. So, know your building, look out for these issues, and be proactive. Get the problems taken care of before they become larger, far more expensive problems.

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