

## Special Effects

### *The connection between your log package and design decisions*

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Having exhibited at Log Home Shows in the past, I have noted scores of would-be log homebuyers enter the exhibition space enthusiastic, bright-eyed and ready to learn. It is disconcerting to see these same consumers later trudging along, hopes dampened, eyes glazed over and very confused. Why? It is not that there aren't fine examples of the log building craft represented, nor knowledgeable experts from the industry full of technical information. I believe it is because what seemed like a simple choice and a few considerations now appears to be muddled mess of styles and methods, each better than the competitors. While there are a myriad of styles and methods used in the log building industry, they can generally be grouped into either handcrafted or manufactured. Here the differences in construction method are most dramatic and the impact on overall appearance and design most apparent.

#### ***Primary Log Types***

Whether a home is handcrafted or manufactured will more than anything else determine the overall appearance of the home. Manufactured logs are milled to a uniform size resulting in a near uniform appearance. The logs are generally shorter and have a smaller diameter though some manufacturers mill large diameter long logs. In addition,

these manufacturers often fashion the log (called draw knifing) to give a hand-peeled appearance.

### ***Handcrafted Log Construction and Design***

Handcrafted log construction usually involves working with debarked and peeled trees that are fitted together using chainsaws and hand tools. They generally use longer and larger diameter and have a more rustic appearance, as each log is different.

While there are several types of handcrafted construction, perhaps the most widespread method is commonly called Scandinavian scribe fit. Without getting too technical, construction involves fitting one log to the log below by means of scribing the exact contours of each log and cutting with a chainsaw. Where logs meet at a corner they are notched to overlap. This method of construction impacts the design in many ways. In terms of general appearance, the most obvious is the use of full peeled logs. All the characteristics of the natural log are evident starting with the fact that the base of a tree is of larger diameter than the top. Therefore the logs used in the walls taper from one end to the other. In some species the taper is significant. In others, it is quite gradual. To make up for this taper, each successive course or layer of logs is laid in the opposite direction so that the overall wall height averages out. When you look at a log wall you see logs of varying diameter with each log having its own unique characteristics. The logs themselves can be left quite rough, showing the marks of the 'draw knife' used to remove the bark, or sandblasted or sanded to a smoother finish. The unique appearance of handcrafted log homes is most noticeable near the corners where the variation in

diameter is most evident and the technique used for overlapping the corners clearly visible.

The size and variations in log diameter may impact the placement of furniture or other interior fixtures against the walls, as well as paintings and wall hangings. Where cabinets are up against walls, it is very common to build a conventional wall to which cabinets can be attached. I prefer to slab the walls flat giving a vertical wall and exposing the rich grain of the heartwood.

The use of long logs also can have a major impact on the design possibilities. While some manufacturing companies utilize large full length logs, many are limited by smaller tree sizes and a manufacturing process which results in smaller diameters and shorter lengths. The larger and longer logs generally used in handcrafting allows for longer unbroken walls and greater unbroken interior spaces.

While all logs are susceptible to changes in size due to changes in moisture content, this is usually more evident in the handcrafted industry where 'green' or recently cut trees are often used. This means that the log walls may 'settle' or reduce in height up to 6% from the time they are initially constructed until they have reached their final height. Settling valences over those building elements that do not settle, such as regular frame walls or windows and doors, become a more noticeable part of the design. It also means that the use of logs in the gable ends is more difficult because of differential rates of shrinkage.

Because corners are handled by overlapping log walls, designs that call for posts at corners are often difficult to execute. For example, the prow front, a once-popular

design among would-be log cabin owners is a challenge for scribe fit construction. Many handcrafters have taken to using posts with screw jacks at these locations when necessary. Screw jacks are threaded steel supports that can be adjusted allowing the posts to settle with the log walls. These have to be carefully trimmed out to conceal the steel support yet allow for access for adjustment.

The technique used to notch the overlapping corners means windows and doors must be set back from the corners, usually a minimum of two feet from the centerline of the wall. Because of furniture and drapery placement this is not usually a problem but needs to be accounted for in exterior wall design nevertheless.

Finally, handcrafted construction often incorporates feature logs. A handcrafter or designer can select trees that have unusual characteristics, such as grain patterns, interesting knots and branches or curved shapes, and incorporate them into the design.

In summary, while conventional handcrafted construction does impact design and interior finishing, the dramatic beauty of full natural logs are themselves an architectural statement and require little in the way conventional interior design to create a beautiful interior. In addition, the size of logs normally used allows large and dramatic spaces and unique features.

### ***Manufactured Logs Construction and Design***

By far the largest numbers of log homes built using a manufacturing process. Factories can handle large volumes of logs and produce uniform logs or building units that can be easily put together to form a variety of plans and styles and machines can replace the highly-skilled labour usually required in handcrafted operations. In addition,

logs can be cut from cutting lists and shipped to the building site without having to assemble them in advance. These decreases production time and increases potential volume. While the handcrafted industry led by Robert Chambers is now experimenting with a system called “accelerated building”, manufactured homes can generally be produced at a much quicker rate. The manufactured method of log construction also facilitates the use of dealer reps and allows manufactures more direct exposure in a wide range of markets. It is therefore becoming more common in the industry in general as the consumer is exposed to more manufactured home companies. While your dealer representative may be local, the homes themselves are likely to be manufactured at a remote location and shipped to your site for re-assembly. This is either done by the rep or by your general contractor using an installation guide provided by the manufacturer.

Because of the flexibility of the manufacturing process, there are even more types of construction methods than with handcrafted. In all types logs are milled to a uniform diameter or shape. While smaller diameters (often 10” or less) are most common, some manufacturers are beginning to use logs as large as 16” diameter. Because the logs are uniform, logs are stacked one atop another without the need for scribing one to the other. They stack relatively easily and can often be assembled by people with little experience. In most methods, the logs have been machined to allow the corners to overlap.

The uniform diameter of logs used in manufactured construction means the appearance is much more uniform and therefore less dramatic that with handcrafted. However, their consistency makes it easier to complete interior design and hang pictures and place furniture.

With most manufacturing companies, the smaller logs and diameters mean more logs are required to reach a given wall height. This sense of scale is more noticeable on larger homes. In addition, shorter logs mean shorter wall lengths, butt joints and less design flexibility. If large beams are required to give a more open feel to an interior space, rectangular timbers and glulams may have to be utilized. Like handcrafted homes, overlapping corners mean windows and doors need to be kept away from the corners, though the machine joinery allows them to be much closer.

Because manufactured logs tend to have significantly less moisture content than handcrafted logs, differential settling is less noticeable. Wood trim used to conceal the settling that occurs can be smaller and less visible. Therefore many manufactured log homes utilize logs in the gable ends. However, it is important to note that except in a few systems, there will be some settling of log walls and allowances must be made to avoid problems down the road. Some systems use anti-settling devices, but the individual logs still shrink in diameter necessitating the use of caulking or chinking between logs.

### ***Unique Designs***

Where a design calls for windows and doors at corners or uses varying floor levels, a post and beam type design can be used with both manufactured logs and handcrafted logs. In this method, the overall building structure is accommodated by a series of log posts and beams and horizontal logs are used for infill. Few companies do this type of building, often called piece-en-piece, because of the additional and often complex joinery required.

While most design ideas can incorporate either handcrafted log or manufactured logs, the overall appearance and specific details will vary greatly. In my years as a designer, I have been amazed at how many people, stacks of log home magazines in hand, don't really know the difference between handcrafted and manufactured. I encourage all those who are contemplating owning a log home to look carefully at photographs at log homes so that they can decide which building system might best meet their needs.