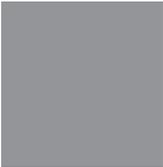


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## SECTION 5: WOOD FRAMING

### Background

The following standards apply to the installation of dimensional wood framing materials and other wood framing components, such as trusses, used in the construction or remodeling of a house.

Many varied species of lumber are used as building components and are imported here from all parts of the United States, Canada, and in some instances, outside of North America.

Since almost all of the lumber used in home construction is not indigenous to this area, it goes through a period known as “stabilization.” This phase usually lasts through one complete change of all seasons, or in some cases longer. During this time it is common for wood components to swell, bow, bleed, twist, or contract through drying or curing, and in general, deviate to different degrees from its original form when installed. Since much of this movement is hidden behind the drywall, the effect is usually seen only on the outside of the drywall, such as mitered joints that were once closed and have now opened up, or doors that initially operated efficiently and now will not latch properly. These problems are due to the stabilization of lumber and should be attended to as late in the service period as possible so as to allow sufficient time for lumber to stabilize.

## CARPENTRY

### Wood Floors

**5.1 Observation:** Wood subfloors are uneven

**Standard:** Subfloor should not be more than 1/4 inch off level within any 32 inch span and not to exceed 1/2 inch off level within any 20 foot span. Allowable floor and ceiling joist deflections are governed by local building codes.

**Builder’s Responsibility:** The builder will meet the standard.

**Discussion:** The builder has many options to bring the floor into acceptable tolerances at either the initial or finished carpentry stages.

**5.2 Observation:** Springiness, bounce, shaking, or visible sag is observed in floor.

**Standard:** All beams, joists, headers, and other structural members shall be sized and fasteners spaced according to local building codes.

**Builder's Responsibility:** The builder will modify any floor not meeting the standard.

**Discussion:** Deflection may indicate insufficient stiffness in the lumber, or may reflect an aesthetic consideration independent of the strength and safety requirements of the lumber. Joists are required to meet standards for maximum deflection as called out in the building code span tables.

**5.3 Observation:** Floor squeaks.

**Standard:** Extensive research on this subject concludes totally squeak-proof floors cannot be guaranteed but reasonable efforts should be made to eliminate the squeak.

**Builder's Responsibility:** The builder will refasten any loose subfloor or take other corrective action to eliminate squeaking to the extent possible without removing floor and ceiling finishes. Due to the nature of floor squeaks, total elimination may not be possible.

**Discussion:** Floor squeaks may occur when a subfloor has come loose from the joists or when the subfloor is deflected by the weight of a person or furniture and rubs against the nails that hold it in place. The subfloor or joists may be bowed, and the nails may also be expelled from the wood during drying or the stabilization process of the home. Movement may occur between the joist and bridging or other floor members when one joist is deflected while the other members remain stationary. Gluing the subfloor is an acceptable method of code compliance and may help reduce the possibility of squeaks. Renailing floor joists with ring-shank nails will also substantially reduce severe floor squeaks. Because the standard requires the builder to make a reasonable attempt to eliminate

squeaks without requiring removal of floor and ceiling finishes, nailing loose subflooring with casing nails into the carpet surface and countersinking the head is an acceptable practice, as long as it is not readily visible.

## Beams or posts

**5.4 Observation:** Wood beam or post made of dimensional lumber is split.

**Standard:** Beams and posts, especially those 3-1/2 inches or greater in thickness (which normally are not kiln dried), will sometimes split as they dry after installation. Such splitting is usually not a structural concern if posts and beams have been sized according to National Forest & Paper Association span tables.

Aesthetically, splits under 1/4 inch do not need to be filled. A 1/4 inch to 3/8 inch split should be filled, and splits over 3/8 inch requires replacement of the beam or post.

**Builder's Responsibility:** Builder will repair or replace any beam or post with a defect that does not meet the standard. Filling splits is acceptable for widths up to 3/8 inch.

**Discussion:** Some characteristics of drying wood are beyond the control of the builder and cannot be prevented. Compensation is made in span tables for the probable reduction in strength resulting from splitting caused by drying; therefore, splitting is primarily an aesthetic concern rather than a structural problem. Only aesthetic concerns are addressed in this section, and any structural questions should be referred to the Building Code. The builder and the homeowner may agree that the unfilled cracks are not aesthetically a concern and may be left unfilled.

**5.5 Observation:** Wood beam or post is twisted or bowed.

**Standard:** Beams and posts, especially those 3-1/2 inches or greater in thickness (which normally are not kiln dried), will sometimes twist or bow as they dry. This is usually not a structural concern if they have been sized according to National Forest & Paper Association span tables. Bows and twists exceeding 3/4 inch in an 8 foot section are unacceptable from an aesthetic standpoint.