

Common Lumber Defects

Lumber defects can give a unique character to a piece of wood, but for structural integrity, the defects should be kept to a minimum. Most of the following are caused by problems with cutting, stacking, or drying the wood—with the exception of naturally-occurring knots.



Bow: A bow is a curve on the face of a board, typically extending from one end to the other. If the board was sitting flat, the ends would not be touching the ground.



Check: A check is a crack that occurs along the wood's growth rings. It does not extend through the entire thickness of the board. You may notice that the corners of a board do not touch the ground when the board is flat on a surface.



Crook: A crook is a warp that happens along the edge of a board.



Cup: A cup is when the face of a board is hollow.



Knot: A knot is a naturally-occurring defect in a piece of wood. Knots are circular imperfections caused by a broken-off tree branch. Tight knots are nothing to worry about, but dead or loose knots may fall out or leave a hole.



Shake: A shake is when the grain between the wood's growth rings separates. Shakes can occur on the face of a board or below the surface.



Split: A split is a crack in a piece of wood that goes all the way through the board.



Twist: A twist occurs when there are multiple different bends in a board.



Wane: A wane is when there is missing wood or an untrimmed edge along the side or corner of a board.

Softwood grades typically fall into two categories: dimensional lumber (based on the wood's strength) and appearance boards (most commonly used for woodwork).

- C Select has little to no defects and is used for cabinets and trim.
- D Select has a few more defects than C select. It's great for projects that will be painted.
- No. 1 Common is a standard grade lumber with a knotty look.
- No. 2 Common has larger knots. It's good for paneling and shelving.
- No. 3 Common has larger knots than No. 2 Common. It's best for shelving, paneling, pallets and fences.

Tip: Sometimes "prime" is listed with the grade, such as "prime FAS grade." This lumber has both the qualities of the FAS grade and a fine appearance. Search for prime lumber when the look of the wood is important for a project.

Non Stressed Lumber Grades

This first category of softwood lumber is primarily considered in building, for applications that don't require a great deal of structural support, but that also aren't highly visible. This lumber is common for use as siding, shelving, and paneling where it will typically be painted over, as well as subflooring and sheathing, where the appearance of the wood doesn't matter. Non stressed lumber is broken into five different grades, based on the number of defects present in the wood.

No. 1.

Considered a "construction grade", No.1 lumber might contain some tight knots, but is otherwise relatively defect-free and easy to paint, making it perfect for shelving, siding, or paneling.

No. 2

A "standard" grade, No. 2 softwood will still accept paint well, but contains numerous larger knots. It's an economical option that will still do well if you're planning to cover it with paint.

No. 3

Considered a "utility" grade of softwood lumber, No. 3 is better for utility applications, like subflooring and sheathing. It won't accept paint as well as No. 1 or 2, and might have splits and knotholes. It is a great option for unseen building applications.

No. 4

Economy grade softwood lumber No. 4 will have large areas of waste wood, along with splits, knotholes, and a variety of other defects. This wood won't accept paint, and is best for sheathing, subflooring, and creation of forms for concrete work.

No. 5

Also considered an "economy" grade of lumber, No. 5 softwood has the most waste areas and defects. It's used in similar applications to No. 4 where it won't be seen, but can make forms, molds or models.

Appearance Lumber Grades

Appearance lumber is any softwood lumber that's used in applications where it will be seen, such as furniture building. As such, the appearance of the wood is important. It is divided into two categories: Select and Common, each of which can be broken down into their own specific grades.

Select Appearance Lumber: Grades A-D

Select appearance lumber is the highest quality softwood for exposed applications where looks matter. It's divided into four grades, A-D.

Grade A

Grade A appearance lumber does not have visible defects with zero apparent knots or splits.

Grade B

This grade may have a few visible defects, but no obvious knots.

Grade C

One side might be completely clear of defects, the other may feature a few small knots.

Grade D

This lumber contains small pin knots and other blemishes, none of which affect the lumber quality.

Common Appearance Lumber

Common appearance lumber grades are split into two categories. This lumber has more defects and knots than select lumber, but some prefer Common appearance lumber as it offers more character to furniture and other visible woodworking applications.

No. 1 Common

Features enough knots to give wood a "knotty" appearance, as with knotty pine. Though knots are present, they are small and tight, making them unlikely to fall out.

No. 2 Common

Chosen for the appearance of the knots like Common No. 1, but tight knots are slightly larger.