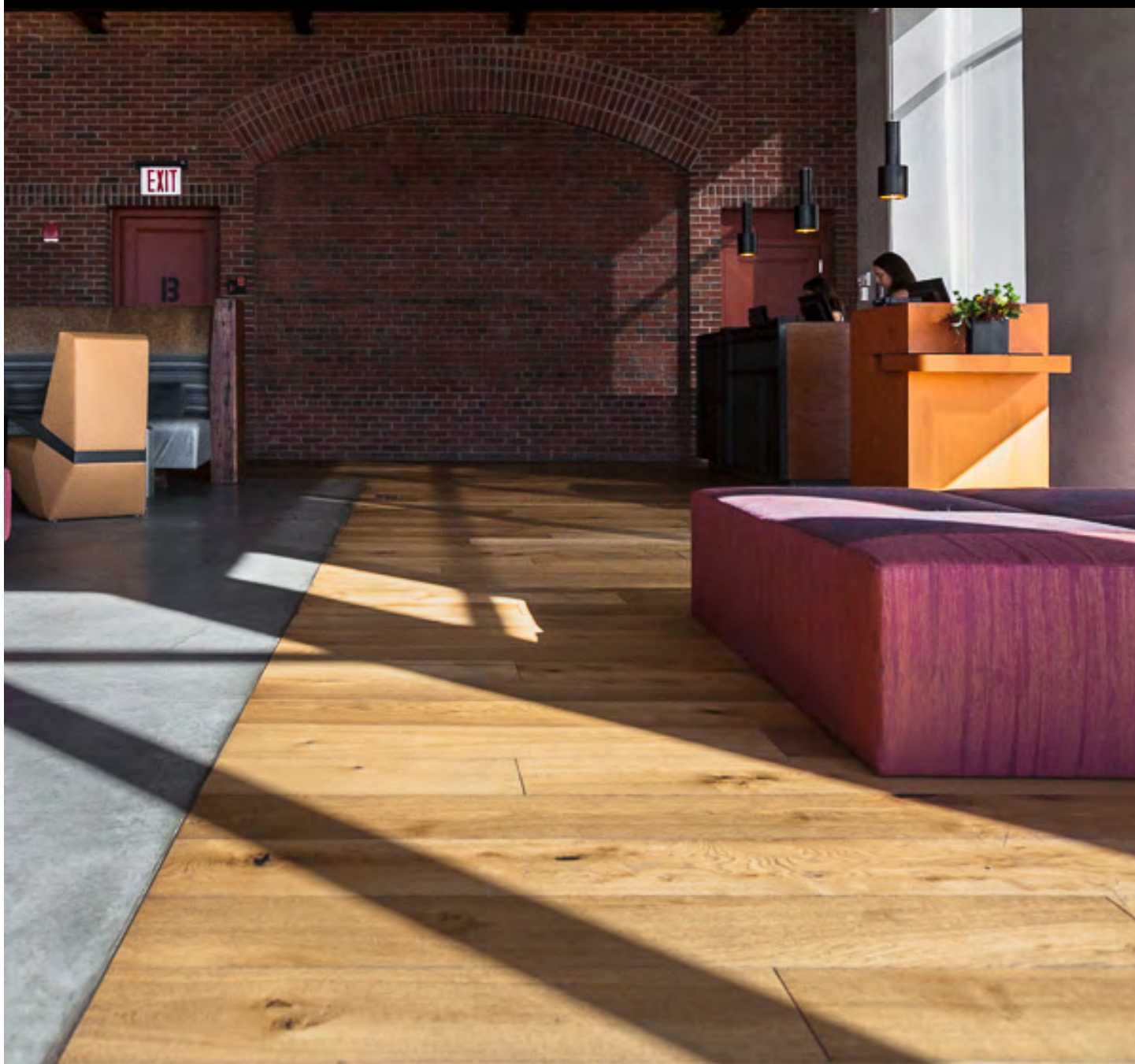


The Intricacies of
Color Theory:
From the Color Wheel
to Wood Floors





When you walk into any space, the way your eyes translate color and color combinations can affect how you interpret the style, mood, and overall comfort level. When you re-do a room or design a new one, color theory is typically used as a foundation to choose colors that fit your wants.

Color theory is the science behind how we interpret the colors we see in the world, and how we respond to specific color combinations and proportions. Color theory starts at the color wheel, which is basically a roadmap for understanding color combinations and how the human brain processes these combinations.

If you can recall your elementary school art teacher discussing color combinations, then you've definitely heard of primary and secondary colors. Primary colors are colors that are combined to create secondary colors. Secondary colors are made by mixing any two primary colors. The primary colors are red, blue, and yellow. Below we see how the primary colors are mixed together to create the secondary colors orange, green, and violet.

This information is significant because colors can actually change the way someone feels. An article published in WedMD, and reviewed by Dr. Gabriela Pichardo, says colors can change your mood, your behavior, and even your appetite.

EMOTIONS

The color green seems to make positive emotions stronger and negative emotions weaker. White and pink may have similar effects, but researchers are still studying those. Meanwhile, the color red seems to have the opposite effect and make negative emotions -- like those linked to failure and danger -- more intense.

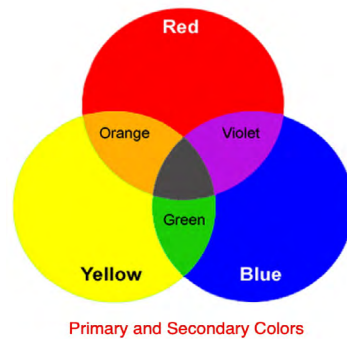
CREATIVITY

The color green can help get the creative juices flowing. Scientists compared it with white, gray, red, and blue, and green helped people do better with both word-based and picture-based activities.

APPETITE

The color of your plate can affect how much you eat. The key is contrast: The more different the color of the plate from the color of the food that's on it, the less you'll serve yourself. In one study, people served themselves about 30% more fettuccini alfredo if they were given white plates instead of red.

The way materials interact with light can affect our mood as well.



Dr. Xi Zhang from Harvard University, along with her colleagues, have conducted multiple studies that conclude human subjects consistently demonstrate positive emotions while working in wooden rooms versus non-wooden rooms. For example, in one study 20 adult participants were asked

to conduct work for 60 minutes in wooden rooms and non-wooden rooms. While they were working, several physiological measures were assessed. The results demonstrated diminished stress and tension level in subjects working in wooden rooms.



Furthermore, Professor Minoru Masuda hypothesized additional reasons for wood's ability to calm humans. He suggests that when wood reflects long-wavelength light, humans interpret that light as yellow to red hues. He found that these hues created a "warm" impression in humans. Masuda further argued that as wood lacks abundant reflectance of UV light from its exterior, people may experience less stimulation and therefore feel less fatigued. This also suggests an increase in productivity in rooms with more wood.

Being educated on how materials and colors affect us will make us more informed designers and consumers. When we purchase products, it's important to know if that color will last forever. Wood, for example, will change color over time. Wood changes color through oxidation and/or photochemical exposure. Some wood species will change more drastically than others, but wood discoloration is a naturally occurring phenomenon that typically cannot be prevented.

SOME WOODS WILL DARKEN OVER TIME LIKE AMERICAN CHERRY, BRAZILIAN CHERRY (JATOBA), DOUGLAS FIR, AND PURPLEHEART.



PURPLEHEART

Purpleheart, also referred to as amaranth, is the name applied to species in the genus *Peltogyne*. The center of distribution is in the northcentral part of the Brazilian Amazon region, but the combined range of all species is from Mexico through Central America and southward to southern Brazil.

Freshly cut heartwood is brown. It turns a deep purple upon exposure to air and eventually dark brown upon exposure to light.

SOME WOODS LIGHTEN WITH AGE. SOME EXAMPLES OF SPECIES AND PRODUCTS THAT LIGHTEN INCLUDE BLACK WALNUT AND CORK. NOT ALL BOARDS WILL CHANGE COLOR TO THE SAME EXTENT.



WALNUT, BLACK

The heartwood of black walnut varies from light to dark brown; the sapwood is nearly white and up to 8 cm (3 in.) wide in open-grown trees. Black walnut is normally straight grained, easily worked with tools, and stable in use. It is heavy, hard, strong, and stiff, and has good resistance to shock. Black walnut is well suited for natural finishes.



As seen in the photo, wood discolorations can be affected by a rug or furniture. Wood that is exposed to less direct light (because it is covered by a rug or furniture), may change color at a slower rate than those areas exposed to more sunlight. Window coverings or UV protection may aid in slowing the issue over time but will not eliminate it.

You may see a discolored line, spot, or band in the wood that may range in color from light gray to tan, olive green, brown, purple, blue, or black. Mineral streaks/deposits are naturally occurring, and they are often considered to add value and appeal to the wood.



Some mineral streaks may be caused by normal cell physiology occurring from wounds caused by insects, animals, weather, or logging. Maple, hickory, white ash, and a number of other species are often visually affected by small holes made by woodpeckers. These bird pecks often occur in horizontal rows, sometimes encircling the tree, and a brown or black discoloration known as a mineral streak originates from each hole. Holes for tapping maple trees are also a source of mineral streaks. The streaks are caused by oxidation and other chemical changes in the wood.

Some mineral deposits such as silica are often mistaken for chemical stains in some imported species, because of how they may appear as spots or blotches. Overall, the source of these mineral streaks/deposits is often undetermined and is considered a naturally occurring characteristic of living trees. These deposits may develop as the tree absorbs and deposits minerals from the surrounding soil such as limestone, sulfur, nitrogen, phosphorus, potassium, silica, gypsum, or any other mineral found in the region where the tree was grown.

CURES

- Mineral streaks are allowed in many grades of wood flooring, and are dictated by length, width and/or total surface area. The grading of the material used should be a part of the end-user's decision when selecting product.
- Mineral streaks generally will not sand out.
- Proper culling of material prior to/during installation.
- Replacement of objectionable boards may be necessary.
- When grade falls within tolerance, no action may be necessary.

As always, consult with your seller to see how best to maintain your wood product.

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