

Hot Topic 3 cont'd: A Great Kitchen Project! Part II: What Cabinets Are Made Of

By Coach Jerry R. Spumberg

The DIY FYI

March 22, 2010

By Jerry R Spumberg - The DIY Coach

If you asked Mother Goose, the answer may be “snips and snails and puppy dog tails”. Like most homeowners, we know that’s not the right answer. So what is? I mean if you’re going to purchase one of the most expensive parts of a kitchen remodeling project, kitchen cabinets, shouldn’t you know a little about the various materials that may be used in their construction? This Coach thinks so!

One of the factors that set cabinets apart from each other are the different combination of materials that they may be made of. In today’s modern world, all solid wood construction is saved for the most part for fine furniture. One of the newest trends in kitchen design is the revival of using furniture pieces that are mixed with cabinets. This was used in the last century and up until the middle of the twentieth. These “unfitted” retro kitchens bring back the feeling of yesterday when life was simpler. For these pieces, solid wood in many finishes, both painted, natural and stained, work best. Less expensive pieces may be made of a combination of the materials that we will talk about next.

Most “fitted” cabinetry is made from a collection of different materials that include: solid species woods, wood veneers, cabinet grade plywood, particle board, Medium Density fiberboard (MDF), engineered sheet goods (which have a core of MDF sandwiched by layers of wood similar to plywood), stainless steel melamine, vinyl veneer, plastic laminates, and more.

Traditional faced framed cabinets for the last fifty or so years have the face frames and door (for the most part) made from solid wood. In some cases, doors and drawer fronts can be made from a combination of other materials. A product known as thermo-foil



laminates is used over MDF for doors to reduce costs and produce a white, easily cleaned product. Plastic laminates (known by brand names such as Formica or Wilson Art) may be glued to any of various 3/4” sub-surfaces that include Baltic birch plywood (the highest grade and most expensive plywood), various cabinet grade plywood’s, MDF, particle board, or a combination sandwich of the before mentioned. Exotic veneers of woods can also be used in a laminating process to make doors, drawer fronts and other parts for cabinets.

By now I have you totally confused, so take this article with you to see and touch cabinets. Ask what they are made of. For now, let’s just say that there are a lot of ways to use different materials to make doors and the same can be said for the door fronts.

The cabinet box can also be made from any of the before mentioned materials or a combination of them. In addition, the thickness of the material (called sheet goods) can vary from 3/8” to 3/4” in thickness. In my opinion, the best case (the box) material is a high grade Birch plywood, but boy is it expensive and not very often used except for draw-

er construction. Naturally, the thicker the material the stronger the cabinet, but you don’t need over kill. Materials are directly related to the cost of the cabinets and cost should be directly related to purpose and budget.

What is plywood? Plywood, in its most general terms, is a multi-layered material that forms sheet goods. When we are referring to cabinet making, the layers can be made of wood and various materials that form the core. The one thing that the four core options used in cabinet making have in common is that final outside layer on both sides is made of a wood veneer. Costs for these four by eight foot sheets can run from \$45.00 to \$130.00 (for cherry) per sheet depending on the species and grade of veneer options used on the exterior and interior sides.

The four cores are (most costly to least costly) Veneer Core, Combination Core, MDF Core, and Particleboard Core. Without going into all the details of how they are made, I’m just going to mention their strongest points. Veneer Core is the strongest, most expensive, and sometimes allows core imperfections to show through the top veneer.

Combination Core has a thin underling layer of MDF underneath the final exterior veneer; this allows for a strong core and eliminates any core imperfections from telegraphing through. MDF Core is solid MDF under the exterior veneer and is extremely heavy; it requires fasteners made specifically for it. However, it's a great choice for a smooth finish at a less expensive price. Particleboard Core is cheap and difficult to work with and has the least strength of the materials. However even though it's flat, it is easily chipped (tear out) when machined or impacted. It is my least favorite material and I only use it in projects where funds are extremely limited and clients have ruled out other low cost alternatives.

(These alternatives will be discussed in the next parts of this series.)

The use of veneer core and com-

bination core plywood that is 3/8" thick and greater is found in better cabinet boxes and creates a significantly stronger cabinet than other equally thick sheet goods. The use of 3/4" MDF, when used with special joinery fasteners and methods, can also perform well and may be used in European styled units in coordination with the use of laminates. One of the downsides to this product is that it is the heaviest in comparison to the others. An affordable alternative to the before mentioned is the use of a high quality particle board that is often laminated (covered) with a vinyl paper that imitates the wood or the surface of the

doors. This can provide a serviceable cabinet for those who plan to remain in their home for only five to ten years, are on a limited budget, and who's kitchen receives moderate use. I do not recommend the use of heavy countertops, such as granite, in conjunction with particle board units because of their lack of structural strength. Clients on a limited budget who wanted to use a heavy countertop have asked me if it pays to strengthen particle board units.

When we looked at the cost, it was always better to upgrade the cabinets to a stronger construction material.

The material used in shelf construction is an important consideration when purchasing cabinets because of the amount of weight that is placed on them. The longer the span of a weighted shelf from end to end without support, the stronger the material has to be to prevent sagging or failure. The materials used listed in the order of greatest strength first are solid wood (some species such as oak are stronger than others), plywood's, MDF, and particle board. Other details that affect shelf strength are the material's thickness, if a front edge is attached, how much deeper it is than the shelf, how the self is attached to the cabinets, and if it's supported in the middle (similar to wall cabinet with a center support between twin doors). The minimum thickness for a plywood shelf should be 5/8" with 3/4" being better. What is often called a slide out or pull out shelf is actually a drawer with short sides.

The best drawers are made from solid wood or Baltic birch sides and a ply-

wood bottom. Drawer fronts may be solid wood (sometimes wood or plastic veneer) that is attached to a sub-front with screws or integrated directly into the drawer construction. The drawers are assembled with various methods of interlocking joinery and glue. Terms such as dovetail, sliding dovetail, miter lock joints, and drawer lock joints are indicative of solid drawer construction that can withstand a lifetime of use when combined with quality drawer guides. Recently, high quality metal drawer systems have become available that allow the attachment of any drawer front. Drawers constructed with limited joinery methods, where the four sides are butted, glued, stapled or nailed together, use inexpensive non-ball bearing drawer guides and made of 3/8" MDF are inexpensive. However, they will be limited to the amount of weight they can hold, operating ease will decline with use, and have a limited useful life. I steer my clients away from these products.

A final comment about the interior of the cabinets you pick. Your cabinets will hold many things including food. It is important that the interior be easily cleaned with a damp cloth. Manufacturers accomplish this in two ways. The first, if the interiors are birch, maple, or a similar wood veneer, is by applying several coats of a durable varnish or if style dictates, a wear resistant paint. The second is by applying a high quality vinyl paper-like product that can be a color or imitate the look of wood. The second method is used because of one or more of several reason. These are: the interior of the plywood is a lesser grade and would not finish nicely, the interior surface lacks a durable surface (i.e. particleboard or MDF) and this is one way to provided it, or the client requested it.

Our next topic in this series will be: Part III: Manufacturers Production Styles, From Custom to Stock

May the coach be with you,

Coach Jerry

