



Virginia Cooperative Extension Service

VIRGINIA TECH AND VIRGINIA STATE • VIRGINIA'S LAND GRANT UNIVERSITIES

Publication 356-146

April 1984

KITCHENS: Cabinets and Countertops

Prepared by: Robert J. Thee, Extension Specialist, Housing, Virginia Tech.

CABINETS

Cabinets are usually the most expensive item in the kitchen. Normally, kitchen storage is provided with cabinets having door fronts, but some people enjoy the convenience and appearance of some or all open shelves, and/or some hanging storage. For the well-organized and well-kept kitchen, the nuisance of opening and closing doors could be avoided with the

benefit of lower cost by using open shelves. Style and design are a personal choice, but should blend with other selections in the kitchen and the entire house.

There is a range in cost and quality in all three types of cabinets. A top line stock cabinet may cost more than a custom or special order cabinet. To judge the quality the consumer

TYPES OF CABINETS AVAILABLE

Type of Cabinets	Description	Price Range	Fit to Kitchen	Delivery Time	Storage Devices*	Style, Color and Finish
Stock	Mass manufactured, available in standard sizes	Low to middle	If not exact use fillers	Short if not immediate	Limited	Seldom unique, choices range from very limited to a wide choice
Special order (some special order cabinet-makers will also custom build)	Manufactured in standard and non-standard sizes for a specific order	Middle to high	If not exact use fillers and extenders	4 to 8 weeks or more	Great variety including plastic, metal and fiberglass	Wide choice, finishes and color match exactly***
Custom built	Made by local cabinet makers	Low to high	Fits exactly, some use extended stiles**	Depends on work load	Variety depends on craftsman	Great variety, complete freedom within limits of talents of cabinet maker

*e.g., pull-out trays, tracks, dividers, utility compartments

**Stiles are the vertical members in cabinets

***Manufactured finishes can have the advantage of precise quality control

Based on: "Kitchen Planning, New and Remodeled." Special Report 92, by Wanda Olson and Delores Ginthner, Agricultural Extension Service, University of Minnesota.

Virginia Cooperative Extension Service programs, activities, and employment opportunities are available to all people regardless of race, color, religion, sex, age, national origin, handicap, or political affiliation. An equal opportunity/affirmative action employer.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, and September 30, 1977, in cooperation with the U.S. Department of Agriculture. Mitchell R. Geasler, Director, Virginia Cooperative Extension Service, and Vice Provost for Extension, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061; M. C. Harding, Sr., Administrator, 1890 Extension Program, Virginia State University, Petersburg, Virginia 23803.

must look at how well they fit the kitchen, special features, and construction. United States, Canadian, and European manufactured cabinets are available. Imported cabinets may be in stock, but special orders may take up to six months. Due to shipping costs they tend to be more expensive than domestic cabinets of similar quality. Imported cabinets are usually contemporary; many are unique and exciting in design, offer a variety of storage devices, and are sold in metric measurements (10 cm modules).

Some cabinet manufacturers have chosen to be certified by the National Kitchen Cabinet Association which means the cabinets have passed industry minimums related to performance and durability. Some cabinet dealers have chosen to become members of the American Institute of Kitchen Dealers (AIKD). It is a prestigious organization and means quality work for the consumer. Members have reputations for following good business practices and doing quality work.

Considerations in judging the quality of cabinets:

- The whole box of the cabinet should look and feel sturdy; the drawer is a good indication of the quality of construction used in cabinets.
- Corner of wall and base should be braced with corner blocks (Fig. 1).

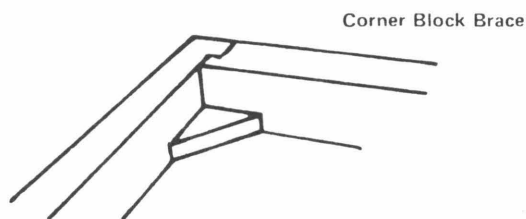


Figure 1

- Where there is stress or a major joint, the stiles and rails (the vertical and horizontal framing) should be joined with mortise and tenon joints (Fig. 2) or dowel joints (Fig. 3).

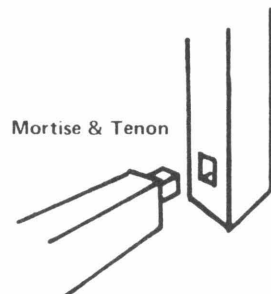


Figure 2

LD
5655
Art 62
no. 356-146
VPI
Spec

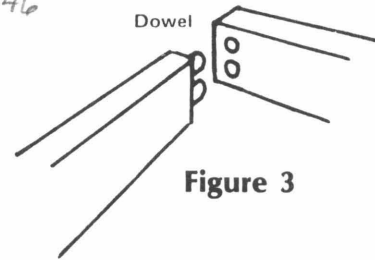


Figure 3

- Tops and bottoms should be dadoed into the sides (Fig. 4).

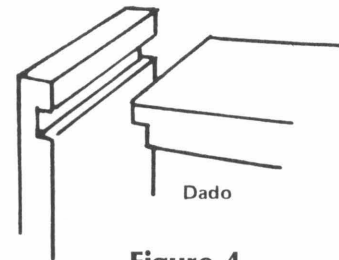


Figure 4

- Hinges should be strong, swing freely and be silent in operation.
- Hardware should be conveniently located and be comfortable to the hand.
- In addition to quality, if undercabinet lighting is being considered, select wall cabinets with an apron large enough to cover the light.

DRAWERS

- Drawers should be removable, but with an automatic stop and of sturdy construction.
- The easiest sliding drawers have double metal tracking with nylon and ball bearing rollers or wood with plastic rollers. Over time, drawers that slide directly on wood will not slide as well.
- The sturdiest drawers have dovetail joints (Fig. 5) in all four corners and have 1/2-inch thick wood for the sides and backs with wood or plywood bottoms (fiberboard is less sturdy).

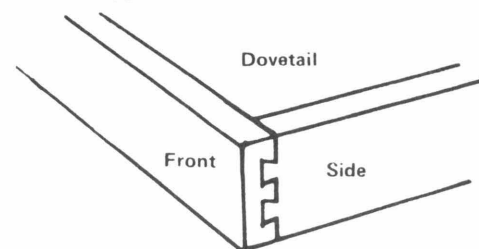


Figure 5

- Tongue and groove joints (Fig. 6) are sturdy; butt joints (Fig. 7) and rabbeted joints (Fig. 8) are the least sturdy.
- Plastic drawers are easy to clean and may come with molded compartments which are useful. However, lightweight plastic can break if heavy objects are dropped in them.

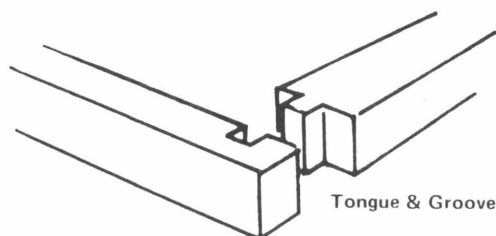


Figure 6

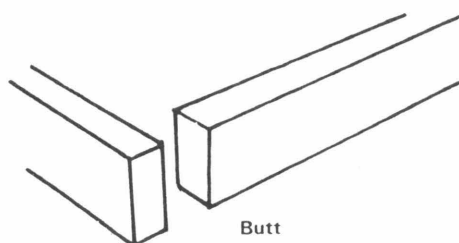


Figure 7

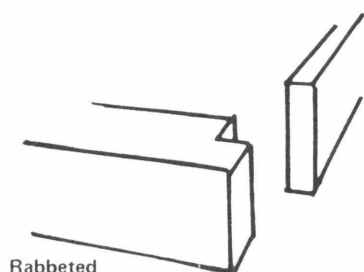


Figure 8

SHELVING

- Better quality wood cabinets have solid wood shelves; composition board shelves are extremely sturdy.
- Cabinets wider than three feet should have a shelf support in the center.
- Wall cabinet shelves should be removable and adjustable, attached with clips or grooves.

- In base cabinets, sliding shelves are more usable and convenient than stationary shelves and may be vertically adjustable.
- If there will be a corner in the kitchen cabinetry, lazy Susans, swingout shelves, or double-folding doors make that space more easily accessible.

FINISH

- There is a great range in the quality of the finish of wood cabinets; many times you are paying for a better, more durable finish.
- Some stock cabinets are available unfinished which can save on cost.
- Cabinets finished on site are subject to dust, etc., in the air. Prefinished cabinets often have a baked on finish.
- Look for wood that is sanded smooth, with a richness and depth of tone.

Cabinet Materials

WOOD

Wood is the most popular material for cabinets. It is available in softwood and hardwood; softwood scratches more easily. Solid wood is not used for certain purposes since large wood pieces may warp. Plywood and particle board may also be used.

HIGH PRESSURE PLASTIC LAMINATES

(e.g., Formica, Nevamar, Wilsonart)

The 1/32-inch-thick plastic laminate on a rigid material is highly suitable for kitchen cabinets. Plastic laminate cabinet doors need a backing sheet to prevent them from warping.

OTHER PLASTICS

Polystyrene, a heavy, durable plastic is sometimes used to imitate wood. Rigid vinyls in sheet or roll, and low pressure plastic laminates are sometimes laminated to a substrate or corestock such as particle board, but are not as durable as the high pressure plastic laminates.

STEEL

Steel cabinets are durable, washable, and retain no odor. Textured steel gives a warmer look and finger prints are less of a problem. It is also available with laminated or wood fronts. Better quality steel cabinets are higher in cost and are quieter when opening and closing doors and drawers.

Material	Durability	Cleanability	Do-it-yourself Repair
Wood	Very good to excellent; scratches can be touched up; can be refinished	Very good	Easy
High pressure plastic laminates	Excellent; could scratch and chip but not easily	Excellent	Difficult
Rigid vinyls and low pressure plastics laminated to particle board	Good; will scratch and chip off	Good	Difficult
Steel	Excellent; if finish is damaged, could rust if not touched up	Excellent	Moderate

Installation

Cabinet installation requires skill. Cabinets must be installed level, plumb, and true, or doors will hang crooked and not operate properly. Corners must be square. It may be necessary to sand or add shims between cabinet walls and floors. Check warranties carefully because do-it-yourself installations may void warranty.

The space above the wall cabinets may be used for storage or closed with a soffit. For illustration, see Publication 356-145, "Kitchens: Planning for Appliances, Lighting and Other Equipment." Closed storage is available in custom cabinets and some special order cabinets; open storage for serving pieces or accessories can be very decorative. It is also possible to extend the soffit to accommodate soffit lighting.

Remodeling

Check with a custom cabinet maker if you need to add or replace some of the cabinets and the original model is no longer available. Sometimes old cabinets must be refinished to match new finishes. The process is expensive if not done by the owner. If the base cabinet storage is in poor condition, such as if the drawers no longer slide well, replace those and save the wall cabinets. If the cabinets are in good condition, it is possible to improve the storage within existing cabinets.

If the wood is in good condition, one may either sand and paint using a semi-gloss or gloss finish, or remove the old finish and then stain and seal the wood. If the doors are in poor condition, they can be replaced with new standard size wood door and drawer fronts.

COUNTERTOPS

Countertops must be easily cleaned and able to withstand punishment, such as heat stains, moisture, and cutting. To achieve a standard height of 36 inches, the countertop, including the subsurface, should be 1½ inches thick. Remember, the lighter colors reflect more light which is important for a work surface. Dark colors show food spills more readily. Think about how food will look next to the color you select. Glossy, shiny surfaces may be easier to clean, but a matte finish reduces glare. Textured, rough surfaces or grooves and seams are harder to clean. Commonly used materials for countertops are plastic laminates, butcher block, ceramic tile, cast acrylic (Corian), stainless steel, ceramic glass (Pyroceram). Ceramic tile and cast acrylic are extremely heavy and must have sturdy cabinets to support them. See the chart on page 6 for additional information on these materials.

Countertop Materials

PLASTIC LAMINATES (e.g., Formica, Nevamar, Textolite, Wilsonart)

High pressure melamine laminates are the most popular countertops. The surface may be glossy, matte, or textured. For horizontal surfaces, laminates should be textured. For horizontal surfaces, laminates should be 1/16 inch thick (1/32 inch thick is suitable for vertical surfaces). The laminate is adhered to a material such as particle board or plywood to give it rigidity.

BUTCHER BLOCK

Get a good grade of laminated maple, 1½ inches thick and well sealed on all sides if you will be installing butcher block countertops. Caution: standing water will cause the wood to discolor. Treat the countertop with mineral oil after it is installed and repeat the process periodically. Mineral oil is preferred because it is non-toxic and will not turn rancid.

CERAMIC TILE

This is a hard surface, but could break if heavy objects are dropped on it. Damaged tile can be replaced. Choose tiles with a glazed finish and use an epoxy grout to resist stains and moisture. For other grouts use a silicone sealer. Some tiles are available with a no-drip edge trim. In remodeling, tiles can be installed directly over a plastic laminate.

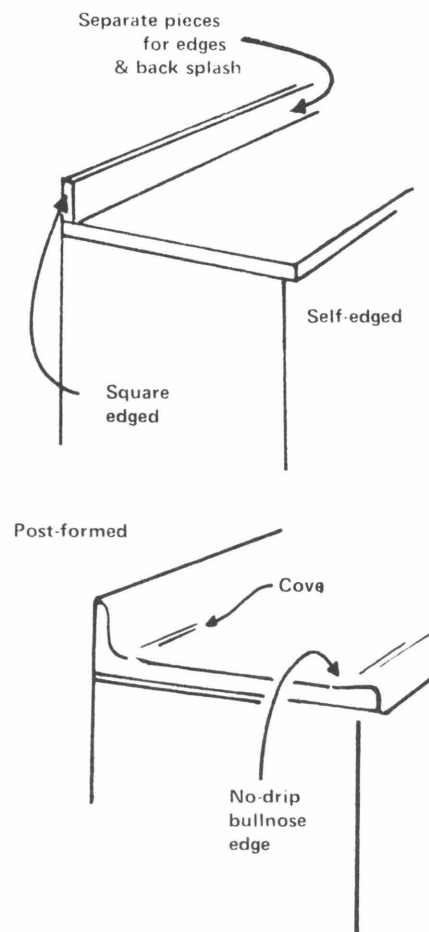
CAST ACRYLIC (e.g., Corian)

Cast acrylic material is available in ½-inch and ¾-inch thicknesses. It can have a single or double molded integral sink, but that option is costly. This material can be worked like wood, routed, sanded, etc.

COMBINATIONS

The above and other materials may be chosen as sections or inserts of a counter; however, this would add seams which are more difficult to clean and must be made water resistant.

Brushed stainless steel, cast acrylic, or ceramic glass near the range or oven are useful for placing hot pots and pans. Butcher block, cast acrylic, and ceramic glass inserts can double as pastry boards. For appearance reasons, you may choose to edge a counter with some other material. Use inserts or sections as an alternative to replacing entire countertops.



COUNTERTOPS

Material	Cost Range	Design	Durability	Heat	Resistance		Scratches and Cuts	Cleanability	Sound	Do-it-yourself Installation	Corners
					Stain	Moisture					
Plastics: High pressure melamine laminate 26", 33", 48", and 60" wide up to 144" long	Low to middle	Many colors, patterns and textures	Very good but if damaged must be replaced	Hot pans can scorch	Good	Good	Will cut with knives	Good. Rough textures present a problem	Quiet	*Power tool skills for cutting. Buy stock slabs that are prelam-inated	Mitred. Recommend to have cut professionally for post-formed tops
Cast Acrylic (Corian) 25" and 30" wide up to 145" long	High	Elegant, limited color range	Excellent	Good	Good	Good	Good	Excellent		**Chips & breaks. Usually professionally installed due to cost of material.	Butted
Butcher Block	Middle	Adds warmth	Shows wear. Can be sanded & resealed. If not sealed moisture can cause warping & discoloration	Will scratch	Shows stains	Good if sealed	Shows wear. Develops patina. Can be refinished easily	Needs periodic resealing	Quiet	*Chips more easily than plastic laminates	Butted
Ceramic Tile Wide range in size	Middle to high	Widest choice of color & patterns	Excellent	Good	Good	Good	Good	Use epoxy grout or a silicone sealer on grout. Needs periodic scrubbing of grout inden-tations. Can tolerate strong solutions	Noisy	*	Directional patterns are difficult in corners
Brushed Steel	High	Commercial look	Excellent	Good	Good	Good	Brushed surface helps camouflage	Good		**	
Ceramic Glass (Pyroceram)	High	Suitable as an insert	Excellent	Good	Good	Good	Good	Good		*	

*Requires skills

**More difficult