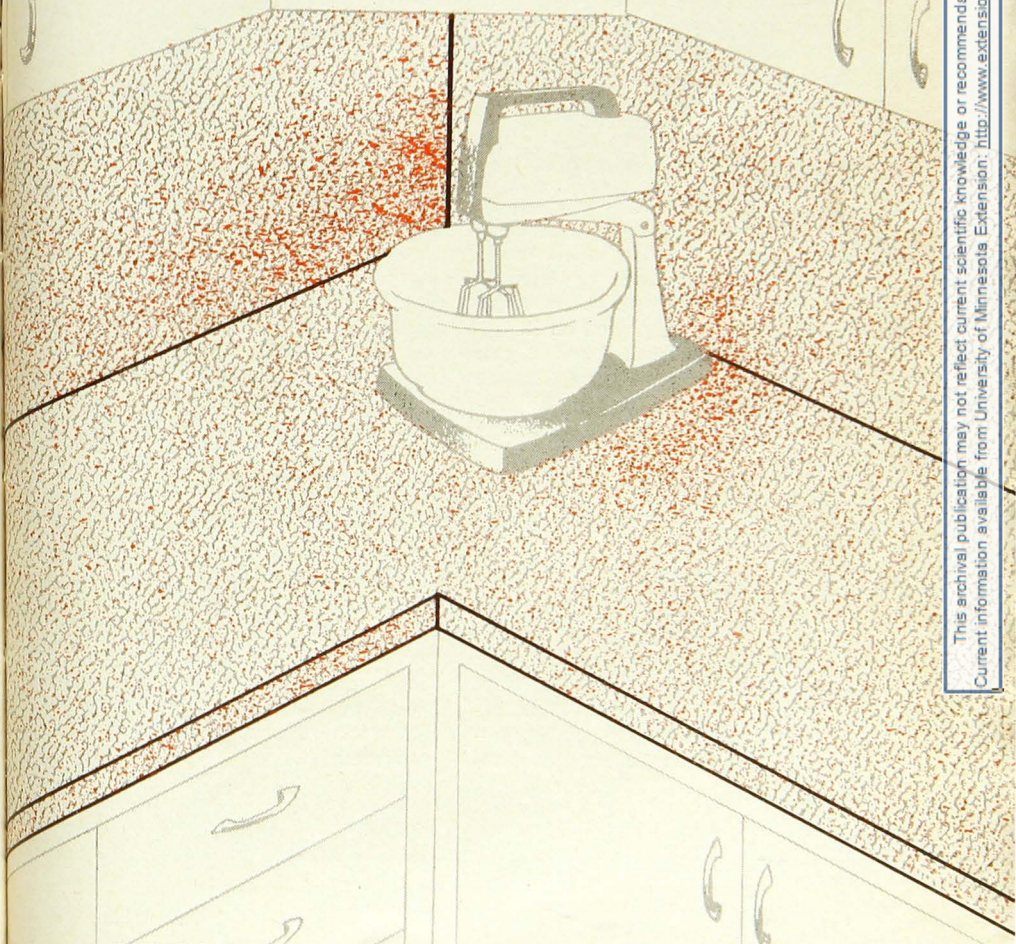
Extension Bulletin 292
July 1958

COUNTER TOPS



UNIVERSITY OF MINNESOTA
Agricultural Extension Service
U. S. DEPARTMENT OF AGRICULTURE

Counter Tops

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YOUR CHOICE of counter top material for your kitchen, utility room, and bathroom will influence the attractiveness and the ease of work in these rooms. It is important that you choose it wisely, for it is difficult and expensive to replace a counter or table surface.

Questions asked by families replacing old table tops or counters or buying new ones led to a recent study which has provided much of the material in this bulletin.[2]

What You Want

Counter top material should be attractive, smooth, durable, and easy to clean. It should not crack or chip, be a source of glare, change color, or be noisy when things are placed on it.

In the tables on pages 7 and 8 you will find some of the characteristics of each commonly used type of surface finish. This will help you decide which material will serve your purpose and fit your pocket-book. It is important for you to know how each type reacts to heat, cutting, cleansing agents, disinfectants, foods, moisture, and abrasion. You'll find that no one material has all of the qualities you might want in a kitchen counter surface.

Prepare Before Shopping

There are some things you should know and do before you choose your counter and get estimates on the cost of material and installation:

—**Measure** the work area carefully; use a metal tape or a ruler. (Measurements on blue prints are not dependable.) If you plan to buy custom-made counters, make accurate drawings of cabinets to be covered and indicate the location of the sink and the built-in cooking surface if you have one. Most dealers and fabricators will send a workman into your home to measure the surfaces to be covered.

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[1] Home Economist and Extension Home Improvement Specialist, respectively. Grateful acknowledgment is made to Dr. Florence Ehrenkranz, professor, and Mrs. Dorothy Stulberg, former staff member, of the School of Home Economics staff of the University of Minnesota, for their help in preparing this bulletin.

[2] *Work Counter Surface Finishes for Kitchens and Utility Areas.* North Central Regional Publication 52, August 1955. Ohio Agr. Experiment Station.

—**Check** to see if you need a new wood base (or core) or if the old one is usable.

—**Decide** on the type of sink you will use.

—**Decide** if you want stainless steel, aluminum, or plastic trim around the front and side edges.

—**Decide** on the height of the backsplash.

Counter Surface Finishes

Finishes for counter surfaces have undergone important changes during the past 50 years. Today you have a variety of materials from which to choose. In addition to linoleum, ceramic tile, and stainless steel, there is vinyl and laminated plastic. Pressed wood and natural wood with various penetrating treatments are also available.

LINOLEUM is made from linseed oil, resins, wood gums, powdered cork or wood flour, chalk, and color pigments. The prepared linoleum mixture is pressed onto a backing of burlap or felt paper. In inlaid linoleum, which is the only type of linoleum suitable for counter tops, the colors extend from the surface to the backing.

VINYL is made by the manufacturers of linoleum and of rubber products. The manufacturing process is similar to that of linoleum except that a petroleum product is used in place of linseed oil. There are many differences in quality in the vinyls on the market. Only a good quality product should be used for a counter top.

LAMINATED PLASTICS[3] are made by impregnating special Kraft paper or cloth with resin and drying it. Several sheets (7 or more) of this impregnated paper are then stacked on top of each other. A design sheet, which has been impregnated with melamine resin is placed on top of this stack of paper. An overlay sheet of clear melamine (tough plastic) is placed on top of this (figure 1). These stacked sheets are then put under pressure. Some are put under low pressure (flexible). Some are put under high pressure (rigid), resulting in a bonded sheet of laminated plastic that cannot be soaked or split apart.

A special type of cigarette-proof laminated plastic has a sheet of metal foil under the decorative sheet to guarantee against blisters from cigars and cigarettes. "This type should not be

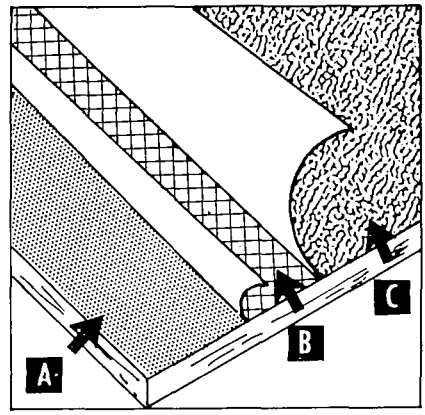

Fig. 1. Laminated plastic. (A) Layers of special Kraft paper, impregnated with a resin and bonded together under heat and pressure. (B) Decorative sheet of printed paper, cloth, or a thin layer of wood impregnated with melamine resin. (C) Overlay sheet of melamine resin.

[3] Some of the brand names for high pressure laminated plastics are Consoweld, Corlex, Formica, Micarta, Panelyte, Texolite, and others.

Note—Use of brand names does not mean an endorsement of the product. Omission of any brand name does not imply criticism.

used on kitchen counters since the application of larger areas of heat (such as a skillet) could cause the material to buckle." [2] It would, however, be satisfactory for covering a dinette or a coffee table.

Laminated plastic is fabricated into counter tops by veneering it to a plywood core—which provides rigidity and support. Special tools are needed for cutting and trimming laminated plastic.

STAINLESS STEEL comes in various finishes—high polish, satin finish, or a slightly corrugated pattern. It may be purchased as a flat sheet, which can be bonded to a core (plywood) and trimmed with a special trim. This costs less than the usual factory fabricated stainless steel counter which has a backsplash and a slightly raised front edge. The core of stainless steel tops should be properly insulated. A good quality stainless steel is considered a long-term investment.

CERAMIC TILE is made from clay. The tiles are from ¼ to ⅜ inches thick and the size varies from very small to 9-inch squares. Generally the 2-inch size is used in kitchen counter tops. Ceramic tile is available in many shapes and designs. The glazed tiles are used more often than the unglazed. They are often used as a backsplash, especially behind ranges, separate cooking surfaces, and sinks. They are usually installed by experienced workmen although it is now possible to obtain a do-it-yourself kit with detailed directions for installation.

WOOD should be pretreated with penetrating seals or other finish to make it stain and water resistant. Seasoned maple, cut in narrow strips and glued and bolted together, is often used. Processed or pressed wood is made from well seasoned wood. The wood goes through a rather complicated process where it is chipped, coated with adhesive materials, exposed to steam under pressure, then pressed into hard boards which are immersed in a hot oil bath and humidified. A wood cutting surface 18 inches wide frequently is used as a part of a counter assembly with other counter surface materials.

Forms and Sizes

Counter materials are available in several different forms:

—Sheets or rolls of linoleum and plastic materials of different widths. These are bonded to the core on the job. Plastics are obtainable in 24, 30, 36, and 42-inch widths and linoleum in 6-foot width.

—Panels, or standard sized sections, with the surface material bonded to a special type of plywood and with separate backsplash sections.

—Made-to-order tops with the surface material bonded to a plywood core and the top and backsplash molded in one piece. This is known as a post-formed counter top. This is the neatest type of counter and is more expensive than panels or standard sections. Eight or ten-foot post-formed counter lengths are now on the market with detailed directions for cutting out the hole for the sink or surface cooking units, for finishing edges, and installing the counter length.

—Some cabinet manufacturers sell materials in standard widths to cover their own cabinets.

The standard widths of panels or post-formed counter tops are: 18, 24, 30, 36, and 48 inches (6-inch additions). The standard lengths are 48, 60, 72, 84, 96, and 120 inches (12-inch additions). Other sizes can be built on the job or made to order.

Cost

There is a wide spread in both the cost of materials and the cost of installed counter tops. The total cost is influenced by the grade of material, the type of construction, and the number of separate counters and right angles in the counters.

The cost of materials, depending on the type and the construction, will include: material for counter and backsplash, adhesive, counter core, sink rim, edging, screw eyes, and screws.

It is difficult to get the actual cost unless you have a diagram of your kitchen and are dealing with the dealer or builder. You would be wise to get more than one estimate. Installed stainless steel is generally the most expensive. Ceramic tile and good quality high pressure post-formed laminated plastic tops are in the middle cost group. Linoleum is the least expensive with vinyl slightly more costly than linoleum. In general, the cost of material is less than the cost of installation. Material which comes in a usable size may actually cost less, although higher priced per square foot, than material which costs less but where there is waste.[4]

Installation

Many builders prefer to build counter tops on the job to insure a good fit. Some counters can be installed by the "do-it-yourself" workman and others should be installed by a skilled workman. Manufacturers usually provide detailed directions for installing their products. Follow these carefully. Use the adhesive recommended by the manufacturer for his product.

There are a few things to remember about installation. Corner sections in-

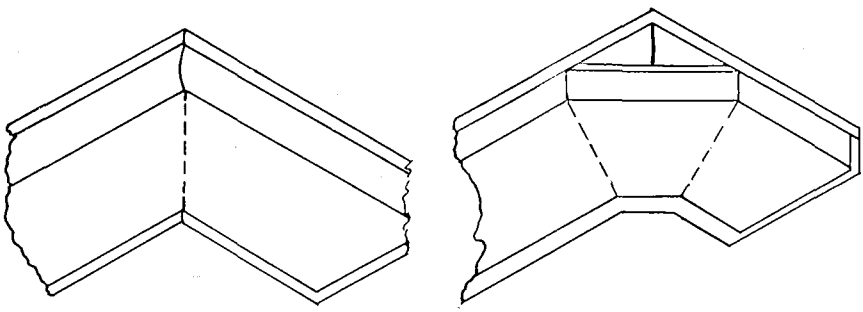

Fig. 2. Two types of counter corner miter

[4] Estimated prices in the Twin Cities in the spring of 1958 on an installed counter with backsplash in a 9′ x 11′ U shaped kitchen ranged from $70 for linoleum to $650 for stainless steel with vinyl slightly higher than linoleum and laminated plastics varying from $135 to $280.

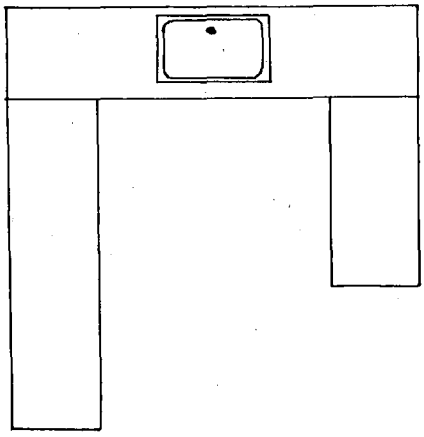

Fig. 3. Joining counters with straight edge

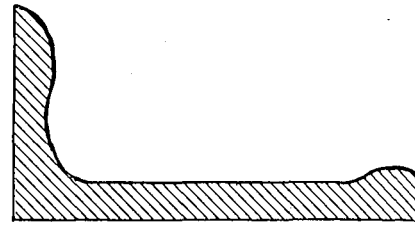

Fig. 4. Cross-section of post-formed counter top and backsplash

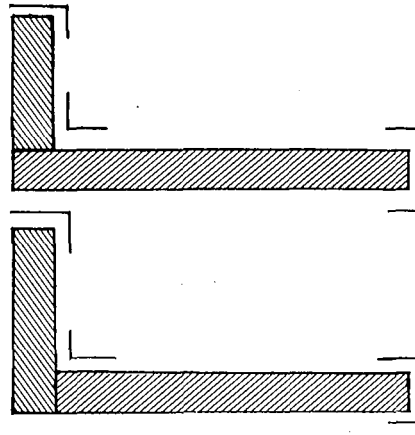

Fig. 5. Cross-section showing two methods of installing counter backsplash

crease labor and cost. **The corner sections** of U and L shaped counters are handled in different ways. It is not easy to transport ready-made counters with completed corners so corners are usually formed on the job. Some of them are joined by miters as in figure 2. In others the side pieces are joined to the end section as in figure 3.

The front and the edge of counters can be covered by metal or plastic moldings made of the same material as the counter. Aluminum and stainless steel are usually used—stainless steel is preferred as it does not darken dish cloths, towels, or aprons rubbed against it.

The backsplash is usually made of the same material as the counter surface or the sink top. It is often coved and extended as high as desired—frequently from the counter to the bottom of the cabinet above. On made-to-order or post-formed counters (figure 4) the backsplash may be 1½ inches high—although it is usually 4 inches high. Sometimes the counter is flat (figure 5) with a separate backsplash joined by metal stripping to the counter. This is an easier type of installation for the less skilled worker.

"Do-it-yourself" workmen often install linoleum counter tops. Although linoleum is flexible, it is not easy to handle and the result is often disappointing. If you don't get a tight seal between the sink and counter, water will get under the linoleum and it will mildew in hot, humid weather and turn black and crack. You can get a J-shape molding for making a tight seal between counter material and a flat rim sink.

Characteristics of Counter Materials

MATERIAL	What You WILL LIKE About It	What You MAY NOT LIKE About It
LINOLEUM (Inlaid)	—Durable—if well installed and well cared for —Easy to clean —Resilient —Quiet to work on —Cuts, scratches, and dents appear to heal —Generally stain resistant (if waxed) —Nonconductor of electricity —Flexible for backsplash —Wide variety of colors and designs	—Not easy to install—requires careful installation to prevent water from getting underneath —Absorbs moisture —Affected by abrasion —Shows heat rings —Soaps, detergents, and direct sunlight may fade it —May be stained by some substances —Needs continuous waxing and good care
VINYL	—Durable —Easy to clean —Easy for less skilled worker to install —Reasonable in price —Flexible—for backsplash —Resilient —Color unaffected by sunlight —Grease and stain resistant —Nonconductor of electricity —Not affected by moisture or alkaline materials —Attractive colors	—Heat blisters and melts it —Cuts, scratches, and indents more easily than linoleum —Although resistant to most stains it may be stained by mustard, bluing, grape juice, food coloring, ink, alkalies such as drain cleaners, ammonia, and disinfectants
LAMINATED PLASTIC (High pressure—Rigid-sheet)	—Durable —Easy to clean —Resistant to stains, acids, and alkalies —Nonconductor of electricity —May buy in sheets or panels or may be post-formed at the factory —Wide variety of colors and designs	—Higher in price than linoleum or vinyl —Shows cuts —May be affected by heat —Can be scratched by rough utensils —May be dented or cracked by heavy or sharp blows —May warp unless well installed —Should be installed by skilled worker
LAMINATED PLASTIC (Low pressure—roll variety)	—Reasonable in price —Resistant to staining —Easy to install by do-it-yourself worker —Smooth—glass-like surface —Good variety of colors and designs —Nonconductor of electricity	—Shows cuts and scratches —May blister and crack with heat
WOOD—NATURAL—HARD	—Durable —Moderate price —Hard smooth finish if well seasoned —Good cutting surface —Heat resistant —Laminated most suitable —Easily treated or refinished	—Must be well sealed or treated frequently to prevent staining and moisture absorption —Solid wood may warp —Unless well seasoned, top made of narrow pieces may spread apart

WOOD-PROCESSED OR PRESSED	—Low cost —Durable —Smooth surface —Moisture resistant —Good cutting surface —Easily treated or refinished —Can be installed in small area as a cutting board —If treated, easily cleaned	—Scorches easily —Roughened by abrasion —Must be well sealed or frequently treated to prevent staining and moisture absorption
STAINLESS STEEL	—Very durable —Resistant to staining —Not affected by heat —Will not break, chip, or crack —Can be obtained in sheets or in prefabricated counter or sink tops —Seamless if molded to fit counter —Flat sheet may be installed by the family handyman	—Most expensive counter material —More reasonable in price when flat sheets are used —Shows scratches, watermarks, and finger prints —Not resilient —Dents under heavy impact —Conducts electricity —Discolored by acids and alkalies (vinegar, lemon juice, ammonia, and soft drinks)
CERAMIC TILE	—Durable —Easily cleaned—if properly installed —Smooth hard surface —Resistant to stains—if glazed —Suitable for counter and backsplash at range and sink —Not affected by heat —Nonconductor of electricity —Attractive colors, sizes, shapes	—Among most expensive counter material —If glazed, some light reflection —Should be installed by skilled workman —May cause dish breakage —May crack or break if hit hard —Unglazed may stain —Joining material may stain —Noisy

To keep your counter in good condition . . .

Keep linoleum waxed with water or solvent base wax.

Occasionally wax plastic counters.

Avoid cutting on linoleum, plastic, or stainless steel.

Avoid using harsh cleaners on all counters.

Avoid placing hot utensils or appliances on linoleum, plastic, vinyl, and wood counters.

Wipe up spills at once on all counters.

Do not hit ceramic tile with a heavy or sharp instrument.

Do not use varnish, lacquer, or shellac on linoleum.

Wipe stainless steel with damp cloth—follow at once with a soft, dry cloth to prevent spotting.

Treat or refinish wood occasionally to prevent staining.

Avoid putting rubber drain mat on linoleum or plastic—unless it will permit air circulation underneath (open mesh).

Follow manufacturer's directions for care and maintenance.

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Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Service and United States Department of Agriculture Cooperating, Skuli Rutford, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.

12,500—5-58