

# **Modern Paint Finishes in Kitchen Cabinets**

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In order to supply the demand in the housing and remodeling industries, manufacturers of kitchen cabinets have come a long way in developing new methods of assembling and finishing their products. They must produce quantity and quality with an eye toward economy. Gone are the days of the cabinetmaker who carefully cut and joined wood together with simple tools, then patiently stained, sealed and applied several coats of brushed varnish, followed by hand rubbing between each coat.

Today's cabinetmakers have large facilities which run in assembly line fashion using power equipment instead of hand tools. Sprayers have replaced brushes and ovens have reduced drying times of finishes. Through their evolution of the cabinet industry into modern times, there has been a great deal of research and development done by the paint companies in order to find new and better finishing and coating products, products that would be heat and chemical resistant and be able to withstand hard use in modern kitchens. Kitchen cabinets that have some type of finish or coating applied to them would fall into two categories, either metal or wooden.

Metal cabinets are not in such great demand in today's market as they were many years ago. In fact there are but a few companies that manufacture metal cabinets at all.

These cabinets are usually spray painted with enamel and baked in ovens to produce a hard finish. Metal cabinets can be cleaned with most detergent type cleaners without damage to their finish. Abrasive type cleaners should not be used because they could scratch the surface of the enamel paint.

Wooden cabinets are the choice product of the industry today. Many types of wood are used, from the most expensive hardwoods to the least expensive particle board. However, whether they be expensive or inexpensive, the type and quality of the finish used today in their construction make them a very acceptable product in today's modern kitchen.

The finishes used in wooden cabinetry come in transparent which show the natural wood grain, semi-transparent, which involve color but still show the natural wood grain and opaque which reveals no wood grain. The remainder of this text will concern itself and elaborate on transparent finishes.

There are four types of transparent finishes used by cabinet manufacturers today: varnish, polyurethane, nitro cellulose lacquer and catalyzed or conversion varnishes.

The first two, varnish and polyurethane, are used by the smaller cabinetmakers who do not have the facilities to spray, but must brush apply their finishing coats.

The third, nitro cellulose lacquer, is used by about 60% of the industry. Lacquer is so widely used because it can be spray applied and have a very quick drying time between coats. Clear lacquers were first made using resin gums for solids.

Later, the development of synthetic gums improved the qualities of lacquer films as to tenacity and toughness. Color pigments may be ground and added to lacquer making it a very desirable product to manufacturers.

Catalyzed varnishes are the newest development in paint technology for the cabinet industry. They produce a very hard finish with a brilliant gloss that will not soften or imprint. This finish is fire resistant and highly resistant to normal household chemicals. Catalyzed varnishes are used primarily by the large cabinet manufacturers who have the proper facilities for their use. They require specialized spray equipment, climate controlled drying rooms or curing ovens.

Catalyzed varnishes are made of synthetic resins which are mixed together then spray applied to the wood. They are then set in drying rooms or heat cured in an infrared oven. These varnishes are very desirable to the manufacturer because they have a high solids content which means fewer coats need be applied for better results, creating a savings in time and labor.

There are a few large manufacturers that are applying their varnishes electrostatically to the wood. This process is all done before the cabinets are assembled. Precut wooden pieces are wiped by hand with a negatively charged stain. These pieces are placed on metal hangers which travel on a track into a paint chamber. In the chamber a centrifugal disc device hurls a positively charged catalyzed varnish upon the surface of the negatively charged wooden piece, imparting a uniform coating to it. After the pieces leave the paint chamber they travel along into the curing ovens.

Then they are hand sanded and sent through the paint chamber and curing ovens for a second coat. After the desired hardness and gloss are achieved, the cabinets are assembled and finished for delivery. The process of applying finishes electrostatically is new to the wood and cabinet making industry. However, it has been used by the metal industry for several years. Catalyzed varnish finishes should be relatively easy to clean since they are very resistant to chemicals and heat. However, they would be difficult to refinish because catalyzed varnishes cannot be removed easily.

The paint industry has come a long way in developing these new catalyzed finishes and techniques in applying them. However, research is constantly being done to expand and perfect new products and methods of application. We as fire restorers must determine if a cabinet can be restored, refinished or replaced, once it has been damaged. For this reason the restoration contractor must be aware of the new products and finishes in this market. Without that knowledge an appropriate decision cannot be made.

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