Put It To The Test

by Hugh Phibbs

Anyone working with conservation-quality materials is likely to wonder just how effective each is (to demonstrate the capacities of their products). Manufacturers provide testing data but the figures and graphs may not give a "feel" for the results. Even when a manufacturer ages a work (with part of it protected by conservation quality materials and part left unprotected) the results may not be easy to see in a photograph.

The best way a framer can get a sense of the workings of conservation quality materials is to test them in the shop. Such tests will not be scientifically valid, but they can enhance the framer's understanding of benefits which such materials can provide in a way that test data may not.

Glazing products which filter ultraviolet light are obvious candidates. These can be tested for the protection they afford both the paper and the media used on it. Strips of different glazing products can be placed side by side in front of papers of varying quality and secured so that they can be placed in a sunny window. Part of the test package can be covered with an opaque board or metal foil to demonstrate any change which occurs, or part of each paper sample can be kept in a drawer. The use of sunlight will provide a full spectrum of light unlike an artificial source.

This same test can be done on examples of different types of printing and other artist's media. To get an accurate picture of each type of glazing, it is best to use it with and without filtering capacity. Thus, if a filtering glass is being used, a nonfiltering glass of similar type should be included. The test should be run until some change is observed. A light meter could be used to calibrate the amount of light which falls on the test package during full sun exposure and measurements of interior walls with and without exposure to sunlight can be taken for comparison. An item on paper in a museum might get between four to eight thousand foot candle hours during one exhibition cycle. (One foot candle equals the light from one candle one foot away. This figure can be converted into the internationally used lux standard by multiplying by ten.)

Many materials are described as being acid-free, they can be tested in a number of ways. Archivist's pens can be used to check the pH of a material. The fluid which the pen provides will show different colors in different pH

ranges. There are also pH strips that will change color when placed in water in which a sample of the test material has been soaked. In both of these cases, the pH reading which is obtained is that of the material after it has been suffused with either the indicator fluid or the water. This may not be a completely accurate picture of how the material may behave when it is dry.

Fortunately, acid detector paper strips are becoming available which change color in the presence of acetic acid fumes. These blue strips were designed for use with cellulose acetate film but, as has been shown by work done at the National Archives by Catherine Nicholson and Elissa O'Loughlin, they can be used with other materials to indicate the off gassing of acid.

To create a test like this on your own, a small sample of the material to be tested can be placed in a sealable polyethylene bag with a piece of acid detector paper and left for a couple of weeks. If the bright blue color remains, the material is not donating acetic acid. A change of color to a greenish shade shows off gassing.

This indicator paper is not as successful with all acids, but since polyvinyl acetate is commonly used to laminate conservation quality boards, the detection of acetic acid off gassing from improperly handled adhesive is useful. If an adhesive is to be tested, a sample of it can be extruded onto a clean piece of glass and allowed to cure. The glass can be bagged with the blue strip and observed for color change. Tapes can also be tested in this manner.

In addition, these same strips can be used in conjunction with a barrier material which functions by scavenging pollutants. If the barrier does not have a built-in indicator to denote its having reached saturation, the blue acid detecting strip can be placed inside the barrier and monitored during unframing.

This same strategy can be used in testing matting and backing boards for their capacity to sequester the art from pollution. In this case, a sample of board can be partially delaminated and the strip slipped inbetween the plys. If a backing board is to be tested and it is not laminated, two pieces of equal size can be used with their edges clipped together with metal or plastic fasteners to avoid any contamination of the experiment with tape. The boards can be placed in an environment such as a garage which has a less beneficial climate so that the test need not run too long.

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When results have been obtained, they should be discussed with others who are familiar with these materials to guard against misinterpretation in the same way that scientists have their peers review their work. The results can be shared with clients who may not understand the functioning of such materials, but the most important role they should serve is their broadening of the framer's grasp of the benefits of preservation. ■

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