

THE HIERARCHY OF HINGES



● This is an example of a piece with many hinges layered one on top of another. In this case, linen tape over Japanese paper hinges over linen tape residue over masking tape.



● The most dire circumstances I've seen are when objects have been glued directly to the window mat or backing board.

By Madalyn P. Meehan

Hinges help determine artworks' longevity. Choosing the right hinge will ensure customer satisfaction for years to come.

At my paper conservation studio, M Conservation, the first thing I do when a piece comes in for treatment is remove any existing hinges. I've seen all different styles of hinging and a variety of hinges themselves that range from good to bad. I've treated artworks secured directly to matboard with electrical tape, to pieces expertly float mounted using beautiful Japanese paper hinges, to weighty Warhol artworks supported solely by linen tape. Sometimes, objects will come in with several different kinds of hinges layered on top of one another.

Safely securing a work of art on paper in its housing is one of the most crucial steps in framing. The piece needs to be indirectly adhered to the mount, which means securing it without directly gluing the piece to the display materials. Hinging works of art creates a bridge between these materials and the object itself, allowing easy removal from a frame for storage, conservation treatment, or reframing.

However, not all hinges are created equal. Some types of hinging materials can cause serious problems and unsightly discoloration that may eventually migrate to the front of the paper. Hinging materials can be broken down into three categories: water-soluble, pressure-sensitive tape, and heat and solvent tape.

The two hinging categories most commonly used are water-soluble hinging materials and pressure-sensitive tape. Water-soluble hinges encompass anything that requires moistening a hinge with water to adhere it to the piece. This includes water-based linen hinges, gummed paper or tissue, Japanese paper with wheat starch paste, etc. Pressure-sensitive tape encompasses any tape with an adhesive that is ready to go. You simply tear off the tape and press it down onto the paper. This category includes artist tape, Scotch tape, masking tape, double-sided tape, framer's tape, Lineco self-adhering tape, etc. There are also heat- and solvent-activated hinging materials, but they seem to be used less frequently.

From my perspective as a paper conservator, while water-soluble hinging materials have potential downsides that range from better to worse, pressure-sensitive tapes (PSTs) pose the biggest threat to paper. Let's dive in!

Before 1950, the majority of adhesives were natural, rubber-based adhesives. At present, there are thousands of different kinds of tape, each with their own complicated and varied aging properties. In general, the degradation and aging of PSTs manifests in three stages. Stage one occurs as soon as the tape is applied to the paper. At this first stage, the tape can still be removed easily with mechanical action, heat, or solvents. In the second stage, the adhesive begins to soften and become gummy. Because paper is a fibrous and porous material, the tape adhesive often seeps into the paper and can cause unpleasant discoloration and staining. In the third stage of this PST degradation, the aging of the adhesive makes it dry and brittle, which often results in the carrier layer falling off. At this stage, the tape residue is fully ingrained in the paper and the stain it leaves often becomes visible on the front of the piece. Solvent and lightening techniques are the

only options available to remove this kind of staining. In some more extreme cases, the staining cannot be removed completely.

Oftentimes, companies market their products as "archival" or "acid-free," implying that the product will not cause issues further down the road. In the conservation world, archival products hold little tangible meaning beyond a marketing term. Though these archival products have better aging properties or offer



● The image shows an example of what can occur when paper hinges are adhered with an adhesive that is not water-soluble.

a neutral buffer than commercial tapes, they still contain adhesives that degrade over time and cause discoloration. Due to this, it is advisable to avoid PSTs that are marked as archival or otherwise whenever possible. If PSTs are the only available option, it is preferable to choose one marketed as archival than to use commercial tapes.

That PSTs advisory brings us to the category of water-soluble hinging materials. Water-soluble hinging materials are generally easier to

remove, any damage caused easier to reverse, and the adhesive causes less discoloration to the paper in the first place. Additionally, most water-soluble hinges are more responsive to moisture in the air, which allows the paper to expand and contract more naturally.

In my experience, I've found Japanese paper fastened with Japanese wheat starch paste to be the best type of hinge. Japanese paper and wheat starch paste both have excellent aging properties. They are very strong but still allow the paper to expand and contract naturally. However, this style of hinging does require a certain skill level and the materials are less readily available.

The next best alternative to Japanese paper and Japanese wheat starch paste is a product like Gummed Hayaku Hinging Tape from Lineco or a similar gummed paper tape. Although the adhesive hasn't been well

studied, from my personal experience in paper conservation, these hinges are easier to remove and leave behind less residue than PSTs.

Linen tape is the most tenacious type of water-soluble hinge. I'd advise staying away from using linen tape in framing practices unless completely necessary, such as in the case of supporting a bulky and heavy work. Much like PST, linen tape has its own cycle of aging with the primary difference of requiring water-based treatment versus treatment that is solvent-based. Although technically reversible, older linen tape can adhesive become dry, brittle, and yellow. It tends to leach into the substrate of the paper. I'd particularly advise reconsidering the use of linen hinges on any print on a paper like Arches or BFK Rives. A paper tape hinge would be more acceptable.

At M Conservation, the most dire circumstances I've seen are when objects have been glued directly to the window mat or backing board. Art objects should never be directly adhered to their housing, but instead always secured with hinges. It is a slow and arduous process to reverse the damage from this direct adhesion. Typically, this process involves slowly paring away with scalpels at the window mat or backing board until the adhesive layer is revealed. From there, the adhesive layer has to be solubilized in order to soften it enough to remove the remaining backing board and any subsequent adhesives. Beyond the difficulties of conserving these artworks, art handling presents another major danger to artworks direct glued to their housing. This adhesion method results in the risk of tearing, creasing, or denting the work when the housing is opened for reframing.

Mounting objects with heat-set tissue or film is another common practice that leads to difficult removal. Like "archival" products, heat-set tissue or film is often marketed as reversible. While this is true to a point, removing an object mounted with heat-set tissue often requires additional heat or solvents. It may be possible to remove the piece from the board, but the adhesive will likely have already embedded itself in the paper surface, leaving a smooth film on the back of the object. This remaining residue can cause issues such as discoloration further down the road.

I've seen problems arise in artwork hinged with non-water-soluble adhesives. This image shows an example of what can occur when paper hinges are

adhered with an adhesive that is not water-soluble. In these instances, conservation options are very limited. This is largely because these prints are often in excellent condition overall. The best I can do for this type of hinge is remove the existing paper and use moisture to slightly soften the adhesive. This allows me to mechanically reduce the residue. However, the glue is generally already discolored at this point, and this discoloration will likely worsen over time.

If the piece of art is going to be over-matted, it's best to choose a technique that avoids hinging entirely. In these cases, using products such as Mylar photo corners or corners made of high-quality artist paper such as arches or BFK Rives paper affixed with PVA glue to the backing board is an excellent option. Mylar is an inert material that won't harm the artwork even over the course of many years. High-quality artist papers are made from cotton linter, which also has excellent aging properties.

For framers, making the best decision for the object depends upon understanding the merits and downsides of different hinging materials. Hinges help determine the longevity of an artwork. Therefore, choosing the most appropriate hinges for an artwork provides the best avenue for long-term client satisfaction.

The moral of the hinge story: when choosing a hinging material, steer clear of pressure-sensitive tapes whenever possible. Of course, there are always exceptions to the rules, such as in cases where a moistened tape would be detrimental to the artwork. But in general, water-based hinges—even those light linen tapes that can leave residue and staining long-term—are less harmful than pressure-sensitive tapes. And again, if the piece is being over matted, consider using photo or high-quality paper corners to avoid any potential risks from hinging. **PFM**



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