13 Covering With Tissue

There are two basic types of covering; paper and film. This video will show how to prepare, apply and trim paper used to cover indoor models with open framework such as Wright Stuff and Helicopters. The paper coverings can be further divided into tissue and condenser paper with tissue being by far the most popular. In this video only tissue will be addressed. Condenser paper is difficult to use compared to tissue and its availability is limited.

Before tissue can be attached to an indoor model it must be shrunk. If it is applied as purchased, moisture will cause it to shrink, warping the surfaces and making them un-flyable. Take a sheet of tissue and make a small tear in a corner. Note the direction the tear wants to go. This is the direction of the grain.

Clip the sheet of tissue to a rod or stick with the grain in a vertical orientation. Do not pull the tissue tight between the clips. Spray the tissue with water and allow it to dry.

Once the tissue is dry, carefully remove the clips and place the tissue where it will not get damaged. At this point it will look horrible; don't worry this will be addressed.

Tissue is applied with the grain running parallel to the longest dimension. If the wing has turned up panels, a piece will be needed for the center panel and each tip panel. Using a very sharp hobby knife, razor blade or scissors cut a piece of tissue about ½" oversize on each of the four sides of the main panel. Mark the direction of the grain on the tissue.

Place the tissue on a smooth pad such as paper or an ironing board. With an iron set to its lowest temperature, iron the tissue to remove the wrinkles. If the wrinkles are not removed increase the temperature of the iron until they are.

I prefer using a glue stick to attach covering. Very gently rub the glue stick on the outside top surfaces of the panel to be covered. Just the weight of the stick should be sufficient to apply enough adhesive. It is better to not have enough than to have globs of glue on the wood.

Place the tissue on a flat surface and hold the long edge down with a ruler. Pull the tissue back and slide the structure under the tissue against the ruler. Gently press the tissue onto the piece of wood that is against the ruler.

Allow the tissue to drape over the structure and gently pull it to remove any sags. Press the tissue onto the balsa parts that have adhesive. Allow the adhesive a few minutes to dry.

Make cuts in the excess tissue where it is attached to the curved ribs.

Apply adhesive to the outside edges and any spots where the tissue did not bond to the wood. You can use a piece of wood or plastic to apply adhesive to hard to reach spots.

Gently press the tissue onto the adhesive. Again allow a few minutes for it to dry.

The excess tissue can now be removed using a sharp hobby knife, or razor blade. Scissors can be used to trim straight cuts. When you use a razor blade or hobby knife, use the wood as a guide and angle the blade so it slices just the tissue.

If you use scissors take note of the blades and position the scissors so the edge of the blade will cut right against the wood.

Once the main panel is covered the tips will be elevated to their final position. If you used acetone based adhesive and cut the leading and trailing edges at an angle this is a snap. Just soften the joint and lift the tips. Hold the wing in place at the leading and trailing edges with pins in case you inadvertently unglue the ribs.

If you used a different adhesive you will need to cut notches through the leading and trailing edges alongside of the outer ribs. Lift the tip of the panels to the proper height The Leading Edge height may need to be different than the Trailing Edge height if wash-in or wash-out is specified.

A piece of tissue is applied to the tip panel in the same manner as the main panel, Where the tissue is attached to the outside rib of the main panel it will need to be cut in an arc. It is best to trial fit a piece of plain notebook or copy paper to get the shape of the curve. Mark the paper to identify where the leading edge is located.

Once you are satisfied with the fit trace the curve outline onto the tissue and cut the arc.

Adhesive will be applied to the top surface of the main panel's outer rib and the top surfaces of the tip panel to attach the tissue. Apply the tissue to the tip panel in the same manner and steps as you did for the main panel. Turn the paper pattern over and cut a piece of tissue for the other tip panel and apply it to the other panel. Trim the excess tissue to complete the process.