

Gluing materials other than wood

This video will give an overview of the adhesives used to glue materials other than balsa that are common to indoor model construction

As mentioned in the section about gluing wood, Carpenter's glue is a good choice for gluing foam to wood or itself. It should be thinned using water. A ratio of 2 parts glue and 1 part water is a good place to start. Again, use the double gluing method discussed in the previous video.

Polyurethane glues can also be used to glue foam either to itself or other materials. Polyurethane glues are activated by moisture so one part will have glue applied to it while the other part will be moistened with water. As the glue cures it expands into a hard foam. It takes hours for the urethane glues to cure so the parts must be held together with tape, pins, weights or some other means while the glue cures.

Since the glue expands as it cures care must be taken to not use too much or a hard foam residue will be formed at the joint which will need to be removed.

In addition to the polyurethane adhesives there are some other Styrofoam to Styrofoam adhesives. Other than the specially formulated cyanoacrylates, most of these require hours to cure. Each one has specific instructions related to their use.

Epoxy can be used for bonding foam to itself or other materials. The amount used on indoor flying models must be kept to a minimum because it can add an amazing amount of weight. A simple sandwich bag makes measuring, mixing and applying epoxy relatively easy. Cut the ends of the epoxy and hardener tubes the same amount. Count as each stream of epoxy and hardener are added to a corner of a sandwich bag. Twist the bag and mix the epoxy. Snip a small opening in the corner of the bag and dispense it directly from the bag. If you need to remove uncured epoxy from yourself or a surface use a paper towel and vinegar.

Sand any metal part where it will receive glue. Then clean it with acetone. After it has been cleaned do not touch the area to be glued. Oil from your fingers will weaken the bond, If necessary use tweezers to handle the metal Apply glue to the metal and wood where they will be attached.

Allow the glue to dry for a couple of minutes If you wish, you can tie the thread to the metal part. Apply glue to the wood and place the metal part into the glue. While making sure the metal does not move, wrap the thread around the wood and metal using moderate tension. You do not want the thread to cut into or crush the wood. About six wraps should be sufficient. Slide the end of the thread between the metal and wood so it stays in place.

Check the alignment of the parts to the wood. Once satisfied, with the alignment, apply glue to the thread on all of the surfaces and allow it to dry overnight.

If the metal part needs to be repositioned apply acetone to the joint until the bond is soft enough to move the metal. Reposition the metal and allow the glue to dry. If there is excess thread trim the excess.