

Gluing Wood

This video will focus on acetone based adhesives for gluing wood to itself. For light weight construction applicable to indoor flying models, acetone based glues such as Duco and Ambroid are the glues of choice. Aliphatic resin commonly called carpenter's or wood glue is a good alternative, especially for larger structures such as boomilever and bridge building. Please note this is not the same as white glue. The polyurethane glues such as Gorilla glue can be useful for bonding dissimilar materials. For a number of reasons, I am not a proponent of the Cyanoacrylate adhesives such as Super Glue for indoor models. These reasons will be discussed later.

Acetone based glue when properly thinned is fast drying, extremely light weight, sands well, is easy to use and most importantly the glue joint can be disassembled and re-glued. The importance of the ability to disassemble a glued joint and re-glue it cannot be overstated. If a part is broken or misaligned, or a flying surface needs to be adjusted, the bond can be dissolved, the part repositioned and glued again. Damaged parts can be removed and replacement parts installed.

Three things are necessary for great results with acetone based glue.

First for building indoor flying models, acetone based glues cannot be used successfully directly from the tube. A hypodermic oiler is often used as an applicator. If you plan to use a hypodermic oiler, make sure it has a wire that fills the metal tube when it is not in use. Otherwise the glue will harden inside the tube and the oiler will be worthless. The bore of the oiler tube should be approximately .025". An excellent, and free alternative is an empty nail polish bottle with a brush in its cap.

Second it needs to be thinned or diluted with approximately equal amounts of acetone. Insure there is sufficient ventilation when working with acetone. There is no need to purchase a quart can of acetone, a small bottle of acetone based nail polish remover will be enough for dozens of models. As you use the glue the acetone will evaporate and the glue will thicken. When this happens, just add more acetone until the desired viscosity is reached. Please remember that nail polish remover is a nice name for paint remover. If any is spilled on a painted or plastic surface, that surface will be affected if not dissolved. Acetone also is flammable so use caution when handling it.

Third a process known as double gluing needs to be employed. This means that each surface to be glued will need a coating of the adhesive before they are glued together. The first application will need a couple of minutes to dry. Then the parts are glued together with a small amount of glue applied to each surface. While this might seem time intensive, you will quickly learn to apply the glue to parts as you work, cutting, sanding and fitting other parts so the prepared parts are ready for the second application without wasted time or waiting. The parts can be handled with care in about 5 minutes. Allow 15 minutes for the joint to dry.

If a glued joint becomes attached to the waxed paper slide a razor blade under two of the pieces toward the joint. This will break the bond between the waxed paper and the glue.

To unglue a part or structure, apply acetone to the bond. You can use a paint brush, the brush in the cap of a nail polish bottle or a cotton swab on a wood or paper stick. Acetone evaporates quickly so multiple applications will probably be needed to soften the glued joint. Apply only enough acetone to the desired area to keep it from softening other glued areas. Test the bond occasionally and you will feel the joint become flexible prior to being able to separate the parts. If you only need to reposition the parts, no

additional glue will be needed. Once the acetone evaporates the glue will harden. If you are replacing a damaged part be sure to apply glue to the new part, wait for it to dry and proceed with gluing it in place.

Acetone based glue is not a good choice for gluing foam and some plastics. Acetone is too aggressive and will melt foam very quickly. It is necessary to test the specific plastic to be used with acetone based glues. In many cases it will be fine but some plastics will dissolve.